

SERVICE MANUAL

LDR-8 S auto-clean Electric LDR-8+8 S auto-clean Electric



- NOTICE -

This manual is prepared for the use of trained Service Technicians and should not be used by those not properly qualified. If you have attended a training for this product, you may be qualified to perform all the procedures in this manual.

This manual is not intended to be all encompassing. If you have not attended a training for this product, you should read, in its entirety, the repair procedure you wish to perform to determine if you have the necessary tools, instruments and skills required to perform the procedure. Procedures for which you do not have the necessary tools, instruments and skills should be performed by a trained technician.

Reproduction or other use of this Manual, without the express written consent of Fri-Jado, is prohibited.



Table of contents:

| | |
|---------------------------------|-----------|
| Installation..... | 6 |
| Software | 18 |
| Electrical tests | 42 |
| Service procedures | 46 |
| Trouble shooting | 56 |
| Exploded views..... | 65 |
| Electrical diagrams..... | 89 |

| Versions | | |
|----------|------------------------|---|
| Version | Issue date dd/mm/yy | Remarks |
| 20220930 | 30/09/2022 | First release |
| 20230721 | 21/07/2023 | LDR stacked added + update software and scematics |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

EMPTY PAGE

EMPTY PAGE

LDR-AC, TECHNICAL DATA

Consult the identification plate to get the proper specifications of the unit. The electrical data may vary from country to country.

American models

| | | | |
|-----------------------------|-----------------------|--------|------------|
| Models | | | LDR-8 s AC |
| Dimensions approx. | Width | inch | 52 |
| | Depth | inch | 38 1/4 |
| | Height | inch | 70 3/4 |
| Weight | Gross | lbs | 745.2 |
| | Net | lbs | 635 |
| Maximum ambient temperature | | °F | 95 |
| Sound pressure | | dB (A) | < 70 |
| Electrical installation | Voltage | V | 3 ~ 208 |
| | Frequency | Hz | 50/60 |
| | Required power | kW | 20.6 |
| | Max. nominal current | A | 55 |
| Water connection | Aerated | inch | 3/4 (1x) |
| | pressure | kPa | 200 – 500 |
| | Acidity | pH | 7.0 - 8.0 |
| | Chlorides | ppm | <30 |
| | Hardness ¹ | dH | <4 |
| | | | |
| Drain | Open connection | inch | min. 1 5/8 |

¹ See chapter “water requirements” for detailed information

EMPTY PAGE

INTRODUCTION

- Unpacking of the unit.
- Remove the pallet under the unit with the help of a fork lift.
- Put the unit on his location.
- Check if there is enough free space around the unit (see installation drawing).
- Check the electrical supply.
- Tethering of the unit.
- Connect the water.
- Connect drain.
- Grease collection.
- Make a test run on 220 °C (425°F).
- Give instructions to the operator.

UNPACKING THE UNIT

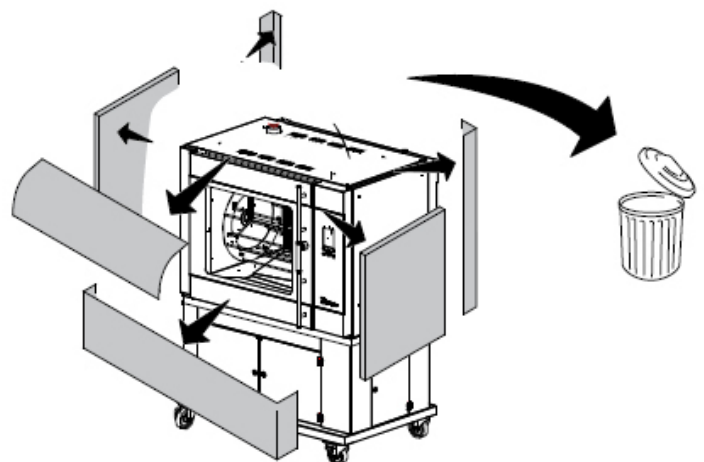
Immediately after unpacking the oven, check for possible shipping damage. If the oven is found to be damaged, save the packaging material and contact the carrier.

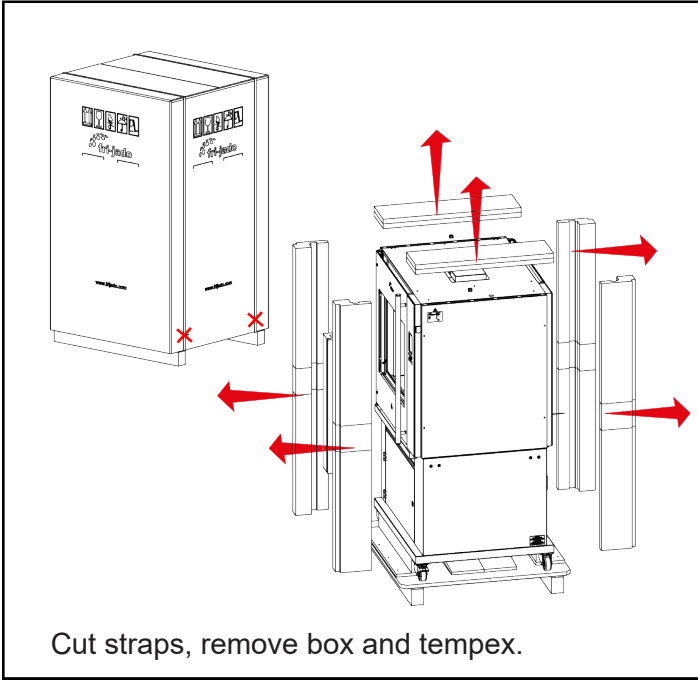
The standard way to remove the oven from a pallet is with a fork lift.

The alternative way is explained on the next page.

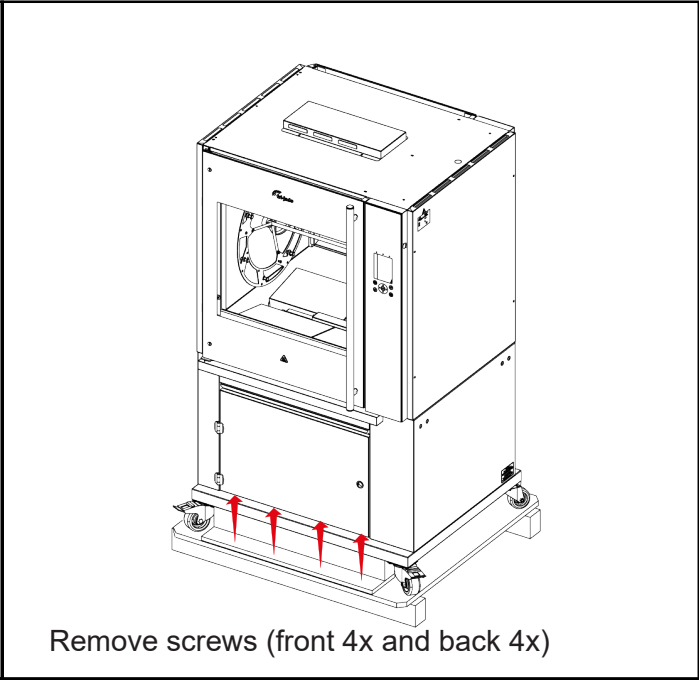
Do this with at least 2 people.

Dispose the packagaging according local legislation..

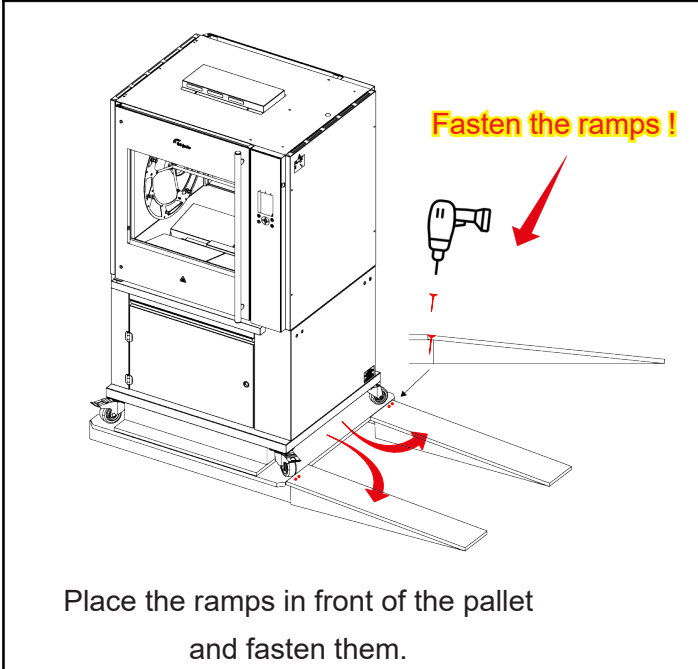




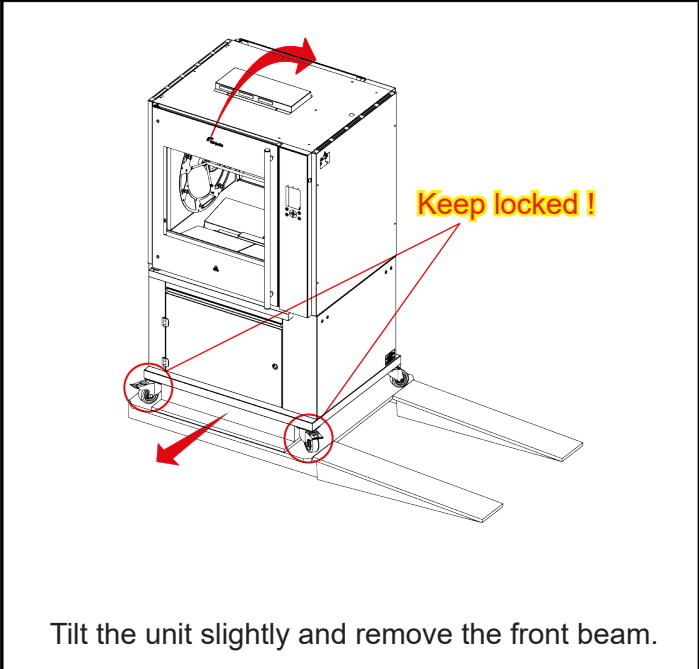
Cut straps, remove box and tempex.



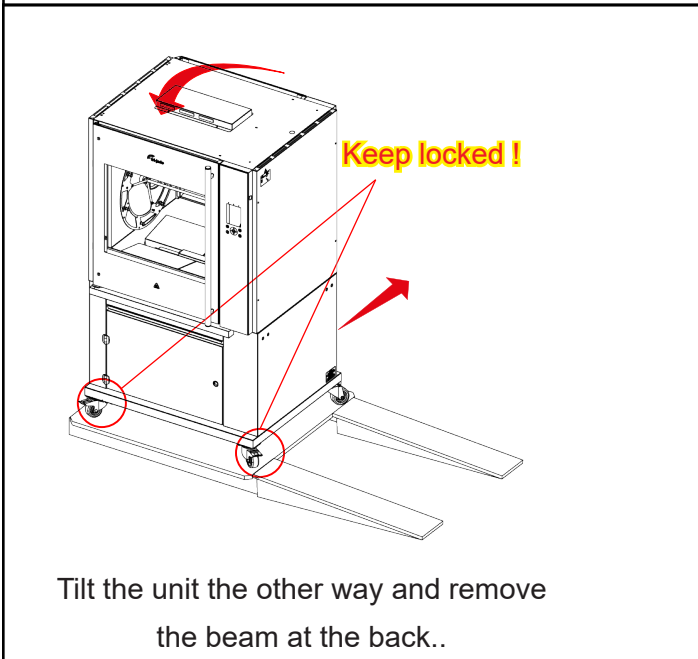
Remove screws (front 4x and back 4x)



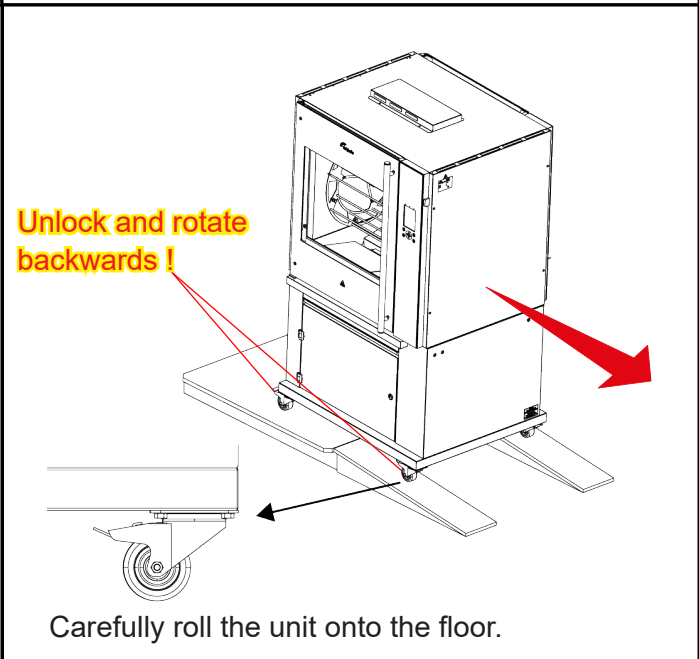
Place the ramps in front of the pallet and fasten them.



Tilt the unit slightly and remove the front beam.



Tilt the unit the other way and remove the beam at the back..



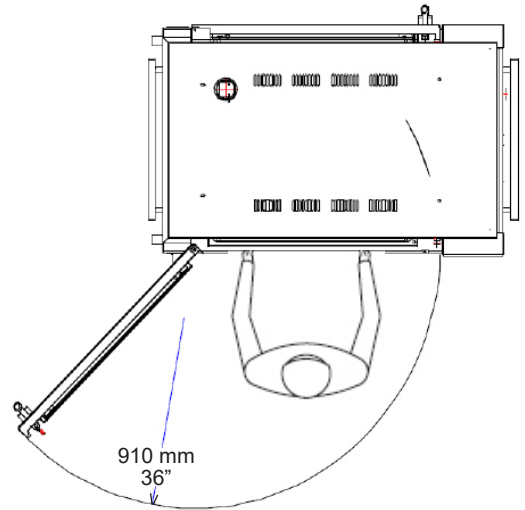
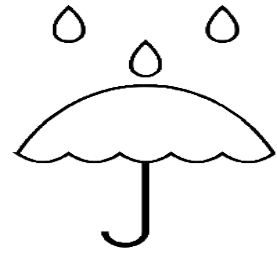
Carefully roll the unit onto the floor.

LOCATION

The oven must be installed on a level surface.

The installation location must allow adequate clearances for servicing and proper operation.

The oven must be protected against falling moisture !



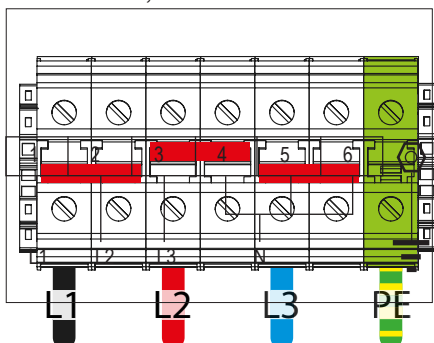
IMPORTANT: Make sure you leave sufficient space around the rotisserie to easily remove or insert the rotor.

ELECTRICAL SUPPLY

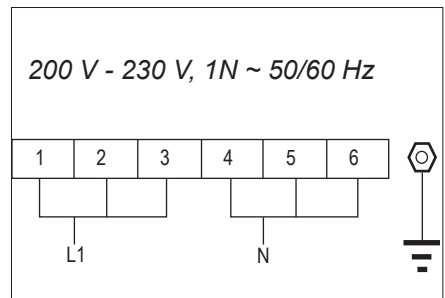
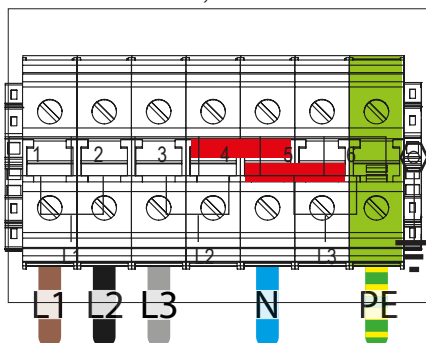
Prior to installation, test the electrical service to assure that it agrees with the specifications on the machine data plate located on the right side panel near the controls. The connecting cable for the unit must be equipped with an approved plug connection. If use is to be made of a permanent connection, the connecting cable must be connected to a manual on/off switch that is installed near the unit in a clear visible manner.

The unit must be connected according to one of the the figures below.

Factory default !
European models
400 V, 3N ~ 50/60 Hz



Factory default !
American models
200 V - 230 V, 3 ~ 50/60 Hz



CASTORS

The LDR ac is placed on a stand with 4 locking swivel castors.

TETHERING OF THE UNIT

Warning: Safety standards require that, when this appliance is properly connected to the electrical power supply using flexible conduit, adequate means be provided to limit movement of the appliance without depending on or transmitting stress to the electrical conduit. This means that, as part of the installation, the base or bottom unit of stacked models must be secured to the building structure (typically either wall or floor) to limit the movement of the appliance and, thus, helping to prevent damage to the conduit during cleaning, maintenance and service operations.

A tether bracket, as shown on the drawing below, is provided with the stand. Based on the routing of the flexible conduit, the bracket must be installed along with the caster to one corner of the base using the hardware provided. The remaining open hole in the center of the tether bracket is to be used to secure one end of the tether (locally supplied chain, cable, etc.). The other end of the tether is to be secured to an anchoring point in the building structure.

Note: Length of tether must be shorter than the flexible conduit to make sure that during appliance movement, no stress is transmitted to the conduit.

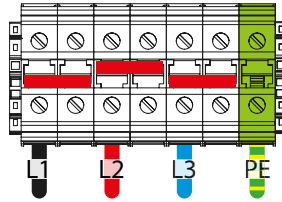


POWER, WATER AND DRAIN CONNECTIONS LDR8 AC

The Power, water and drain connections can be found on the back of the unit.

200-230 V USA models.

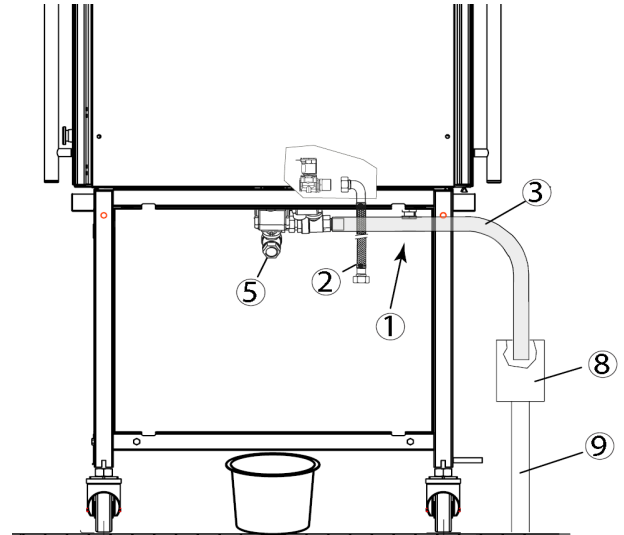
Remove the side panel to get access to the connection block



Water supply hose

G 3/4", L= 1,1 mtr (43")

Flush the tap before connecting



Drain hose, Ø 33 x Ø 25, L= 1,2 mtr

(Ø 1 5/16 x Ø 1", L= 47")

See chapter "connecting the drain tube" for further information.



WATER REQUIREMENTS

The supplied tap water must have the following conditions:

1. Minimum pressure 200 kPa (2 bar)
2. Maximum pressure 500 kPa (5 bar)
3. Maximum water temperature 40 °C (100 °F)
4. Acidity pH 7.0 - 8.0
5. Chlorides less than 30 ppm
6. Use a sediment pre-filter or a strainer for the reduction of silica and other non-dissolved sediments.

Water hardness and descaling filters.

7. A descaling filter is advised when the hardness of the water is > 4° dH (4 Grains/Gal).
8. A descaling filter is mandatory when the hardness of the water is > 20° dH (20 Grains/Gal).

Note that the cleaning capacity of the cleaning tablets will decrease with harder water.

The by-pass of the descaling filter, if applicable, needs to be adjusted to zero.

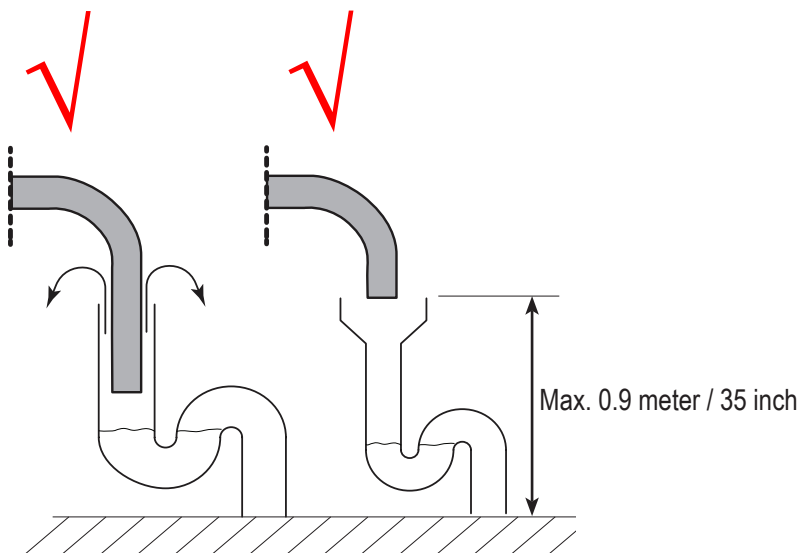
Refer to the filters manual to determine the filter capacity. This filter capacity needs to be adjusted in the manager parameters.

CONNECTING THE DRAIN TUBE

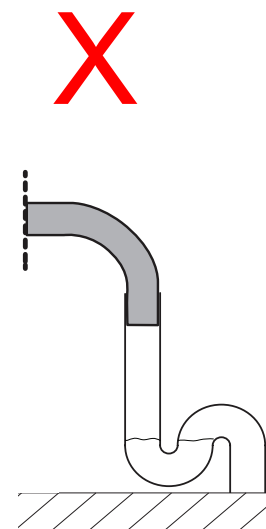
An open draining system with a 110 mm (4 1/2") funnel is recommended. The drain tube has an outside diameter of 33 mm (1 5/16").

- It is not allowed to make a closed connection!
- Make sure that the tube is not kinked and is sloping downwards to the drain funnel.
- The minimum inside diameter of the sewer pipe needs to be 40 mm (1 1/2").
- A siphon in the customers sewer is highly recommended to prevent odors from coming out of the sewer.
- See below examples.

Possible lay outs of drain



Faulty lay outs of drain



EXTRACTION OF THE ROTISSERIE

An extraction hood is prescribed when the unit is NOT delivered with the special Fri-Jado Exhaust Hood mounted on it.

The LDR 8 produces about 20 m³ (700 cf) vapour during a cooking cycle. When placing the rotisserie under an extraction hood, the following guide lines have to be considered:

- The minimum capacity of the extraction hood has to be 1600 m³/h (50000 cf/h).
- The extraction hood has to extend minimum by 20 cm (8") on all sides of the rotisserie.
- The extraction hood has to have a free height, above the rotisserie, of a minimum of 30 cm (12").
- The rotisserie has to be accessible for service purposes.
- The extraction hood has to have facilities to drain any condensation, down to a drain.

GREASE COLLECTION

For TDR5-ac and TDR7/8-ac:

Place the bucket, which is delivered with the unit, inside the stand under the drain pipe.

It is also possible to put other containers in the underframe to collect the grease.

Note 1: In one run, 8 liters (1.75 gallon) grease can come out.

Note 2: The temperature of the grease can go up to 80 °C (176 °F).

Make sure that the container meets the above requirements.

For TDR7+7-ac / 8+8-ac:

The stacked unit comes with a grease tray underneath.

The grease from both units will be collected in this tray.

TEST RUN

The oven must be burned in to release any odours that might result from heating the new oven surfaces. Operate the oven at maximum temperature setting of 220°C (425°F) for 30 minutes.

Smoke with an unpleasant odour will normally be given off during this burn-in period.

INSTRUCTIONS FOR OPERATORS

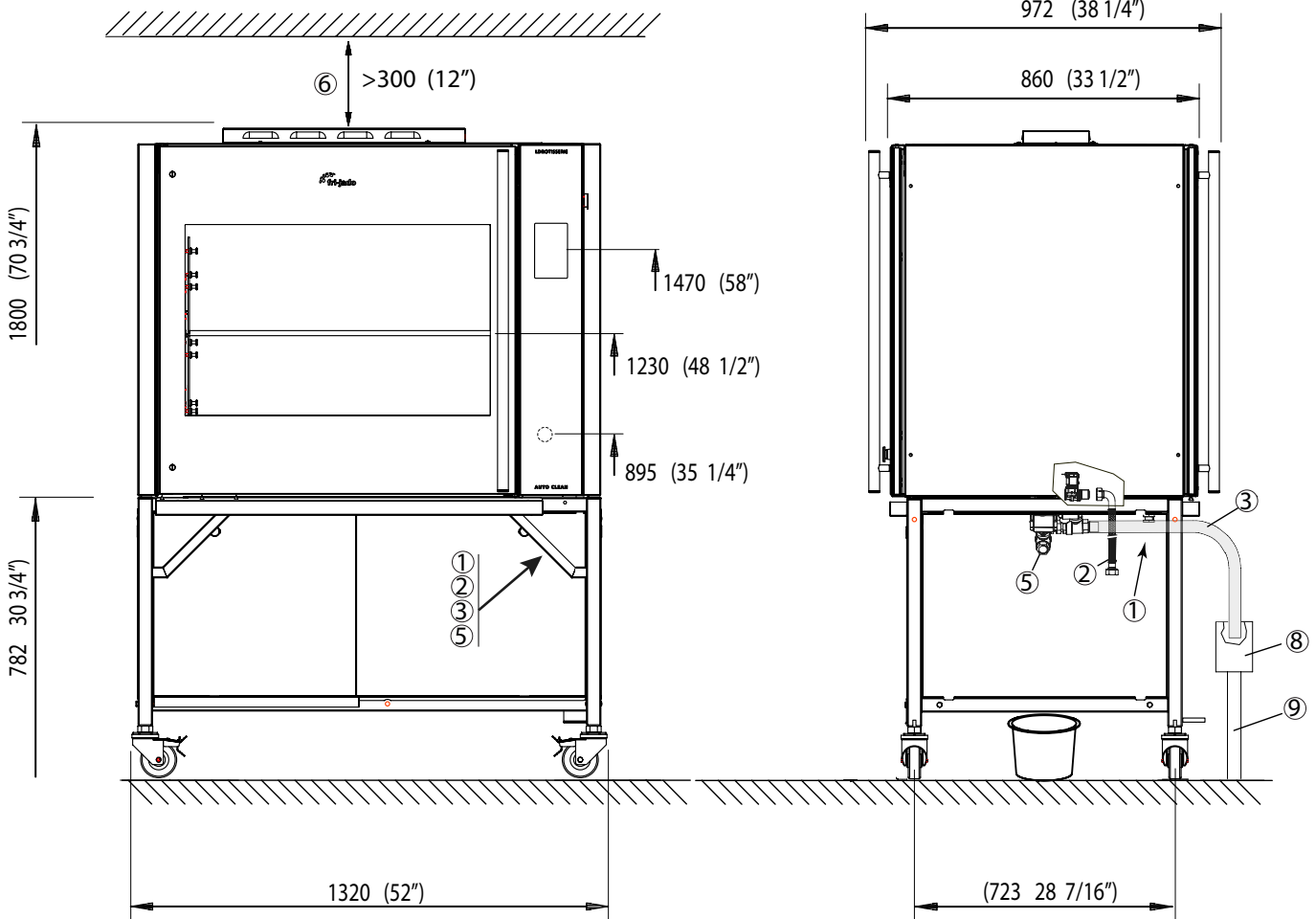
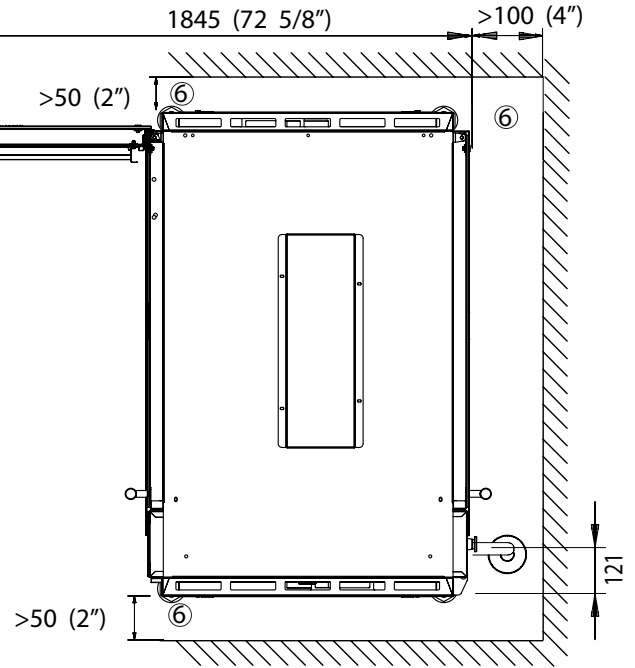
After installation of the rotisserie the operator of the unit has to be instructed.

