Commercial Kitchen Equipment Parts

NESPRESSO PROFESSIONAL GEMINI CS224

Service Manual

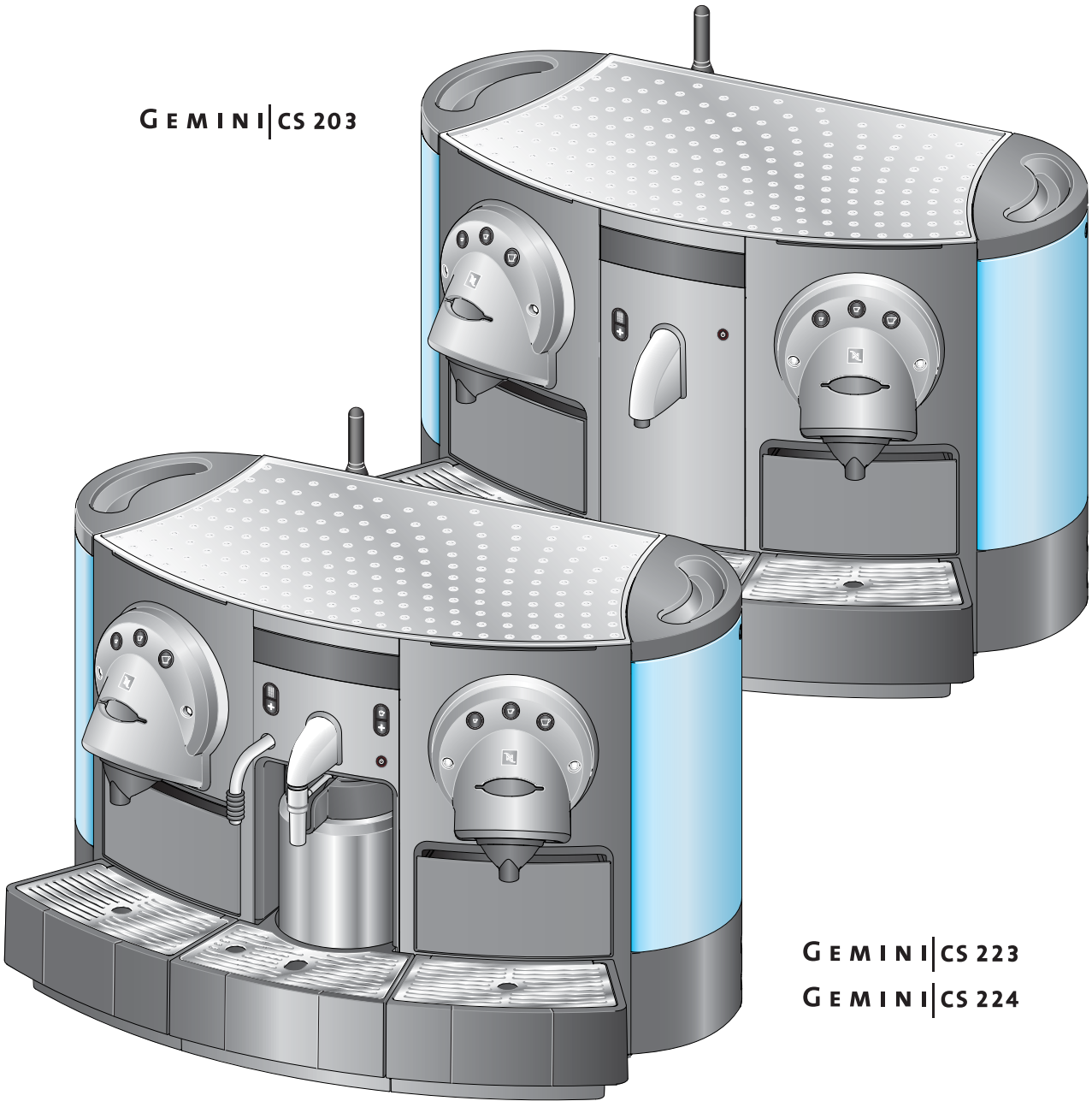
Provided by PartHubz

parthubz.com

833-700-8006 | support@parthubz.com

SERVICE MANUAL
COFFEE MACHINE

Gemini CS203	**EF 733**
Gemini CS203	**EF 903**
Gemini CS223	**EF 734**
Gemini CS223	**EF 904**
Gemini CS224 (US, CA)	**EF 727**



Version 1.0 en

CONTENTS

1 Preface 6

2 Content Updates 6

3 General Safety Notes 7

4 Main Components 8

4.1 Overview - Gemini coffee machine range 8
4.2 Overview - front side of Gemini CS203 9
4.3 Overview - front side of Gemini CS223/224 10
4.4 Overview - removable parts 11
4.4.1 Optional parts 11
4.5 Overview - rear side 12
4.6 Overview - operating elements and display 13
4.7 Interior view 14
4.8 Type plate 16
4.9 Fluid system 17
4.10 Fluid system of Gemini CS203 17
4.10.1 Fluid system of Gemini CS223/224 18
4.11 Technical data 19

5 Installation 21

5.1 Direct water connection (DWC) 21
5.1.1 Safety instructions and references to standards 21

6 Operation 26

6.1 General information 26
6.1.1 Preset filling amounts 26
6.1.2 Multiple procurements 26
6.2 Coffee machine displays 27
6.2.1 Button colours 27
6.2.2 Display messages 27

7 Programming 29

7.1 Programming the cup volume by push-button 29
7.2 Super user menu 29
7.2.1 Access to super user menu 30
7.2.2 Navigation in super user menu 30
7.2.3 Super user menu selection 32
7.2.4 Super user menu points 33
7.3 Power user menu 39
7.3.1 Access to power user menu 39
7.3.2 Power user menu selection 40
7.3.3 Power user menu points 40
7.4 Parameter table 43

8 Maintenance 47
8.1 Neslink 47
8.2 Clean milk outlet 47
8.3 Daily maintenance and cleaning 47
8.4 Change water filters (optional) 47
8.5 Descaling 48
8.6 Extraction unit maintenance 48
8.6.1 Security check 48
8.6.2 Lubrication of extraction unit 49
8.6.3 Wearing parts 50
8.6.4 Maintenance schedule 50

9 Troubleshooting 51
9.1 Check list 51
9.2 Error messages 52
9.2.1 Capsule not ejected 52
9.2.2 Call Nespresso Club - Machine blocked 53
9.3 Drip tray display messages 53
9.4 Coffee capsule falls through 54
9.5 Only hot water during coffee preparation 54
9.6 No or too less steam for milk preparation 55
9.7 Noisy extraction unit 55
9.8 Direct water connection problems 55

10 Repairs 57
10.1 Safety instructions 57
10.1.1 Security check 57
10.2 General 58
10.2.1 Repair and mounting tips 58
10.2.2 Tools and accessories 59
10.2.3 Overview of plug-in modules 60
10.3 General disassembly 61
10.3.1 Opening the casing 61
10.4 Coffee pump / flow meter module 69
10.4.1 Removing coffee pump / flow meter module 69
10.4.2 Replacing coffee pump 70
10.4.3 Replacing thermostat of coffee pump 71
10.4.4 Replacing flow meter 72
10.4.5 Replacing left / right contact bank 73
10.5 Extraction unit 74
10.5.1 Replacing worn parts 74
10.5.2 Replacing extraction unit 76
10.5.3 Replacing motor and spindle of extraction unit 77
10.5.4 Replacing safety lid with micro switch 78
10.6 Hot water / steam module (CS223/224 only) 80
10.6.1 Removing display 80
10.6.2 Removing hot water / steam module 81
10.6.3 Replacing steam thermoblock of hot water / steam module 82
10.6.4 Replacing pump of hot water / steam module 83

10.6.5 Replacing cappuccino keyboard of hot water / steam module 84
10.6.6 Replacing cappuccino power PCB of hot water / steam module 85
10.6.7 Replacing solenoid valves of hot water / steam module 86
10.6.8 Replacing steam outlet of hot water / steam module 87
10.6.9 Replacing micro switch for milk container detection 88
10.6.10 Replacing micro switch for middle drip tray detection 89
10.7 Hot water module (CS203 only) 90
10.7.1 Removing display 90
10.7.2 Removing hot water module 91
10.7.3 Replacing hot water keyboard 92
10.7.4 Replacing hot water outlet 93
10.7.5 Replacing middle contact bank 94
10.8 Basic coffee machine - non-modular parts 95
10.8.1 Replacing coffee thermoblocks 95
10.8.2 Replacing solenoid valves 99
10.8.3 Replacing display, PCBs and transformer 102
10.8.4 Replacing keyboards 107
10.8.5 Replacing detection sensors 109
10.8.6 Replacing micro switches 112
10.8.7 Replacing illumination components 114
10.8.8 Replacing Neslink device 115
10.9 Block diagrams 119
10.9.1 Block diagram of CS203 coffee machine (EF 903 / EF 733) 119
10.9.2 Block diagram of CS223/224 coffee machines (EF 904 / EF 727 / EF 734) 120
10.10 Wiring diagrams 121
10.10.1 Wiring diagrams of CS203 coffee machine (EF 733 / EF 903) 121
10.10.2 Wiring diagrams of CS223 and CS224 coffee machines (EF 727 / EF 733 / EF 904) 123

11 Function tests 126

11.1 Safety instructions 126
11.2 Required equipment 127
11.3 Security check of safety lids 128
11.4 Measure coffee temperature 129
11.5 Measure flow rate of coffee units 131
11.5.1 Preparation 131
11.5.2 Test run 133
11.6 Pressure and leakage checks for coffee units 134
11.6.1 Preparation 134
11.6.2 Test run 134
11.7 Performance checks for cappuccinatore unit (CS223/224 only) 137
11.8 NESLINK test 139
11.9 Protective earth (PE) continuity test 140
11.9.1 What is the protective earth continuity test about? 140
11.9.2 General 140
11.9.3 Test sequence 141
11.9.4 What to do if the protective earth continuity test fails 143
11.10 Protective insulation test 144
11.10.1 What is the protective insulation test about? 144

11.10.2General 144
11.10.3Test sequence 145
11.10.4What to do if the insulation test fails 149

12 Exploded drawings 150

12.1 Exploded drawings of CS203 coffee machine (EF 733) 150
12.2 Exploded drawings of CS203 coffee machine (EF 903) 160
12.3 Exploded drawings of CS223 coffee machine (EF 734) 170
12.4 Exploded drawings of CS223 coffee machine (EF 904) 182
12.5 Exploded drawings of CS224 coffee machine (EF 727) 194

13 Spare Parts 206

13.1 Spare parts list for CS203 (EF 903) 206
13.2 Spare parts list for CS223 (EF 904) 211
13.3 Spare parts list for CS224 (EF 727) 217

14 Notes 223

1 PREFACE

Please keep this manual together with the corresponding service documentation. This way you are assured to have the necessary information.

The purpose of this service manual is to provide the service personnel with all necessary information with regards to correct handling, maintenance and repair of the new Gemini coffee machine range.

This service manual is based on the Gemini CS203 (EF 903) and CS223 (EF 904) coffee machines mainly. Differences compared to the other coffee machine versions are mentioned and illustrated if necessary.

This manual should be used by the technicians as a valuable aid to guarantee the permanent readiness for use of the machines. In order to take full advantage of all the functions, it is absolutely necessary to follow the instructions in this manual.

Only use original spare parts from your official supplier for maintenance and repair work. Spare parts lists and exploded drawings are subject to change. To obtain the last version, please contact your official spare parts supplier.

Access is restricted and can be obtained by asking your *Nespresso* technical contact person.

Visit the *Nespresso* technical website periodically to check for upgrades, technical modifications, counter measures etc. for these coffee machines:

https://business.nespresso.com

2 CONTENT UPDATES

Version 0.1

- Preliminary service manual version for proofreading, in English only.

Version 1.0

- First released service manual version.