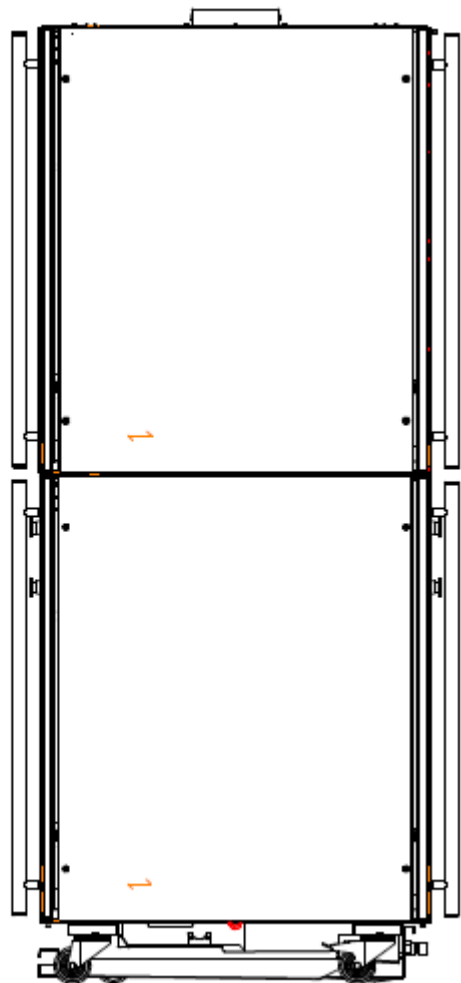
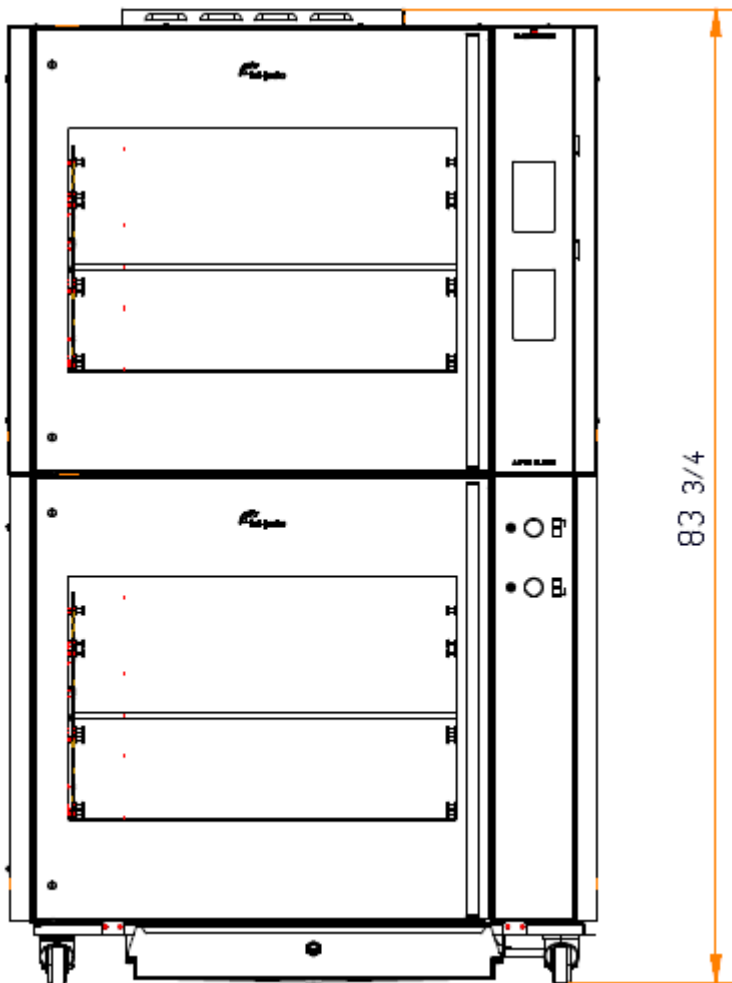
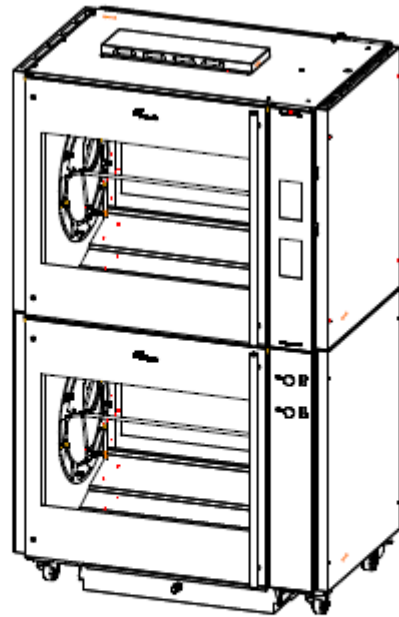
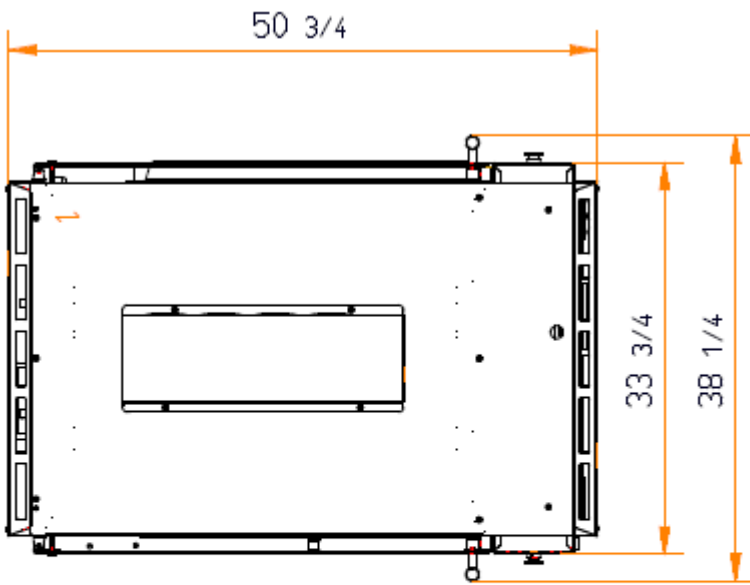
The instruction has to cover the following subjects:

- Programming and options.
- Working of the unit.
- Free space of unit for cooling of drive motor and blowers.
- Run through the user manual.
- How to run the cleaning program and placing cleaning tablets.
- Cleaning of the bottom filters after the cleaning program has finished.
- Periodical maintenance:
 - o Cleaning of fan plate every 3 months.
 - o Yearly maintenance by service agent.
- How to react for information or service calls.

LDR8 AC ON STAND

- ① Location of mains connection
- ② Location of water connection G 3/4" BSP
- ③ Location of drain hose OD Ø 33 mm (1 1/16")
- ⑥ Minimum required space
- ⑧ Example of funnel
- ⑨ Sewer pipe ID ≥ Ø 40 mm (1 5/8")





SWITCHING ON

Touch the screen somewhere



Touch the ON / OFF symbol



Home screen



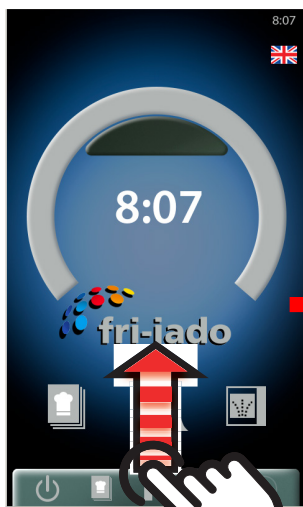
Main functions

- Language
- ON / OFF or stop program
- Recipes menu
- Home screen
- Cleaning program
- Help function
- Settings
- Wipe/clean touch screen (locks screen for 60s.)

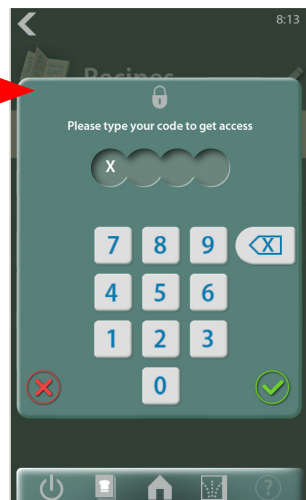
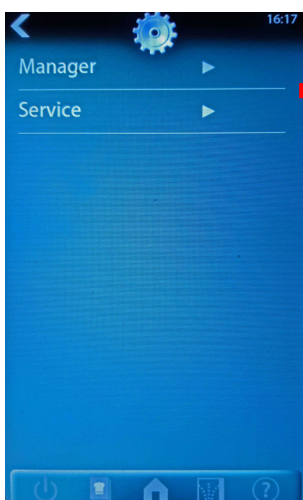
Other symbols

- Pause
- Extra time
- Continue
- Create recipe
- Edit recipe
- Confirm
- Step back
- Delete
- Tap screen
- Swipe

MENU OVERVIEW SW VERSION 1.00.17



- Recipes menu
- Messages (under construction)
- Manager and service settings (see below)
- Log & maintenance menu
- Help menu (under construction)
- Clean screen. Locks the touch screen for 60 seconds.
- About. Gives information about soft- and hardware.
- Screenshot. Only available with a wifi connection.



The manager pin code can be chosen freely. 0000 = free access.
The service pin code is 4878.

Once the service menu is entered, also the manager menu is unlocked.

Once the manager or service menu is opened, it stays unlocked for 30 minutes.

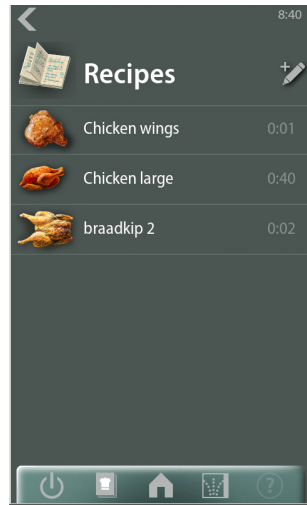
See parameter lists at the end of this chapter.

RUNNING A COOKING PROGRAM

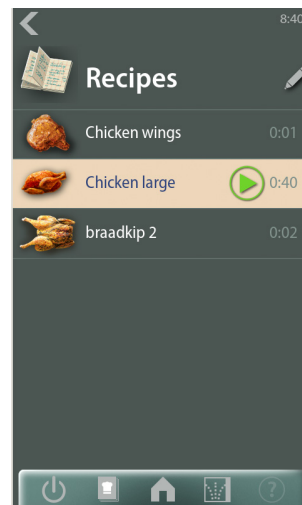
Push recipes icon



Choose program



Start program

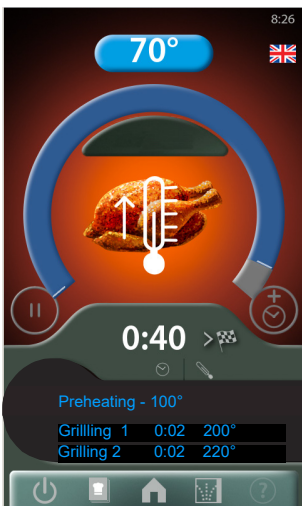


Check fat container and push "continue"

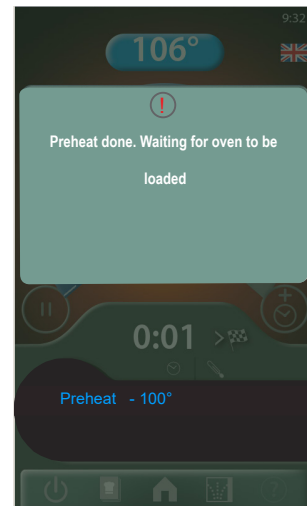


The below 4 steps are only applicable in case the cooking program has a pre-heat step.

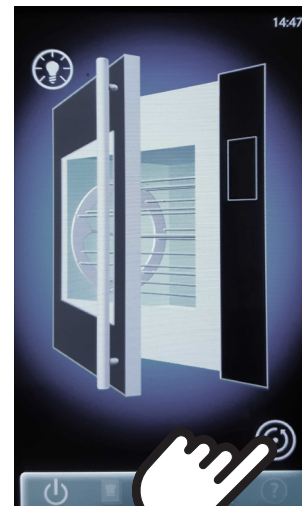
Preheat starts. Actual temperature shown.



Preheat done, open the door.



Load products and close the door.



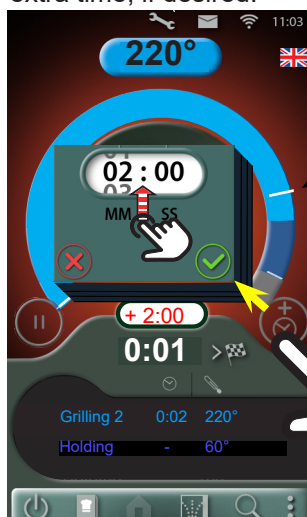
Push



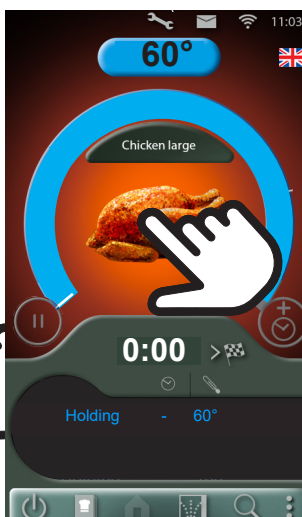
Program running. Push to see actual temperature.
 = Pause button



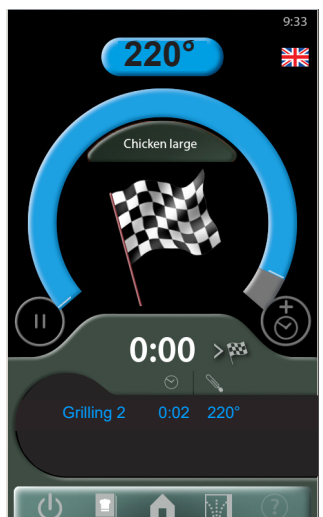
A short sound comes when going into the next step. Push "boost" icon for extra time, if desired.



Program in holding step, if applicable. Touch the screen to stop the sound



End of program when no holding is programmed.

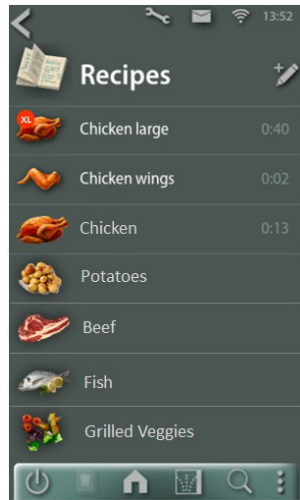


CREATING A COOKING PROGRAM

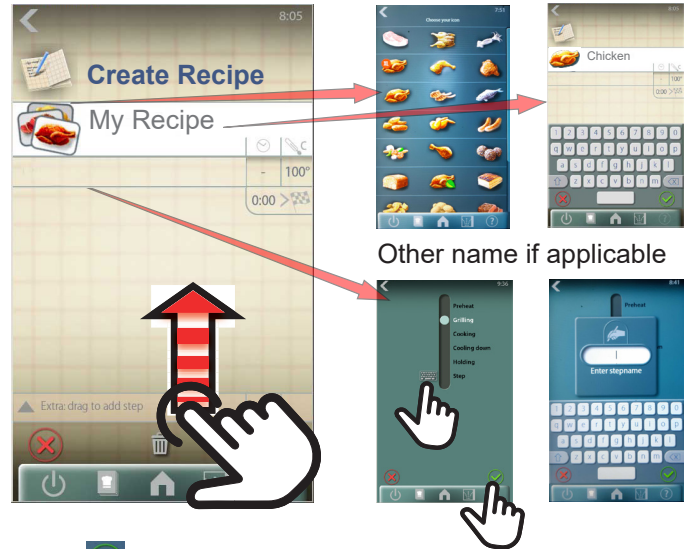
Push recipes icon



Push icon



Chose product icon and fill in recipe name.
Chose or change step name if applicable.
Drag up for an extra cooking step.

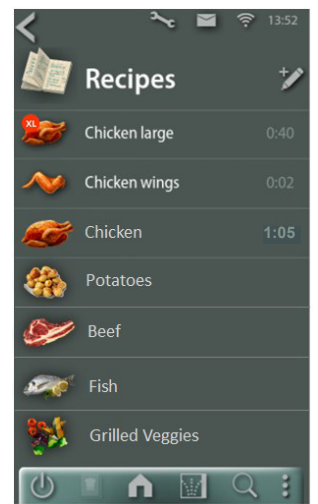


Other name if applicable

Push time and temperature and adjust.



Push when ready

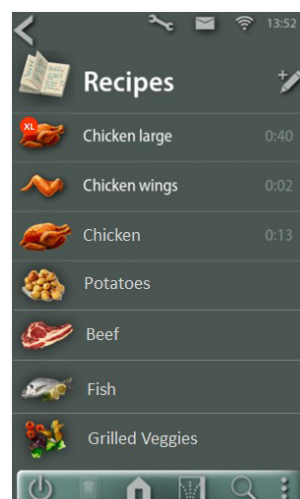


EDITING A COOKING PROGRAM

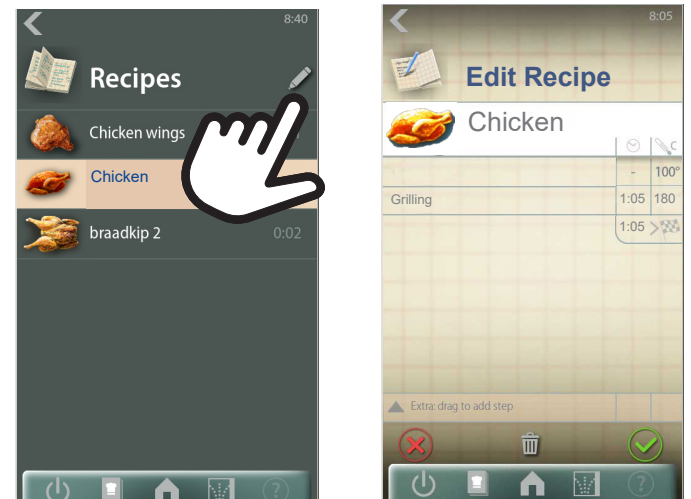
Push recipes icon



Choose program

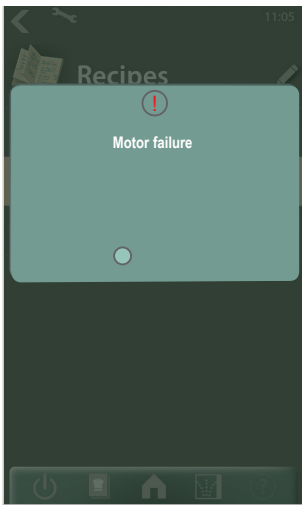


Push icon to edit the highlighted recipe. Now follow the steps as described above.



EXAMPLE OF ERROR MESSAGE

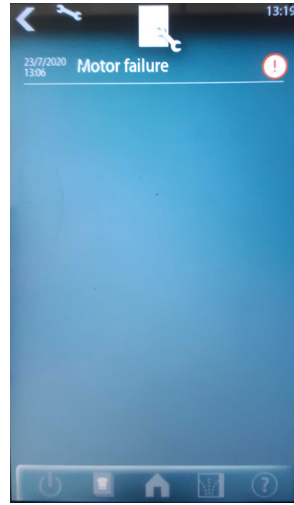
Example motor failure during cooking.



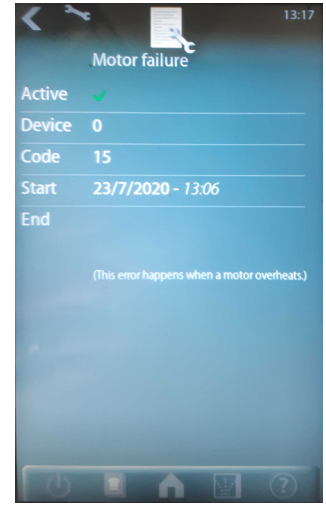
In the "log" menu the error can be found



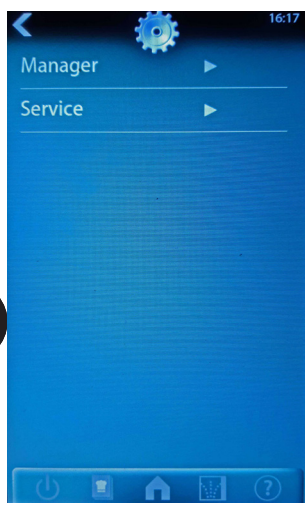
Select the error



Meta data is shown

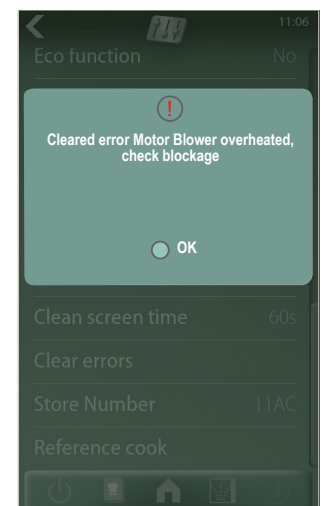
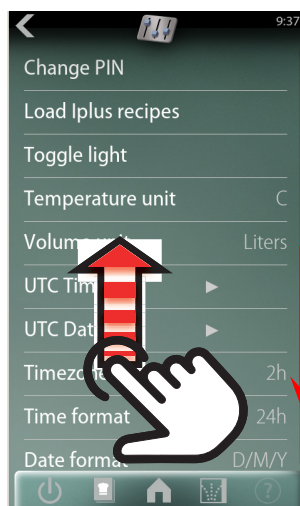


Go to the manager menu to clear the error.



In manager menu:

Scroll to "Clear errors" and push



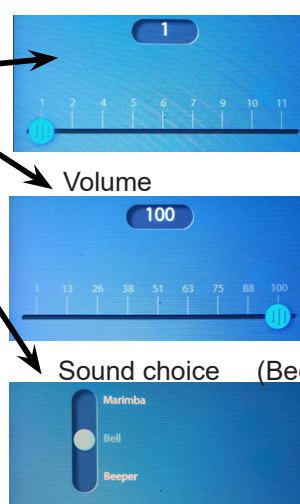
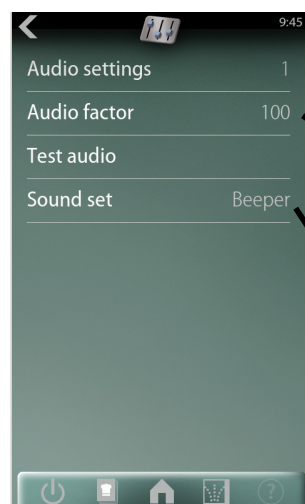
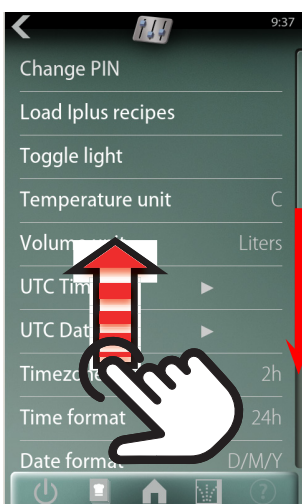
AUDIO VOLUME AND SOUND SETTING

In manager menu:

Scroll to "Audio" and push

4 options.

With "Test audio" the chosen volume or sound can be checked.



This is no setting. Different sounds can be heard in combination with "Test audio".

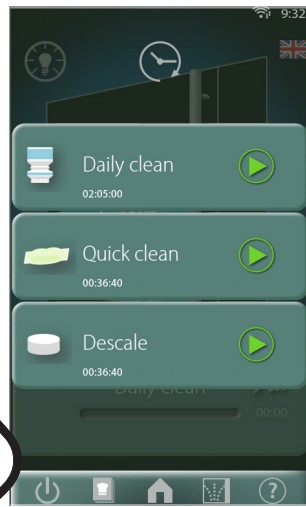
Sound choice (Beeper has highest volume)

THE CLEANING PROGRAM

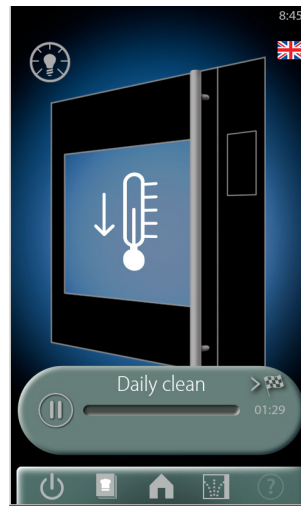
Push cleaning icon



Choose program



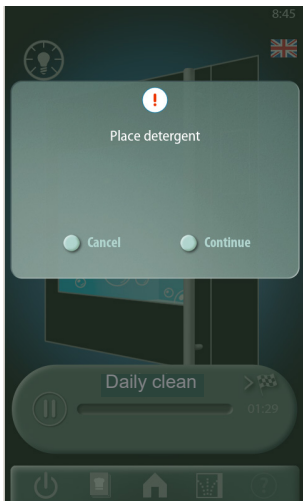
If unit is too hot, it will cool down first.



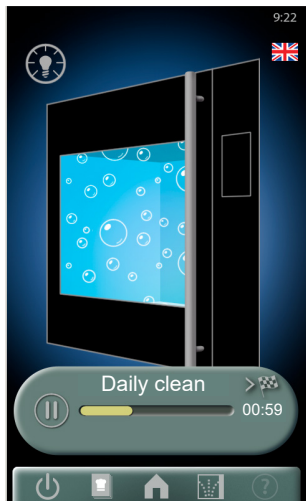
Now it is asked to place the detergent.

Follow the instructions that can be found in the container with detergent.

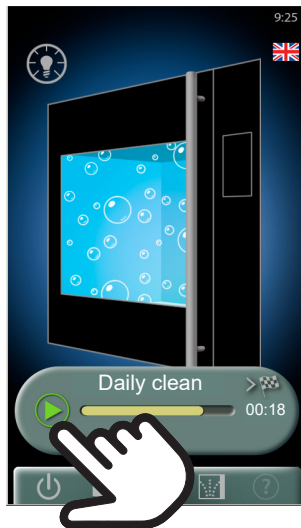
Place the detergent.



Push to pause, if applicable.



Push to continue



Cleaning program has finished.

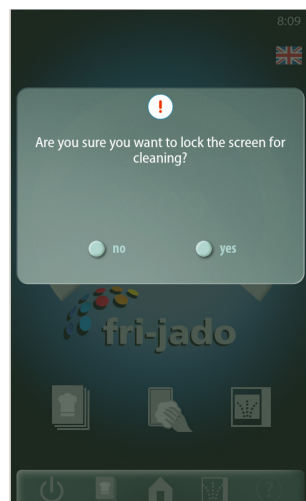


CLEANING THE TOUCH SCREEN (WHILE IN OPERATION)

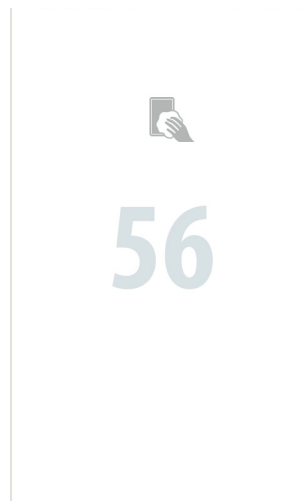
Push icon



Push "yes"

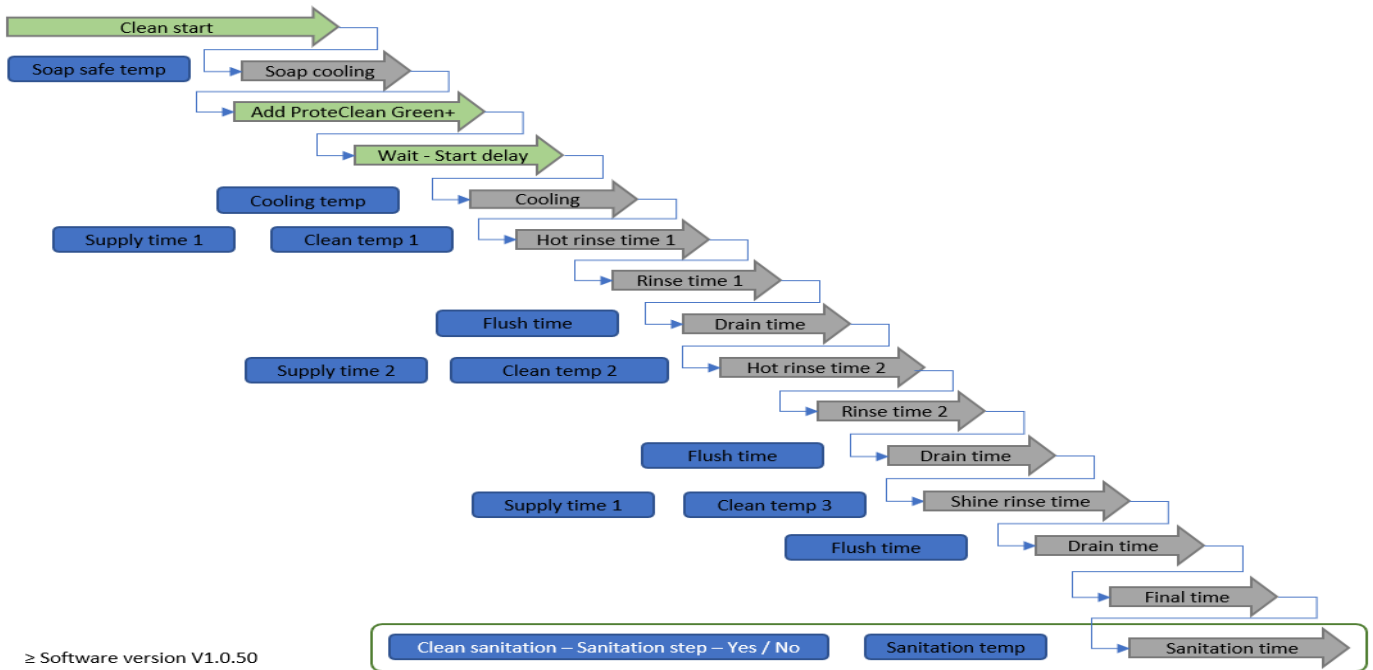


The screen is now locked for 60 seconds and counting down

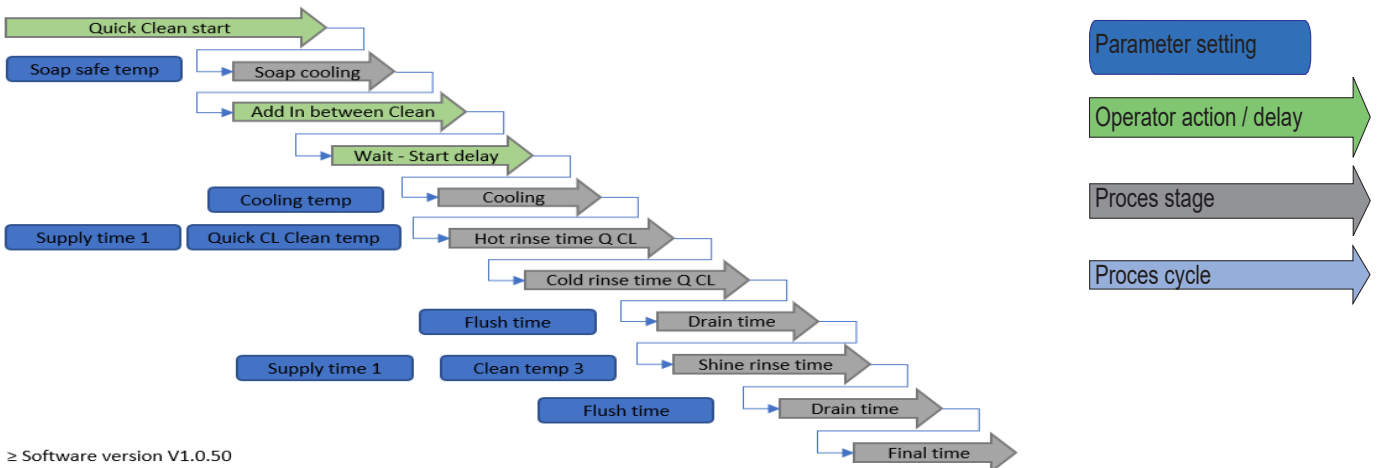


CLEANING PROCESS STEPS & PARAMETERS LDR AC

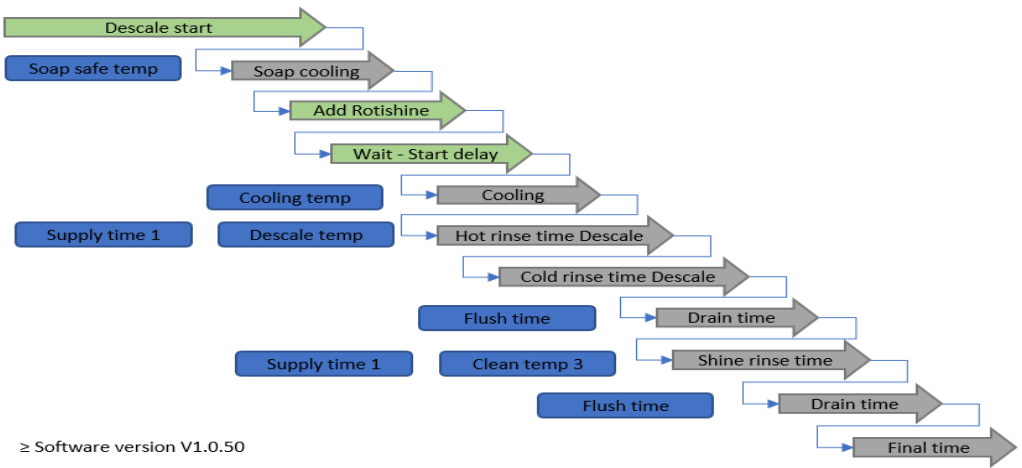
Daily Clean – Enabled / Disabled **Daily Clean**



Quick clean – Enabled / Disabled **Quick Clean**



Descal – Enabled / Disabled **Descal**



2 PUMPS SYSTEM AND VALVES IN ACTION DURING CLEANING

Valve position during cooking

cooking

The pictures below show each stage in the cleaning program.

- Tubes in red, are flowing
- Pump or valves in yellow are active / open.
- Soap has to be added after stage 1

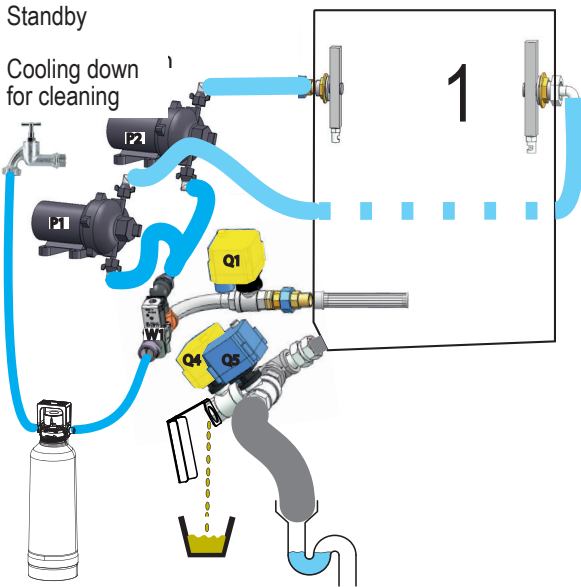
- The first cycle is following stage 1 until 10.
- The second cycle is following stage 2 until 10.
- The third cycle is following 2 until 9 and then 5 as last stage.

The stages 3 and 4 are rehearsing alternately, during 1 minute each, over a period of 20* minutes, with the heating on and after that, during 10* minutes with the heating off. The third cycle has only heating on.