---

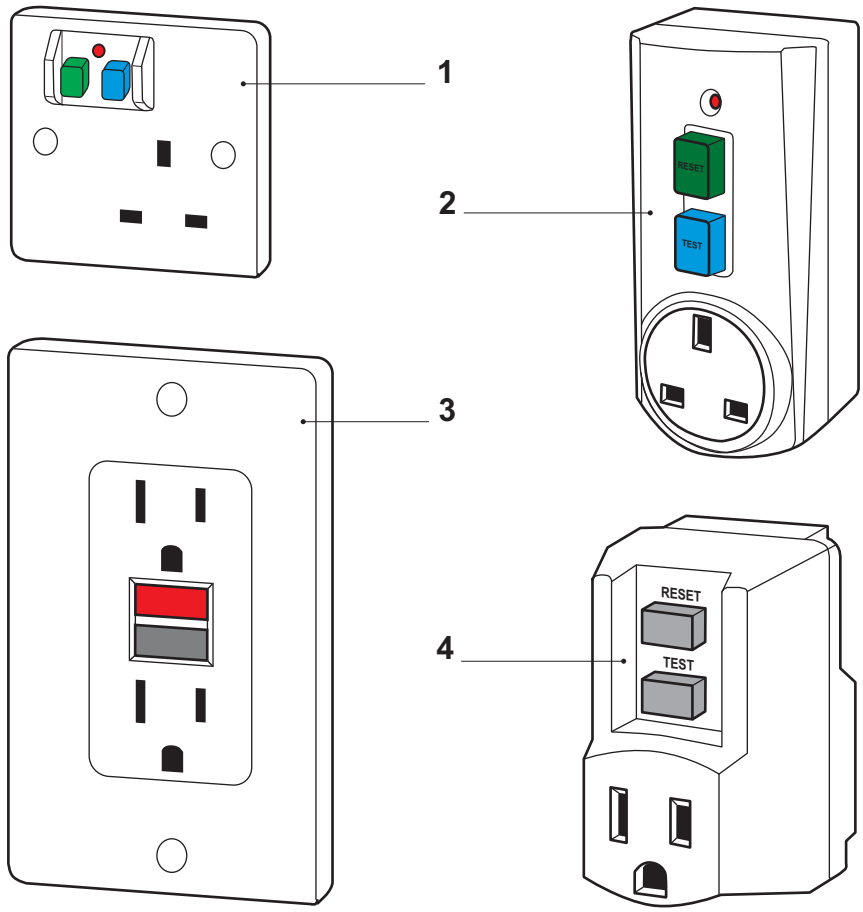
3 GENERAL SAFETY NOTES

Risk of fatal electrical shock and fire!

Mains voltage inside the coffee machine.

- **Unplug appliance before cleaning.**
- **Never clean wet or immerse plug, cord or appliance in any fluid.**
- **Disconnect the mains plug before disassembly - the appliance must be free of voltage.**

As an additional safety measure, the use of a residual current device (RCD), also called a ground fault circuit interrupter (GFCI), in the repair centre is highly recommended.



1) RCD protected socket-outlet
2) Plug-in RCD unit
3) GFCI socket
4) Plug-in GFCI

Danger of burns!

Hot parts and water under pressure inside the coffee machine (particularly in the thermoblocks).

- **Let the coffee machine cool down before cleaning or disassembly.**

This device does not protect against electrical shock due to contact with both circuit conductors.

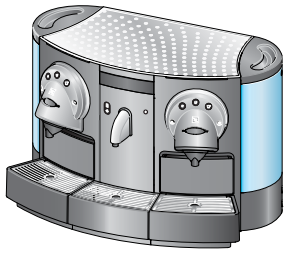
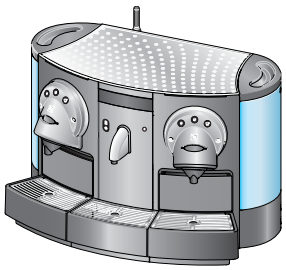
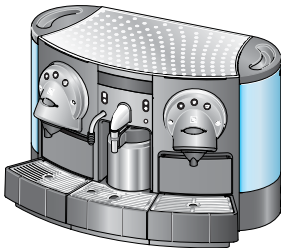
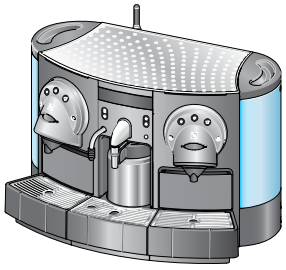
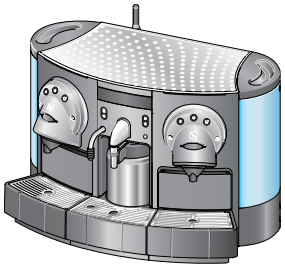
Example illustrations of typical devices.

Use a GFCI with a trip level of 4 - 6 mA (USA) resp. a RCD with a trip level of 15 - 30 mA (Europe). A trip level above 30 mA provides only very limited protection against harm from an electric shock.

4 MAIN COMPONENTS

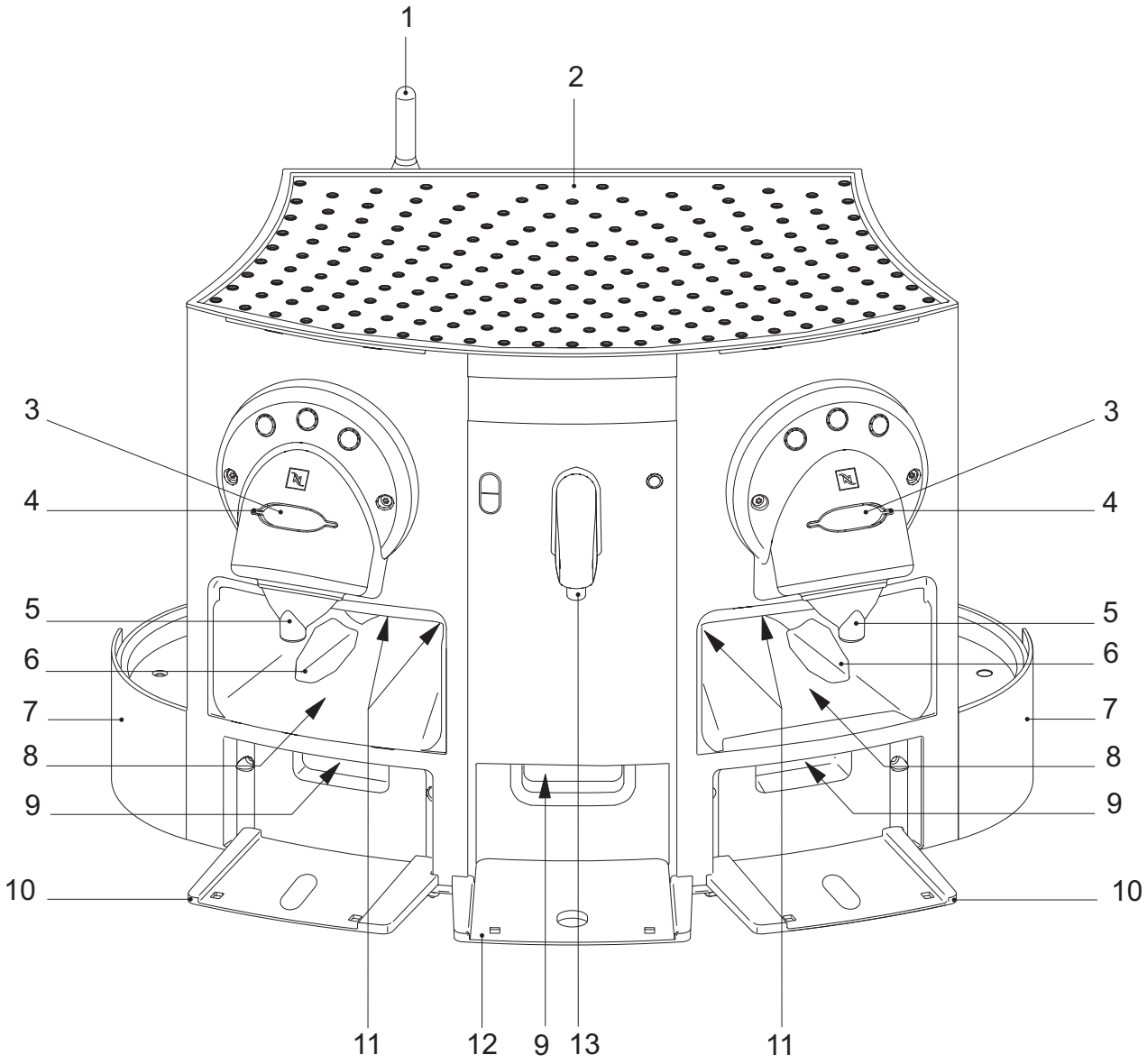
4.1 Overview - Gemini coffee machine range

i Type reference:
CS 2 x y / z z n
x = 0 hot water solution
x = 2 milk solution
y = 3 country version other than US, CA
y = 4 for US and CA
zz = country code
n = 1 no Neslink device
n = - with Neslink device

Machine illustration	Type	EF no.	Neslink	DWC*	Voltage ranges / countries
	CS 203	EF 733	no	yes	220-240 V, 50/60 Hz
	CS 203	EF 903	yes	yes	220-240 V, 50/60 Hz
	CS223	EF 734	no	yes	220-240 V, 50/60 Hz
	CS223	EF 904	yes	yes	220-240 V, 50/60 Hz
	CS224	EF 727	yes	yes	220-240 V, 50/60 Hz, US, CA (NSF)