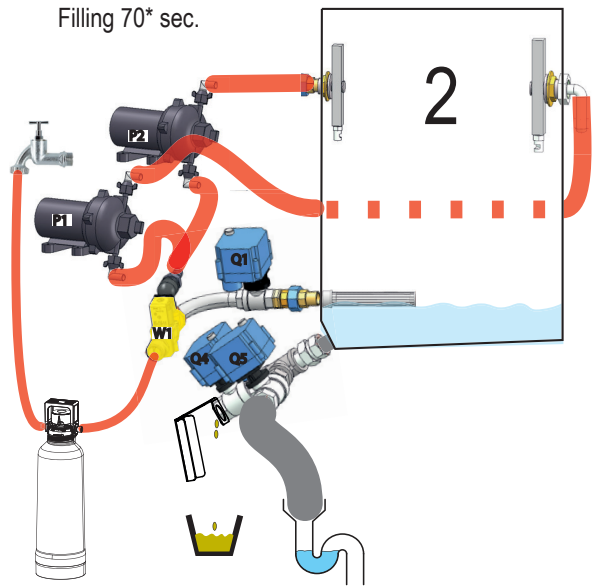
Note: * = parameter setting

Standby

Cooling down
for cleaning



Filling 70* sec.



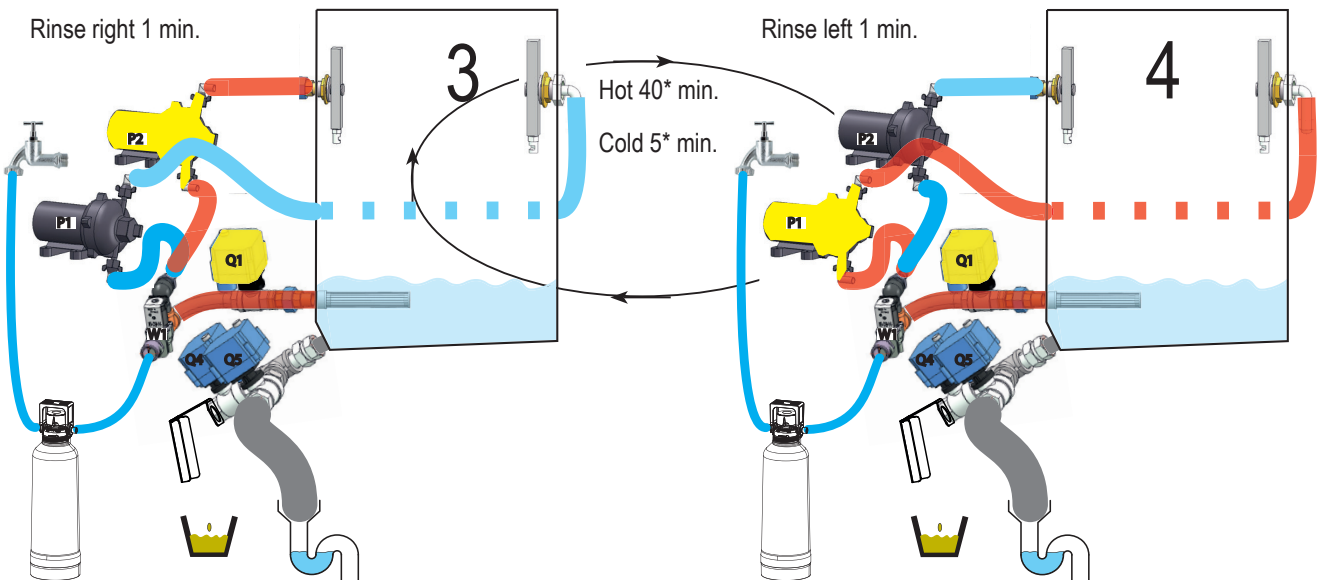
Rinse right 1 min.

3

Hot 40* min.
Cold 5* min.

Rinse left 1 min.

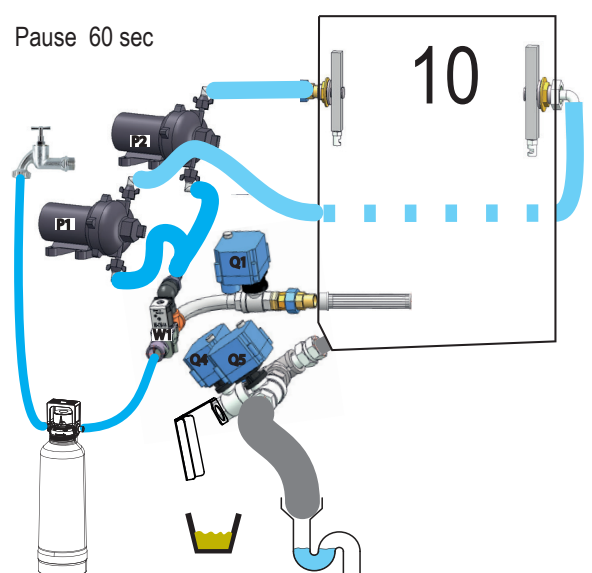
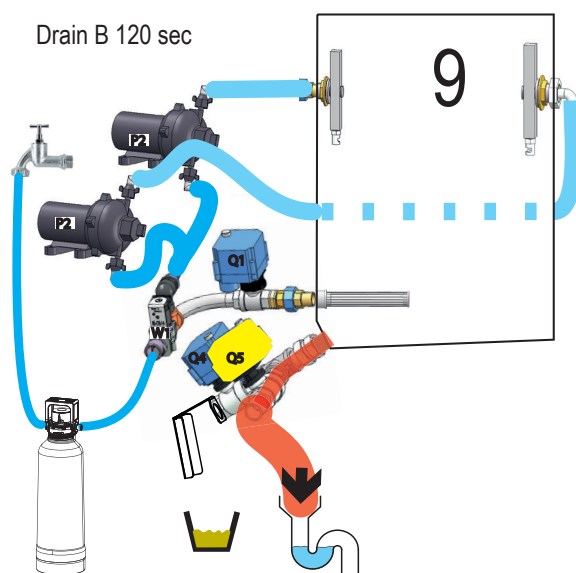
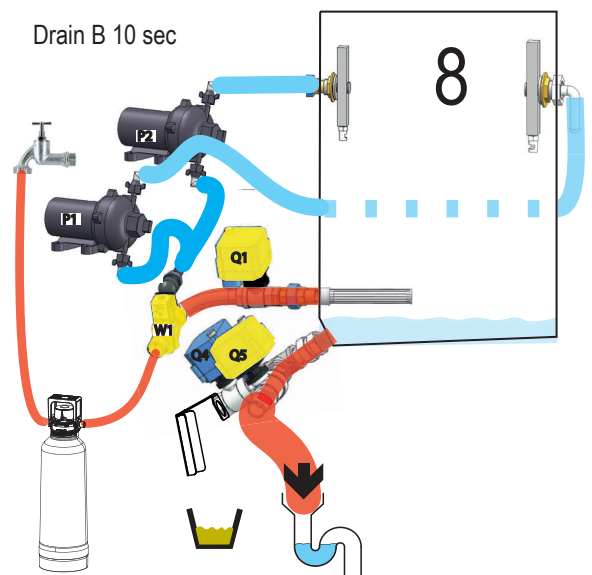
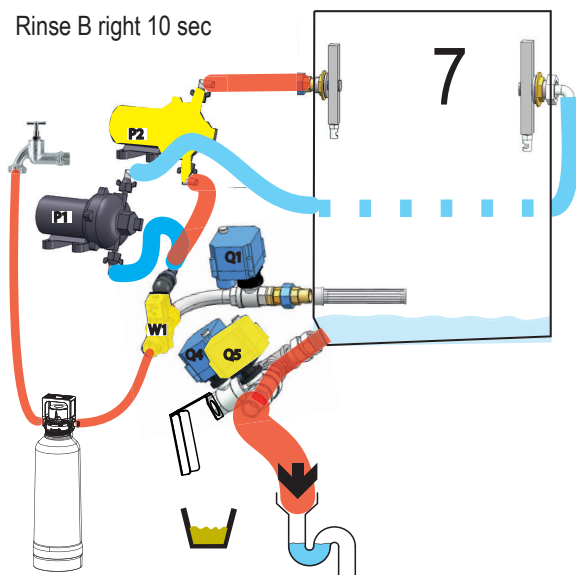
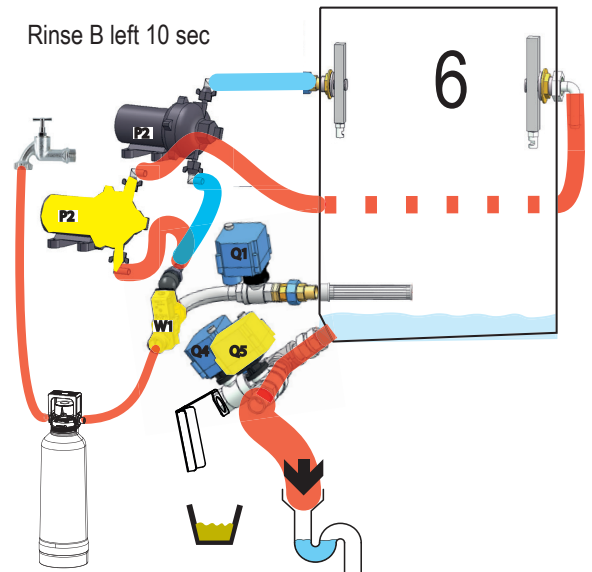
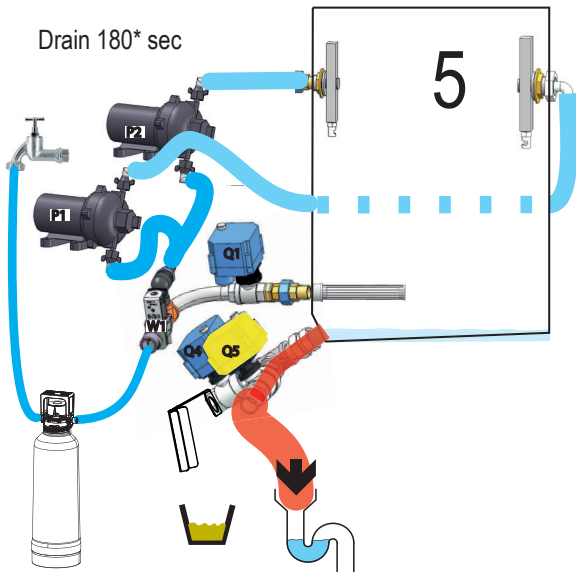
4



The stage 3 and 4 are rehearsing alternately, during 1 minute each, over a period of 40 minutes, with the heating on and after that, during 5 minutes with the heating off.

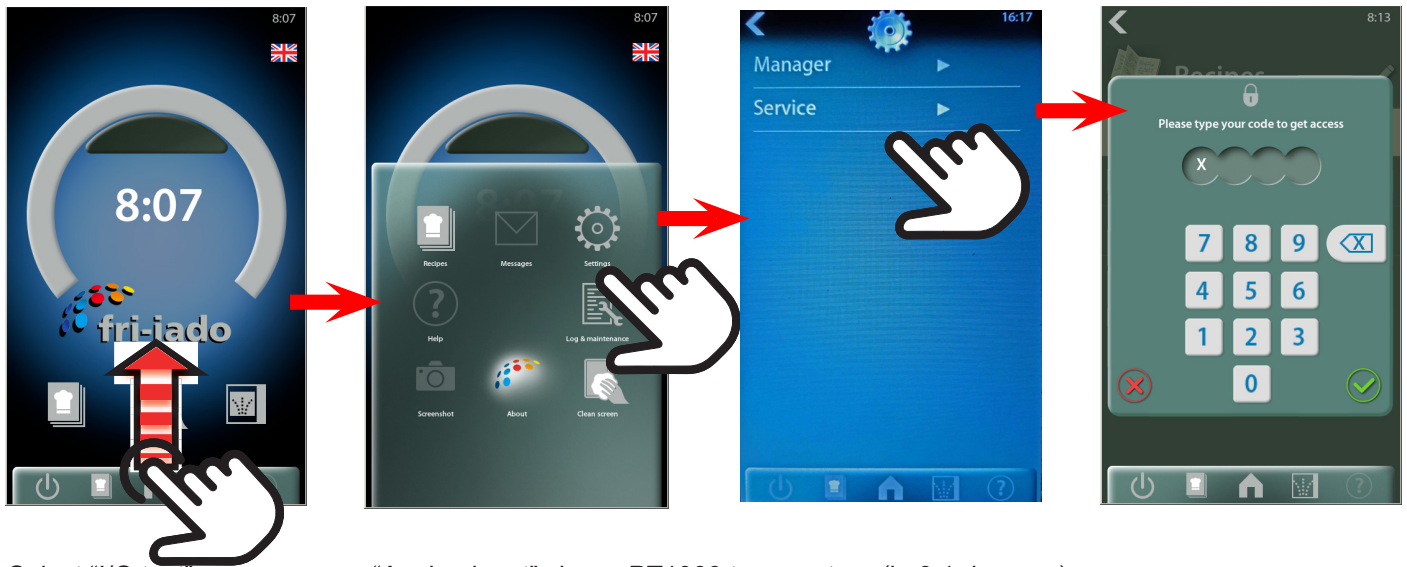
The third cycle has only heating on.

In case of a sanitation step, that will be like stage 10, but then only with the heating on.



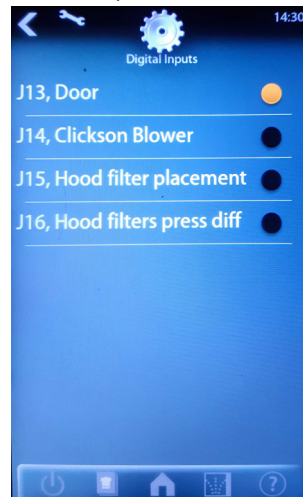
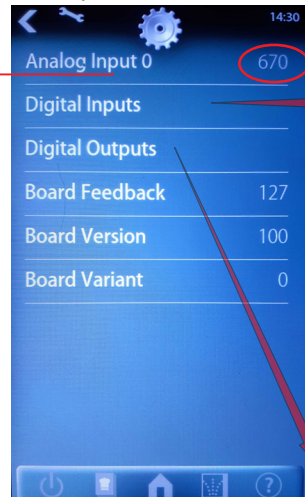
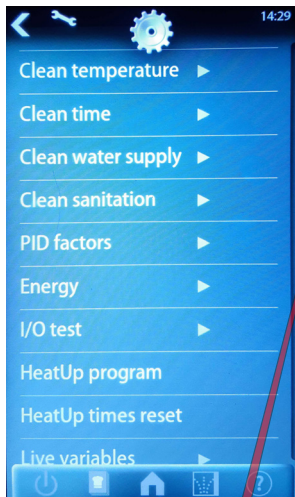
Gain access to the service menu

4878



Select "I/O test"

"Analog input" shows PT1000 temperature (in 0,1 degrees)
Example below is 67°C, (which is 152°F), see table below

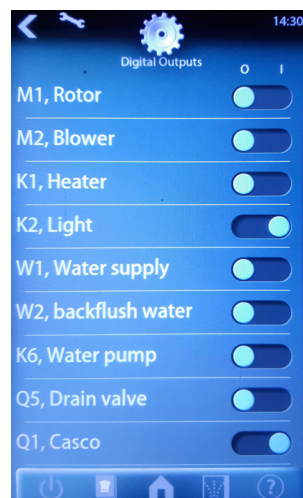


"Digital inputs" is showing the available inputs and also which contacts are closed.

J13 shows that the door is closed.

J14 shows an open thermostat in the blower, causing a blower error.

| Reading | °F |
|---------|-----|
| 0 | 32 |
| 500 | 122 |
| 670 | 152 |
| 1000 | 212 |
| 1500 | 302 |
| 1750 | 347 |
| 2000 | 392 |
| 2200 | 428 |

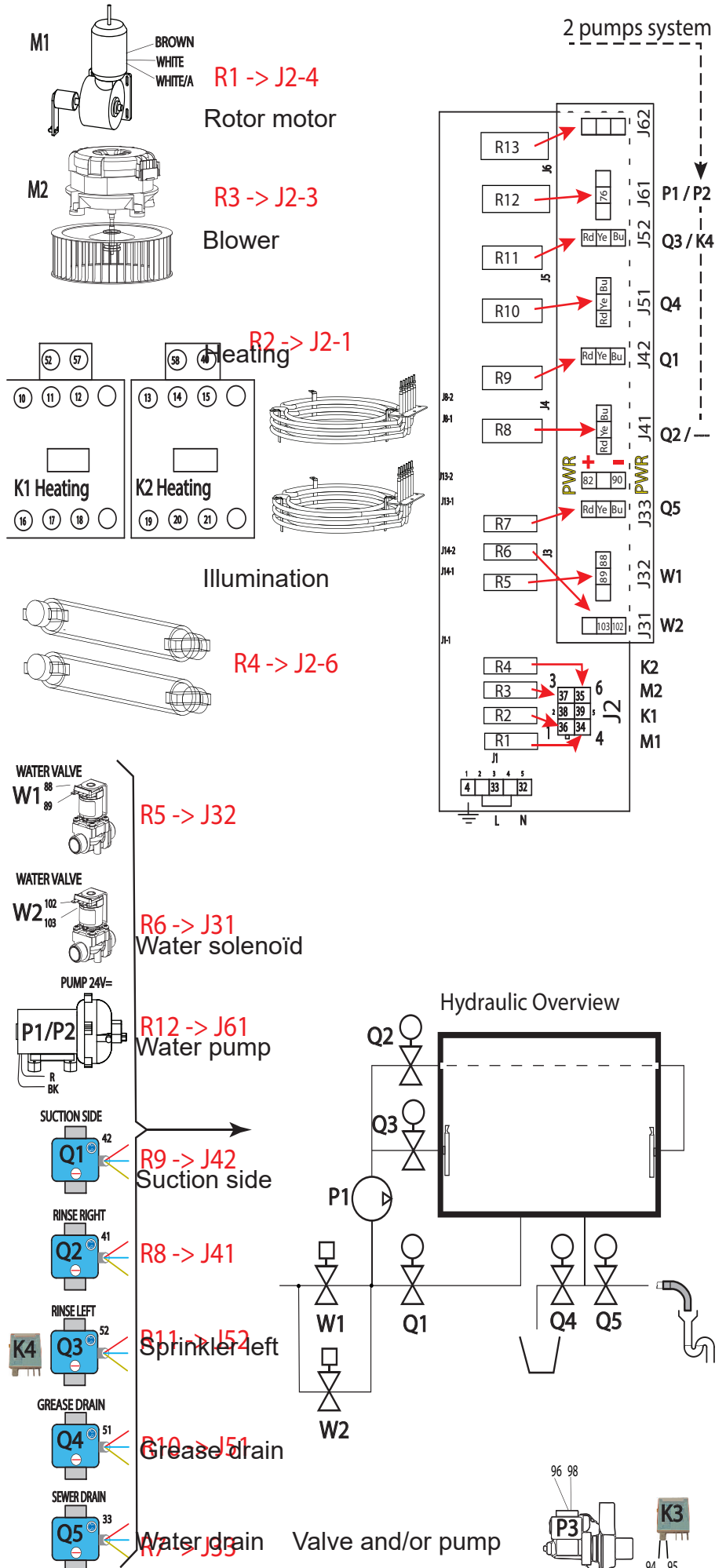


"Digital outputs" is showing the available outputs and also which are activated.

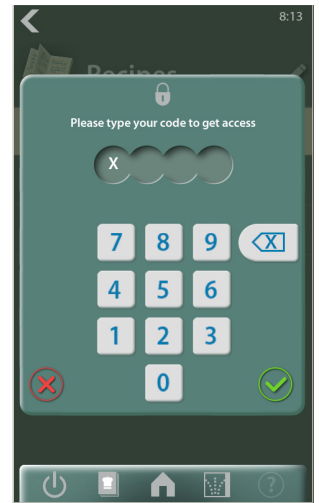
Push the button to activate or deactivate the output of your choice.

See chapter "software i-controller" (I/O test) for a hardware overview of the outputs.

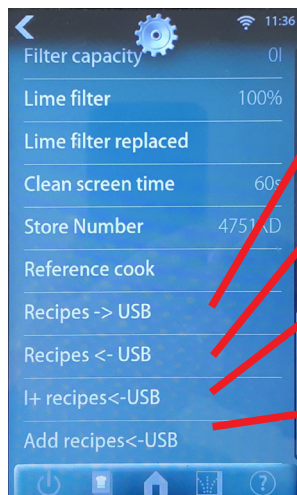
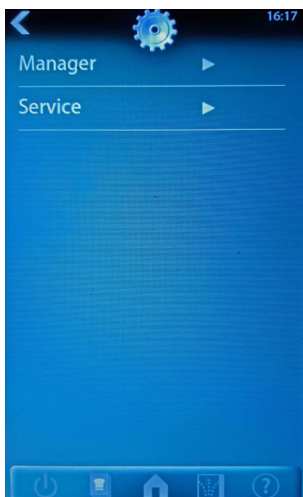
| Device | Relay | Connector |
|----------------------------|-------|-----------|
| M1 Rotor | R1 | J2-4 |
| M2 Blower | R3 | J2-3 |
| K1 + K2 Heater | R2 | J2-1 |
| Light | R4 | J2-6 |
| W1 Water Supply | R5 | J32 |
| W2 Water Supply | R6 | J31 |
| K6 Water Pump | R12 | J61 |
| Q1 Casco | R9 | J42 |
| Q2 Spray Right / P2 | R8 | J41 |
| K4 | R11 | J52 |
| Q4 Fat Drain | R10 | J51 |
| Q5 Drain Valve and/or pump | R7 | J33 |



EXCHANGING DATA WITH THE USB DRIVE



The password for service is 4878. Once the service menu is entered, also the manager menu is unlocked.

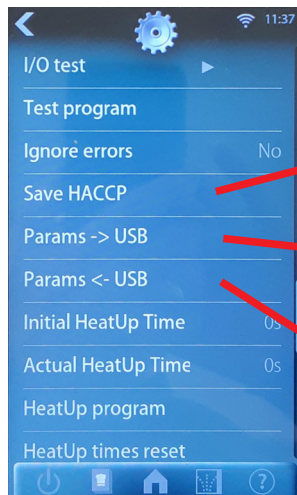


Copies recipes from the controller to the USB drive

Copies recipes from the USB drive to the controller. The existing recipes will be overwritten.

Copies i-control recipes from the USB drive to the controller. The current recipes will be overwritten.

Copies recipes from the USB drive to the controller. The recipes will be added to the current recipes.



Copies HACCP files from the last 3 days to the USB drive.

Copies the parameter list from the controller to the USB drive.

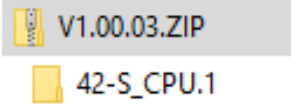
Copies the parameter list from the USB drive to the controller. The current parameters will be overwritten.

UPDATING SOFTWARE TDRAC (S-CONTROL)

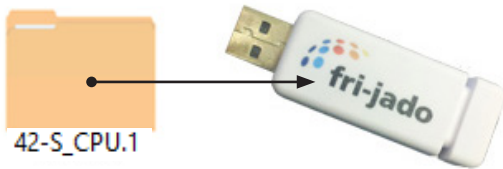
Preparing the software (firmware)

The software comes in a .zip file. The name corresponds with the version of the software. For example: *V1_00_3.zip*.

1. Extract the zip file

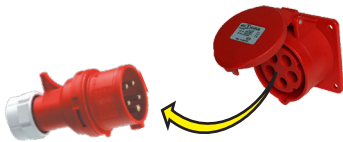


2. Copy or move the folder "42-S_CPU.1" to the USB drive.



Updating the software (firmware)

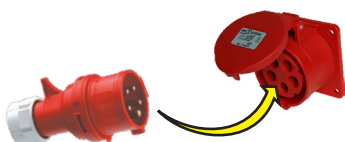
1. Disconnect the mains supply



2. Connect the USB drive.



3. Connect the mains supply



4. The following messages appear

Bootloader version V4.03.04

-USB stick found
starting upgrade

-Copying update.tar

-in progress .. %

-USB can be removed

-Removing current application

-Extracting archive .. %

-Please remove USB stick

5. Disconnect the USB drive and wait until the screen comes back.



Important first setting !!

In the service menu, the parameter "commision apply" needs to be set on "yes".

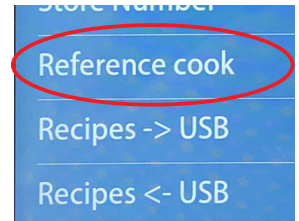
Otherwise, cooking programs will be lost after a power disconnection.

In case a new board has just been put into a unit, it has to be set to the right device type! -> TDRac

AUTOMATIC COOK CORRECTION

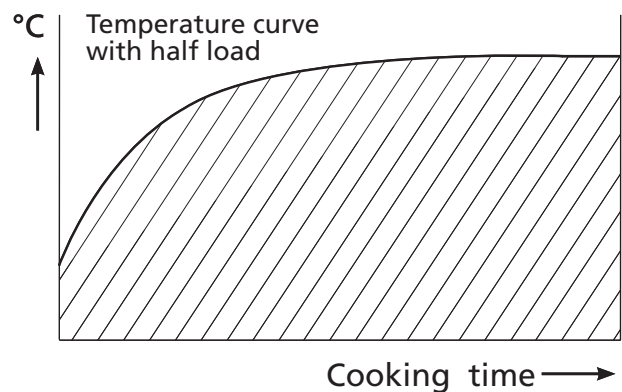
The automatic cook correction facility will automatically add or deduct time to the programmed cooking time in order to have constant cooking quality. To activate it, the parameter "auto correct" has to be put on "time".

Go to the manager menu --> Reference cook and activate it. Then select a (new) program.



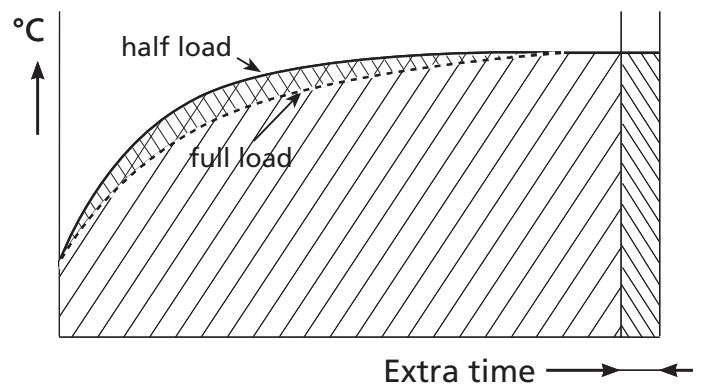
It is recommended to do that cook with a half to 3/4 load.

The program calculates the surface from the diagram below the curved line. (temperature * time). The result is the so called heat number. This heat number is stored into the cooking program.



All further cooking programs will try to get the same heat number.

The second diagram shows an example with full load. It takes more time for the unit to reach the programmed cooking temperature. See dashed line. The surface above the dashed line represents the missing part of the heat number. The cook correction will put this missing part behind the normal cooking time. Therefore extra time is added in order to reach the desired heat number.



It is also possible that time is deducted in case a smaller load has been put into the oven.

Time will be added in case of:

- A bigger load.
- A colder load. (straight from the freezer)
- A lower mains voltage.
- Somebody opened the door.

Time will be deducted in case of:

- A smaller load.
- A warmer load. (defrosted)
- Higher mains voltage.

Note that:

In case the time or temperature will be changed in the cooking program, the heat number will be adapted with this amount.

The heat number is stored in the cooking program. In case such a program is copied, the heat number goes with it.

It is possible that in case the program has changed a lot, the cook correction is not able to perform well anymore. In that case the program has to be deleted and reprogrammed with the good parameters.

It is possible to disable this auto cook correction feature in the service parameters. See "parameter listings" -> "auto correct".

DEFAULT PARAMETERS LDR-AC 208V USA

| Parameters LDR-8 S AC 208V software version 1050 | | | | |
|--|-------------------------|----------------------|--------------|---|
| Level 1 | Level 2 | Level 3 | Default | Possibilities |
| Information | | | 1050 | software version |
| Manager | | | | |
| | Change Pin code | | 0000 | 0000 - 9999 |
| | Toggle Light | | | on - off |
| | Temperature unit | | °F | °C - °F |
| | Volume unit filter | | gal | lit - gal |
| | UTC time | | Local time | |
| | UTC Date | | Actual date | |
| | Timezone offset | | 0h | -12 - 12 |
| | Time format | | AM/PM | 24 hr - AM/PM |
| | Date format | | MDY | DMY - MDY |
| | Start delay recipe | | no | no - yes |
| | Alarm signal | | on | off - on |
| | End-user recipe editing | | no | no - yes |
| | Ask weight | | no | no - yes |
| | Preheat mode | | Continues | no - 1x - continues |
| | Preheat temp default | | 302°F | 122 - 302°F (50 - 150°C) |
| | Eco function | | no | no - yes |
| | Audio | Audio setting | 1 | 1 - 11 |
| | | Audio factor | 100 | 1 - 100 |
| | | Test audio | | |
| | | Sound set | | |
| | Keyboard beep | | Marimba | Marimba - Bell - Beeper |
| | Filter capacity | | on | off - on |
| | Lime filter | | -- | 50 - 30000, or -- |
| | Lime filter replaced | | | remaining capacity of lime filter |
| | Clean screen time | | | no - yes |
| | Store Number | | 30 sec | 10 - 60 sec |
| | Reference cook | | | |
| | Recipes -> USB | | | |
| | Recipes <- USB | | | |
| | Add recipes <- USB | | | |
| | Restart hard | | | |
| Service | | | | |
| | device type | | 4878 | LDR-8 S AC 208V LDR-8 S AC gas, TDR-8 S, TDR-8 S AC, TDR-7 S AC 208V, TDR-5 S AC, TDR-5 S, LDR-8 S AC, TDR-5 S 208V, TDR-7 S 208V, LDR-8 S AC 208V, LDR-8 S AC gas 208V |
| | smart temperature | | off | off - on |
| | auto-correct | | off | off - on |
| | Language | | english | english - deutsch - francais - nederlands - espanol - japanese - danish - italiano - russian - norsk - polish |
| | save errors | | | save error history on usb |
| | clear error history | | | |
| | Demo mode menu | Demo mode | off | off - on |
| | | Demo param. | 5 min | 2 - 40 |
| | | Rinse time | 5 min | 2 - 40 |
| | | Drain time | 70 sec | 0 - 120 |
| | | Supply time | | |
| | | Demo clean start | | |
| | auto off time | | 60 min | 10 - 240 |
| | Change pin | | **** | read out of the manager pin code |
| | Sensor offset | | 0°F | -55 - 55°F |
| | Cleaning | Clean temp | 118°F (48°C) | 77 - 140°F (25 - 60°C) |
| | | Clean temp 1 | 140°F (60°C) | 77 - 140°F (25 - 60°C) |
| | | Clean temp 2 | 131°F (55°C) | 50 - 180°F (10 - 70°C) |
| | | Clean temp 3 | 131°F (55°C) | 50 - 180°F (10 - 70°C) |
| | | Quick CL temp | 131°F (55°C) | 50 - 180°F (10 - 70°C) |
| | | Descalc temp | 131°F (55°C) | 50 - 180°F (10 - 70°C) |
| | | Soap safe temp | 167°F (75°C) | 77 - 210°F (25 - 100°C) |
| | | Cooling temp | 167°F (75°C) | 77 - 210°F (25 - 100°C) |
| | | Clean times | 40 min | 5 - 40 |
| | | Hot rinse time 1 | 40 min | 5 - 40 |
| | | Hot rinse time 2 | 20 min | 5 - 40 |
| | | Hot rinse time Q Cl | 20 min | 5 - 40 |
| | | Hot rinse time Desc | 10 min | 5 - 40 |
| | | Cold rinse time 1 | 10 min | 5 - 40 |
| | | Cold rinse time 2 | 10 min | 5 - 40 |
| | | Cold rinse time Q Cl | 10 min | 5 - 40 |
| | | Cold rinse time Desc | 10 min | 5 - 40 |
| | | Drain time | 3 min | 1 - 10 |
| | | Flush time | 15 sec | 5 - 60 |
| | | Drain backflush time | 2 min | 1 - 15 |
| | | Final time | 1 min | 1 - 15 |
| | | Shine rinse time | 5 min | 1 - 30 |
| | | Clean water supply | 70 sec. | 1 - 120 |
| | | supply time 1 | 70 sec | 1 - 120 |
| | | supply time 2 | 20 min | 1 - 60 min |
| | | add water interv. | 5 sec | 1 - 30 sec |
| | | add water time | no | no - yes |
| | | Clean sanitation | 20 min | 0 - 30 |
| | | sanitation step | | |
| | | sanitation time | | |

| | | | | | |
|----------------------|-----------------------|-----------------|---------------|-------------------------------------|----------|
| | | sanitation temp | 230°F (110°C) | 77 - 251°F (25 - 125°C) | |
| | Descal warning | | 0 | 0 - 30 | |
| | Daily clean warning | | 0 | 0 - 30 | |
| | Open door cooling | | disabled | disabled - enabled | |
| | Force cleaning | | on | off - on | |
| | Cleaning options | Quick Clean | disabled | disabled - enabled | |
| | | Daily Clean | enabled | disabled - enabled | |
| | | Descal | disabled | disabled - enabled | |
| | Clear cleaning status | | | | |
| Delete all programs | | | | no - yes | |
| Hood | | | off | off - on | |
| I/O test | | | | read the inputs and set the outputs | |
| test program | | | | | |
| Ignore errors | | | no | no - yes | |
| save HACCP log | | | | save haocp log on usb | |
| HACCP days | | | 10 | 1 - 100 | |
| params -> USB | | | | save parameters on usb | |
| params <- USB | | | | load parameters from usb | |
| Initial heat up time | | | | | |
| Actual heat up time | | | | | |
| Heat up program | | | | no - yes | |
| Heat up time reset | | | | no - yes | |
| Wifi | Wifi smartphone | | Blocked | blocked - allowed | |
| | Wifi cloud | | Disabled | disabled - enabled | |
| | Wifi RSSI | | | | |
| | Wifi auto restart | | 80 | 0 - 240 | |
| | start config | | | | |
| | Allow open WLAN | | Disabled | disabled - enabled | |
| | reset Wifi chip | | | no -yes | |
| | | | | no -yes | |
| Factory settings | Fact reset settings | | | no -yes | |
| | Fact reset recipes | | | no -yes | |
| | Fact reset data | | | no -yes | |
| | Lights out | | Disabled | disabled - enabled | |
| | Eco variable | | 2 | 1 - 10 | |
| | Correction factor | | 4 | 1 - 10 | |
| | Fat drain | | open | open - auto | |
| | RS485 debugging | | off | off - on | |
| | PID factors | P | | 100 | 0 - 100 |
| | | I | | 5 | 0 - 100 |
| | | D | | 100 | 0 - 500 |
| | | iMax | | 100 | 10 - 300 |
| | | Relay actions | | 80 | 16 - 160 |
| S/N | | | | | |
| Commission reset | | | | no -yes | |
| Commission apply | | | | no -yes | |
| Customer ID | | | | 1 - 10 | |
| Restart soft | | | | no -yes | |
| Restart hard | | | | no -yes | |
| Swipe sensitivity | | | | 25 | |
| Live variables | Status counter | | | | |
| | Output counters | | | | |
| | Start/end counters | | | | |
| | UTC system time | | | | |
| | Commission time | | | | |
| | Time lime filter | | | | |

Commission apply YES

* Descal warning 0 (=disabled) for all units
 * Daily/Deep clean warning 0 (=disabled) for all units

Latest software and settings files are available on the Fri-Jado resource library.