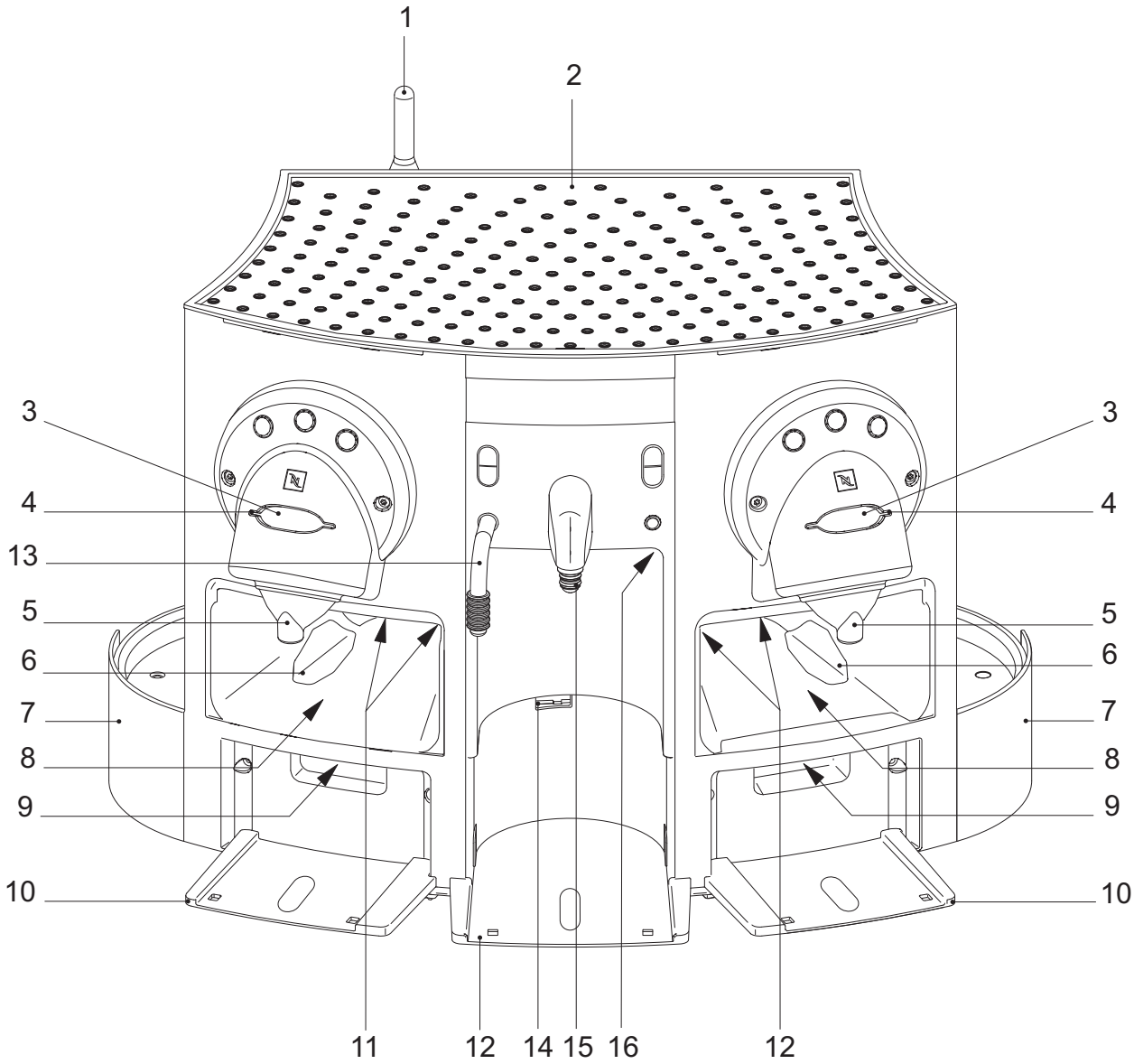
* DWC .....Direct water connection

4.2 Overview - front side of Gemini CS203



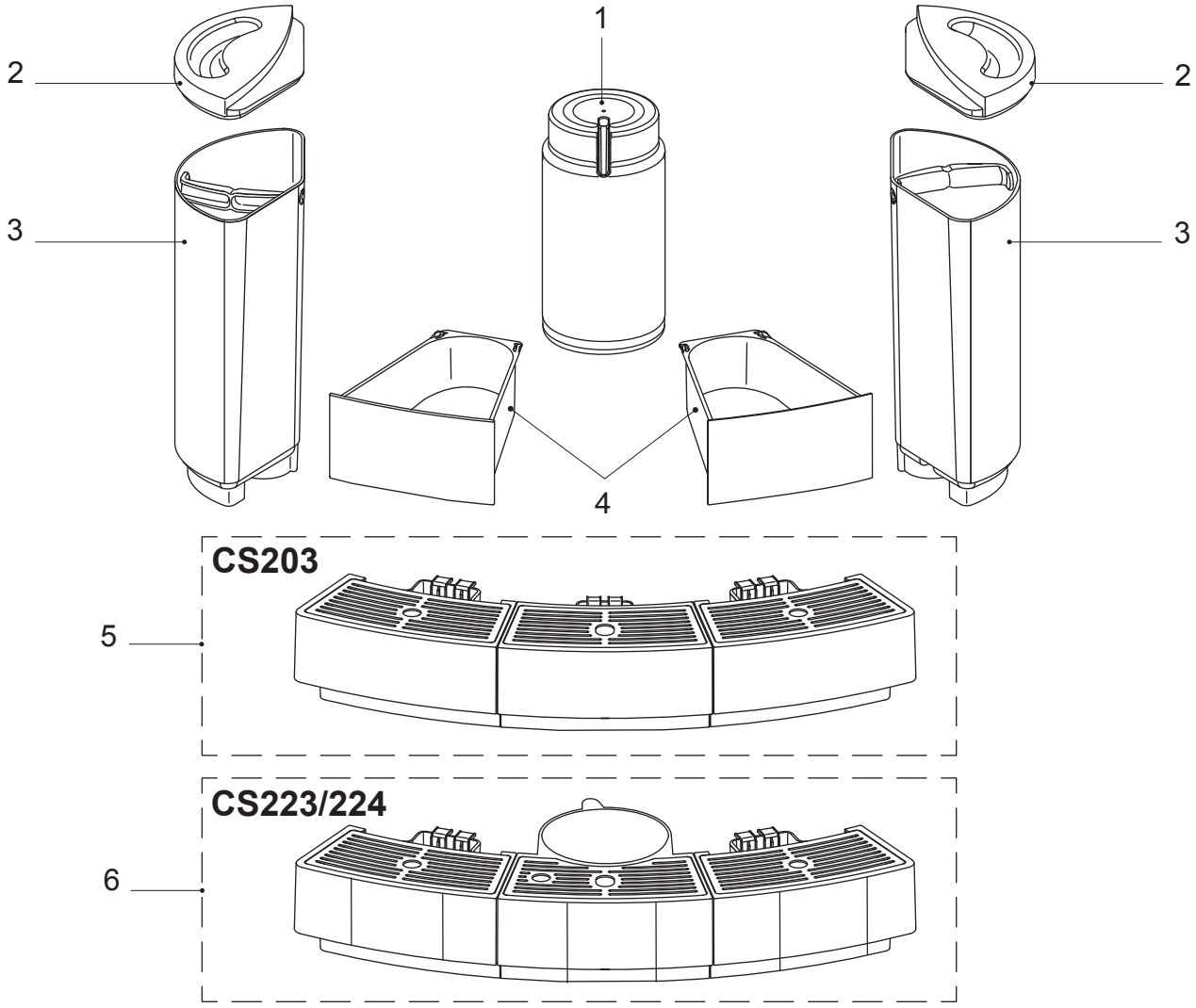
1) RF antenna with cover (CS203 only)
2) Heating plate (active)
3) Safety lid (left, right)
4) Capsule slot (left, right)
5) Coffee outlet (left, right)
6) Cover for capsule ejection hole (left, right)
7) Water tank support (left, right)
8) Opening for capsule container (left, right)
9) Drip tray contacts (left, middle, right)
10) Drip tray support (left, right)
11) Micro switches for capsule container detection (left, right)
12) Support for middle drip tray
13) Hot water outlet

4.3 Overview - front side of Gemini CS223/224



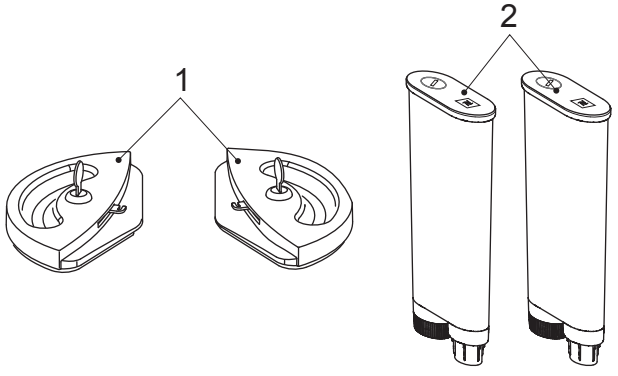
1) RF antenna with cover (CS223/224 only)
2) Heating plate (passive)
3) Safety lid (left, right)
4) Capsule slot (left, right)
5) Coffee outlet (left, right)
6) Cover for capsule ejection hole (left, right)
7) Water tank support (left, right)
8) Opening for capsule container (left, right)
9) Drip tray contacts (left, right)
10) Drip tray support (left, right)
11) Micro switches for capsule container detection (left, right)
12) Support for drip tray with thermos
13) Hot water outlet
14) Micro switch for drip tray detection
15) Steam nozzle
16) Cam switch for milk tank detection

4.4 Overview - removable parts



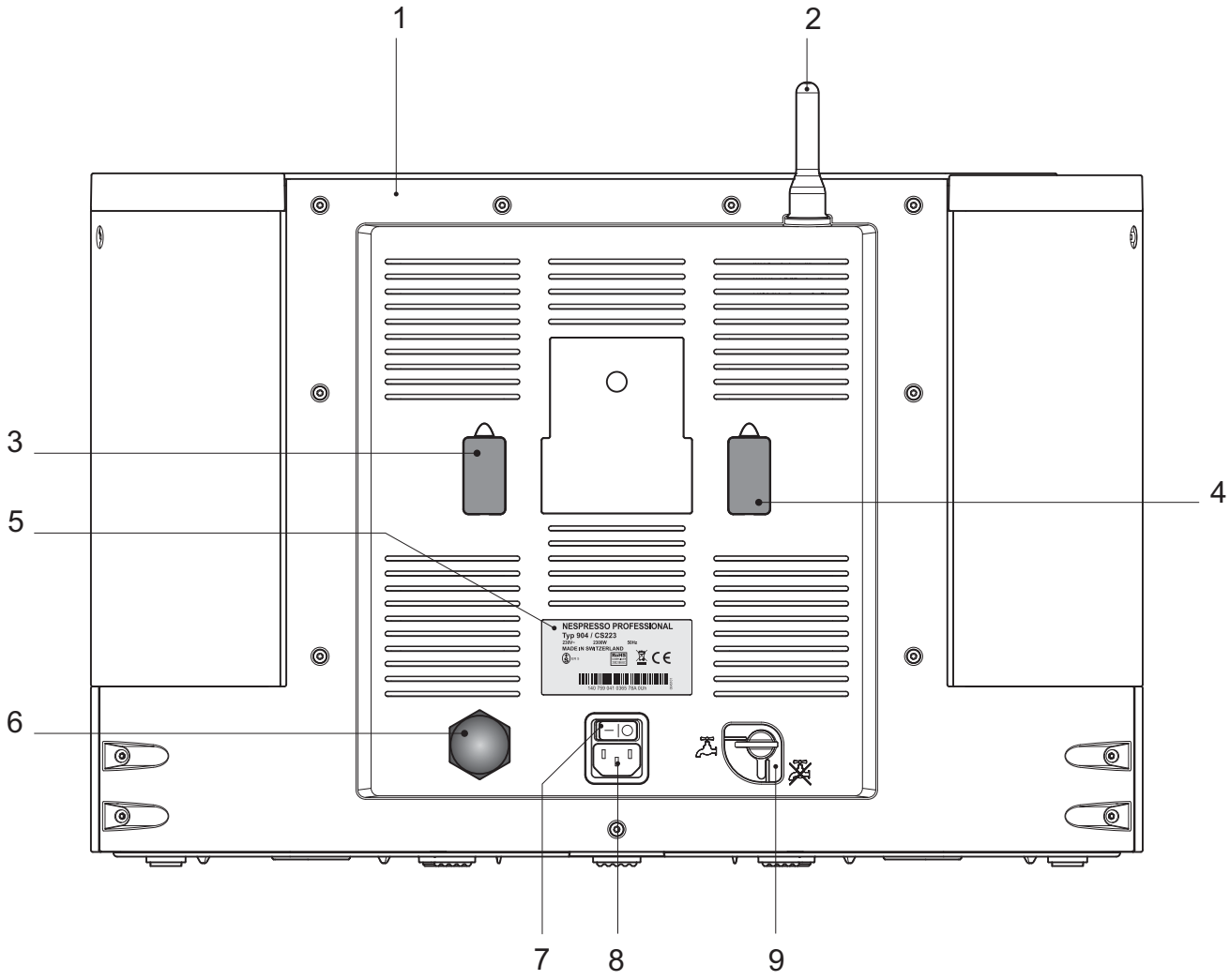
1) Milk container (thermos, 2 pcs.)
2) Water tank cover (left, right)
3) Water tank (left, right) with carrying handle (hinged), magnetic floater level control, water valve (CS224 has different water tanks)
4) Capsule container (left, right)
5) Drip tray / drip grid assembly for CS203
6) Drip tray / drip grid assembly for CS223/224 (with thermos support)

4.4.1 Optional parts



1) Water tank cover with lock (left, right), suitable for direct water connection
2) Water filter (left, right)

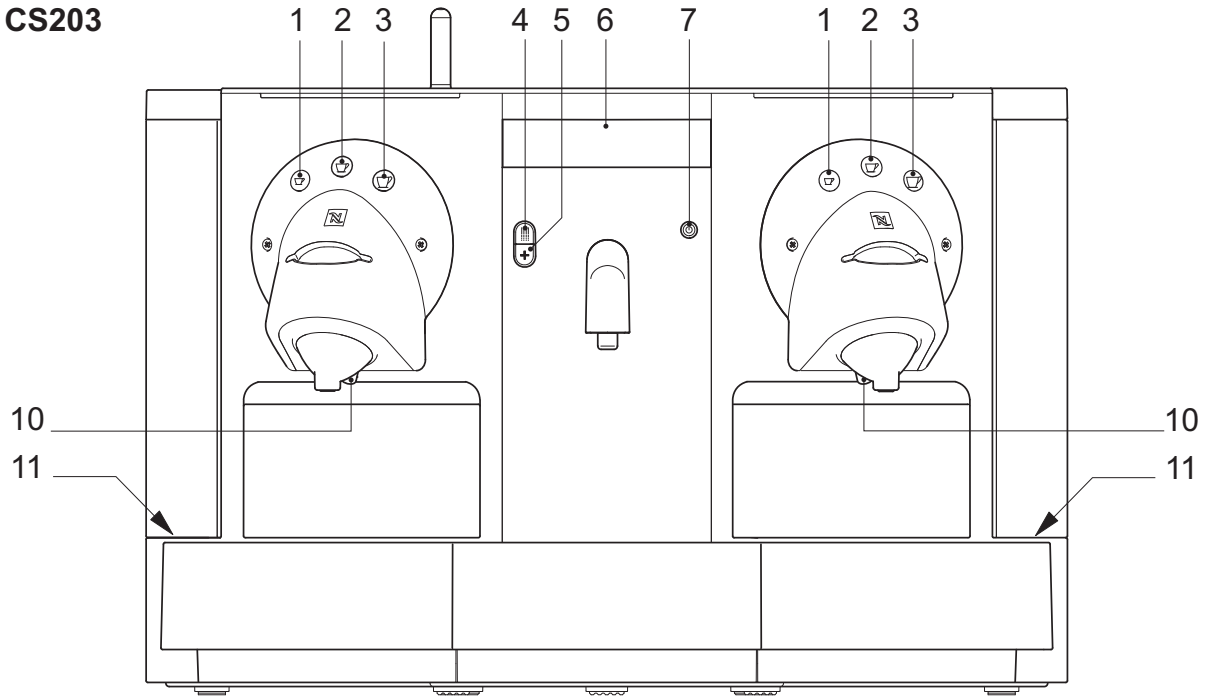
4.5 Overview - rear side



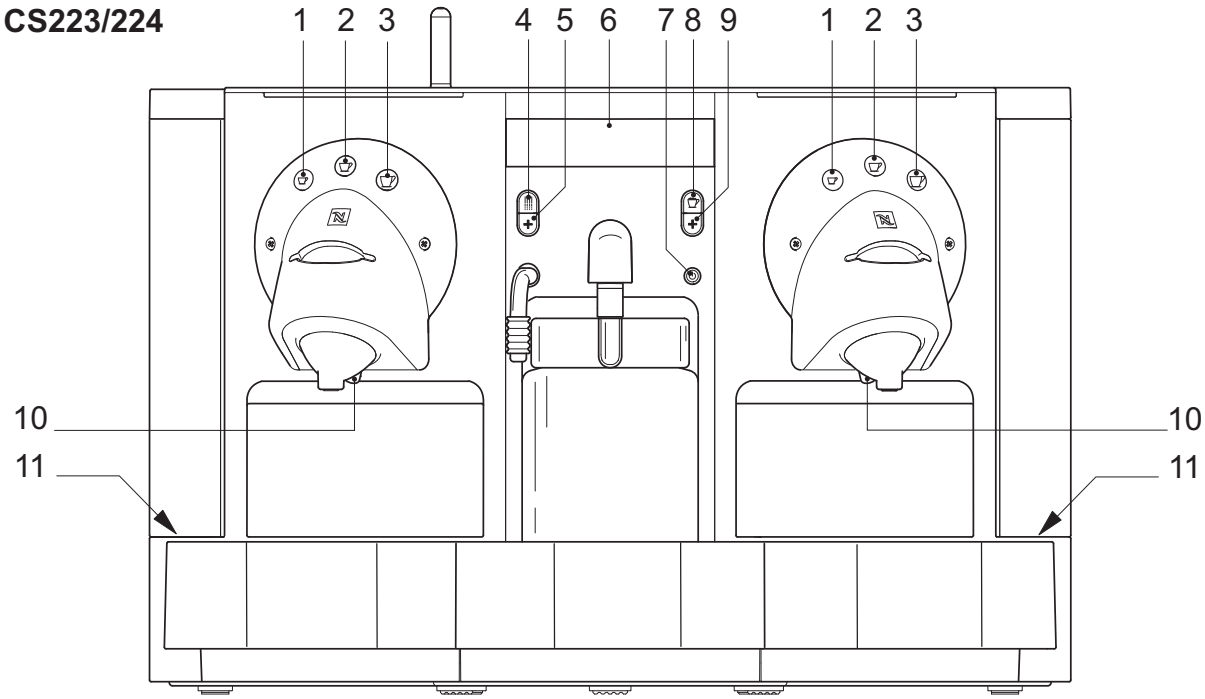
1) Back wall
2) RF antenna with cover (CS203 and CS223/224 only)
3) Tower connector (cover)
4) Service connector (cover)
5) Type plate
6) Direct water connection
7) Mains switch
8) Mains connection
9) Water tank connection valve (direct water ON/OFF)

4.6 Overview - operating elements and display

CS203

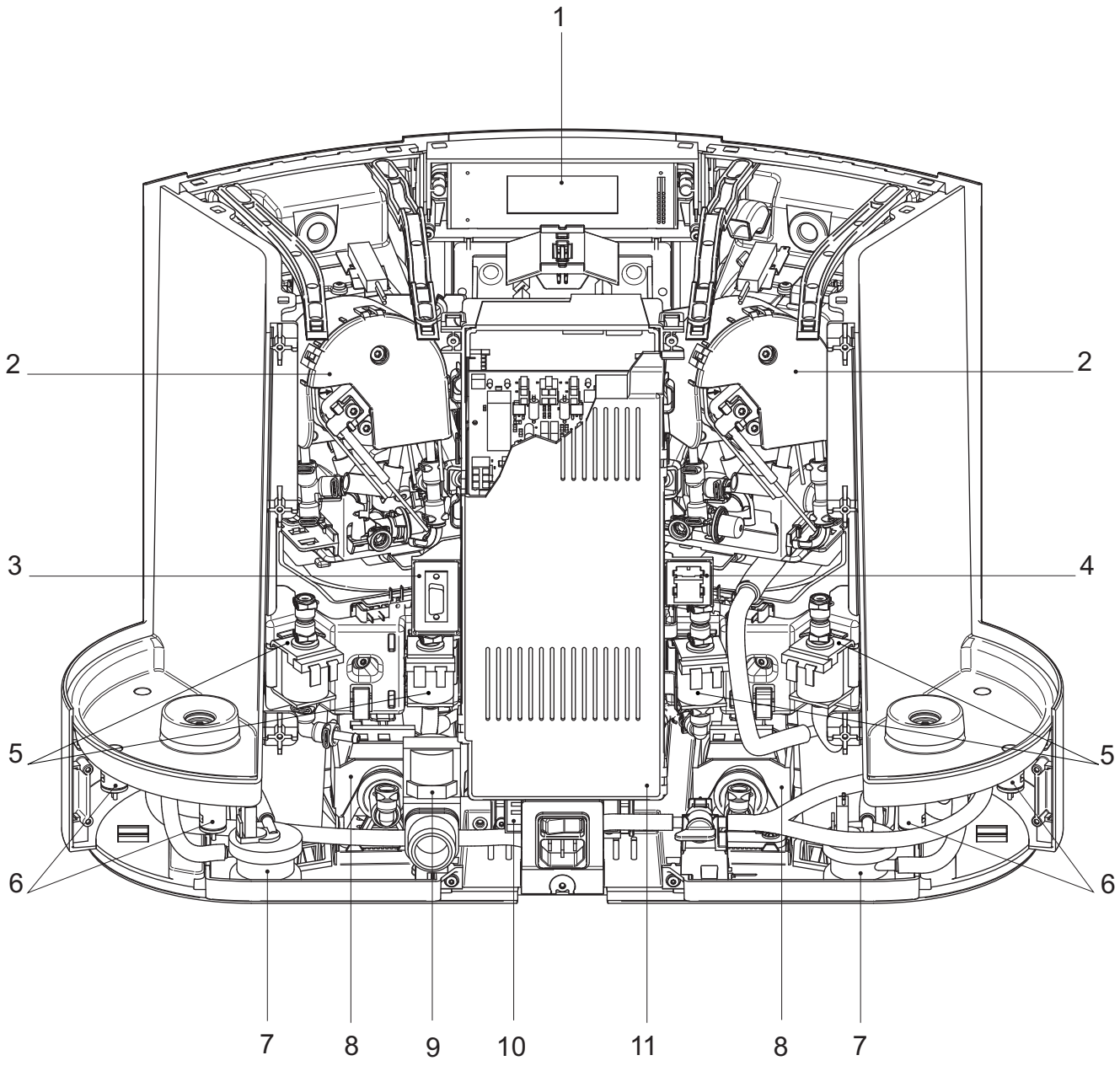


CS223/224



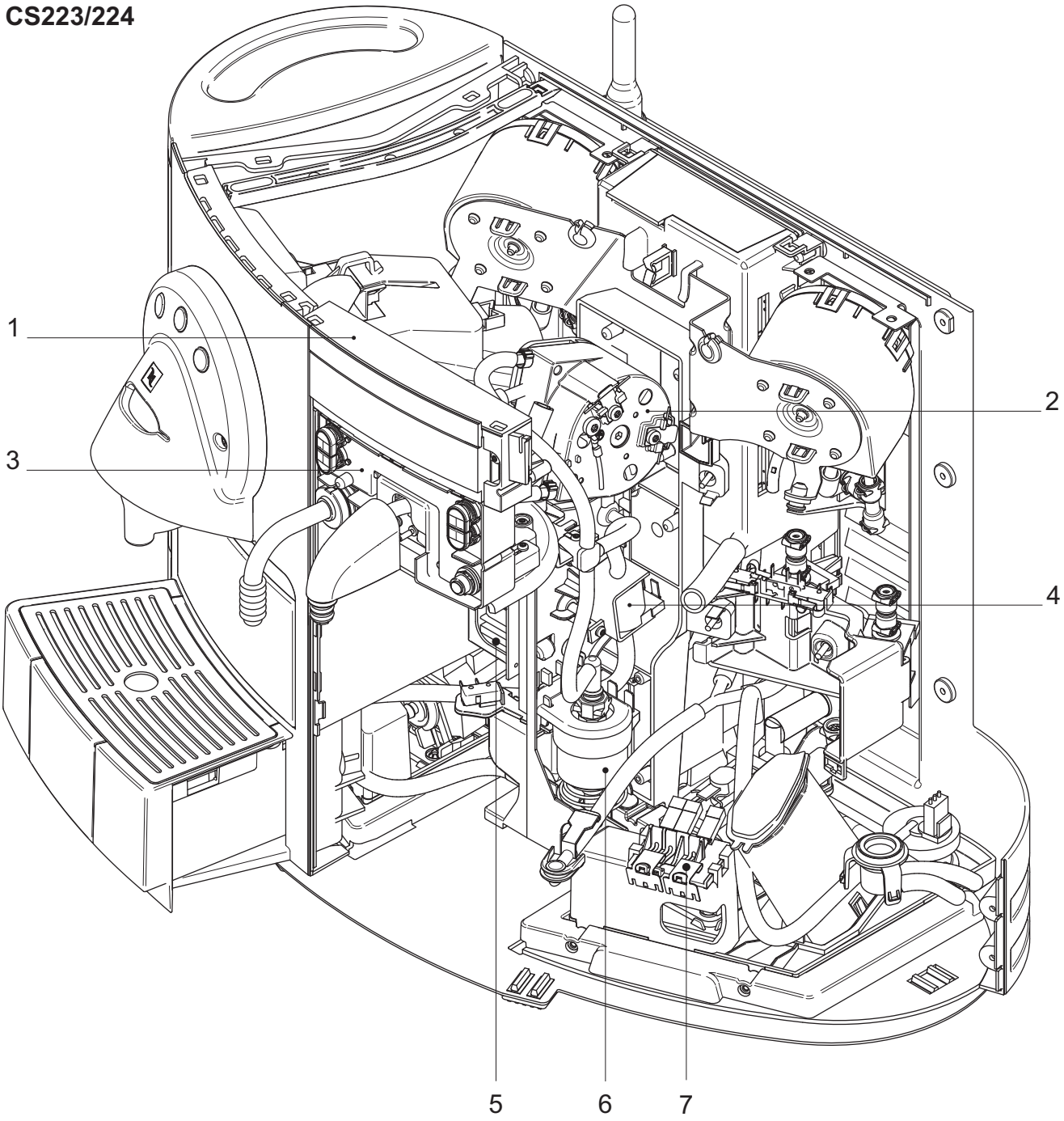
1) Coffee button "small cup" for 25 ml (back lighted)
2) Coffee button "medium cup" for 40 ml (back lighted)
3) Coffee button "large cup" for 110 ml (back lighted)
4) Portion button for 125 ml hot water (back lighted)
5) Fill up button for hot water (back lighted)
6) Passive LCD (back lighted)
7) Stand-by button (back lighted)
8) Portion button for hot milk foam (CS223/224, back lighted)
9) Fill up button for hot milk foam (CS223/224, back lighted)
10) Cup illumination (left, right, white / yellow)
11) Water tank illumination (left, right, white)

4.7 Interior view



1) Display
2) Thermoblock TB 2003
3) Tower connector
4) Service connector
5) Solenoid valve (bistable)
6) Water tank lighting
7) Flow meter
8) Pump CP4-SP C2
9) Solenoid valve (DWC)
10) Transformer
11) Electronic control box