<https://www.frijado.com/resource-library/>

EMPTY PAGE

EMPTY PAGE

EXPLANATION OF PARAMETERS

| Level 1 | Level 2 | Level 3 |
|-------------------------|---------------|--|
| Change Pin code | | Option to change the manager pin code |
| Toggle Light | | Option to switch on or off the interior light. |
| Temperature unit | | Change the temperature units from Fahrenheit to Celcius or from Celcius to Fahrenheit. |
| Volume unit filter | | Change the volume units from Liters to Gallon or from Gallon to Liters. |
| UTC time | | Set to local time |
| UTC date | | Set to local date |
| Time zone offset | | Option to set a offset to the timezone (12 to +12 hours) |
| Time format | | Option to select the desired time format |
| Date format | | Option to select the desired date format |
| Alarm | | Switch alarms on or off |
| End-user recipe editing | | Enables the end user to change and save recipes |
| Ask weight | | Option to activate or deactivate the question at the start of a recipe for a low/middle of full load. |
| Preheat mode | | Option to deactivate or activate preheat. 1x means once at the beginning of the day, continue means at each recipe start. |
| Preheat temp default | | Option to set the desired default preheat temperature |
| Eco function | | Option to enable or deactivate the Eco function. The eco mode saves energy to use latent heat at the end of the recipe. (this will increase the total recipe time) |
| Audio | Audio setting | Option to set the desired audio sound (tone) |
| | Audio factor | Option to adjust the audio volume |
| | Test audio | Function to test the set audio options |
| | Sound set | Option to set the desired sound/melodie |
| key board beep | | Option to activate or deactivate the beep at the touch of the key board. |
| Filter capacity | | Option to set the actual filter capacity of the used water filter system in relation to the water quality on site. Set "-" if no filter is installed. |
| Lime filter | | Shows the remaining filter capacity of the lime filter. |
| Lime filter replaced | | When the lime filter is replaced set to yes so the counter will be reset to the start filter capacity. |
| Clean screen time | | Option to set the time for cleaning the screen without a response of the controller. |
| Store number | | Here you can enter the store number or other store references |
| Reference cook | | |
| Recipes -> USB | | Copy all recipes from the rotisserie to the USB key. |
| Recipes <- USB | | Copy all recipes from a USB key to the rotisserie. |
| Add recipes <- USB | | Copy selected recipes from a USB key to the rotisserie. |
| | | |
| device type | | Option to set the correct device type so the oven configuration will be active. |
| Smart temperature | | Do not change |
| auto-correct | | Option to activate or deactivate the auto correct function which adds time if necessary (Due to high product load or temperature loss) to the remaining time. |
| Correction factor | | With this setting you can change the effect of the auto-correct. |
| language | | Option to select the desired language |
| Eco variable | | Option to set the influence of the Eco mode |
| save errors | | Option to save the error log/history to a USB key. |
| clear error history | | Option to clear the error log/history |
| RS485 debugging | | Option to activate or deactivate the RS485 debugging |
| demo mode | | Option to activate or deactivate the demo mode of the rotisserie on for instance during a trade show. (no power will be activated to the main high power components) |
| demo parameters | Rinse time | Option to set the rinse time when demo mode is activated |

| Level 1 | Level 2 | Level 3 |
|---------------------|-----------------------|--|
| | Drain time | Option to set the drain time when demo mode is activated |
| | Supply time 1 | Option to set the (water) Supply time when demo mode is activated |
| demo clean start | | Option to start a demo clean cycle |
| auto off time | | Option to swith off the rotisserie automaticly after the set time when not operated. When set to "no" the rotisserie will not be switched off automatically. |
| change pin | | Option to change the manager pin code |
| Drain duration | | Sets the open time for the drain valve and backflush valve |
| Fat drain | | Option to controll the fat drain by the recipe or default open |
| Clean Cycles | | Sets the number of repeated clean cycles during cleaning |
| Clean temperature | temp 1 | Set clean temperature during cycle 1 |
| | temp 2 | Set clean temperature during cycle 2 |
| | temp 3 | Set clean temperature during cycle 3 |
| | Soap safe temp | Sets the "safe" temperature to cool down to before soap can be added to the oven at the beginning of the cleaning cycle. |
| | Cooling temp | Set temperature to cool down to before the cleaning starts |
| Clean Times | Hot rinse time | Set time for hot rinse step in cleaning cycle |
| | Rinse time | Set time for rinse step in cleaning cycle |
| | Drain time | Set time for drain open step in cleaning cycle |
| | Flush time | Set time for flush step in cleaning cycle |
| | Drain back-flush time | Set time for drain backflush step in cleaning cycle |
| | Final time | Set time for final step in cleaning cycle |
| | Shine rinse time | Set time for shine rinse step in cleaning cycle |
| Clean water supply | supply time 1 | Set time 1 for filling the oven with clean water |
| | supply time 2 | Set time 2 for filling the oven with clean water |
| | add water interv. | Interval time for adding water during cleaning |
| | add water time | set time for water adding during cleaning |
| Clean sanitation | sanitation step | Option to able or enable a sanitation step |
| | sanitation time | Set time for sanitation step in cleaning cycle |
| | sanitation temp | Set temperature during the sanitation step |
| Deep clean warning | | Number of cook cycles after which you receive a deep clean warning |
| Daily clean warning | | Number of cook cycles after which you receive a daily warning |
| Force cleaning | | Option to enable a forced cleaning |
| Quick clean | | Option to enable a Quick clean cycle |
| Daily clean | | Option to enable a Daily clean cycle |
| Descale setting | | Option to set the Descale cycle in a full / short cycle or to disable the descale cycle |
| Delete all programs | | Option to delete all recipes from the controller |

| Level 1 | Level 2 | Level 3 |
|----------------------|-----------------|---|
| Hood | | Option to activate the optional hood |
| PID factors | P | Temperature regulation setting (P= proportional) |
| | I | Temperature regulation setting (I= Integrating) |
| | D | Temperature regulation setting (D= Differentiating) |
| | iMax | Temperature regulation setting |
| | Relay actions: | Controls the amount of relay switches in time |
| Energy | Volts | Set the actual voltage |
| | Machine model | |
| I/O test | Analog input | |
| | Digital inputs | read the inputs of; door (J13), Clickson Blower (J14), Hood filter placement (J15), Hood filter press diff (J16) |
| | Digital outputs | Set the outputs of; Rotor (M1), Blower (M2), Heater (K1), Light (K2), Water supply (W1), Backflush water (W2), Water pump (K6), Drain valve (Q5), Casco (Q1), Spray right (Q2), Spray left (Q3), Fat drain (Q4) |
| | Board Feedback | Read feedback value |
| | Board Version | Read board version |
| | Board Variant | Read board variant |
| Test program | | Yes activates a cleaning cycle |
| Ignore errors | | If set to yes the controller does not show errors |
| save HACCP | | Option to save the HACCP log to a USB key |
| HACCP days | | Option to set the amount of days the HACCP log stores |
| save params on USB | | Copy parameters from the rotisserie to the USB key. |
| save params from USB | | Load parameters from a USB key to the rotisserie. |
| Initial heat up time | | Recorded heat up time during initial cook |
| Actual heat up time | | Recorded heat up time during last cook |
| Heat up program | | Yes activates the heat up program and shows the heatup time in seconds. Note: if the oven is too hot when the heatup is activated it will cool down first |
| Heat up time reset | | Resets the recorded heatup times |
| Lights out | | Option to disable or enable the interior lights during the cook |
| Wifi Smartphone | | Option to allow a connection to a Smartphone |
| Wifi smart Cloud | | Option to enable a connection to the Fri-Jado Smart Connect website. |
| Wifi RSSI | | Shows the signal level of the WiFi connection. Values are between -101dBm and -1dBm. In practice values are between -85dBm and -25dBm. A bad connection would give -85dBm, a very good connection would give -25dBm. |
| Wifi Auto Restart | | "If you set a time of >= 5 minutes here, the machine will regularly check whether the WiFi no longer receives messages during the set time interval. In case there was no communication during that time interval, the WiFi communication will be restarted. This is intended to be able to automatically recover any loss of the WiFi connection if there should be long-term problems." |
| Start Config | | "This allows you to force the machine to start a new cloud configuration. The old WiFi access point data will be deleted at that time and after a few seconds a smartphone symbol will appear in the top right corner of the status bar on the screen. From the moment that smartphone symbol appears, the user can set the cloud configuration on the machine via the smartphone." |
| Reset Wifi Chip | | This option resets the wifi chip with an electronic reset signal and restarts the wifi communication in the software. |
| Fact reset settings | | Reset to factory settings |
| Fact reset recipes | | Reset to factory recipes |
| Fact reset data | | Reset of factory data |
| Commission reset | | Reset of set commission date |
| Commission apply | | Option to apply the current date/time for commissioning |

| Level 1 | Level 2 | Level 3 |
|-------------------|--------------------|---|
| Customer ID | | By entering the a machining customer code the correct story boards and explanations are given in the help function |
| Restart soft | | This performs a 'soft' reboot of the entire S control software. This means that the entire software restarts internally without an external electrical reset signal being issued. |
| Restart hard | | This performs a 'hard' (electronic) reboot of the entire S control software, which is similar to turning the machine off and on again. |
| Swipe sensitivity | | This option allows you to adjust the sensitivity of the touch display. |
| Live variables | Status Counters | Total hours oven was active |
| | | Total hours oven was operational |
| | | Total hours of preheat |
| | | Yes resets the preheat total |
| | | Total hours added time |
| | | Yes resets the manually added total |
| | | Total hours of cook corrections |
| | | Yes resets the cook corrections total |
| | Output Counters | Shows hours of heater activation |
| | | Resets the heater counter |
| | | Shows hours of blower activation |
| | | Resets the blower counter |
| | | Shows hours of rotor activation |
| | | Resets the rotor counter |
| | | Shows hours of light activation |
| | | Resets the light counter |
| | | Shows hours of pump activation |
| | | Resets the pump counter |
| | Start/End Counters | Number of started recipes after last counter reset. |
| | | Number of ended recipes after last counter reset. |
| | | Number of started quick cleans after last counter reset. |
| | | Number of ended quick cleans after last counter reset. |
| | | Number of started daily cleans after last counter reset. |
| | | Number of ended daily cleans after last counter reset. |
| | | Number of started full descales after last counter reset. |
| | | Number of ended full descales after last counter reset. |
| | | Number of short descales after last counter reset. |
| | | Number of ended short descales after last counter reset. |
| | | Reset of all starts and ended counters |
| | UTC System time | Set time and date |
| | Commission time | Time and date of commissioning |
| | Limefilter time | Last installation time and date of the water filter |
| | | |
| | | |

CLEANING PROCESS LDR AC (3 STEPS) (PARAMETER "CLEANING CYCLES)

Cycle 1

Cooling
 •Cool down <75°C
 [Clean temp 25-60°C]

Rinsing
 •Water supply time 70 sec.
 [Clean Cycle 1 1-120 sec.]
 •Rinse heat 40 min
 [Rinse heat time 5-40 min.]
 •Temperature 104°F
 [Clean temp 1, 77-140°.]
 •Rinse cold 5 min.
 [Rinse time 5-40 min.]

Draining
 • Drain time 3 min.
 [Drain time 2-10 min.]

Rinsing
 •Rinse + drain 10 sec.
 [Rinse B time 5-60 sec.]
 •Drain 2 min. [1-5 min.]
 •Backflush water

Pause
 •60 sec

Cycle 2

Rinsing
 •Water supply time 70 sec.
 [Clean cycle2 1-120 sec.]
 •Rinse heat 40 min.
 [Rinse heat time 5-40 min.]
 •Temperature 140°F
 [Clean temp 2, 77-140°.]
 •Rinse cold 10 min.
 [Rinse time 5-40 min.]

Draining
 • Drain time 3 min.
 [Drain time 2-10 min.]

Rinsing
 •Rinse cold + drain 10 sec.
 [Rinse B 5-60 sec.]
 •Drain water 2 min.
 [Drain B time 1-5 min.]
 •Backflush

Pause
 •Drain 60 sec.

**Cycle 3
 (shine)**

Rinsing
 •Water supply time 70 sec.
 [Clean Cycle 1 1-120 sec.]
 •Rinse shine 10 min
 [Rinse heat time 5-40 min.]
 •Temperature 140°F
 [Clean temp 3, 77-140°.]

Draining
 • Drain time 3 min.
 [Drain time 2-10 min.]

Rinsing
 •Rinse + drain 10 sec.
 [Rinse B time 5-60 sec.]
 •Drain 2 min. [1-5 min.]
 •Backflush water

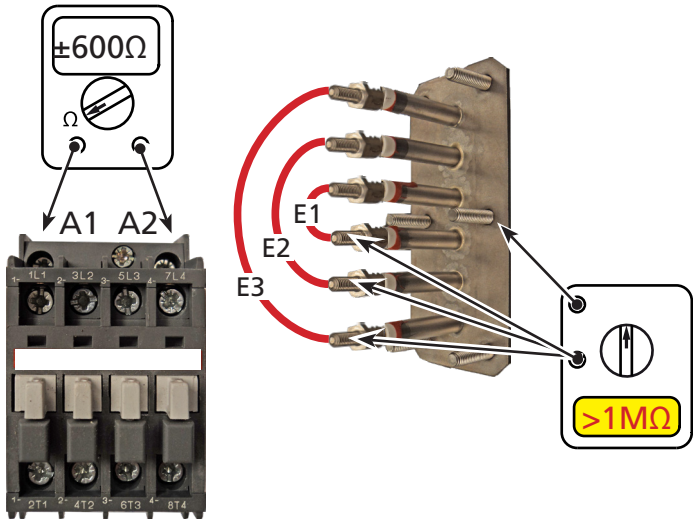
Finish
 •Drain 60 sec.

EMPTY PAGE

EMPTY PAGE

WARNING: Disconnect the electrical power to the machine at the main circuit box. Place a tag on the circuit box indicating the circuit is being serviced.

MEASURING THE HEATING ELEMENTS



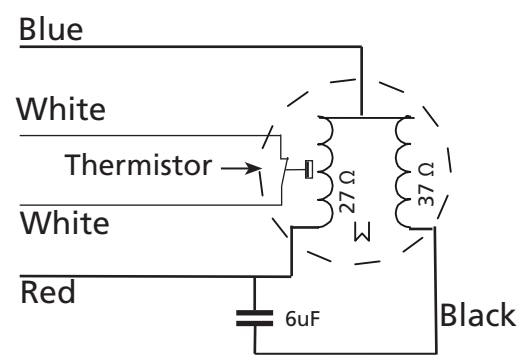
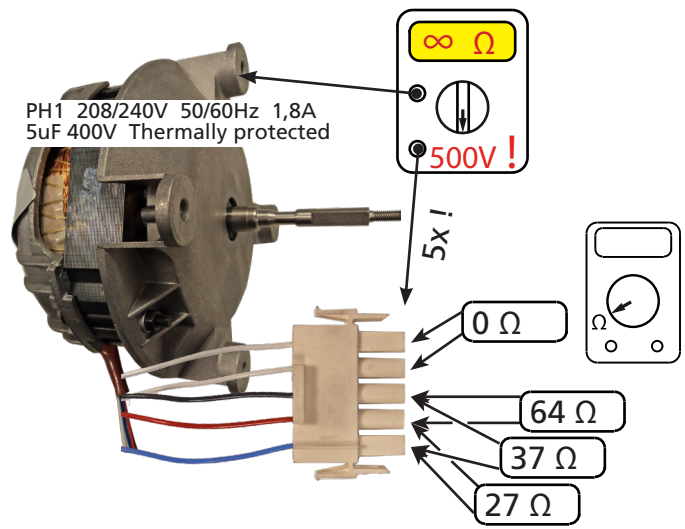
Heating element LDR 8

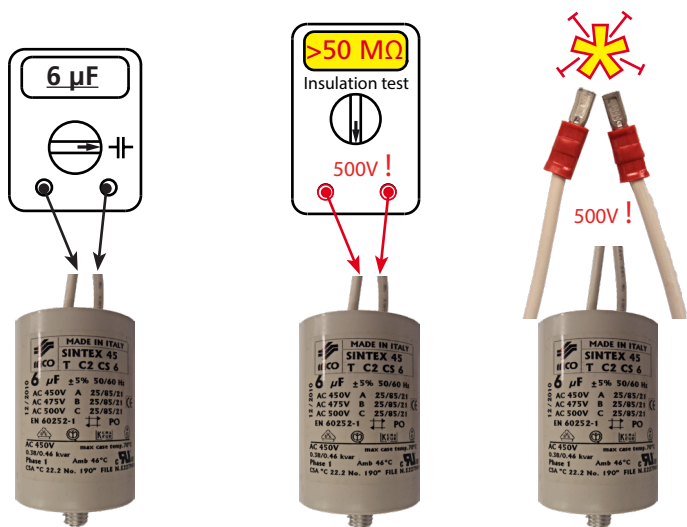
| | |
|---------|----------------|
| | 200-208V (USA) |
| E1 (2x) | 3000W 14,5 Ω |
| E2 (2x) | 3000W 14,5 Ω |
| E3 (2x) | 3300W 13 Ω |

If heaters have been stored for a longer period, Moist can go in and the insulation resistance can go down. Therefore it is good to measure this insulation resistance before mounting it. In case this Insulation resistance is too low, it could be considered to dry the heater in an oven for 24 hours on 130°C (266°F). The longer the better.

- Advise:
- Keep stock limited.
 - Store in conditioned space (for example in a box with silica gel)

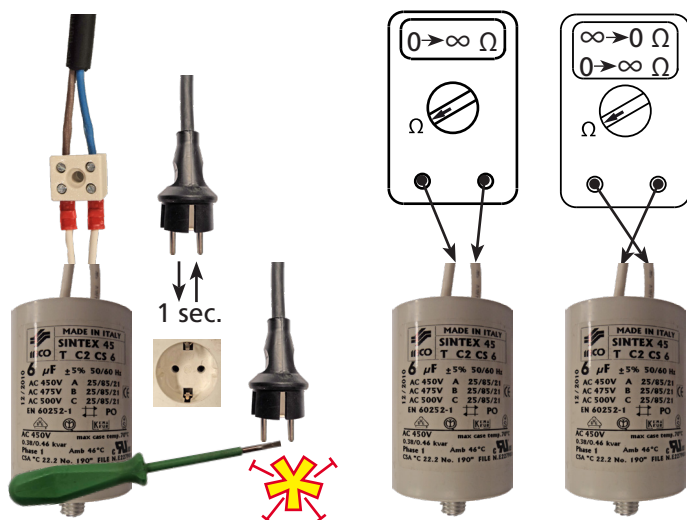
Blower of rotisserie





Charging with a test cable

Checking with Ω meter



The 6 μ F capacitor

General

Even with a capacitance meter it is impossible to determine for sure if the capacitor is ok or not, because it can be leaking when it is connected to mains power.

A quick optical check often tells more. Search for leaking oil and / or bulges (lumps).

Measuring with an insulation tester in 500V position.

Work under safe conditions according local legislation!

The value will not reach $\infty \Omega$, but will go up and down a little. When it is above 50M Ω it will be ok. Disconnect the test leads while the value is at the highest position. The capacitor is now charged with $\pm 500\text{VDC}!!$

Leave it for a few seconds and then put the wires together. A loud spark must arise. If not, the capacitor is leaking (losing its charge).

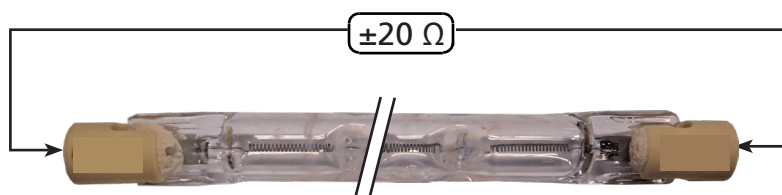
It is also possible to charge the capacitor by shortly connecting it to the mains supply (208V~). The same spark must arise. Do this a few times. The capacitor will not be charged when the leads are disconnected during the "zero crossing" of the mains sinus. It is ok when a spark arises once.

Measuring with an Ω meter.

Be sure that the capacitor is empty!

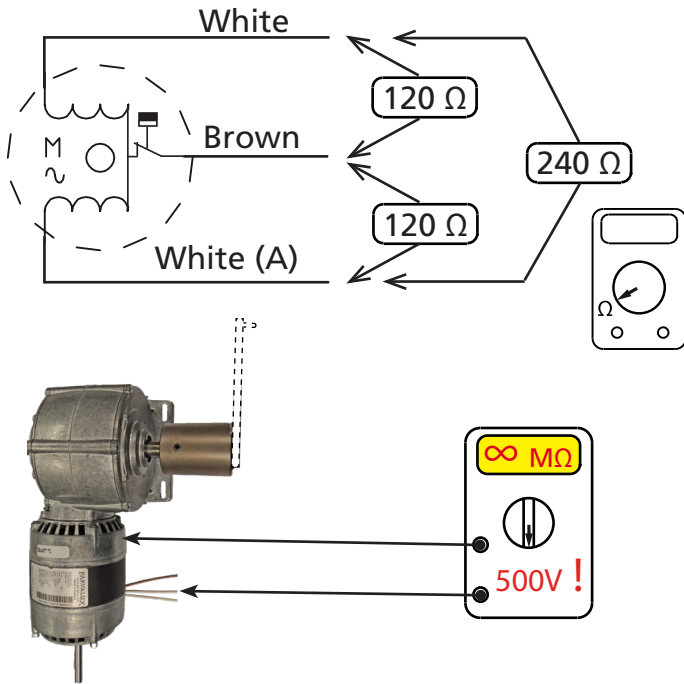
The value will go up until $\infty \Omega$ is reached. Exchange the test leads. The value will go down, through "0" and up again. If not, the capacitor is broken. If ok, it is still not sure if the capacitor is ok. It might leak when it is connected to the mains power!

MEASURING THE 500W LAMP



230V 160Watt

MEASURING THE ROTOR (DRIVE) MOTOR



MEASURING THE PT1000 SENSOR

The oven temperature is controlled by a PT1000 sensor, mounted in the top at the side.

See the resistance overview for the PT1000 sensors.

PT1000 sensor

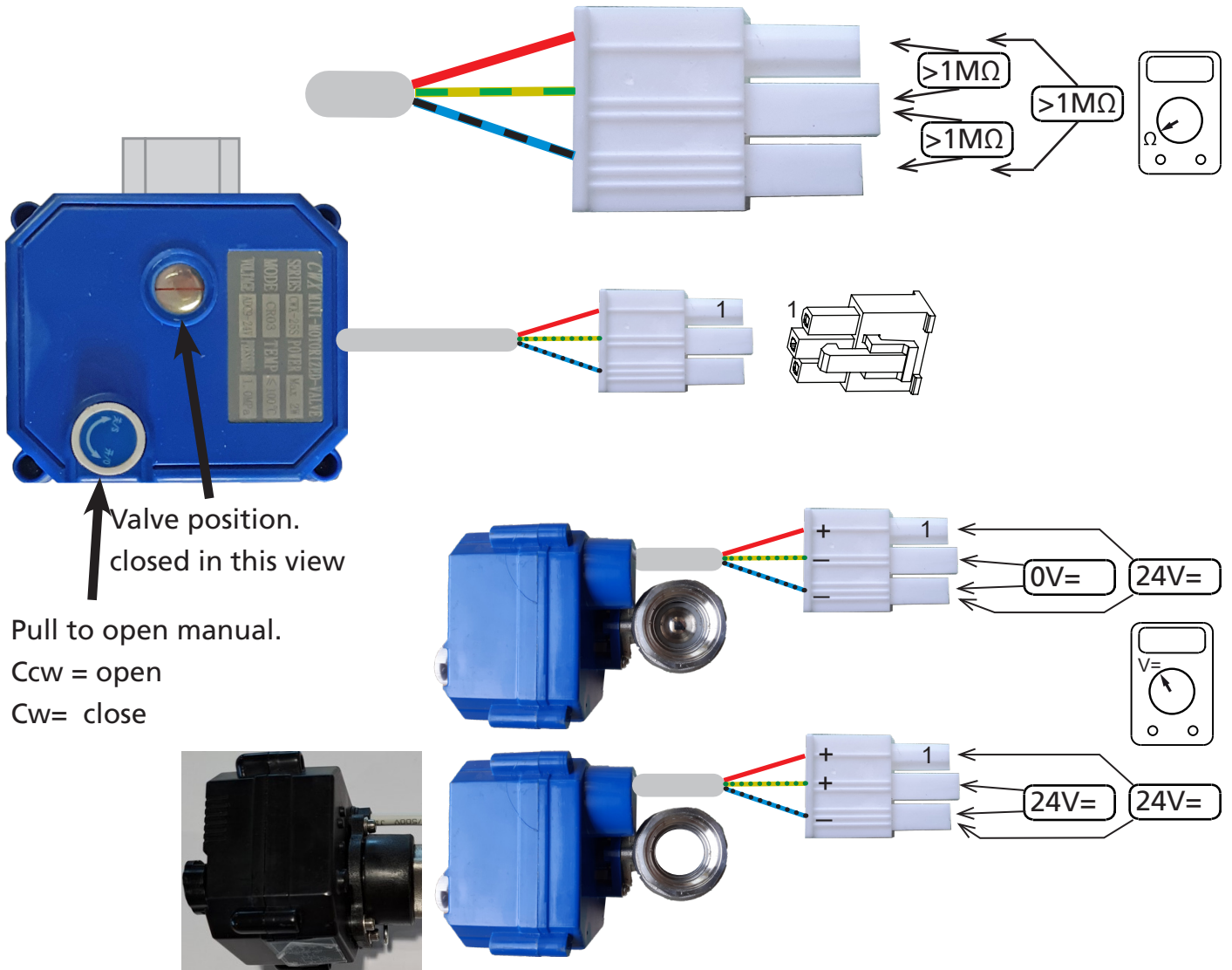


| °F | PT1000 Ω |
|----|-------------|
| -4 | 921,6 |
| 14 | 960,9 |
| 32 | 1000 |
| 50 | 1039 |
| 68 | 1077,9 |
| 77 | 1097,4 |
| 86 | 1116,7 |

| °F | PT1000 |
|-----|--------|
| 104 | 1155,4 |
| 122 | 1194 |
| 140 | 1232,4 |
| 158 | 1270 |
| 176 | 1308,9 |
| 194 | 1347 |
| 212 | 1385 |
| 230 | 1422 |

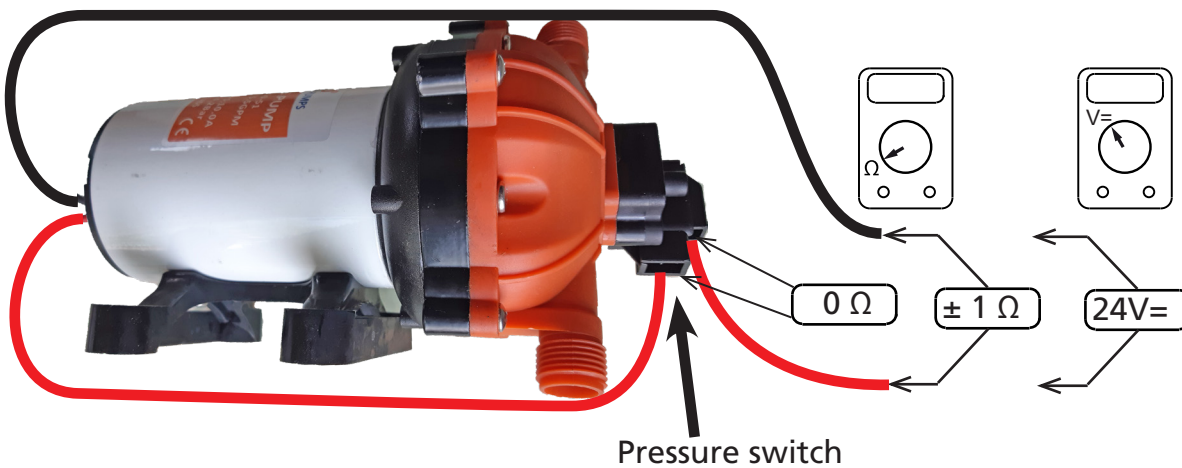
| °F | PT1000 |
|-----|---------|
| 248 | 1460,6 |
| 266 | 1498,2 |
| 284 | 1535,8 |
| 302 | 1573,1 |
| 392 | 1758,43 |
| 482 | 1940,81 |
| 572 | 2120,3 |

MEASURING THE MOTOR VALVE



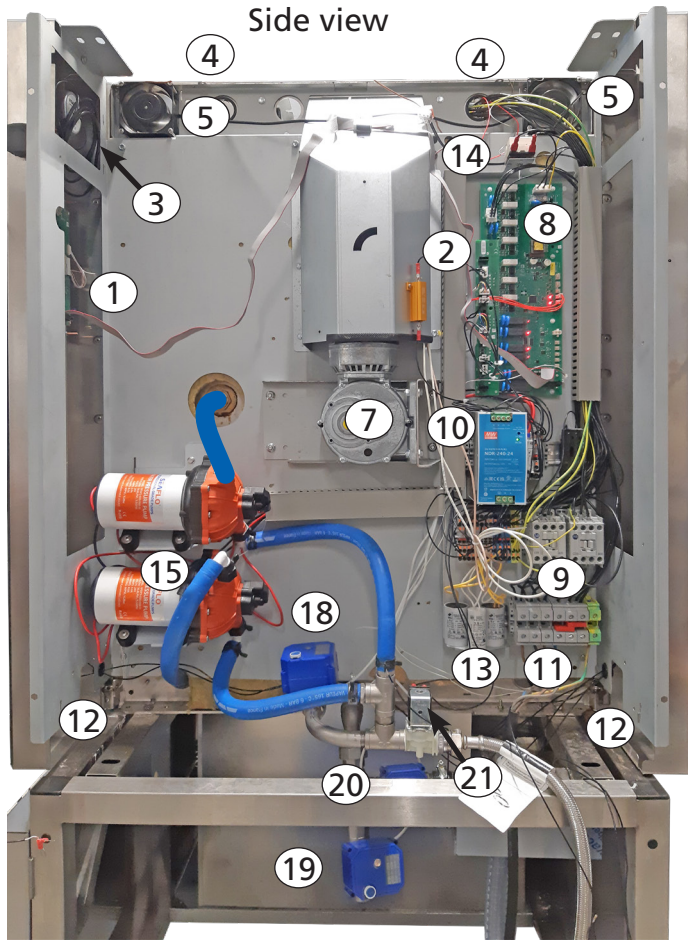
MEASURING THE PUMP

2 Amp. at free run
5-6 Amp. at full load



WARNING: Disconnect the electrical power to the machine at the main circuit box. Place a tag on the circuit box indicating the circuit is being serviced.

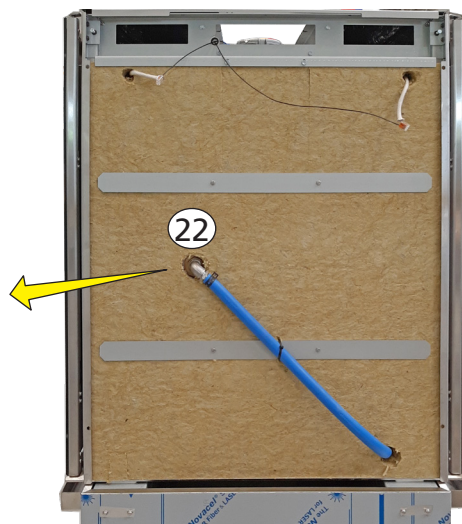
ACCESS TO SERVICE PARTS LDR-AC



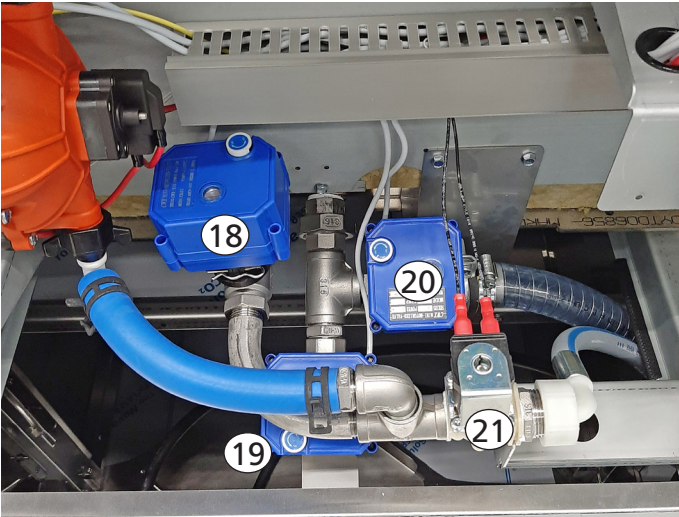
Unscrew 4 screws and open the panel from the electric compartment .
 The same for the panel on the oposite side to reach the wiring from the light and also to "unlock" the top panel.
 Remove the top panel and the blower panel on the inside, to reach the blower motor and the heating element.

1. CPU & LCD board and key board
2. Power & I/O board.
3. Speaker
4. Lamp connection
5. Cooling fans
- 6.
7. Rotor drive motor
8. Fuse on board (1A 5x20 slow acting).
9. Contactors (left = light, right = heating)
10. Power supply 24V 10A (short circuit protected)
11. Mains connection block
12. Door switch
13. Capacitors (smallest one is for the rotor motor)
14. Hi Limit thermostat
15. Rinse pump
- 16.
- 17.
18. Motor valve, suction side
19. Motor valve, grease drain
20. Motor valve, waste water (sewer) drain
21. Solenoid valve, water inlet (10 ltr/min)
22. Elbow connection left rinse arm

view opposite side

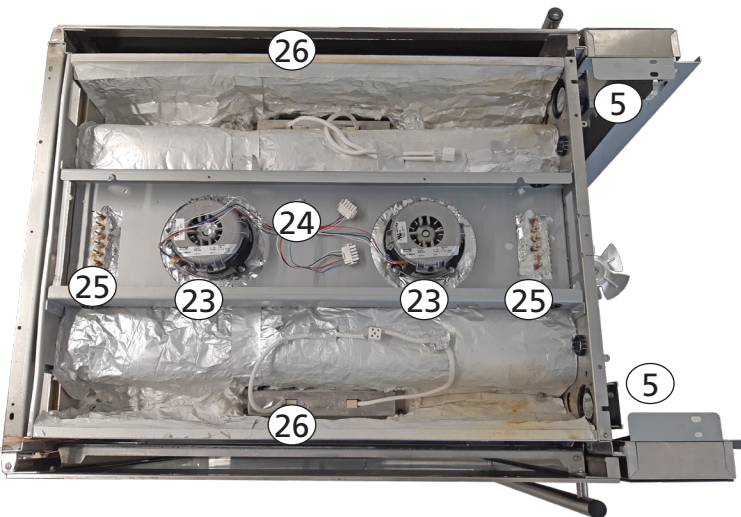


Close up view of water inlet valves and drain valves



- 23. Blower motor
- 24. 5 pole socket / plug connection of blower
- 25. Connections of heating element.
- 26. Illumination
- 27. Heating element
- 28. Turbine
- 29. PT1000 sensor

Top view



Inside view (with removed blower panel)

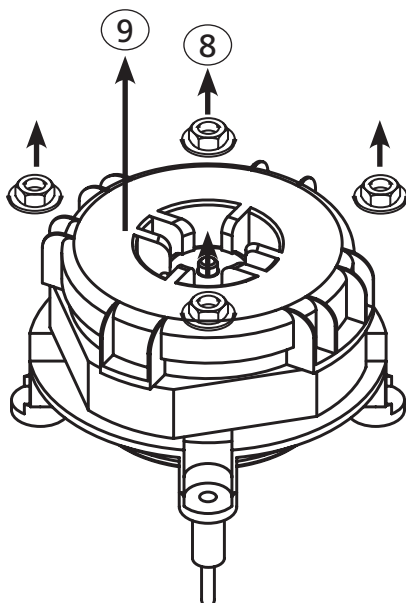
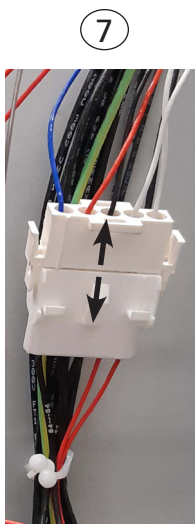
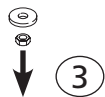
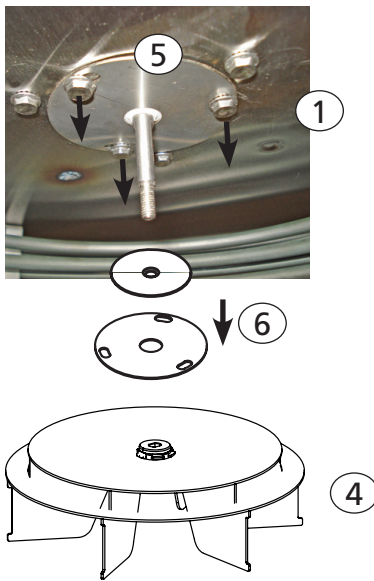
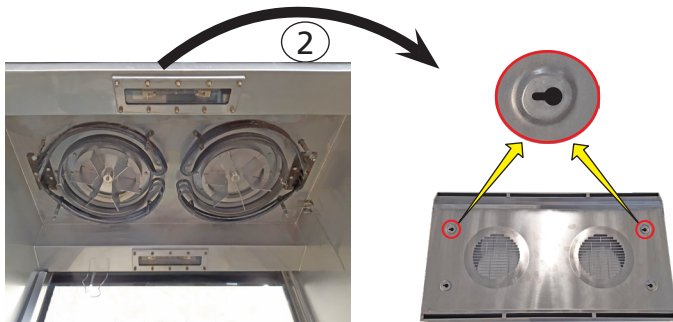


ACCESS TO SERVICE PARTS STACKED UNITS

EMPTY PAGE

EMPTY PAGE

BLOWER MOTOR



Dismounting the blower assembly in the LDR8ac.

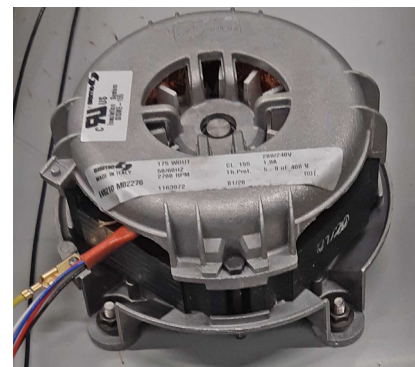
1. Remove both side panels and the top panel
2. Remove the blower panel. Slacken the nuts, move the panel a little sideways and take it out.
3. Remove the M5 nut and washer from the motor shaft
4. Pull the turbine from the shaft. A puller is delivered with the new blower kit.
5. Unscrew 3 screws.
6. Pull off the shaft seal with pressure plate.
7. Disconnect the blower wiring.
8. Unscrew 4 nuts.
9. Take out the motor.

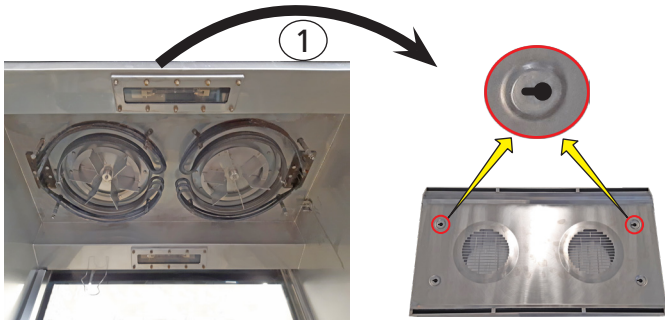
Mounting the blower assembly.

This has to be done in reversed order from disassembling.

Very important!

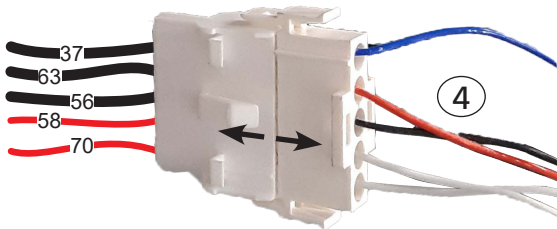
- First mount the motor and tighten the 4 nuts thoroughly.
- Then mount the shaft seal.
- Never loosen or tighten, the 4 nuts from the motor afterwards.
- If this is necessary, then first loosen the shaft seal.
- Check the rotation direction.





Dismounting the blower assembly from the inside.

1. Remove the blower panel.
Slacken the nuts, move the panel a little sideways and take it out.
2. Unscrew 10 screws around the turbine. The assembly will come down a little. If not, the seal is sticking. Loosen the mounting disc from the ceiling.
3. Turn the assembly a little to the right, hold it steady and let it come down.
4. Disconnect the 5 pole plug.

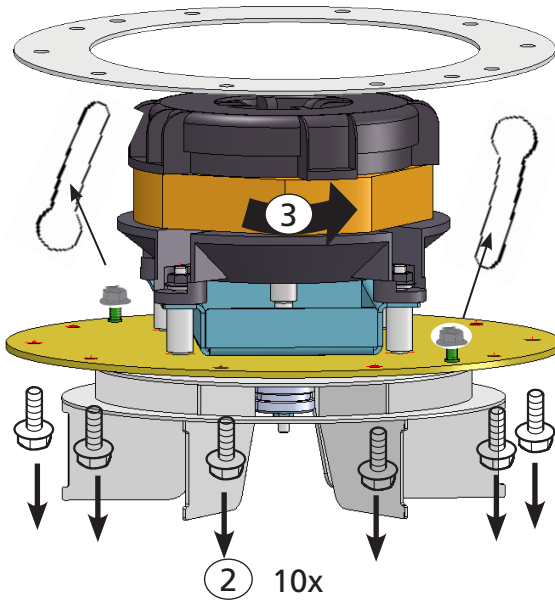


Mounting the blower assembly.

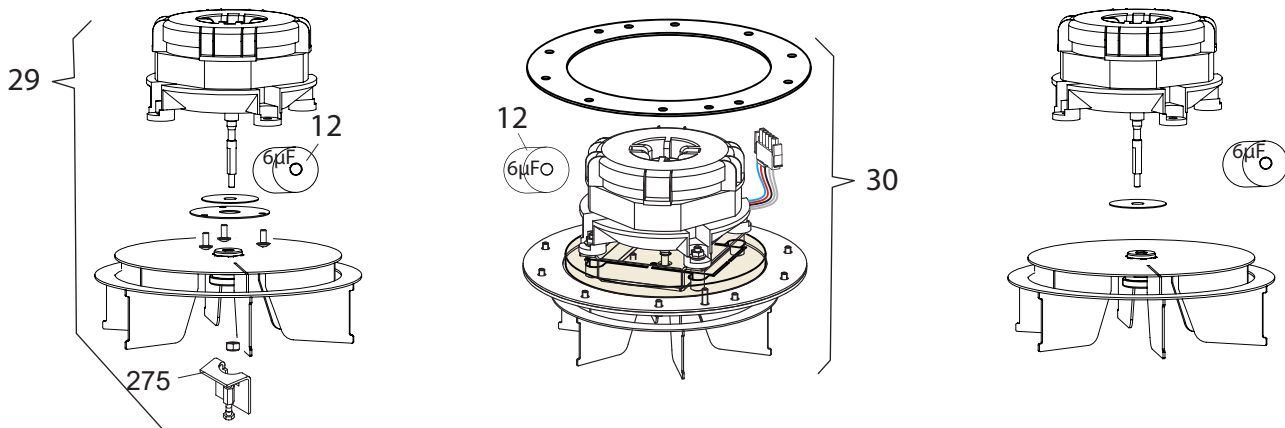
This has to be done in reversed order from disassembling.

Very important!

- Clean the remainigs of the gasket.
- Apply the new delivered gasket.



The below parts are available for service (drawings from exploded views)



HEATING ELEMENT

Dismounting the heating element.

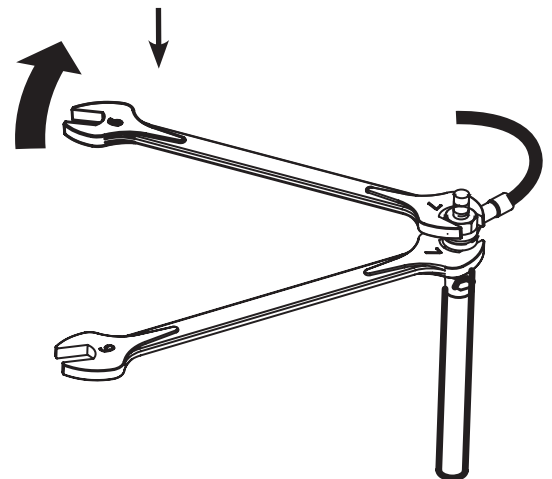
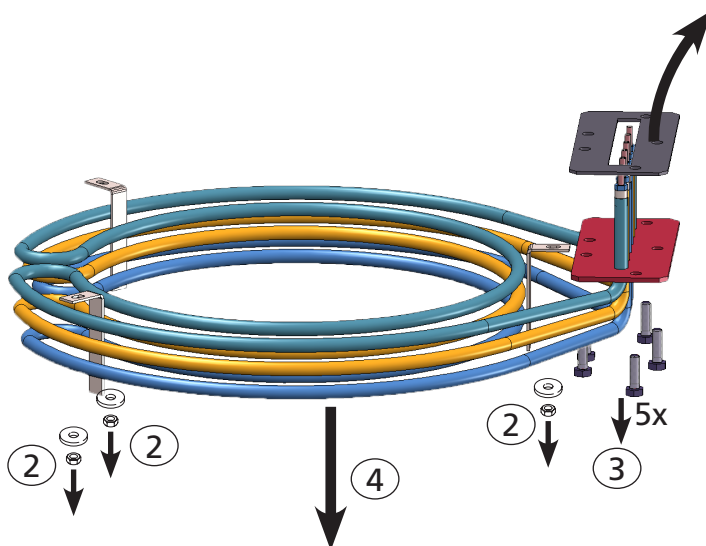
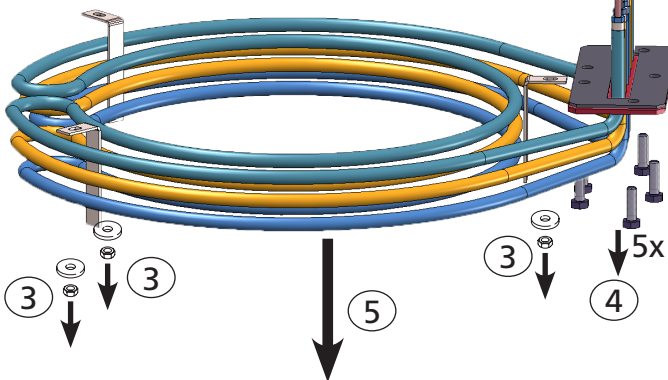
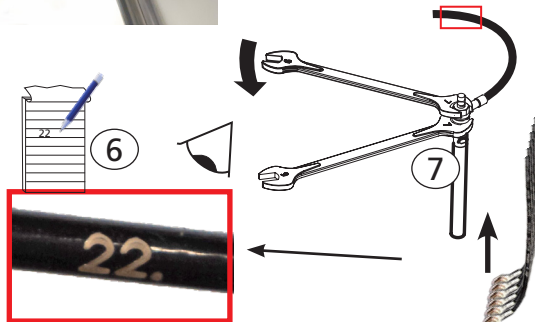
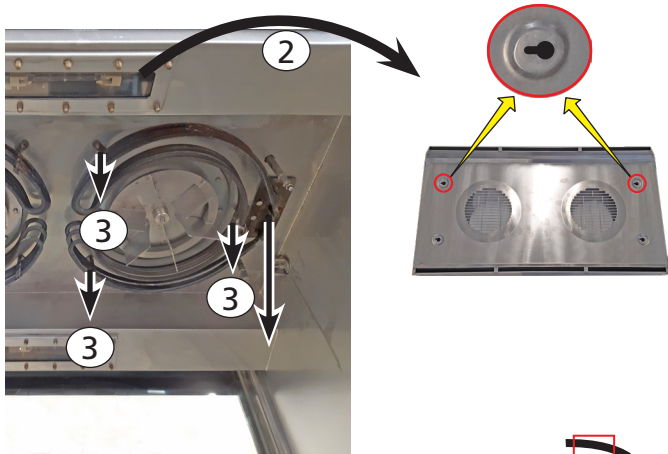
1. Remove both side panels and the top panel.
2. Remove the blower panel. Slacken the nuts, move the panel a little sideways and take it out.
3. Unscrew the three M4 nuts that secure the heating element to the ceiling.
4. Unscrew the 5 screws from the mounting plate.
5. Hold the heating element or pull it down when the gasket sticks.
6. Note the wiring number and write down if necessary.
7. Disconnect the wiring. Note! Hold the rear nut with an open end spanner!
8. Clean the ceiling from residu's.

Mounting the heating element.

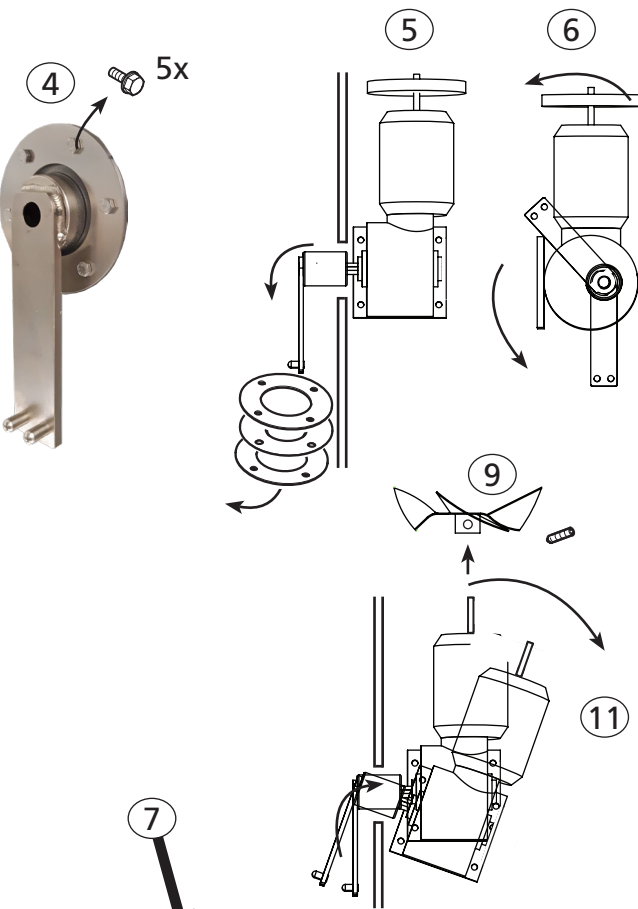
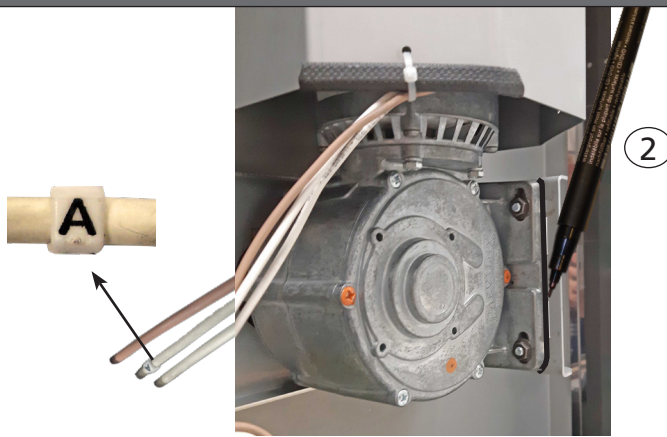
This has to be done in reversed order from disassembling.

Very important!

- Take a new gasket.
- Firts place the gasket, then connect the wiring
- Do not forget to hold the rear nut with an open end spanner when connecting the wiring and tightening the nuts.



ROTOR DRIVE MOTOR



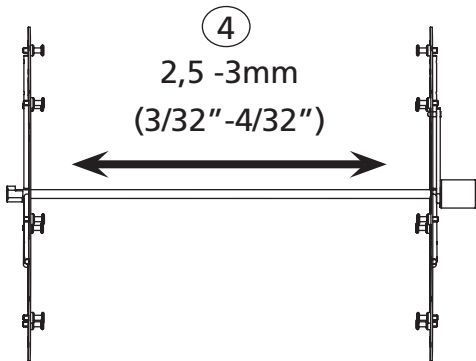
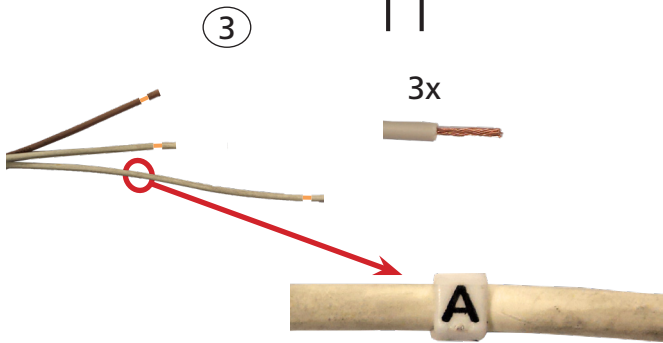
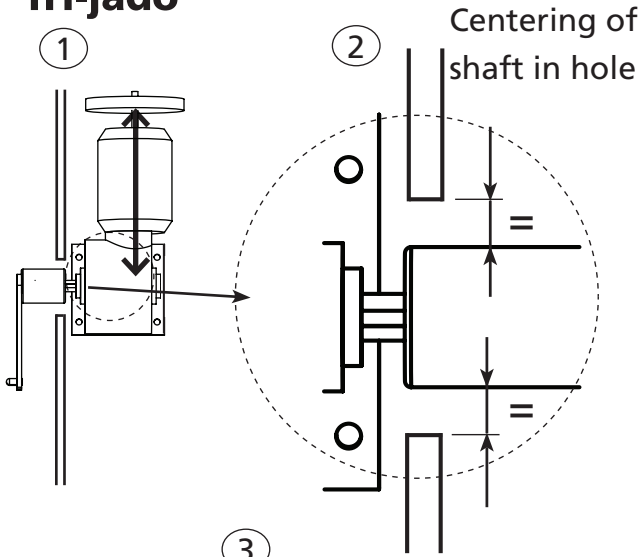
Dismounting the rotor motor:

Note, #4 and #5 are applicable from serial number 100075954.

1. Remove the side panel at the operator-panel side.
2. Mark the position of the motor on the bracket.
3. Take the rotor shaft out of the cooking cavity.
4. Unscrew the 5 bolts from the shaft seal mounting plate.
5. Slide the mounting plate and lip-seal from the drive arm.
6. Put the drive arm (If applicable) in the position as shown. This can be done manually, if necessary, by turning the fan blade on the motor.
7. Disconnect the wiring of the motor.
8. Unscrew 4 screws and put the air guide aside.
9. Remove the (cooling) fan blade.
10. Unscrew 4 screws with nuts.
11. Take out the motor as shown.

White White (A) Brown

| | | | | | | | | | | | | | |
|-------|-----|----|----|------|------|----|-----|----|------|----|-----|----|----|
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 28 | 39 | 35 | 44 | ○ | ○ | 34 | ○ | 58 | 42 | ○ | ○ | PE | ○ |
| ○ | ○ | 48 | 55 | 41 | 43 | 46 | 83* | 57 | C2.1 | 56 | 98* | PE | PE |
| ----- | | | | | | | | | | | | | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | | |
| ○ | ○ | ○ | ○ | ○ | ○ | M1 | M1 | ○ | ○ | ○ | M1 | PE | ○ |
| 38 | 97* | 51 | ○ | ○ | ○ | WH | (A) | 32 | C2.2 | 54 | BN | PE | ○ |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 33 | 82* | 50 | 37 | C2,1 | C2,2 | C1 | C1 | 29 | 45 | 53 | 49 | PE | ○ |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |



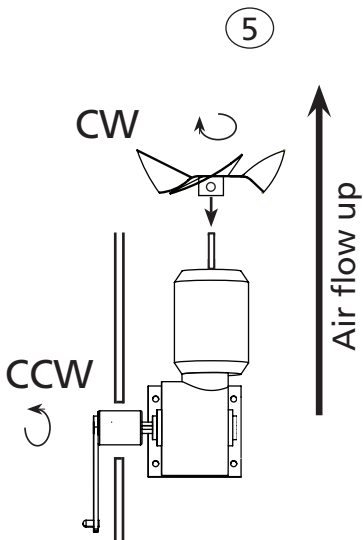
Mounting the rotor motor

1. Mount the motor on the bracket using the previous made mark (see #2 from disassembling).
2. The motor shaft should come through the center of the hole!!
3. Connect the wiring of the (new) motor. See previous page for position of wires.

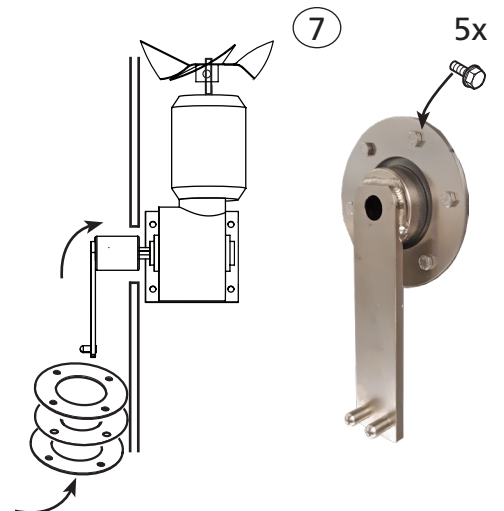
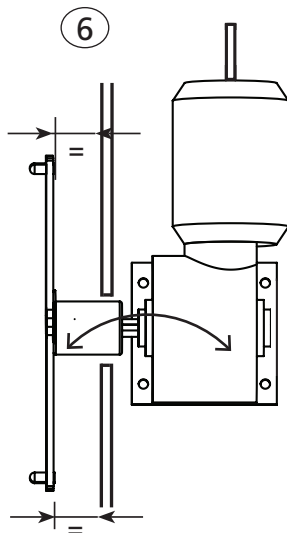
Note that the white wire, marked "A" is longer

4. Hook in the rotor and check the axial play. This should be 2,5 -3mm (3/32-4/32)
5. Put power on the unit and test the rotation of the rotor. Interchange the two white wires if wrong. The air flow should go up!
6. Check if the drive arm in top position has the same distance to the side wall as in bottom position.
7. Mount the shaft seal when the position of the motor is ok and the screws are mounted tight.

Checking rotation



Aligning of the drive arm



OVERVIEW OF ERROR CODES LDR AC.

| Error message | Description | Possible causes |
|---|--|--|
| Sensor overflow | The temperature sensor input reads higher than 320°C (600°F). In resistance, this is higher than 2200Ω. | Wiring loose Broken sensor Broken I/O board |
| Sensor underflow | The temperature sensor input reads lower than 0°C (32°F). In resistance, this is lower than 1000Ω. | Wiring shorted Broken sensor Broken I/O board |
| Communication failure | Communication problem between the I/O board and the CPU board | Broken I/O board |
| | | Broken I/O extension board. (Multiserie only) |
| | | Broken Fan board. (Bake Star only) |
| | Connection problem in ribbon cable. | |
| Motor failure | Blower motor overheated | Cooling air blocked Broken capacitor Broken motor |
| "Door open" picture | De doorswitch signal is not detected | The door is open |
| | | Malfunction of doorswitch. |
| Lime filter full | The lime filter needs to be replaced and in the manager menu, the parameter "lime filter replaced" needs to be put on "yes" | The maximum amount of water has been used and a new filter cartridge needs to be placed. |
| | | The water hardness setting in the service menu is wrong. |
| | | No filter is connected. The water hardness setting has to be set to "-" in the service menu. |
| Please clean first | The cleaning program did not finish. Detergent remainings could be in the oven cavity. Start the cleaning program (in rinse) | The cleaning program has been stopped by the operator. |
| | | The cleaning program has been interrupted by a power supply failure, or the power supply has been switched off during the cleaning program (at night). |
| The below messages are only possible when the USA hood is connected | | |
| Hood: not active (USA hood only) | | The ventless hood has not been switched on Power is disconnected |
| Activate hood (USA hood only) | Tells to switch on the Hood | |
| Hood: filter misplaced (USA hood only) | | One or more filters are not placed correct |
| | | One or more switches defect or disconnected |
| Hood: filter saturated (USA hood only) | | Filters need to be replaced |
| | | Malfunction of pressure switch |

TROUBLE SHOOTING BY SYMPTOM.

| Symptom | Possible cause | Caused by | |
|-------------------------------------|------------------------------|--|--|
| Unit will not switch on. | Power disconnected | Power plug disconnected | |
| | | Mains switch in OFF position. | |
| | Mains breaker open | Short circuit or insulation problem | |
| | Fuse(s) blown | Power surge Check fuse(s) on the electric panel | |
| | Wiring problem | Wiring loose of plugs or sockets inside and outside of unit. | |
| | | Ribbon cable loose between CPU and I/O board | |
| | Control boards malfunction | Mains power surge. (fuse blown on I/O board) | |
| Keypad malfunction | Moist (condens)on the keypad | | |
| Unit does not heat up. | Contactor does not switch on | Defective contactor. Defective temperature sensor. Wiring problem. Unit is put in "DEMO Mode" (check parameters) Wrong cooking program. | |
| | | Hi Limit thermostat triggered | Hi limit thermostat triggered due to transport (hi vibrations). |
| | | | Defective hi-limit thermostat. Defective temperature sensor. (temp. too high) |
| | Air circulation problem | Fanblade loose Blower defect (coil or bearing) or thermistor open (140°C) Capacitor of blower defect Suction grid of ventilator plate blocked | |
| Bad cooking results, uneven cooking | Too much heat | Contactor hangs PT1000 sensor malfunction , value too low PT1000 Sensor too far out of cooking chamber | |
| | | Rotor motor stops | Cooling air flow blocked Wrong rotation direction |
| | | | Short of heat |
| | Cooking program wrong | Wrong programming Wrong product | |
| | Missing inner door | Broken door | |
| Beep functions missing | Speaker not functioning | Loose connection Speaker Parameter "key board beep" switched off | |

| Symptom | Possible cause | Caused by |
|------------------------------------|---|---|
| Mains fuse or breaker switched off | Short circuit or insulation problem | Mains plug burned, or wet |
| | | Heating element broken |
| | | Wiring shorted or wet |
| Rotor drive motor does not stop | Power stays on the motor | Rotor switch, if applicable in pass through units, pushed in. (unit is placed with the back to the wall.) |
| | | Malfunction of I/O board |
| Less or no lighting | One or more lamps defect | Lamp defect |
| | No power on the lamps | Contactora malfunction |
| | | Wiring loose |
| | | Lighting switched off in manager menu |
| Contactora malfunction | | |
| Door does not close well. | Door not right adjusted | Unit not placed level, uneven floor. Abuse by transport / operator. Hinge loose |
| Leakage of steam at the door | Door not right adjusted | |
| Light does not switch off | Power stays on the lamps | Contactora malfunction, contacts sticking. |
| Oven cavity fills up with grease | Drain grid clogged | Cleaning instructions neglected. |
| | Grease drain blocked | Unit is cooking porc meat and in cold environment. The grease gets solid, drain heating required. |
| | Drain valve malfunction | Wiring loose |
| Broken valve | | |
| Controls malfunction | Leakage of steam through rotor shaft. | Worn out shaft seal. |
| | Excessive leakage of steam at door. | Wrong adjustment of door |
| | Controller overheated. | Cooling air flow blocked |
| | Fuses blown | Power surge |
| Water on the floor | Sewage clogged Water stays in the unit during cleaning and when the cleaning program has finished, the grease drain opens and the water falls in the grease container. | Sewer drain hose not installed properly |
| | | Sewer drain hose clogged |
| | | Malfunction of Sewer drain valve. |
| | Too much water in unit | Malfunction of sewer drain pump (if applicable). |
| | | Water inlet valve (W1) broken |
| Pump defect | Water inlet valve (W1) polluted | |
| | Pump is leaking | |

| Symptom | Possible cause | Caused by |
|---|-------------------------------------|--|
| Bad cleaning result. Check parameter settings! | Water issue | Water tap closed |
| | | Descale filter saturated |
| | | No descaling filter applied while the water hardness is high |
| | Detergent issue | Cleaning cartridge not placed on the right place |
| | | Wrong (amount) detergent |
| | Drain issue | Sewer drain malfunction (Q5) |
| | | Drain hose not installed properly |
| | | Grease drain malfunction (Q4) (cleaning proces started while unit is still loaded with oil) |
| | Rinse issue | Suction filter blocked |
| | | Malfunction of pump |
| Malfunction of valve at suction side (Q1) | | |
| Black/ brown spots on the bottom / filter screens | Detergent not dissolved fast enough | Instructions not followed. Detergent and cartridge placed before the unit has cooled down. See storyboard. |
| | | |

TROUBLE SHOOTING BY PART / FUNCTION.