CS223/224

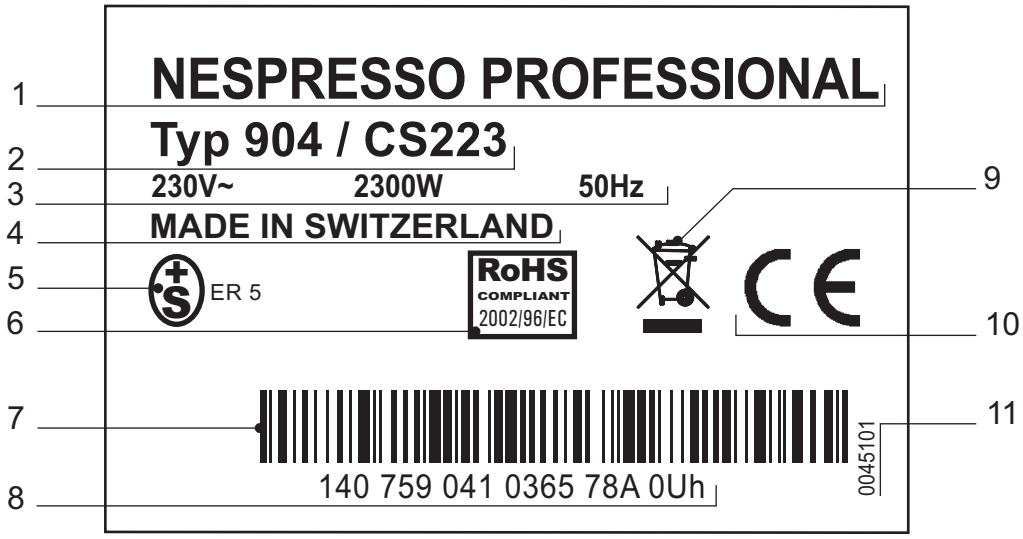


1) Display
2) Thermoblock TB 2003
3) Keyboard module
4) Solenoid valve (bistable)
5) Cappuccino module PCB (CS223/224)
6) Pump MPP1
7) Contact bank for drip tray detection

☞ **Refer to "Exploded drawings" on page 150 to locate other components not visible in this illustration.**

4.8 Type plate

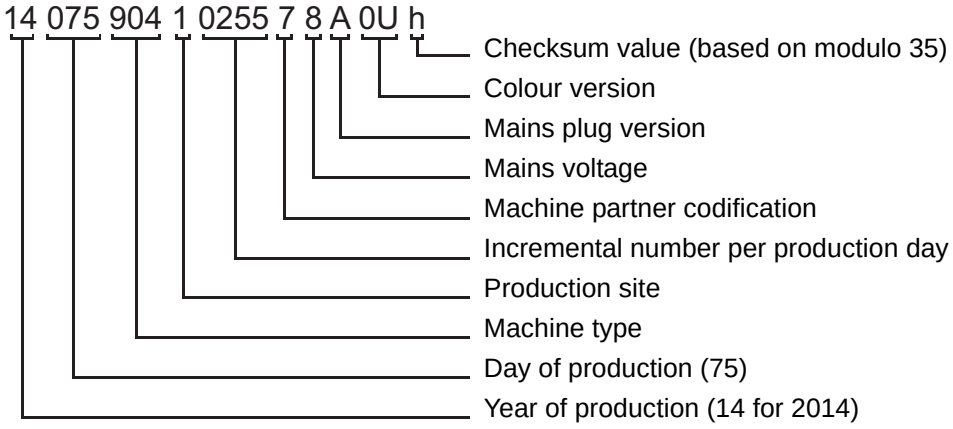
The type plate
- can be found at the backside of the coffee machine,
- carries the following information:



1) Brand name
2) Machine type
3) Rated voltage and power consumption
4) Origin
5) National approval seal
6) RoHS compliance sign (Restriction of the use of certain Hazardous Substances)
7) Bar code
8) Serial number
9) Non-waste disposal symbol
10) Mark of conformity
11) Article number of the type plate

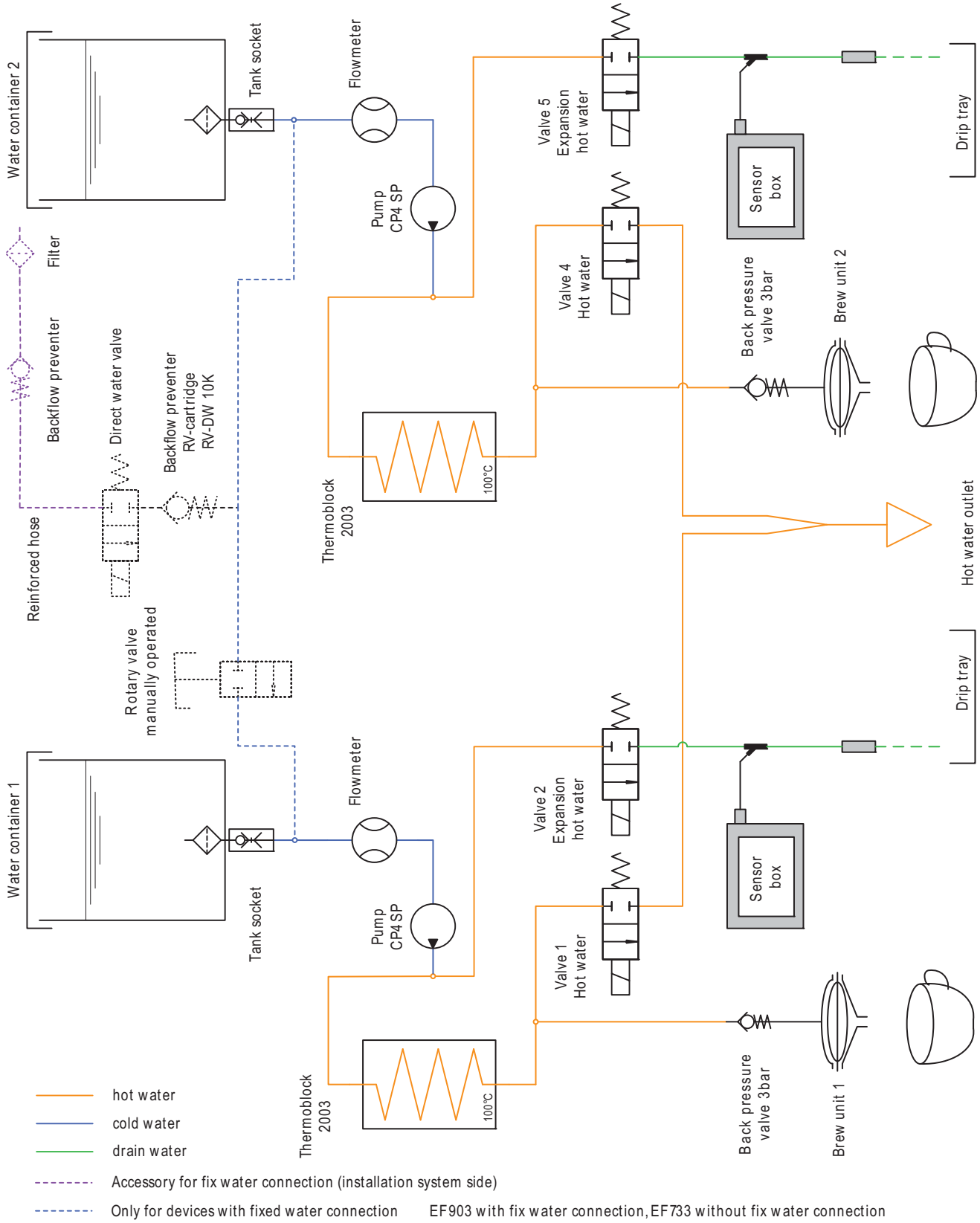
Serial number codification

Example:

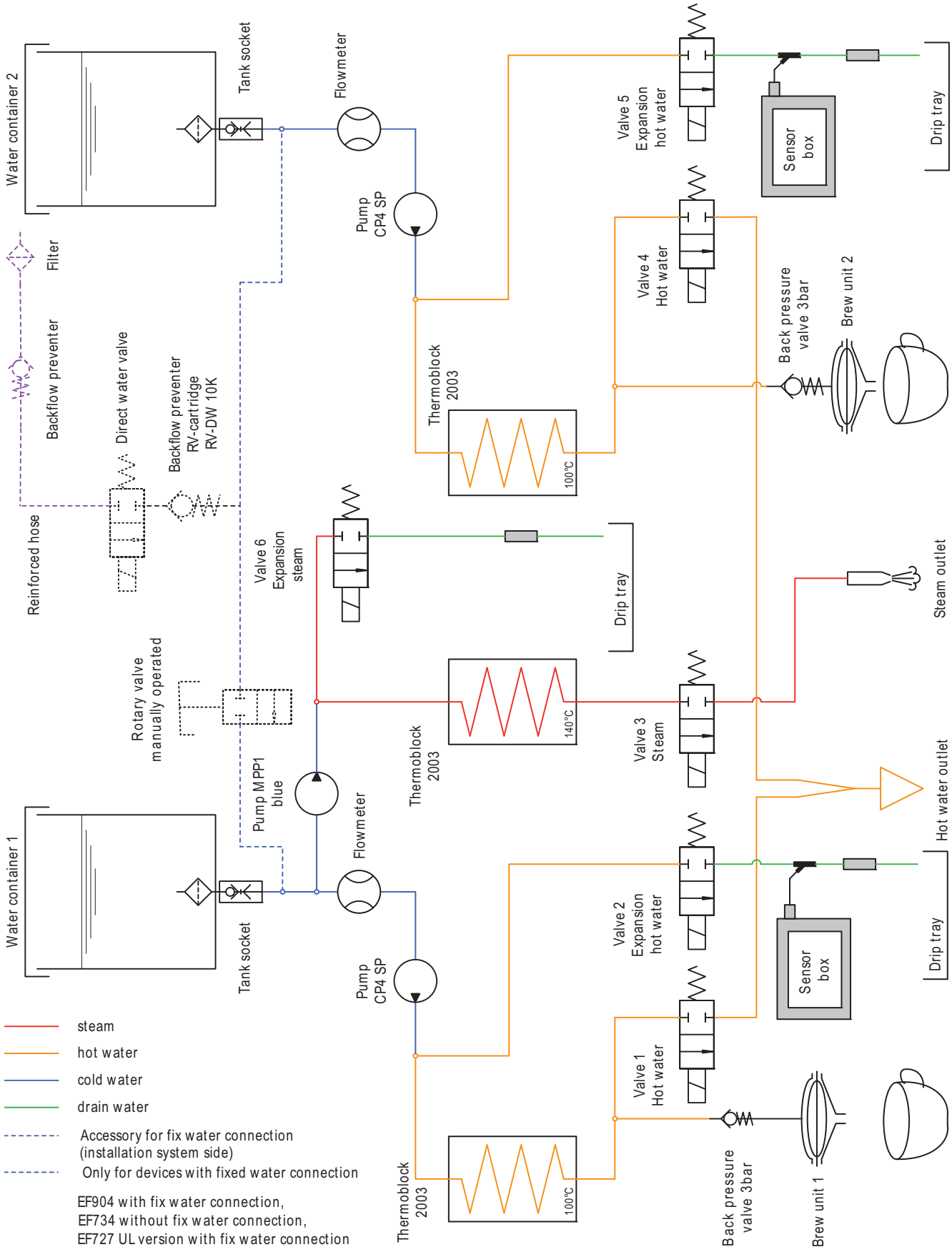


4.9 Fluid system

4.10 Fluid system of Gemini CS203



4.10.1 Fluid system of Gemini CS223/224



4.11 Technical data

Mains voltage

CS203/223/224 ...220 - 240 V, 50/60 Hz, 2100 - 2300 W

Power ratings - CS203
(for all voltages and frequencies)

2 thermoblocks.....each 1’080 W
2 pumps CP4 SP..... each 60 W
Total power consumption max. ..... 2410 W

Power ratings - CS223/224
(for all voltages and frequencies)

3 thermoblocks.....each 1’080 W
2 pumps CP4 SP..... each 60 W
1 pump MPP1 ..... 28 W
Total power consumption max. ..... 2410 W

Consumption data - CS203

Preheating time approx. ..... 31 sec
Heating up..... 19.23 Wh
1 medium coffee cup (40 ml*) ..... 4.28 Wh
2 medium coffee cups
(2 x 40 ml* simultaneously) ..... 8.26 Wh
1 large coffee cup (110 ml*) ..... 9.72 Wh
2 large coffee cups
(2 x 110 ml* simultaneously) ..... 20.78 Wh
Hot water (180 ml*) ..... 11.21 Wh
Switch On (1 h) ..... 21.1 Wh
Standby (1 h)..... 0.181 Wh

* Default settings

Consumption data - CS223/224

Preheating time approx. ..... 42 sec
Heating up..... 24.2 Wh
1 medium coffee cup (40 ml*) ..... 4.75 Wh
2 medium coffee cups
(2 x 40 ml* simultaneously) ..... 7.77 Wh
1 large coffee cup (110 ml*) ..... 9.39 Wh
2 large coffee cups
(2 x 110 ml* simultaneously) ..... 19.43 Wh
Hot water (180 ml*) ..... 13.97 Wh
Foam milk (100ml*) ..... 8.5 Wh
Switch On (1 h)..... 30.59 Wh
Standby (1 h)..... 0.187 Wh

* Default settings

Pumps CP4 SP prof. (2 pcs.)

Pump pressure
- max. permissible ..... 19 bar
- during coffee preparation
  (depending on the type of coffee)..... 9 -16 bar

Flow performance..... 120 - 240 ml/min. at 12 bar

Pump MPP1 (CS223/224 only)

Pump pressure
- max. permissible ..... 4 - 5 bar
- during steam preparation ..... 2 bar

Flow performance..... 35 - 50 ml/min. at 2 bar

D.C. Motors (2 pcs.) for extraction units

Voltage ..... 18 VDC

Bistable solenoid valves and non-return valves

Voltage ..... 240 V, 50/60 Hz
Overpressure release approx. ..... 12 bar

Capacities

2 water tanks ..... each 3 l
Milk thermos (CS223/224) ..... 1 l
Drip trays, left and right ..... each 700 ml min. (CS203)
Drip trays for Macchiato glass ..... each 350 ml min. (CS223/224)
2 capsule containers ..... each 30 pcs. min.

Environmental conditions

Storage and transport temperatures .... -25 °C to +60 °C
Operating temperature ..... +5 °C to +35 °C
Altitude ..... up to 2'500 m
Humidity ..... max. 90%

Various data

Steam thermoblock (CS223/224) ..... 192° C
Coffee / hot water thermoblock ..... 167°C
Coffee temperature at outlet..... 86° C ± 3° C
Hot water temperature at outlet..... > 82° C
Steam temperature at thermoblock (CS223/224) ..... 140° C

Dimensions (width x depth x height)
Neslink version (antenna)..... 560 x 415 x 417 mm
Non Neslink version ..... 560 x 415 x 369 mm
Cable length ..... 2 m ± 50 mm

Weight of coffee machine (without accessories and water):
CS203 approx. ..... 15 kg
CS223/224 approx. ..... 18 kg

5 INSTALLATION

5.1 Direct water connection (DWC)

The coffee machine is equipped with a direct water connection at the back wall to allow the automatic filling of the water tanks. For testing the direct water connection follow the installation instructions in this chapter.

5.1.1 Safety instructions and references to standards

Risk of flooding or malfunction!

- **All appliances intended to be connected to the water mains shall withstand the water pressure expected in normal use.**
- **Installation must be done by a certified technician.**
- **Only use a new hose-set for direct water connection. Do not re-use an old hose-set.**
- **The water supply has to meet the following requirements for a direct water connection (DWC) of the coffee machine:**

Max. static water pressure	10 bar / 1 MPa / 145 psi
Min. dynamic water pressure	0.8 bar / 0.08 MPa / 12 psi
Water temperature	max. 25 °C
Water quality	clean, potable water (use a water filter)

The direct water connection must comply with the requirements of the following standards:

- IEC 60730-2-8: 2000
  Automatic electrical controls for household and similar use - Part 2.8: Particular requirements for electrically operated water valves, including mechanical requirements
  Amendment 1 (2002)
- IEC 61770
  Electric appliances connected to the water mains - Avoidance of backsiphonage and failure of hose-sets

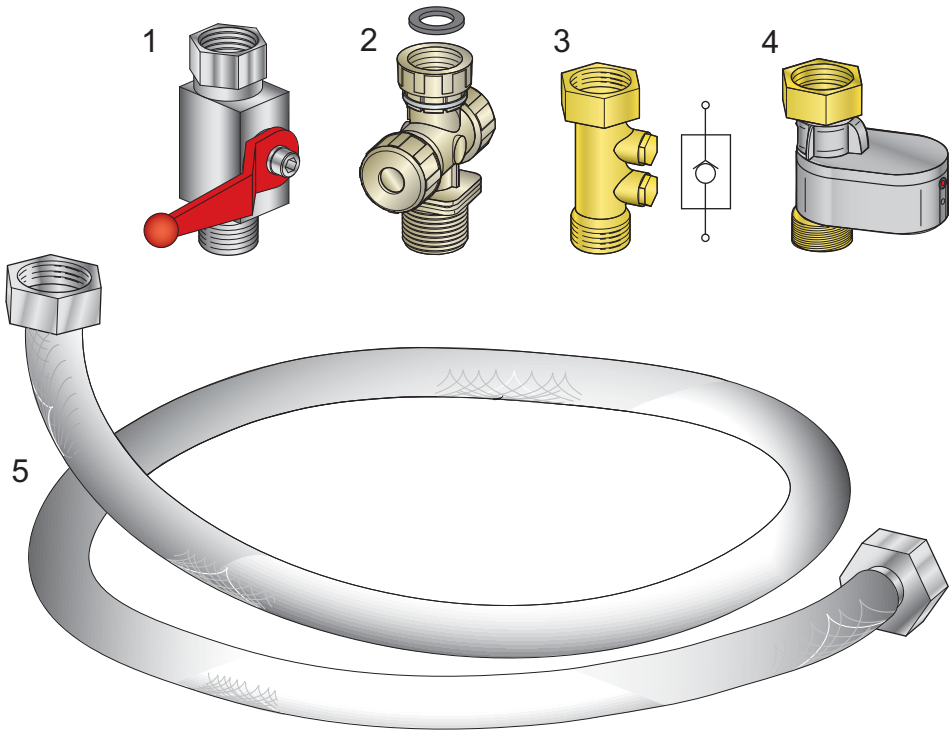
i For coffee machines intended to be used in vehicles or on board of ships or aircraft, additional requirements may be necessary.

i In many countries additional requirements are specified by the national health authorities, the national authorities responsible for the protection of labour, the national water supply authorities and similar authorities.

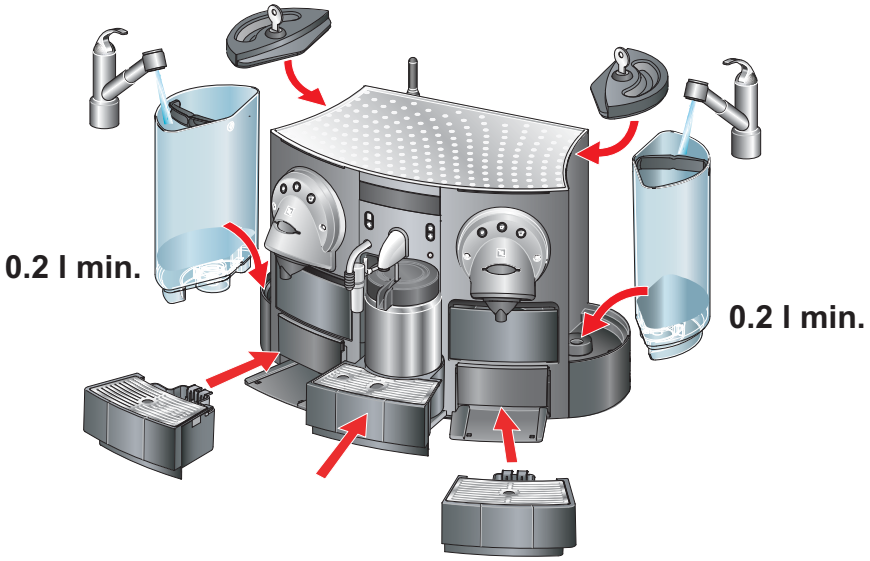
Installation material:

.Symbolic illustration of installation material.

Refer to the separate manual "Installation guide for direct water connection" for special coffee machine equipment.



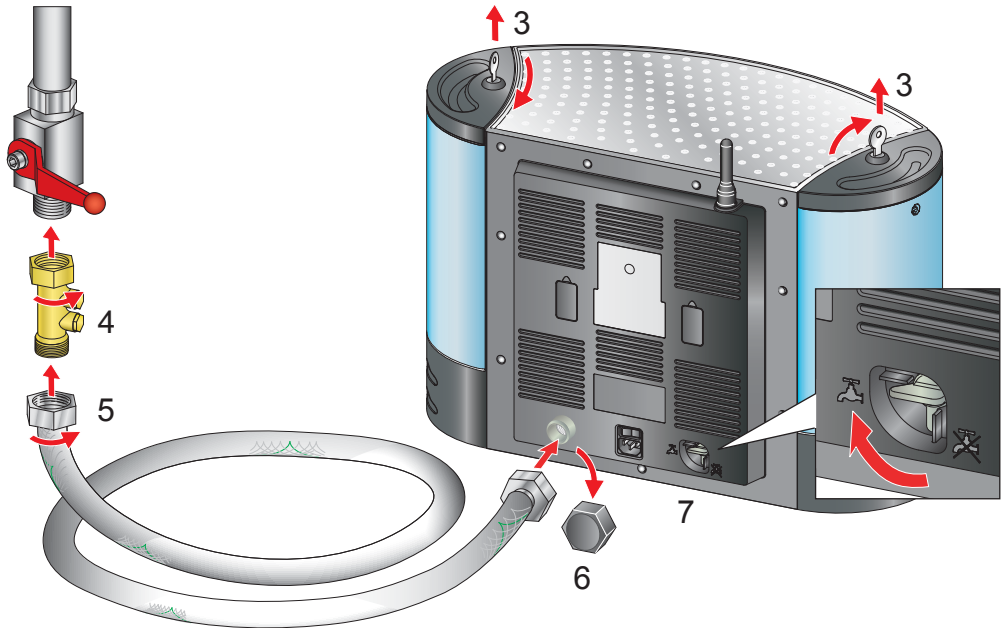
1) Stop valve (mandatory) on the water supply.
2) Water filter (mandatory) prevents any particles from the water supply entering the machine. The water filter can be a separate element or included into a scale filter.
3) Non-return valve (mandatory) to avoid a water backflow into the water supply. The non-return valve
   - prevents that dirt or germs from the coffee machine can contaminate the water supply,
   - can be a separate element or included into a scale filter.
4) Aqua stop (optional) interrupts the water supply in case of a leakage of the high-pressure hose.
5) High-pressure reinforced hose-set (mandatory) with suitable connections (G 3/4" for coffee machine).



1. Fill both water tanks with fresh water.

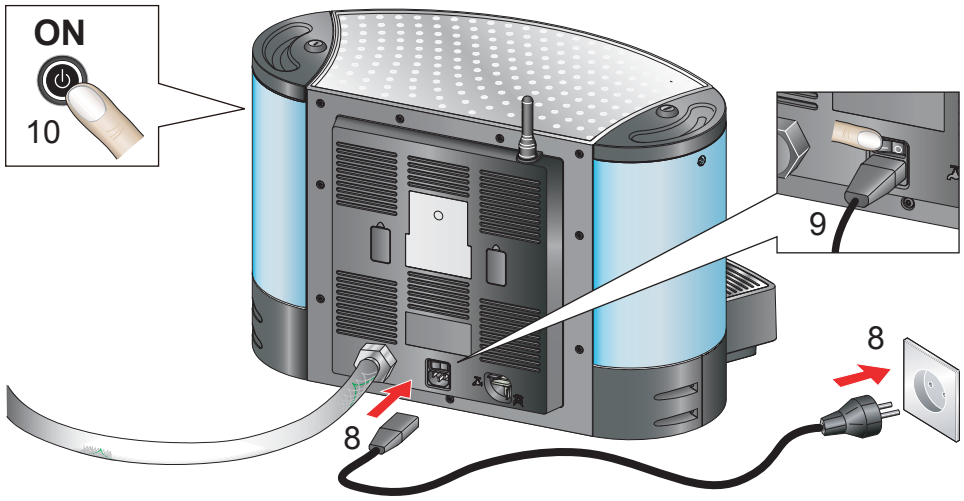
☞ **A minimum water quantity of 0.2 l in each water tank avoids**
- air bubbles in the fluid system,
- splashing during initial operation.

2. Insert water tanks. Then check correct fit of all drip trays (left and right drip trays especially) and capsule containers.



3. Lock both water tank covers (special types) for safety reasons (3).
4. Connect mandatory and optional equipment to water supply (non-return valve, water filter, scale filter, aqua stop).
5. Connect high pressure hose-set to water supply.
6. Remove cover and connect high pressure hose to solenoid valve.
7. Turn water tank connection valve to position ON.

i All metal parts of the hose-set (5) must be separated from live parts by double insulation or reinforced installation.



8. Connect coffee machine to mains.
9. Switch on mains switch.
10. Press stand-by button: Depending on the water level in the tanks the message "Fill water" appears on the display.
11. Open stop valve of the water mains supply. Check tightness of the high pressure hose connections.