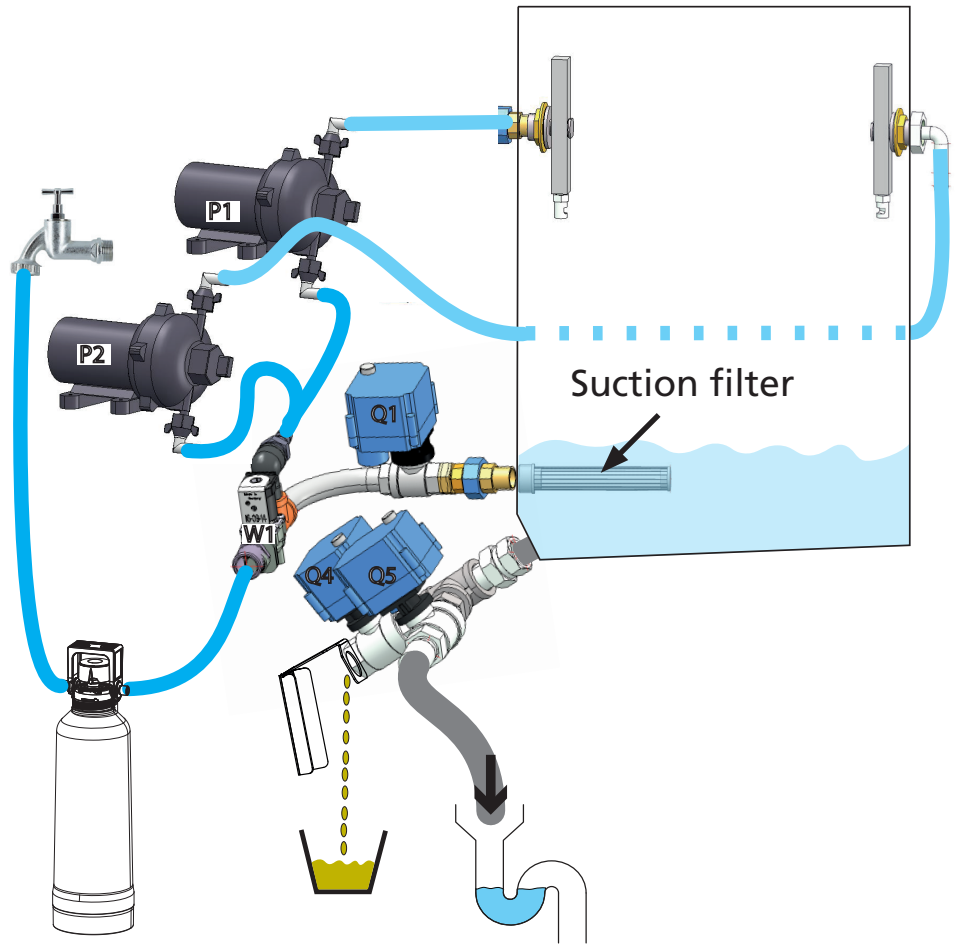
| Description of part / function | Symptoms | Possible cause | Action |
|--------------------------------|---|---|---|
| Inside door | Broken glass | Slamming of door. Fastening bolts and nuts are loose. No PTFE ring between steel and glass. | Give instruction to operator. Tighten all fastenings. Mount new door. |
| | Door does not properly open / close | Door not well adjusted. | Adjust outside and inside door |
| Outside door | Broken glass | Slamming of door. Fastening bolts and nuts are loose. | Give instruction to operator. Tighten all fastenings. |
| | Door adjustment | Door not well adjusted. | Adjust outside and inside door |
| Heating element | Rotisserie doesn't reach adjusted temperature | Wiring. | Check the wiring. Check the power on the element. |
| | | Contactors Element malfunction. | Check the contactor Check the current with AC current tester. |
| | Duration of grilling time is too long | Wiring. Element malfunction. | Check the wiring. Check the current with AC current tester. |
| Safety thermostat | Contactors does not switch on after starting of program | Wiring. Thermostat malfunction. | Check the wiring. Check if the thermostat is making contact. |
| | Contactors switches off before reaching the adjusted temperature in program | Thermostat malfunction. | Check if the thermostat is turned fully clockwise (contact closed). |
| | | Thermostat probe not in right position. | Check the position of the thermostat probe. |
| Contactors | Contactors doesn't switch on | Wiring. Coil malfunction. | Check the wiring. Check resistance of the coil. This should be $\pm 600\Omega$. |
| | Contactors switches on, but no power on lamp or heating element. | Contact burned. | Check the wiring. Check the power on all contacts. Check the contacts of the contactors. |
| Capacitor | Drive motor or blower don't work | Wiring. Capacitor malfunction. | Check the wiring. Check function after connecting a new capacitor. <i>Checking of capacitor: See chapter "electrical tests"</i> |

| Description of part / function | Symptoms | Possible cause | Action |
|--------------------------------|---|--|---|
| Drive motor | <p>Motor doesn't run and / or main fuse burned</p> <p>Motor runs after starting it up by hand</p> <p>Motor stops during process and comes in again after a period of time</p> | <p>Wiring.</p> <p>Coil malfunction.</p> <p>Gearbox.</p> <p>Capacitor malfunction.</p> <p>Coil overheated, thermistor switches off (105°C – 221°F).</p> <p>Broken capacitor</p> | <p>Check the wiring.</p> <p>Check the power to the motor.</p> <p>Check insulation value of coil with Megger on 500V. Minimum value is 0.5 MΩ.</p> <p>Check resistance of the coils. See chapter Electrical tests. Between whiteA and white wire 234Ω.</p> <p>Between whiteA and brown wire 117Ω.</p> <p>Between white and brown wire 117Ω.</p> <p>Check if gearbox is blocked.</p> <p>Check capacitor (see chapter electrical tests)</p> <p>Check rotation direction. Air should be flowing upwards over the motor.</p> <p>Check cooling circuit of motor.</p> <p>Check if rotisserie is close to another heat source.</p> <p>Measure temperature motor during process.</p> <p>Check / repace capacitor</p> |
| Seal of drive motor shaft | Grease leaking | <p>Seal deteriorated</p> <p>Seal not properly mounted</p> | <p>Replace seal.</p> <p>Be sure that the motor shaft comes through the center of the hole, properly aligned and thoroughly fastened.</p> <p>After that, mount the seal. Refer to chapter "service procedures".</p> |
| Blower | <p>Blower doesn't run and / or Main fuse burned</p> <p>Blower runs after starting it up by hand</p> <p>Blower stops during process and comes in again after a period of time</p> <p>Temperature indication on display runs up very fast (180°C - 355°F after 5 minutes)</p> | <p>Wiring.</p> <p>Coil malfunction.</p> <p>Capacitor malfunction.</p> <p>Coil overheated, thermistor switches off (140°C – 284°F).</p> <p>Blower doesn't rotate and heat stays in top of cavity.</p> | <p>Check the wiring.</p> <p>Check the power on the blower.</p> <p>Check insulation value of coil with a Megger on 500V. Minimum value is 0.5 MΩ.</p> <p>Check resistance of the coils. <i>See chapter Electrical tests.</i></p> <p>Replace motor if not ok</p> <p>Check capacitor (see capacitor) or connect new capacitor.</p> <p>Check cooling circuit of blower.</p> <p>Check rotation direction of rotor motor</p> <p>Check if rotisserie is close to another heat source.</p> <p>Measure temperature blower during process.</p> <p>See above.</p> |

| Description of part / function | Symptoms | Possible cause | Action |
|--|--|---|--|
| PT-sensor | <p>Temperature inside rotisserie higher than set temperature</p> <p>Rotisserie does not reach adjusted temperature</p> <p>Error message -PT1000 underflow -Sensor shorted</p> <p>Error message -PT1000 overflow -Sensor open</p> | <p>Resistance of sensor lower, caused by moist inside Short circuit in sensor.</p> <p>Sensor not in right position. Too far out the cooking chamber</p> <p>Resistance of sensor too high</p> <p>Sensor not in right position. Too far into the cooking chamber</p> <p>PT sensor, or wiring shorted</p> <p>PT sensor, or wiring disconnected</p> | <p>Replace sensor</p> <p>Replace sensor</p> <p>Check / adjust position of sensor</p> <p>Replace sensor</p> <p>Check / adjust position of sensor</p> <p>Check in I/O test Temperature 0°C / 32°F This is lower than 1000Ω</p> <p>Check in I/O test. Temperature 317°C / 603°F This is higher than 2200Ω</p> |
| Keypad(s) / touch screen do not react | No possibility to make a program | One or more keys don't function. | <p>Check flat cable connection between CPU board and keypad / touch screen</p> <p>Do a hard reset</p> <p>Replace key pad or CPU board</p> |
| Keypad / touch-screen has bad reaction | Difficult to operate | Wrong parameter setting | Check parameter setting in Service menu |
| Keypad(s) / touch screen-react strange / automatic | Automatic stopping of program. | Moist on / or running over the keypad | <p>1. Check for condensation. When the unit is cold and the environment is heating up, condensation can be expected.</p> <p>2. Check for water, dripping on the top of the unit and running down.</p> |
| Display/CPU on operation panel and power I/O board | <p>No illumination on display</p> <p>Display shows strange things.</p> | <p>Wiring.</p> <p>Fuse burned.</p> <p>Flat cable.</p> <p>Display/CPU malfunction.</p> <p>Power board malfunction.</p> <p>Parameters not on right settings.</p> <p>Wrong software or loss of data.</p> | <p>Check the wiring.</p> <p>Check the power on the CPU board by the 2 flashing red LED's just near the flatcable on the power and I/O board.</p> <p>Check the fuse on the power I/O board.</p> <p>Check other fuses.</p> <p>Check grey flat cable connection.</p> <p>Replace the CPU board with display.</p> <p>Replace the power I/O board.</p> <p>Check parameters.</p> <p>Check software version or upload latest software.</p> |

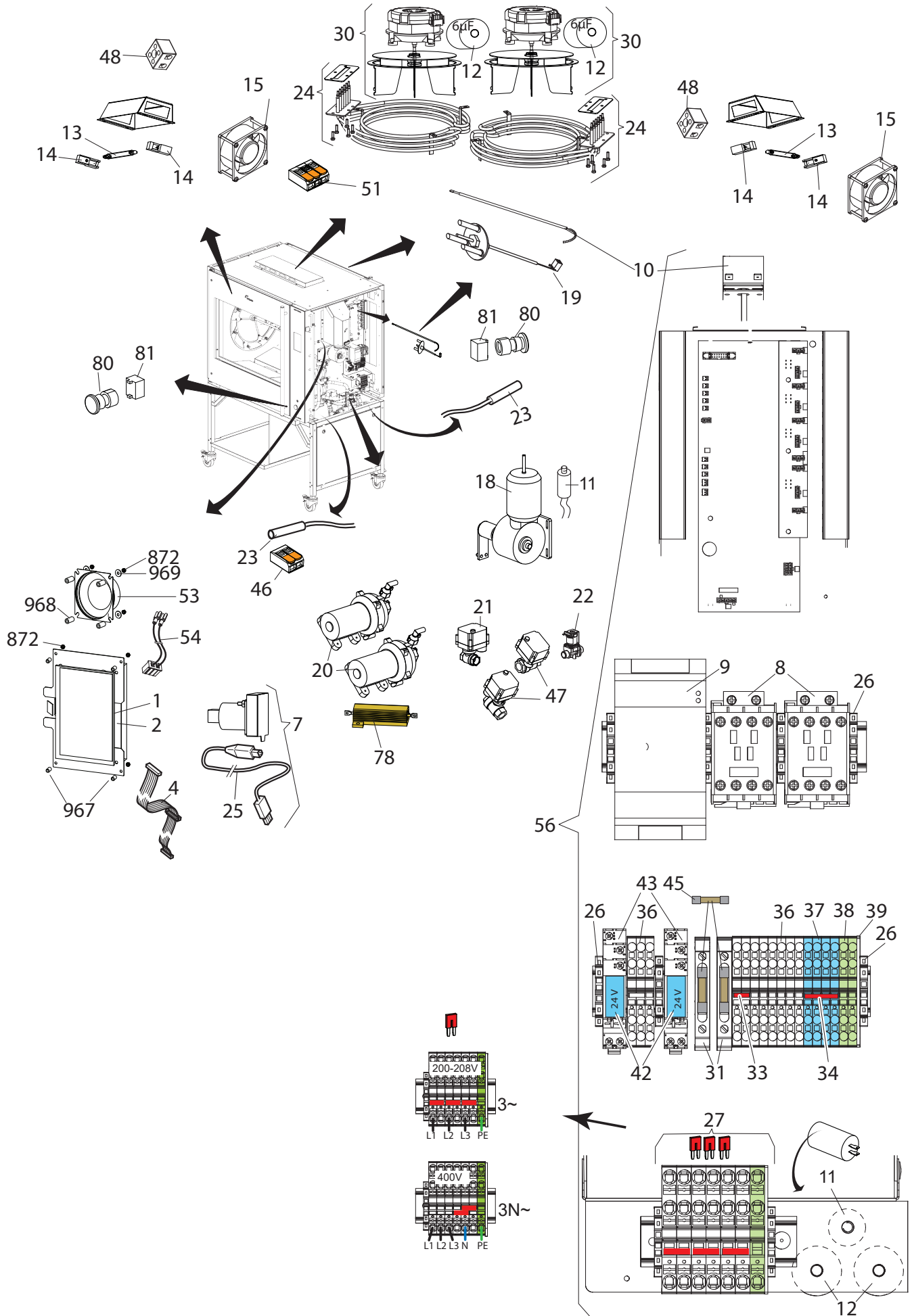
| Description of part / function | Symptoms | Possible cause | Action |
|---|--|--|--|
| Pump See below overview P1 / P2 | Not pumping | Suction valve Q1 (9311008s) malfunctioning | Check the valve if it is closed while the water inlet valve is opened and the unit is being filled. |
| | | Suction filter clogged | Check / clean the filter |
| | | Wiring problem | Check function of pump in I/O test Check the connection on the pressure switch on the pump and other wiring |
| | | Voltage dropped | Check the 24V power supply |
| | Leaking | swivel coupling loose, broken | Check / replace |
| | | Pump membrane broken | Replace pump |
| Water inlet (solenoid) valve See below overview W1 | Too much water in unit | Valve polluted by dirty water | Clean valve |
| | | Broken valve | Replace valve |
| | | Missing reducer (10 ltr/min) | Replace valve by the right one |
| | No Water | Wiring loose | Check wiring |
| | | Broken valve | Replace wiring |
| Motor valve suction side Q1 | Not rinsing during cleaning | Valve does not close during filling of water Valve does not open during rinsing | Check function of valve in I/O test Check wiring and plugs / sockets on the I/O board |
| Motor valve grease drain See below overview Q4 | Oil stays on the bottom. | Valve does not open | Check function of valve in I/O test Check wiring and plugs / sockets on the I/O board |
| | Water comes in the grease container (bucket) and probably on the floor | Valve does not close | |
| Motor valve sewer drain See below overview Q5 | Water comes in the grease container (bucket) and probably on the floor | Valve does not open | Check function of valve in I/O test Check wiring and plugs / sockets on the I/O board |
| | Soap and grease still in unit after cleaning program | Valve does not close and water goes straight out, into the sewer | |
| | | | |

HYDRAULIC OVERVIEW



Descaling filter
By-pass on zero!!

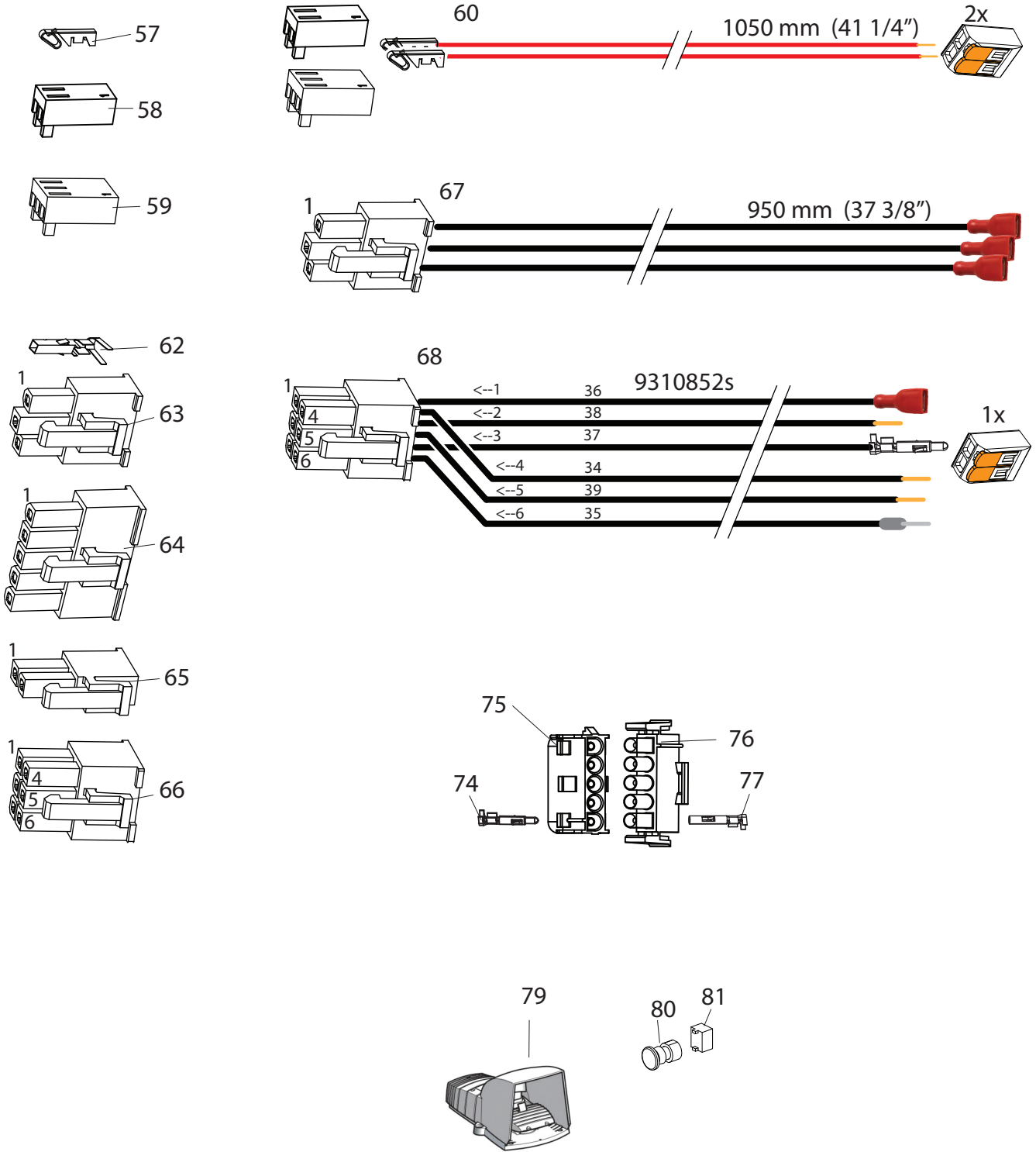
LDR-8 S AC, ELECTRICAL PARTS



LDR-8 S AC, PARTSLIST ELECTRICAL PARTS

| Pos | Part nr. | Description | Qty | Pri | Comment |
|-----|----------|---|-----|-----|---------|
| 1 | 9292280s | CPU + LCD board s-control | 1 | 1 | |
| 2 | 9292282s | CPU + LCD board s-control (without WIFI) | 1 | 1 | |
| 4 | 9172314 | Ribbon cable 14p | 1 | 2 | |
| 5 | 9192400s | Power & I/O board | 1 | 1 | |
| 6 | 9192401s | Interface board | 1 | 1 | |
| 7 | 9310161 | USB socket, ass. | 1 | | |
| 8 | 3500069 | Contactora | 2 | 1 | |
| 9 | 9311016 | Power Supply 24V 10A | 1 | 1 | |
| 10 | 9040970 | Thermostat 50-320°C 122-608°F | 1 | 2 | |
| 11 | 3701228 | Capacitor 2,5µF | 1 | 2 | |
| 12 | 9192034 | Capacitor 6µF | 2 | 2 | |
| 13 | 9351020s | Lamp 160W | 2 | 1 | |
| 14 | 9311015 | Lamp holder R7s ceramic | 4 | 2 | |
| 15 | 8091005 | Fan | 2 | 1 | |
| 18 | 9340105s | Gearmotor, complete with drive head | 1 | 1 | |
| 19 | 9340266s | Temperature sensor PT 1000 | 1 | 1 | |
| 20 | 9311006s | Pump | 1 | 1 | |
| 21 | 9311008s | Motor valve -2/2 1/2" CR03 | 1 | 1 | |
| 22 | 9311007s | Solenoid valve E 2/2 - 1/2" (reduced 9 ltr/min) | 1 | 1 | |
| 23 | 3500020 | Reed switch | 2 | 2 | |
| 24 | 9312192s | Heating element 9300 W 208V | 2 | 1 | |
| 25 | 9291012 | USB cable | 1 | | |
| 26 | 9191222 | End Clamp Clipfix 35-5 PHX | 11 | | |
| 31 | 9191218 | Fuse holder Euro ABB | 2 | | |
| 33 | 9191238 | Plug-in bridge FBS 2-6 PHX | 1 | | |
| 34 | 9191236 | Plug-in bridge FBS 4-6 PHX | 1 | | |
| 36 | 9191240 | Terminal PT 4 (GY) 4 qmm PHX | 8 | | |
| 37 | 9191241 | Terminal PT 4 (BU) 4 qmm PHX | 4 | | |
| 38 | 9191239 | Terminal PT 4 PE (GN/YE) 4 qmm PHX | 1 | | |
| 39 | 9191223 | End Cover D-PT 4 PHX | 1 | | |
| 42 | 9311044 | Relay, 24V Allen Bradley (blue) | 2 | 1 | |
| 43 | 9291141 | Socket, relay Allen Bradley | 5 | 2 | |
| 45 | 9191197 | Fuse 10A, ceramic 32x6,3 | 2 | 1 | |
| 46 | 9291122 | Connector, 2 pole | 6 | | |
| 47 | 9311013s | Motor valve -2/2 3/4" CR03 | 2 | 1 | |
| 48 | 9171110 | Connector, 2 pole ceramic | 4 | 2 | |
| 49 | 9312083 | Drain pump | 1 | 1 | |
| 51 | 9291123 | Connector, 3 pole | 2 | | |
| 53 | 9311046s | Speaker | 1 | 1 | |
| 54 | 9311047 | Cable, speaker s-control | 1 | | |
| 56 | 9340260 | Electric panel | 1 | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

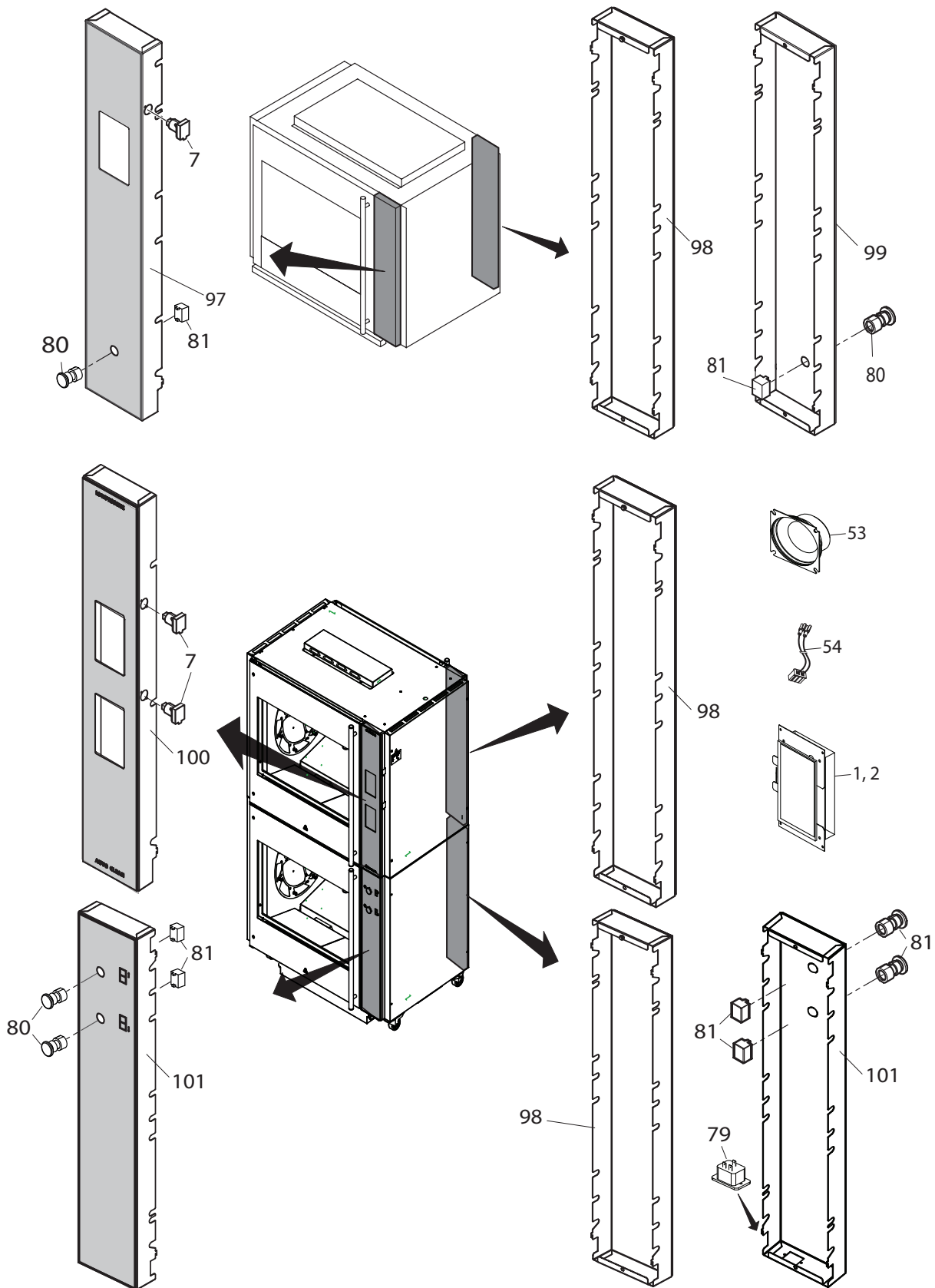
LDR-8 S AC, ELECTRICAL PARTS



LDR-8 S AC, PARTSLIST ELECTRICAL PARTS

| Pos | Part nr. | Description | Qty | Priority | Comment |
|-----|----------|------------------------------|-----|----------|---------|
| 57 | 9291176 | Crimp contact, inputs | | | |
| 58 | 9291175 | Socket, 2 p, inputs | | | |
| 59 | 9291177 | Socket, 3 p, inputs | | | |
| 60 | 9310850s | Wire repair set inputs | | 2 | |
| 62 | 3701231 | Crimp contact, outputs | | | |
| 63 | 9291179 | Plug, 3p, outputs | | | |
| 64 | 9291170 | Plug, 5p, power | | | |
| 65 | 9291174 | Plug, 2p, output | | | |
| 66 | 9291173 | Plug, 6p, outputs | | | |
| 67 | 9310851s | Wire repair set 24V outputs | | 2 | |
| 68 | 9310852s | Wire repair set 208V outputs | | 2 | |
| 74 | 0601466 | Crimp contact male, M-N-L | | | |
| 75 | 9291014 | Socket, 5p, Mate-N-Lock | | | |
| 76 | 3701272 | Plug, 5p, Mate-N-Lock | | | |
| 77 | 0601458 | Crimp contact female, M-N-L | | | |
| 78 | 9311075 | Resistor 0,5 Ω 50Watt | 1 | 2 | |
| 79 | 9311054s | Pedal switch | | | |
| 80 | 9291002 | Pedestal button | 2 | 2 | |
| 81 | 9310181 | Switch block | 2 | 2 | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

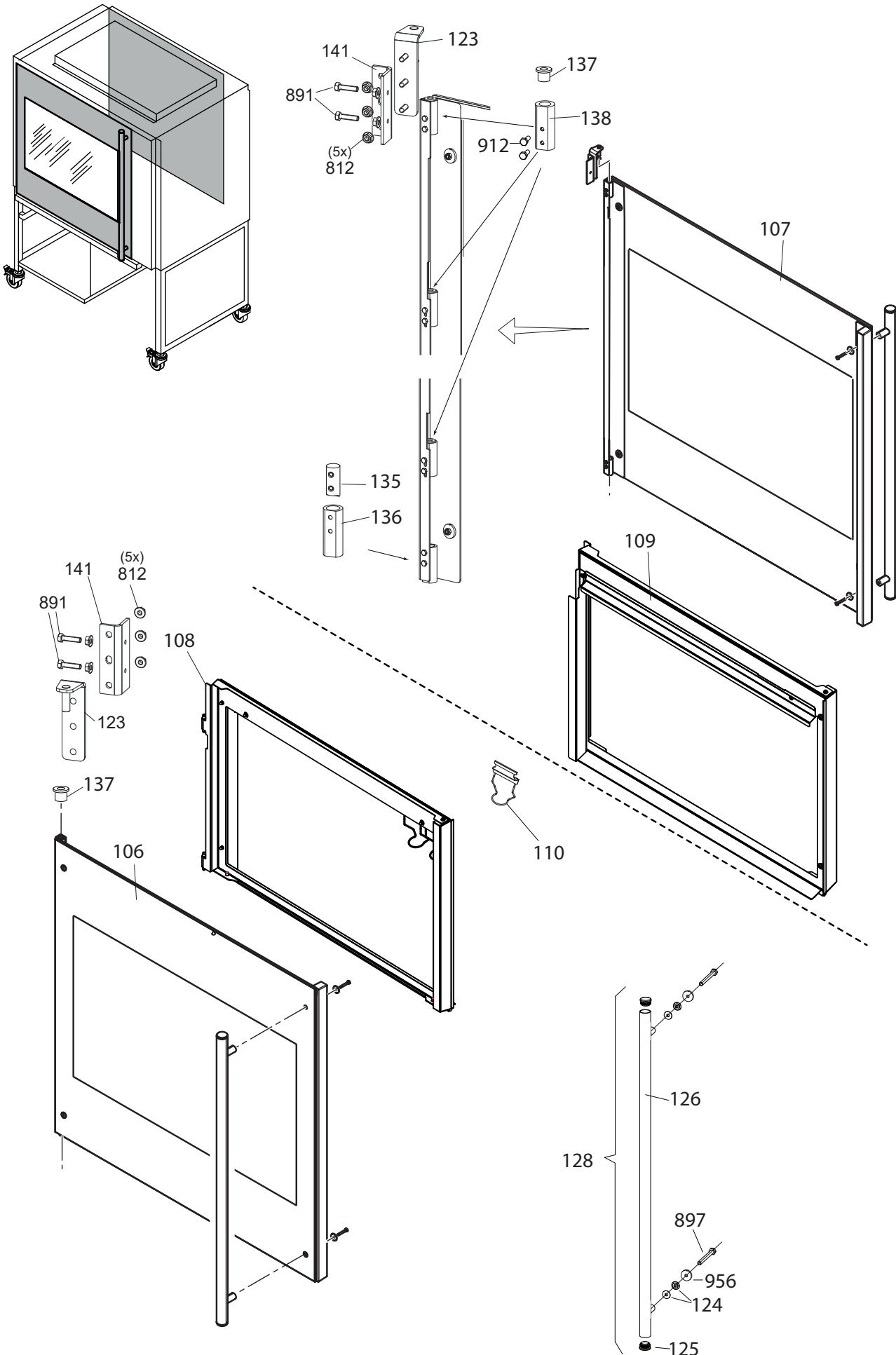
LDR-8 S AC, CONTROL PANELS



LDR-8 S AC, PARTSLIST CONTROL PANELS

| Pos | Part nr. | Description | Qty | Priority | Comment |
|------|----------|--|-----|----------|---------|
| 1 | 9292280s | CPU + LCD board s-control | 1 | 1 | |
| 2 | 9292282s | CPU + LCD board s-control (without WIFI) | 1 | 1 | |
| 7 | 9310161 | USB socket, ass. | 1 | | |
| 53 | 9311046s | Speaker | 1 | 1 | |
| 54 | 9311047 | Cable, speaker s-control | 1 | | |
| 80 | 9291002 | Pedestal button | 2 | 2 | |
| 81 | 9310181 | Switch block | 2 | 2 | |
| 97 | 9318530s | Operator panel, ass.LDR8s AC Right-contr | | | |
| 97* | 9340150s | Operator panel, ass.LDR8s AC inclusive CPU + LCD boards | | | |
| 98 | 9318522s | Panel, customer side L+R, ass. LDR8s AC | | | |
| 99 | 9318528s | Panel, customer side L+R, ass. LDR8s AC, for rotor button | | | |
| 100 | 9348531s | Operator panel, ass.LDR8+8s AC | | | |
| 100* | 9340275s | Operator panel, ass.LDR8+8s AC inclusive CPU + LCD boards | | | |
| 101 | 9318526s | Panel, customer side L+R, ass. LDR8+8s AC, incl. rotor buttons | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

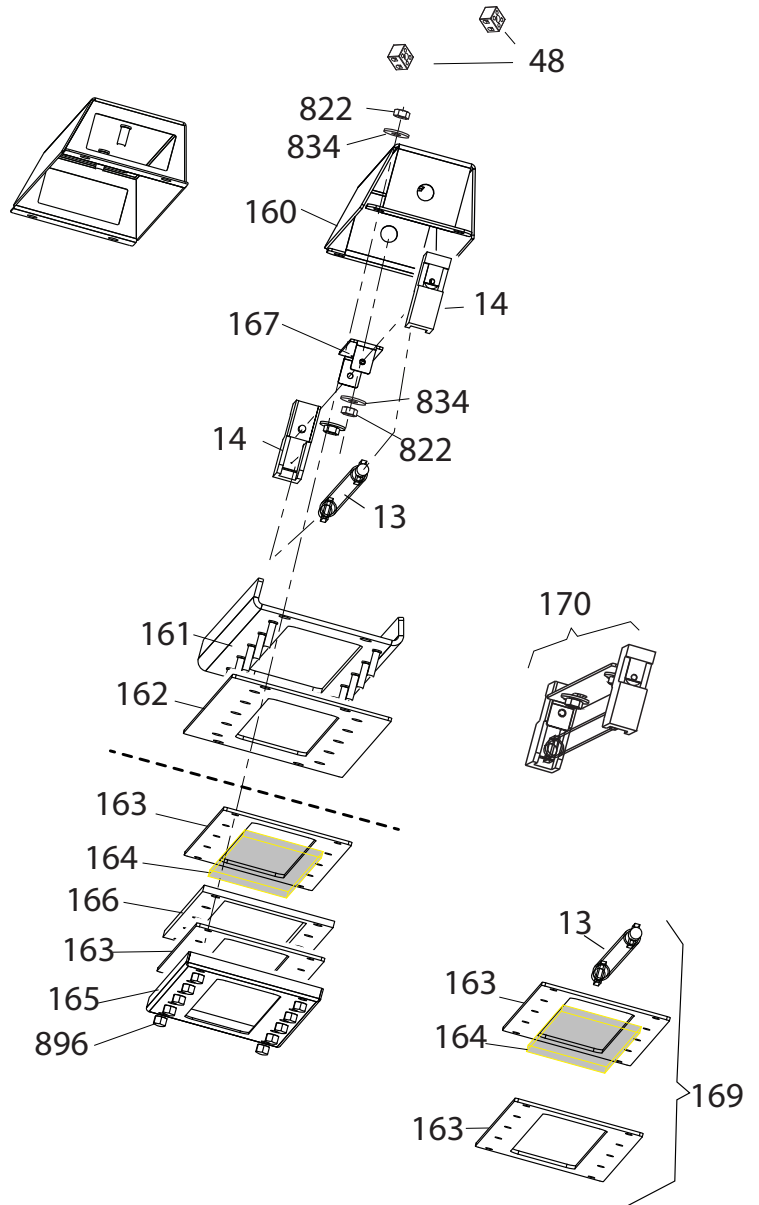
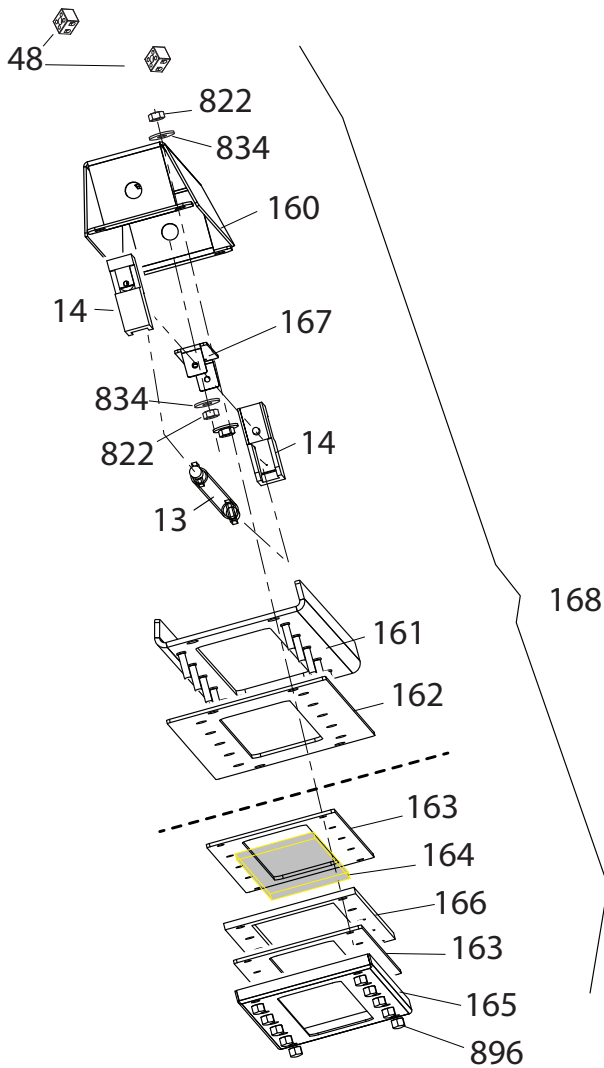
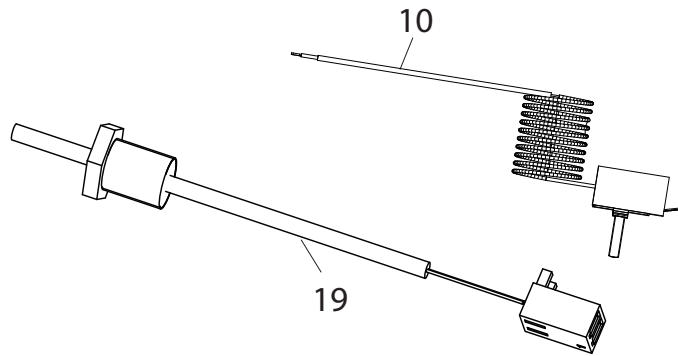
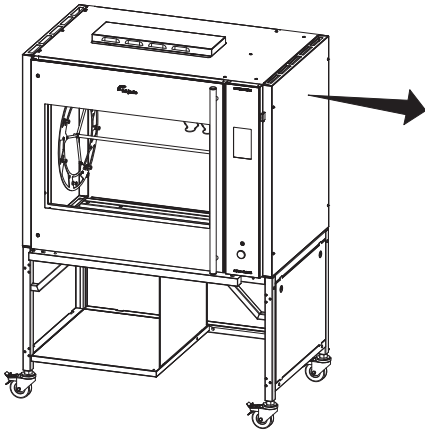
LDR-8 S AC, DOORS



LDR-8 S AC, DOORS

| Pos | Part number | Description | Qty | Priority | Comment |
|-----|-------------|-----------------------------------|-----|----------|---------|
| 106 | 9348510s | Outer door Left turning LDR8s AC | 1 | 2 | |
| 107 | 9348512s | Outer door Right turning LDR8s AC | 1 | 2 | |
| 108 | 9348513s | Inner door Left turning LDR8s AC | 1 | 2 | |
| 109 | 9348511s | Inner door Right turning LDR8s AC | 1 | 2 | |
| 110 | 9312163 | Soap cartridge holder | | 2 | |
| 123 | 9340405 | hinge, top | 2 | | |
| 124 | 3702342 | Collar bush 10x5x3,5 | 16 | | |
| 125 | 2103209 | Plug Ø 30mm | 4 | | |
| 126 | 9293008 | Door handle | 2 | | |
| 128 | 9298101s | Doorhandle set TDR7/8 | | | |
| 135 | 9312014 | Positioning pin, door hinge | 2 | | |
| 136 | 9312112 | Bearing bush, lower hinge | 2 | | |
| 137 | 9172054 | Collar bearing, bronze | 3 | | |
| 138 | 9312111 | Bearing block, upper hinge | 2 | | |
| 141 | 9344023 | Bracket door adjustment | 2 | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

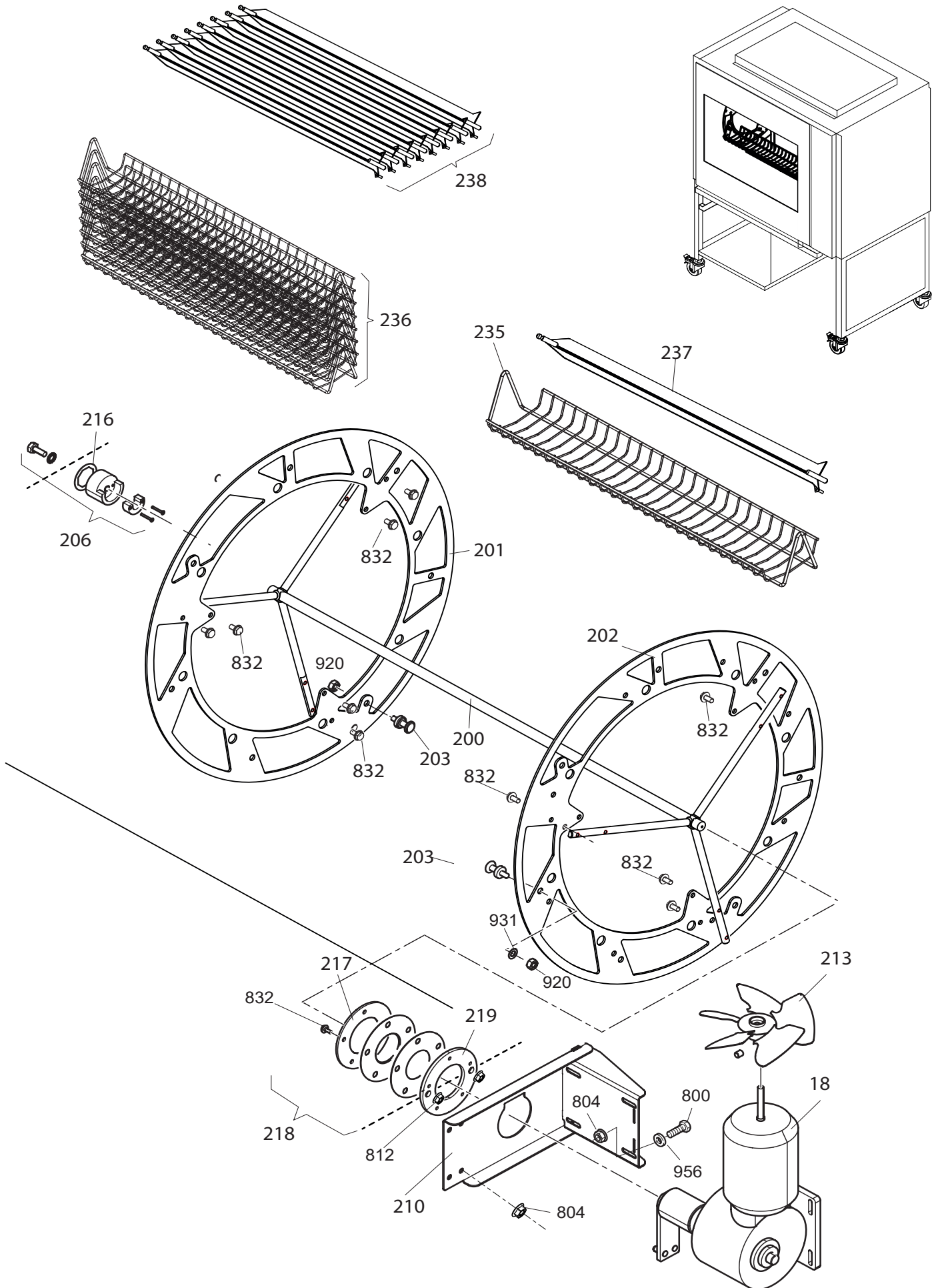
LDR-8 S AC, LIGHTING AND SENSORS



LDR-8 S AC, LIGHTING AND SENSORS

| Pos | Part nr. | Description | Qty | Priority | Comment |
|-----|----------|----------------------------------|-----|----------|---------|
| 10 | 9040970 | Thermostat 50-320°C 122-608°F | 1 | 2 | |
| 13 | 9351020s | Lamp 160W | 2 | 1 | |
| 14 | 9311015 | Lamp holder R7s ceramic | 4 | 2 | |
| 19 | 9122158s | Temperature sensor PT 1000 | 1 | 1 | |
| 48 | 9171110 | Connector, 2 pole ceramic | 4 | 2 | |
| | | | | | |
| 160 | 9344052 | Cover, lamp | 2 | | |
| 161 | 9314114 | Mounting bracket, lamp fixture. | 2 | | |
| 162 | 9312054 | Seal, top | 2 | 2 | |
| 163 | 9312055 | Seal light (for lamp 500W) | 2 | 1 | |
| 164 | 9312020 | Glass, oven illumination | 2 | 1 | |
| 165 | 9314330 | Cover profile, oven illumination | 2 | | |
| 166 | 9314331 | Spacer plate | 2 | | |
| 167 | 9344051 | Bracket, lamp holder. | 2 | | |
| 168 | 9310071s | Service kit, 1 lamp fixtures | | | |
| 169 | | Lamp replacement kit | | 1 | |
| 170 | | Lamp holder kit | | | |
| 172 | 9110072 | Clamp | 2 | | |
| 173 | 9294069s | Bracket, sensors | 1 | | |
| 174 | 9313022 | Silicon hose Ø12xØ3, L=43 | 1 | 1 | |
| 175 | 9313023 | Silicon hose Ø10xØ4, L=43 | 1 | 1 | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

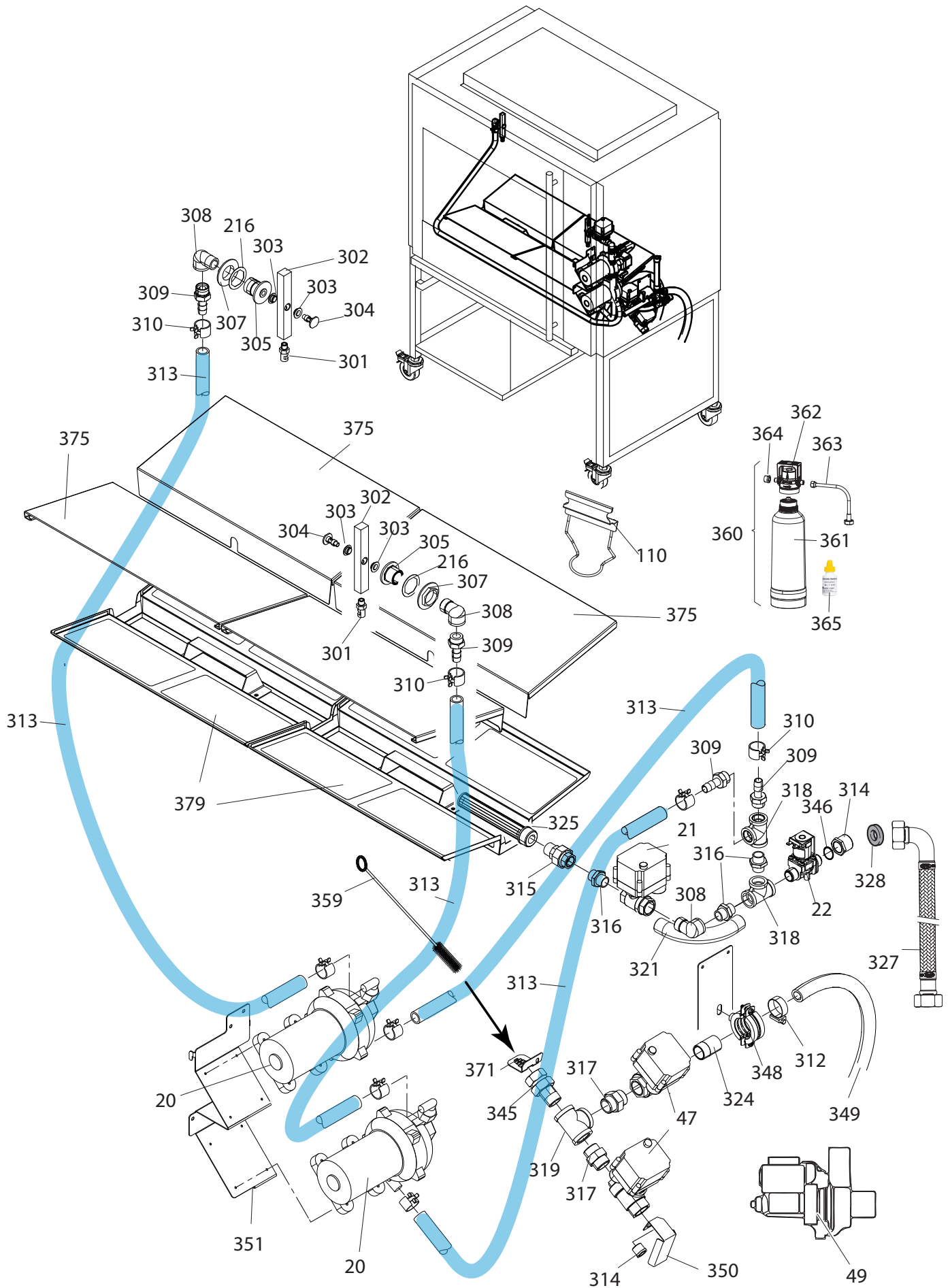
LDR-8 S AC, ROTOR



LDR-8 S AC, PARTSLIST ROTOR

| Pos | Part nr. | Description | Qty | Priority | Comment |
|-----|----------|-------------------------------------|-----|----------|---------|
| 11 | 3701228 | Capacitor 2,5µF | 1 | 2 | |
| 18 | 9340105s | Gearmotor, complete with drive head | 1 | 1 | |
| | | | | | |
| 200 | 9340416s | Rotor shaft | 1 | | |
| 201 | 9344160 | Rotor disk, bearing side | 1 | | |
| 202 | 9344161 | Rotor disk, drive side | 2 | | |
| 203 | 9302027 | Support pin, meat baskets | 16 | | |
| 206 | 9310180s | Bearing ass., rotor TDR7/8ac | 1 | 2 | |
| 210 | 9290444 | Suspension plate, rotor motor | 1 | | |
| 213 | 9172078 | fan blade 150mm | 1 | | |
| 216 | 9312019 | Seal | 3 | 2 | |
| 217 | 9314126 | Pressure ring, 5 holes | 1 | | |
| 218 | 9312002s | Shaft seal, 5 holes | 1 | | |
| 219 | 9314125 | Reinforcement ring, 5 holes | 1 | | |
| 235 | 9342007 | Meat basket | | | |
| 236 | 9340201 | Meat basket, set of 7 | | | |
| 237 | 9342011 | V-spit | | | |
| 238 | 9340200 | V-spit, set of 8 | | | |
| | | | | | |
| | | | | | |
| | | | | | |

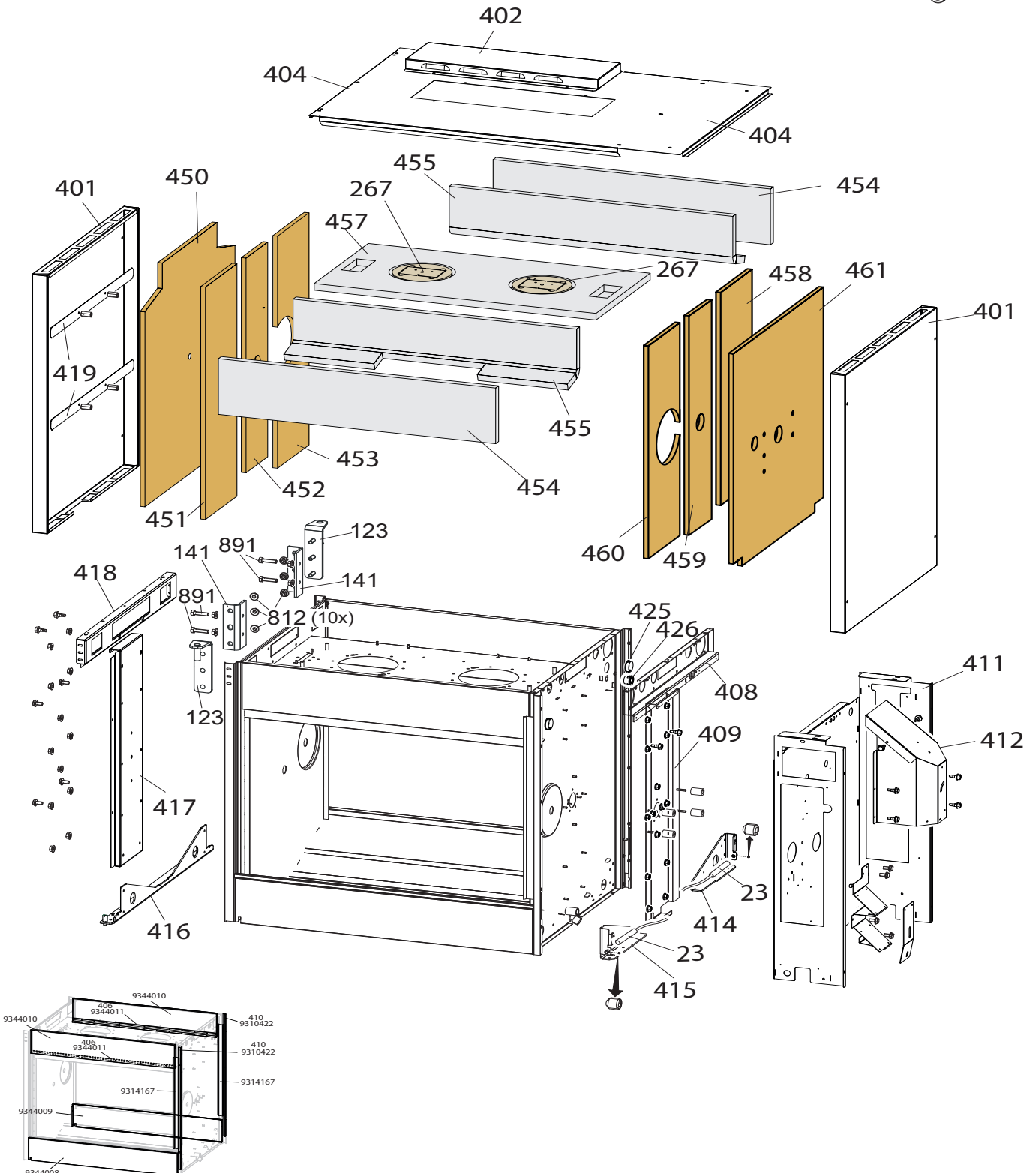
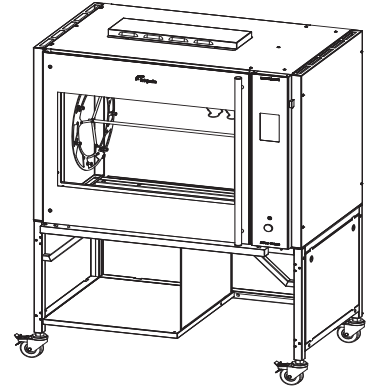
LDR-8 S AC, CLEANING SYSTEM



LDR-8 S AC, PARTSLIST CLEANING SYSTEM

| Pos | Part nr. | Description | Qty | Pri- ority |
|-----|----------|---|--------|---------------|
| 20 | 9311006s | Auto Clean Pump | 2 | 1 |
| 21 | 9311008s | Motor valve -2/2 1/2" | 1 | 1 |
| 22 | 9311007s | Solenoid valve E 2/2 - 1/2" (reduced 9 ltr/min) | 1 | 1 |
| 47 | 9311013s | Motor valve -2/2 3/4" | 2 | 1 |
| 49 | 9312083s | Drain pump | 1 | 1 |
| 50 | 9312085 | Solenoid double valve 1/2" (reduced 9 ltr/min) | 1 | 1 |
| 216 | 9312019 | Seal | 3 | 2 |
| 301 | 9301007 | Nozzle, spoon shape | 2 | |
| 302 | 9312117 | Spray arm TDR5ac and 7/8ac | 2 | |
| 303 | 9311014 | Collar bearing, Ø12xØ10 | 4 | 1 |
| 304 | 9312012 | Shaft , spray arm | 2 | 2 |
| 305 | 9312011 | Adapter, spray arm | 2 | |
| 307 | 9311021 | Nut, 3/4" | 2 | |
| 308 | 3721050 | Elbow threaded 1/2" (F-M) BSP | 4 | |
| 309 | 9311011 | Hose Pillar 1/2" (M) SS | 4 | |
| 310 | 9311038 | Hose clamp,23 mm | 8 | |
| 312 | 6000032 | Hose clamp, 26-38 mm | 2 | |
| 313 | 9301108 | Hose 13x23 | 3 m | |
| 314 | 9311028 | Reducing bushing 3/4"x1/2", SS | 1 | |
| 315 | 9311009 | Union conicle 1/2" (M-F) SS | 3 | |
| 316 | 3721047 | Hexagon nipple threaded 1/2" (M-M) BSP | 7 | |
| 317 | 3721029 | Hexagon nipple threaded 3/4" (M-M) BSP | 2 | |
| 318 | 3721046 | Tee threaded 1/2" (F-F-F) BSP | 3 | |
| 319 | 9301028 | Tee threaded 3/4" (F-F-F) BSP | 1 | |
| 321 | 9311010 | Bend 90° threaded 1/2" (M-M) SS | 1 | |
| 324 | 9301006 | Welding nipple, 3/4" | 1 | |
| 325 | 9310401s | Suction filter | 1 | 2 |
| 327 | 9191203 | Water supply hose | 1 | |
| 328 | 9191227 | Gasket Ø24xØ16x2 | 1 | 1 |
| 345 | 9301027 | Union conicle 3/4" (M-F) SS | 1 | |
| 346 | 9311033 | O-ring | 1 | |
| 348 | 2650217 | Clamp, suspension, 32-38 | 1 | |
| 349 | 9301059 | Hose, ø25xØ33 | 1,5mtr | |
| 350 | 9314070 | Splash guard | 1 | |
| 351 | 9314117 | Suspension, pumps | 1 | |
| 359 | 9191136 | Pipe brush | 1 | |
| 360 | 9308010 | Water filtration system | | |
| 361 | 9301073 | Replacement filter cartridge | | |
| 362 | 9301070 | Filter head | | |
| 363 | 9301071 | Hose 3/8"x 3/4" x 1,5 Mtr | | |
| 364 | 9301061 | Reducing ring 3/4" x 3/8" | | |
| 365 | 9301074 | Carbonate hardness test kit | | |
| 375 | 9344054 | Grease cover LDR8ac | 4 | |
| 379 | 9340134 | Filter screen LDR8ac | 2 | |
| | | | | |

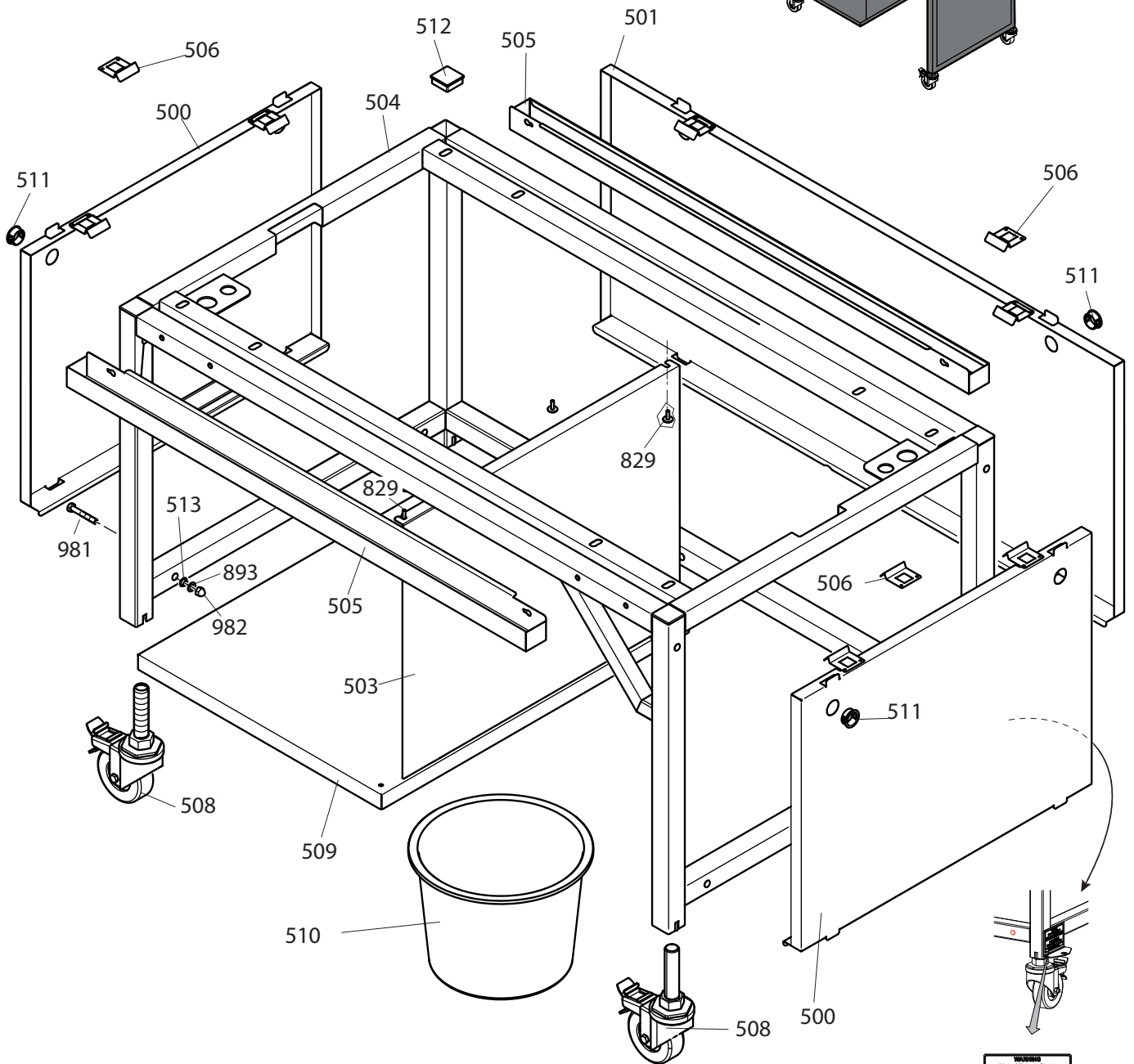
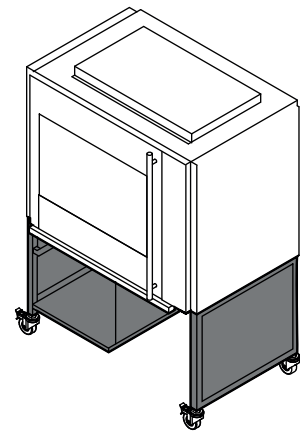
LDR-8 S AC, SHEET METAL