☞ **An automatic rinsing of the coffee outlets is performed.**

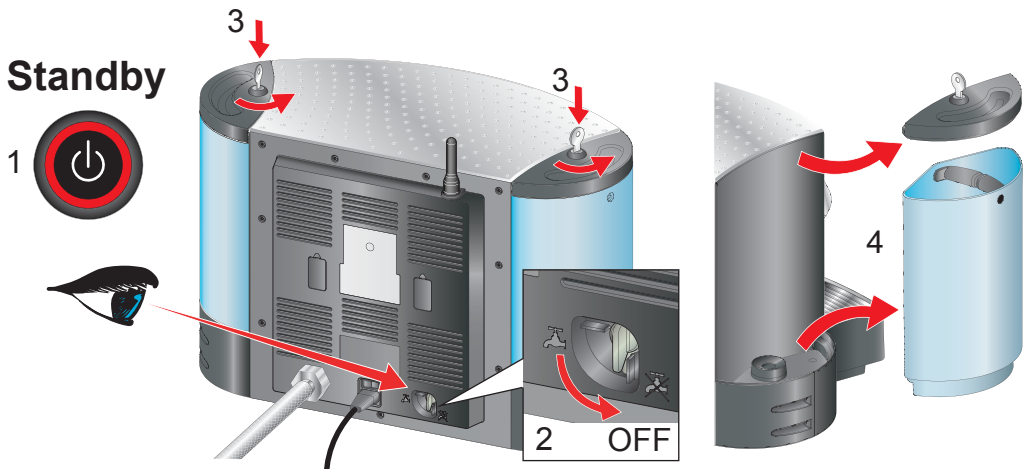
12. Wait (50 - 70 sec.) till coffee machine is heated up and push-button illumination turns to white. Then prepare hot water several times and check if water is replenished in the water tanks.

☞ **In case of problems refer to "Direct water connection problems" on page 55.**

Safety measures

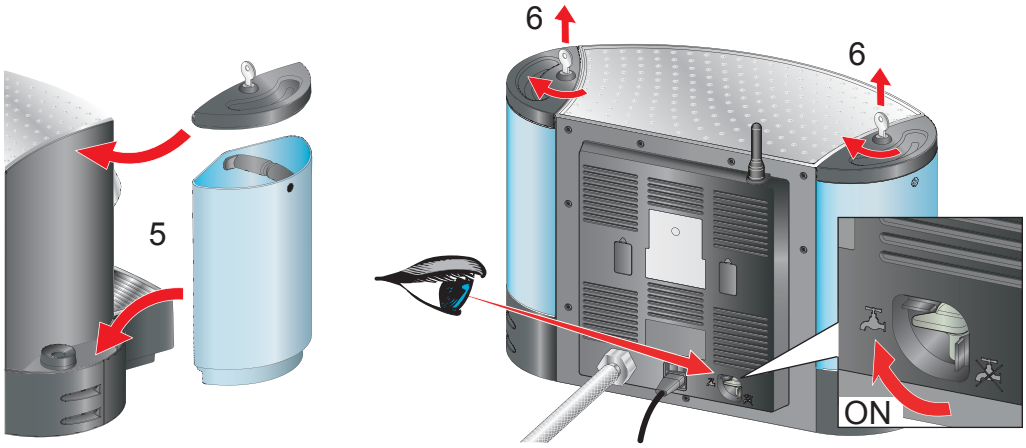
⚠ Operating errors can cause a flooding!

- If no responsible person is present (e.g. at meal time, night etc.), the stop valve of the water mains supply must be closed.
- Adhere strictly to the following procedure for removal of water tanks:



1. Switch stand-by button (1) to stand-by.
2. Turn water tank connection valve (2) to position OFF.
3. Unlock cover of water tank(s) (3).
4. Remove water tank(s) (4).

☞ **If one or both water tanks are removed for a prolonged time, turn off stop valve of water supply as additional safety measure.**



5. Reinsert water tank(s).
6. Lock cover of water tank(s) again.
7. Turn water tank connection valve to position ON.

6 OPERATION

6.1 General information

For an overview of the operational controls see "Overview - operating elements and display" on page 13.

6.1.1 Preset filling amounts

Short cup (Ristretto): .....25 ml
Long cup (Espresso): .....40 ml
Big cup (Café Leggero): .....110 ml
Steam (Cappuccino): .....approx. 15 sec

☞ **Coffee-, portion- and fill up buttons have preset filling amounts that can be modified (see "Programming the cup volume by push-button" on page 29).**

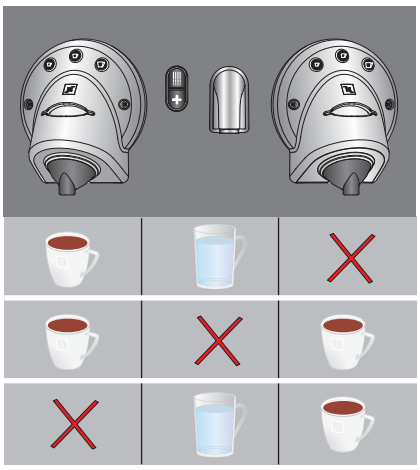
The operation of these buttons is time controlled:

- Pressing a button for a maximum up to 1 sec releases the preset filling amount.
- Pressing a button longer than 5 sec changes the presetting (depending on the power user menu setting).

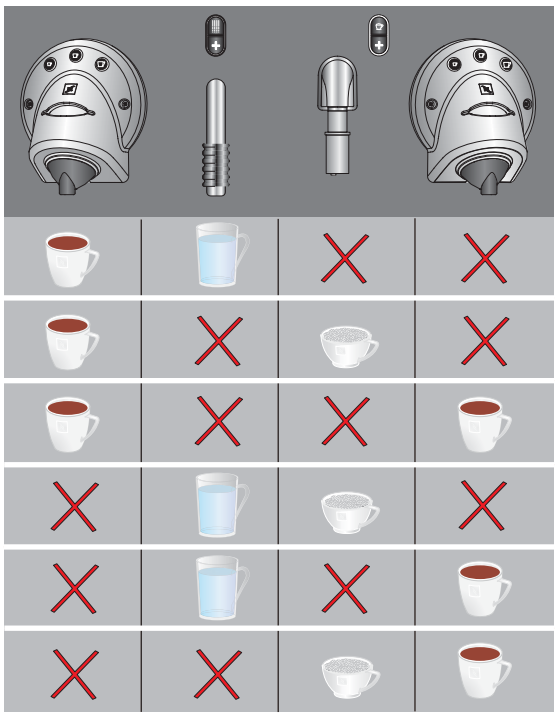
6.1.2 Multiple procurements

The coffee machine can perform two servings at the same time:

CS203



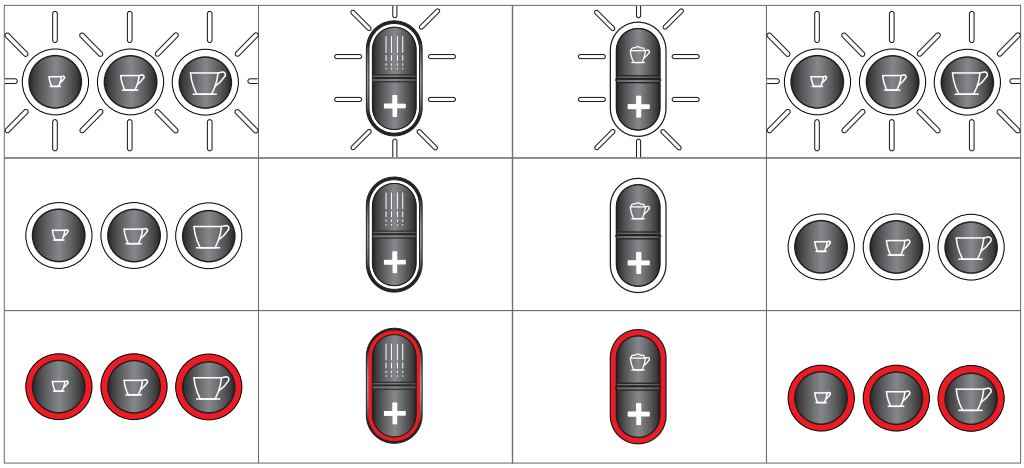
CS223/224



An error message appears if three servings are ordered at the same time.

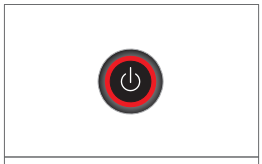
6.2 Coffee machine displays

6.2.1 Button colours

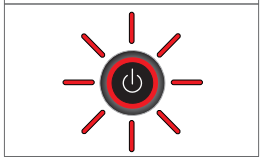


White, blinking backlight.....coffee machine is heating up
White backlight..... ready for operation
Red backlight .....error, user or service intervention necessary

Button colours of coffee and cappuccino or hot water units can be different, depending on cause of error or operation mode.



The stand-by mode of the coffee machine is indicated by a red backlighted stand-by button.



During switching to stand-by (approx. 30 sec.), the stand-by button is blinking red.

6.2.2 Display messages

The following display messages
- are considerations for use,
- appear when a user intervention is necessary or in case of a malfunction.

An arrow in the display shows for which coffee or cappuccino resp. hot water unit the message is valid.

☞ **Bear in mind that more than one error can occur at the same time. The display shows the most important message first.**

i A red backlight on these buttons locates the error and is accompanied by an error display message.

i To change the user language of the display messages, refer to "Super user menu" on page 29.

i Refer to the user manual for special display messages (e.g. descaling, cleaning the milk system, water filter installation and replacement).

Operation

Display message	Reason	Remedy
Heating up	After switching on the coffee machine, the thermoblocks heat up to operating temperature in about 35 sec.	-
Fill water	Water tank empty. Floater stucked in water tank. Water sensor defective.	Fill water tank. Clean floater chamber in water tank. Replace water sensor.
Insert drip tray	Drip tray missing or not inserted correctly. Contact bank for level sensor defective.	Reinsert drip tray. Align contacts or replace contact bank.
Insert capsule container	Capsule container missing or not inserted correctly. Micro switch(es) defective.	Reinsert capsule container. Replace micro switch(es).
Insert milk container	Milk container or cover of milk container missing. Micro switch defective.	Insert milk container correctly. Replace micro switch.
Max. volume achieved	Programming the cup volume by push-button: Maximum of 240 ml for coffee or 1275 ml for hot water reached.	Reprogram cup volume if desired.

Maintenance

Display message	Reason	Remedy
Empty drip tray	Water in drip tray reaches contacts of level sensor.	Empty drip tray.
Empty capsule container	Max. filling amount reached. IR sensor dirty or defective.	Empty capsule container. Clean sensor optics or replace IR sensor.
Milk system - Cleaning needed in: 30’ /15’/5’	Predetermined residence time of milk container in coffee machine nearly reached (4 h or 1 to 4 h for USA).	Replace milk container with second one out of refrigerator. Only for CS224: Remove drip tray with milk container and reinsert it after min. 3 sec.
Change filter	Preset service life of water filter reached.	Replace water filter in water tank or replace DWC filter in water supply line by technician.
Descaling needed	Preset operating time reached (depending on water hardness).	Perform descaling.
Milk line cleaning	Preset operating time reached.	Perform milk line cleaning.

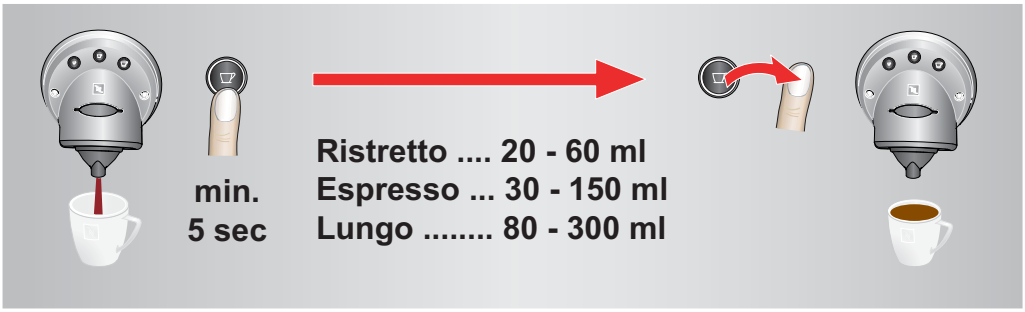
Errors

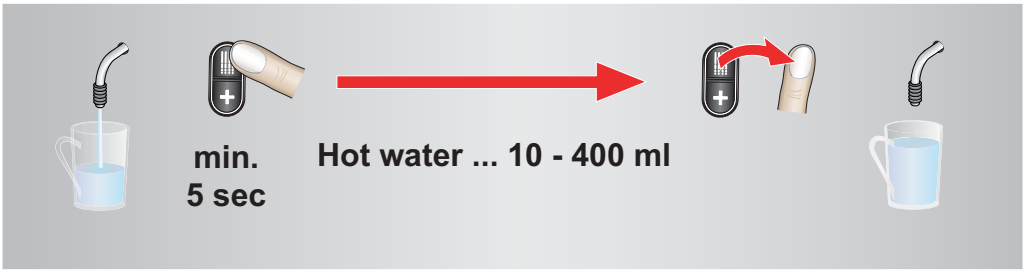
Display message	Reason	Remedy
Capsule not ejected	Used capsule stucked in extraction unit.	Coffee machine tries to eject stucked capsule automatically. User intervention not necessary yet.
Call Nespresso Club Machine blocked	Coffee machine not in working order.	Servicing necessary.