LDR-8 S AC, PARTSLIST SHEET METAL

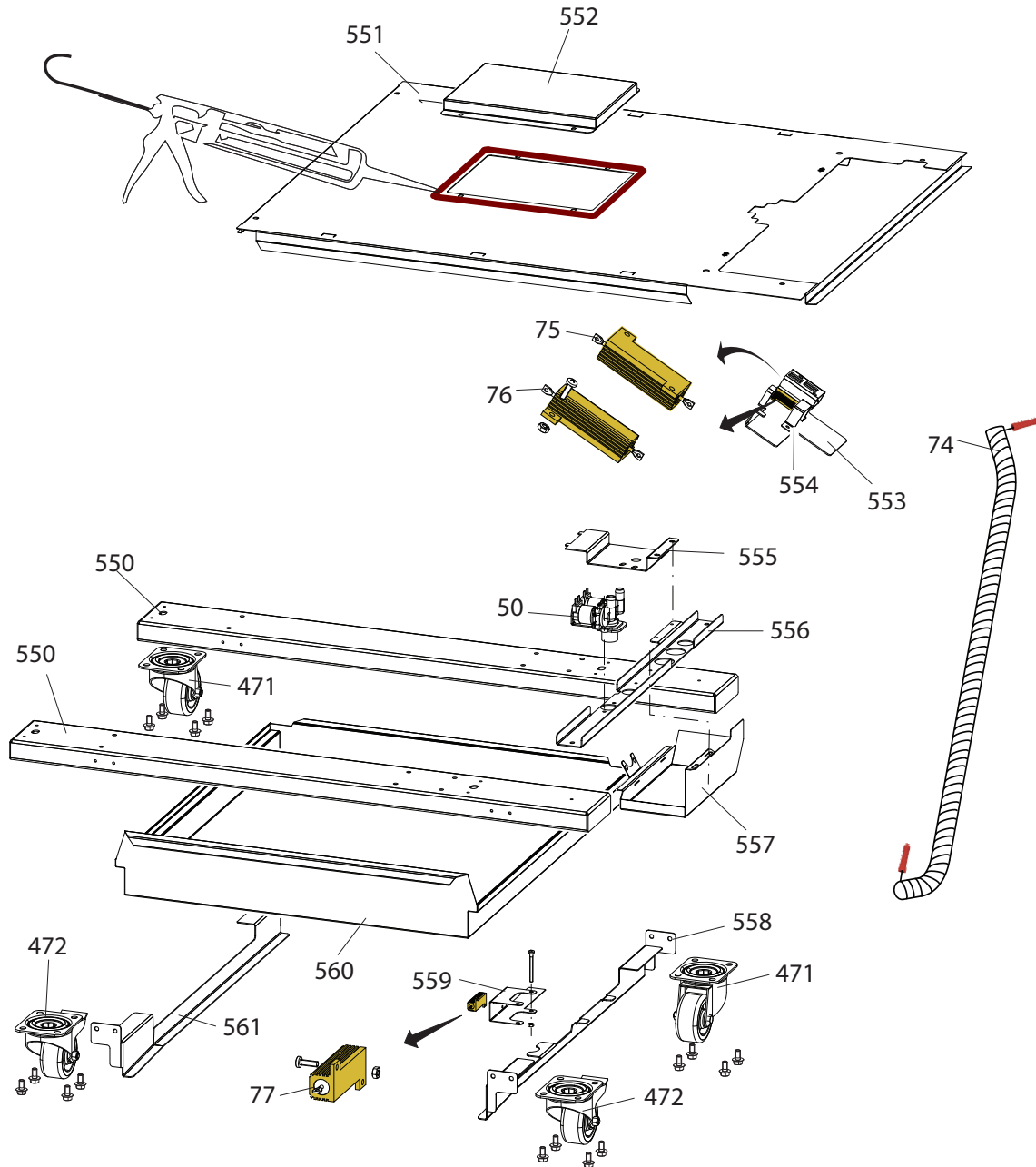
| Pos | Part nr. | Description | Qty | Priority | Comment |
|-----|----------|--------------------------------|-----|----------|---------|
| 23 | 3500020 | Reed switch | 2 | 2 | |
| 401 | 9344090 | Side panel L/R | 2 | | |
| 402 | 9344182 | Cover, fan | 1 | | |
| 404 | 9344181 | Top panel | 1 | | |
| 408 | 9314482 | Reinforcement R top | 1 | | |
| 409 | 9314484 | Reinforcement R | 1 | | |
| 410 | 9314166 | Magnet profile | 2 | | |
| 411 | 9344180 | Machine room | 1 | | |
| 412 | 9314486 | Air guide rotor motor | 1 | | |
| 414 | 9310442 | Support casco, rear | 1 | | |
| 415 | 9310441 | Support casco, front | 1 | | |
| 416 | 9340408 | Suspension, doors | 1 | | |
| 417 | 9344015 | Reinforcement L | 1 | | |
| 418 | 9344175 | Reinforcement L top | 1 | | |
| 419 | 9314188 | Strip, insulation | 2 | | |
| 425 | 9171015 | Grommet Ø 33 mm | 2 | | |
| 426 | 9082211 | Grommet Ø 11 mm | 1 | | |
| 450 | 9313003 | Insulation L | 1 | | |
| 451 | 9313007 | Insulation L front | 1 | | |
| 452 | 9313005 | Insulation L middle | 1 | | |
| 453 | 9313008 | Insulation L rear | 1 | | |
| 454 | 9343010 | Insulation top front/rear | 2 | | |
| 455 | 9343013 | Insulation top middle vertical | 2 | | |
| 457 | 9343011 | Insulation top middle | 2 | | |
| 458 | 9343043 | Insulation R rear | 1 | | |
| 459 | 9343042 | Insulation R middle | 1 | | |
| 460 | 9343041 | Insulation R front | 1 | | |
| 461 | 9343040 | Insulation R | 1 | | |
| | | | | | |

LDR-8 S AC, UNDERFRAME

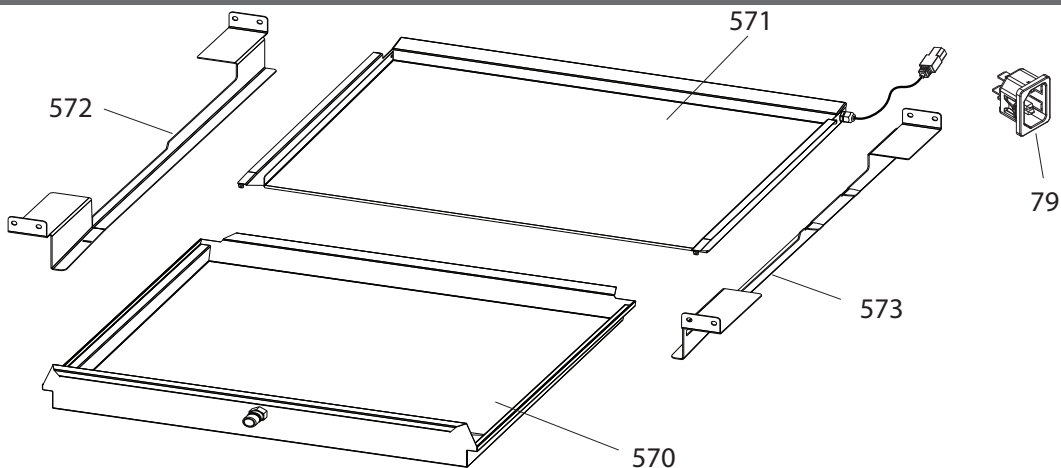


WARNING
Risk of Electric Shock
Always use the correct safety procedures.
ATTENTION
Risque de choc électrique
Toujours utiliser les procédures de sécurité appropriées.

LDR-8+8 S AC, (EXTRA)PARTS



LDR-8+8 S AC, HEATED GREASE TRAY PARTS



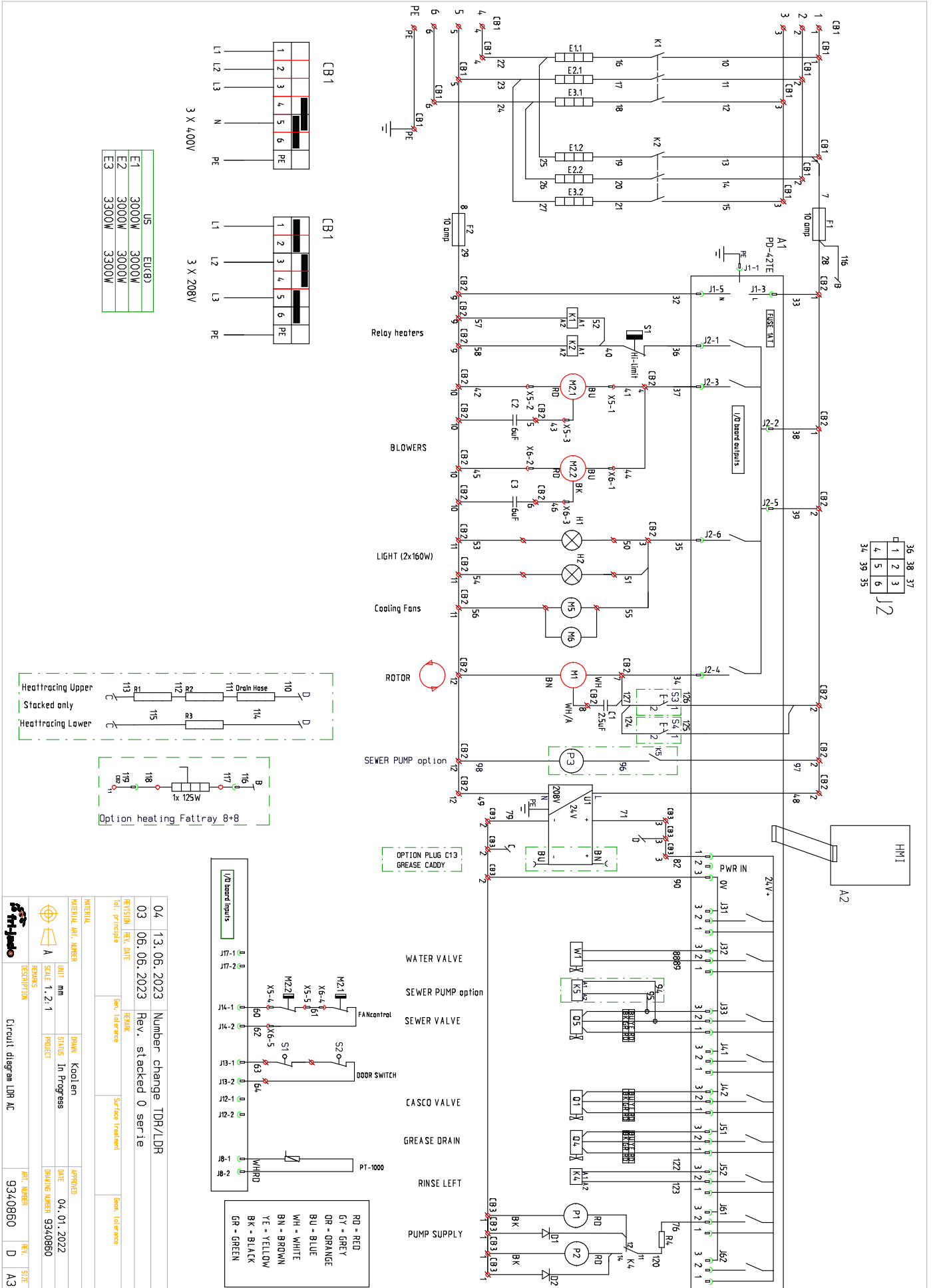
FASTENERS

| Pos | Part nr | Description | Pos | Part nr | Description |
|-----|---------|--|-----|---------|---|
| 800 | 4280107 | Bolt M6x20 ZP | 862 | 9191041 | Circlips, E type for 6mm shaft |
| 801 | 4289559 | Lockwasher M6, serrated ZP | 863 | 4287540 | Screw M4x10, BNP |
| 802 | 4288321 | Screw M5x16, SS socket button head. | 864 | 4285319 | Screw 4,8x13, ZP Self drilling and tapping. |
| 804 | 4285092 | Nut M6, black serrated | 866 | 4287620 | Screw 4,2x12, NP self tapping |
| 805 | 4288232 | Screw M5x12, SS cross recess, wide button head | 868 | 4285078 | Nut 1/4" bsw ZP |
| 806 | 4286713 | Bolt M6x16, ZP threadforming | 871 | 9191049 | Set screw M5x5, black |
| 810 | 4288325 | Screw M5x12, SS socket, wide button head | 872 | 4285010 | Nut M3, ZP with lockwasher |
| 812 | 9087570 | Nut M5, black serrated | 873 | 3701248 | Spacer 7mm, Ø3,2x6 NP |
| 814 | 4289787 | Bolt M6x30 ZP | 874 | 0149296 | Spacer 10mm, Ø4,2x8 Nylon |
| 817 | 4287549 | Washer M8, ZP | 875 | 9057347 | Spacer 10mm, Ø5,2x10 Nylon |
| 819 | 0196673 | Bolt M8x25, ZP | 876 | 0141165 | Screw M5x25, SS Cross recess pan head |
| 820 | 0141149 | Screw M5x16, SS Cross recess pan head | 877 | 4285135 | Bolt M5x10, ZP thread forming |
| 822 | 0142315 | Nut M5, SS hexagonal | 878 | 0137344 | Screw M5x30, SS Cross recess pan head |
| 824 | 9191050 | Bolt, SS M5x18 | 879 | 4287610 | Screw, ZP selftapping 3,5x13 |
| 825 | 0142103 | Washer M5, SS | 880 | 9008178 | Bolt M5x8, SS |
| 826 | 4280218 | Screw M5x45, SS Cross recess pan head | 881 | 0141246 | Bolt M6x12, SS |
| 827 | 4280208 | Screw M4x8, SS Cross recess pan head | 882 | 0141117 | Screw M4x45, SS Cross recess pan head |
| 828 | 4280215 | Screw M5x8, SS Cross recess pan head | 883 | 0142365 | Locknut M6, ZP |
| 829 | 4280558 | Screw M5x16, SS Slotted wide head | 885 | 4288324 | Screw M4x8, SS Cross recess pan head |
| 830 | 9192065 | Capnut M4, ZP | 888 | 6962153 | Washer M6, ZP ø6xØ25 |
| 831 | 0142129 | Washer M4, SS | 889 | 6802013 | Rivet nut, M5, ZP |
| 832 | 4288231 | Bolt M5x10, SS serrated | 890 | 9172053 | Nut M5, for sheet metal |
| 833 | 0142307 | Nut M4, SS | 891 | 4288058 | Bolt M5x20, ZP |
| 834 | 4311110 | Washer M5, SS ø5xØ15 | 892 | 0141521 | Nut M6, SS |
| 835 | 0142111 | Washer M6, SS | 893 | 0146987 | Washer M8, SS |
| 836 | 4285035 | Nut M6, Brass | 894 | 0211520 | Bolt M5x12, SS |
| 837 | 0195910 | Capnut M6, BNP | 895 | 0144359 | Locknut M5, SS |
| 838 | 4285076 | Bolt M8x16, SS | 896 | 4285408 | Capnut M5, BNP |
| 841 | 0147017 | Screw M2,5x16, SS Slotted pan head | 897 | 4288320 | Screw M5x50, SS hexagonal |
| 842 | 0142293 | Nut M2,5, SS hexagonal | 898 | 9073987 | Washer M8, SS ø8xØ25 |
| 843 | 9191130 | starlock washer, 3mm black | 900 | 9008869 | Bolt M8x50, ZP |
| 845 | 0141081 | Screw pan head, Philips M5x35, A2 | 902 | 4288319 | Screw 6x20, ZP CR threadforming |
| 846 | 4288323 | Screw M5x20 mushroom head, with flange, 10 pcs | 903 | 4289402 | Lockwasher M8, ZP |
| 847 | 9070688 | Bolt M8x12, SS | 904 | 3701280 | Lockwasher, starlock for 10mm shaft |
| 848 | 9008518 | Lockwasher, M8 SS serrated | 905 | 0141393 | Screw M4x10, SS countersunk |
| 849 | 0142292 | Nut M3 | 906 | 0141084 | Screw M4x10, SS Cross recess pan head |
| 853 | 0141050 | Screw M3x10, SS Cross recess pan head | 907 | 4288327 | Screw M5x25, SS Socket pan head |
| 854 | 0141076 | Screw M3x20, SS Cross recess pan head | 908 | 9006930 | Lockwasher M4, countersunk SS serrated |
| 855 | 0141078 | Screw M3x30, SS Cross recess pan head | 909 | 0141092 | Screw M4x12, SS Cross recess pan head |
| 856 | 0141035 | Screw M3x5, SS Cross recess pan head | 910 | 4287520 | Washer M4, Brass |
| 858 | 0141075 | Screw M3x16, SS Cross recess pan head | 911 | 4285020 | Nut M4, Brass |
| 859 | 4312810 | Socket set screw M3x6, SS | 912 | 4280128 | Bolt M4x12, SS |
| 861 | 4285151 | starlock washer, 6mm | 914 | 0144347 | Locknut M4, ZP |
| | | | 915 | 8047381 | Washer M6, SS ø6xØ25 |
| | | | 920 | 0141547 | Nut M8, SS |

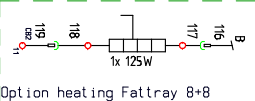
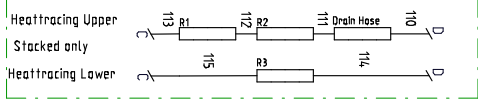
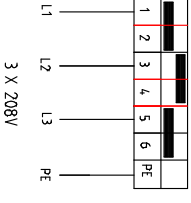
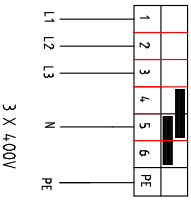
| Pos | Part nr | Description |
|-----|---------|---|
| 922 | 2800066 | Connection nut M8x24, ZP |
| 923 | 4285051 | Connection nut M10x30, ZP |
| 925 | 0195596 | Bolt M8x10, ZP Socket head |
| 926 | 9070793 | Connection nut M6x18, ZP |
| 929 | 0197378 | Washer M12, Zp |
| 930 | 9008056 | Nut M12, ZP |
| 931 | 0142056 | Lockwasher M8, SS |
| 933 | 9077004 | Socket set screw M4x6, SS |
| 934 | 9301049 | Circlips external ø25 |
| 935 | 4287557 | Washer M10 |
| 936 | 9073149 | Wingnut M6, SS |
| 937 | 2800082 | Wingnut M6, Brass Nickle plated |
| 939 | 4312027 | Connection nut M5x15, ZP |
| 940 | 4280540 | Screw M5x6, SS countersunk |
| 941 | 4311215 | Screw , socket head M6 x 30 |
| 942 | 0141123 | Screw pan head, Philips M5x10, SS |
| 943 | 0149299 | Spacer, Ø8xø4,2, H15, black |
| 944 | 0139142 | Screw hexagon head M6x40, SS |
| 945 | 4285410 | Capnut M12 SS low profile |
| 946 | 4286728 | Set screw M8x40, socket |
| 947 | 4280239 | Screw M12x20, hexagon ZP |
| 948 | 0197380 | Washer M12, SS |
| 949 | 0142975 | Screw socket head cap M6x20, A2 |
| 950 | 4285120 | Screw M4x20, thread rolling |
| 951 | 8071043 | Nut M4, serrated ZP |
| 952 | 6962187 | Washer M8x1,5 ø8xØ30 ZP |
| 953 | 0197807 | Screw M4x30, slotted ZP |
| 954 | 4285084 | Screw 4,8x19, ZP Self drilling and tapping. |
| 955 | 9008217 | Blind rivet 4x8,6 |
| 956 | 9174680 | Washer ø5,2xØ20x2mm |
| 957 | 4285047 | nut M8 hexagon, thin DIN 439B |
| 958 | 0195783 | Screw M10x30 sock button head |
| 959 | 9191108 | Wing screw M6x10 SS |
| 960 | 0141204 | Screw M4x16, Pan head SS |
| 961 | 0149210 | Screw M5x6, Pan head |
| 962 | 0141539 | Screw M5x10, SS countersunk |
| 963 | 4288233 | Screw M8x16, ZP serrated |
| 965 | 4288330 | Screw M8x12, SS button head, wide flange |
| 966 | 4285414 | Capnut, M4 ss |
| 967 | 0149298 | Spacer 10mm, Ø3,4x6 Nylon |
| 968 | 0149299 | Spacer 15mm, Ø4,2x8 Nylon |
| 969 | 0251473 | Washer M4, ZP ø4xØ16 |
| 970 | 9087575 | Nut M5 hexagon, tensilock A4 |
| 971 | 4280555 | Screw M6x16, Brass nickel plated |

| Pos | Part nr | Description |
|-----|---------|--|
| 972 | 6390168 | Rivet nut, M6 ss |
| 973 | 9261029 | Wing screw M5x10 SS |
| 974 | 0141131 | M5x12 kruiskop |
| 975 | 9008543 | Nut M12, SS |
| 976 | 4280110 | Bolt M6x20, SS hexagon head |
| 977 | 4286723 | Hex. screw M8x20 flange thread forming |
| 978 | 0211521 | Screw M5x16, SS hex. Head |
| 979 | 4285041 | Lock nut M5, SS |
| 980 | 4280181 | Screw M8x60, hexagon |
| 981 | 4280187 | Screw M8x55, hexagon, ss |
| 982 | 4285045 | Capnut, M8 ss |
| 983 | 0141199 | Screw M4x6, Pan head SS |
| 990 | 4312353 | Blind rivet large head 4x8,0mm - Elec. Galv. Steel |
| 991 | 4286058 | Blind rivet 4,0x8,0 - range 2,5 to 4,5mm - A2 |
| | | |
| | | |
| | | |

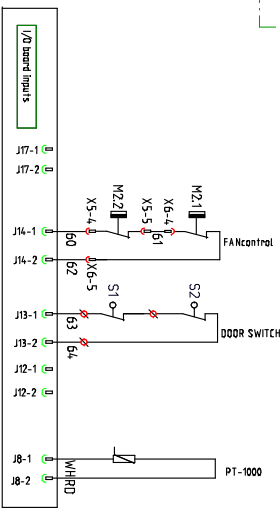
CIRCUIT DIAGRAM LDRAC



| | |
|----------|-------|
| US | EUR |
| E1 3000W | 3000W |
| E2 3000W | 3000W |
| E3 3000W | 3000W |



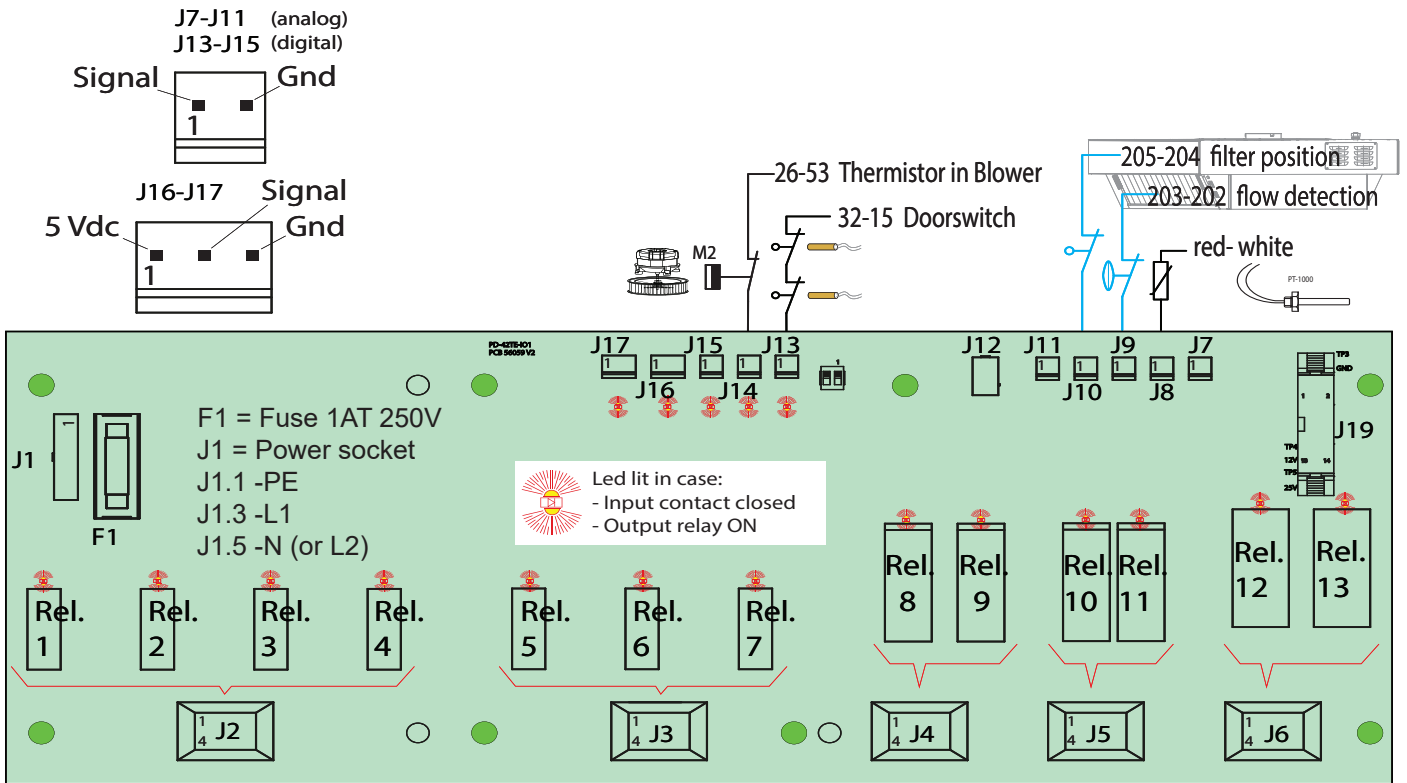
OPTION PLUG C13 GREASE CADDY



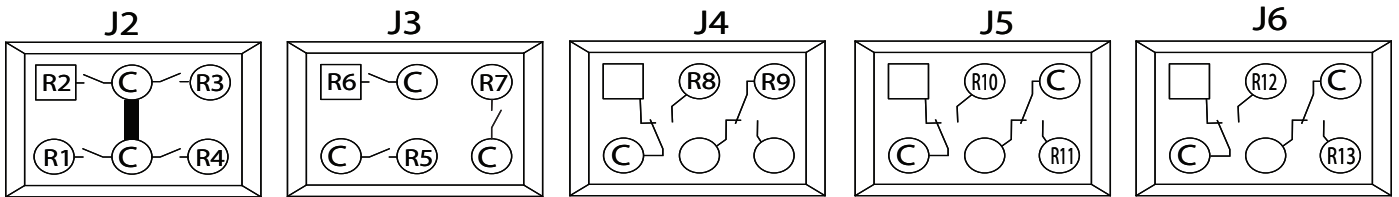
| |
|-------------|
| RD - RED |
| GY - GREY |
| OR - ORANGE |
| BU - BLUE |
| WH - WHITE |
| BN - BROWN |
| YE - YELLOW |
| BK - BLACK |
| GR - GREEN |

| | | |
|-------------------------------------|------------|-----------------------|
| 04 | 13.06.2023 | Number change TDR/LDR |
| 03 | 06.06.2023 | Rev. stacked 0 serie |
| REVISION / REV. DATE | | Rev. stacked 0 serie |
| MATERIAL | | See tolerance |
| UNIT | | See tolerance |
| SCALE | | Surface treatment |
| PROJECT | | See tolerance |
| DATE | | 04.01.2022 |
| DRAWING NUMBER | | 9340860 |
| ART. NUMBER | | 9340860 |
| REV. / SITE | | D / A3 |
| DESCRIPTION: Circuit diagram LDR AC | | |

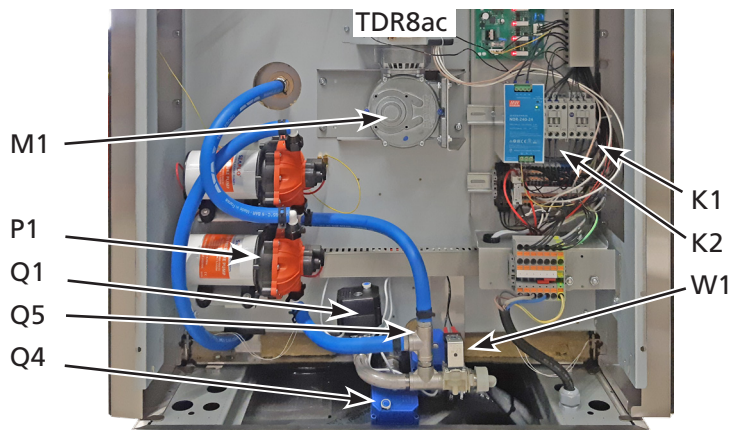
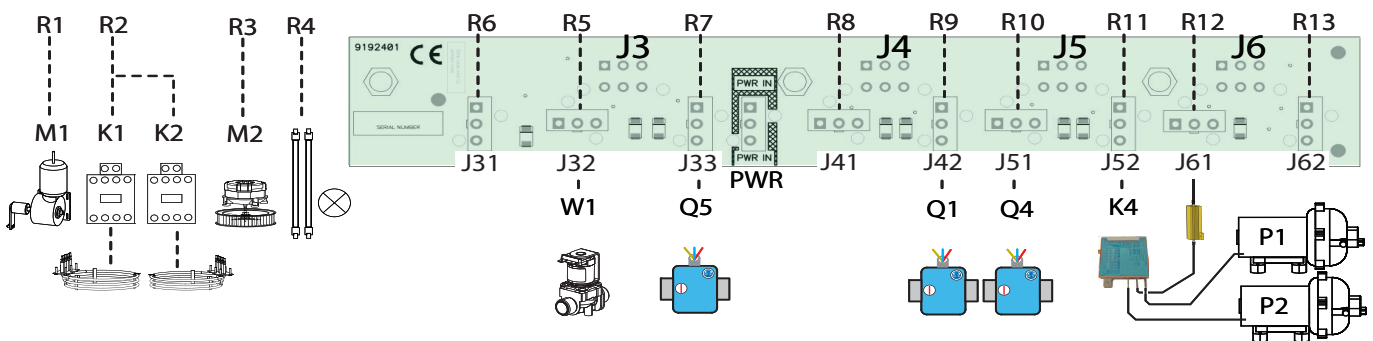
OVERVIEW OF I/O BOARD WITH INTERFACE BOARD (DOUBLE PUMP)



Lay-out of Output connectors



Interconnections on interface board (Jx to Jxx sockets)



For technical support call: +1 877 374 5236



Fri-Jado Inc. • 1401 Davey Road • Suite 100 • Woodridge IL 60517 • USA • fax +1 630 689 1424
• us.info@frijado.com • www.frijado.com • USA • toll free 877-FRI-JADO