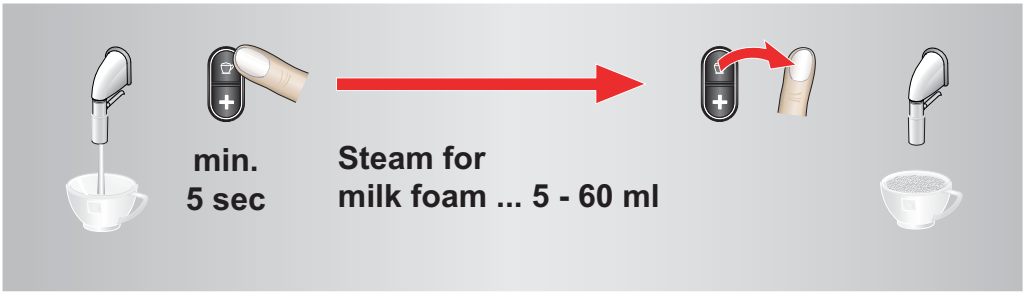
7 PROGRAMMING

7.1 Programming the cup volume by push-button

This feature has to be enabled in the super user menu at first (program cup length ON, see "Super user menu points" on page 33).







Simply press and hold a coffee or portion button, until the desired filling amount is in the cup - then release the push-button. A display message appears if the maximum value is reached.

☞ **Set menu point "program cup length" to OFF afterwards to avoid changes by operating errors.**

7.2 Super user menu

This menu

- is for the experienced user and for service technicians,
- allows basic settings and configurations,
- has different menu points, dependent if a water filter with ion exchanger is installed or descaling is necessary.

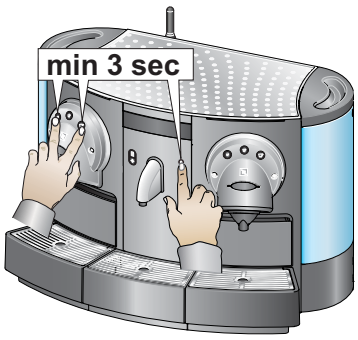
☞ **The ASC software contains settings and configurations out of the super user menu and power user menu (see separate user manual).**

i Cup volumes can be defined with the ASC software also (see separate manual).

7.2.1 Access to super user menu

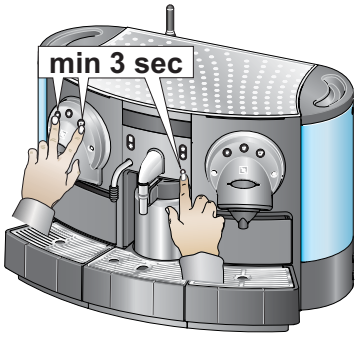
CS203

Standby



CS223/224

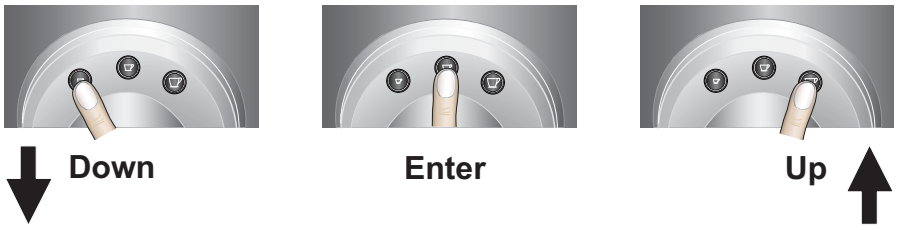
Standby



1. Switch coffee machine to stand-by mode.
2. Press buttons "small cup" and "large cup" on the left coffee unit together with stand-by button, until first menu point is displayed.

7.2.2 Navigation in super user menu

i Right and left coffee buttons correspond to the UP and DOWN ARROW keys on a keyboard. The middle coffee button corresponds to the ENTER key.



1. Use right and left coffee buttons to scroll up/down in the menu.
2. Use middle coffee button to
   - to select a menu point,
   - execute commands like "Exit" or "Descaling",
   - edit and confirm the settings of menu points.

Example: Change display language



1. Press middle coffee button to select language.



The language is now marked with arrows.



2. Use left or right coffee button to choose a language.





3. Press middle coffee button to confirm new language.



The display changes to the new language. The arrows disappear.



4. Use left or right coffee button to display EXIT command.



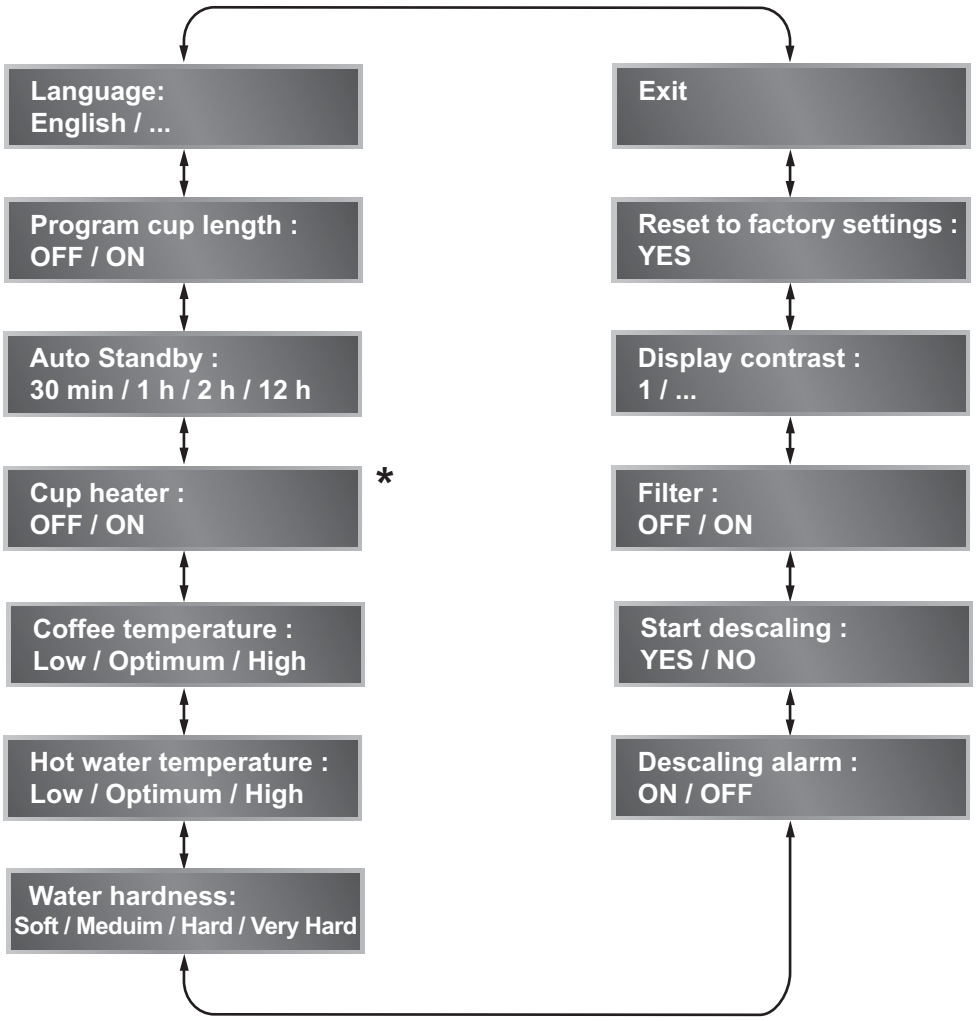


5. Press middle coffee button to terminate super user menu.





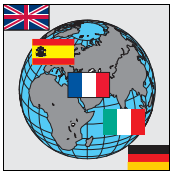
7.2.3 Super user menu selection



* Only for Gemini CS203

7.2.4 Super user menu points

Language



Settings: English / German / French / ...
Factory setting: English

Use this menu point to choose the display language. Beside the standard languages an additional customer specific language is available under the "Customer" setting.

☞ **A customer specific language has to be uploaded to the coffee machine with the dongle (see separate manual).**

Program cup length

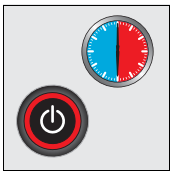


Settings: OFF / ON
Factory setting: OFF

Use this menu point to inhibit or enable the programming of the cup volume by push-button (see page 29).

☞ **By pressing a coffee or portion button too long, a user can change preset filling amounts inadvertently.**

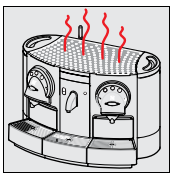
Auto Standby



Settings: 30 min / 1 h / 2 h / 12 h
Factory setting: 30 min

Use this menu point to determine the rest period after that the coffee machine switches to stand-by.

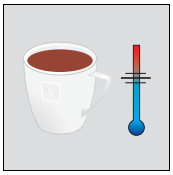
Cup Heater (only for Gemini CS203)



Settings: OFF / ON
Factory setting: OFF

Use this menu point to switch on/off the cup heater.

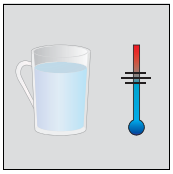
Coffee temperature



Settings: Low / Optimum / High
Factory setting: Optimum

Use this menu point to change the optimal coffee temperature (86 °C) at the outlet if colder or hotter coffee is required.

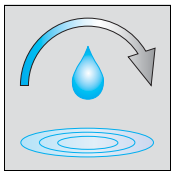
Hot water temperature



Settings: Low / Optimum / High
Factory setting: Optimum

Use this menu point to change the optimal hot water temperature (78 °C) at the outlet if colder or hotter water is required.

☞ **Only for machines without a direct water connection:**
If the hot water temperature setting is "High", the installation of Aqua Clarity water filters in the water tanks is recommended.

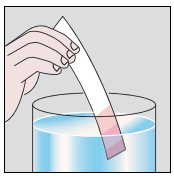


Water hardness

Settings: Soft / Medium / Hard / Very Hard
Factory setting: Hard
Use this menu point to adapt the water hardness setting to the local conditions

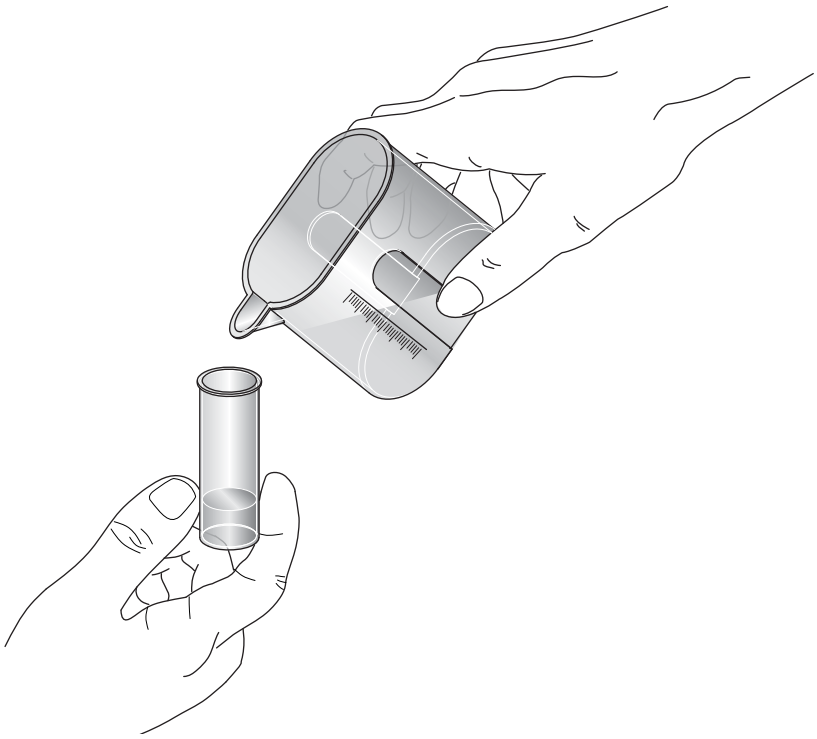
☞ **This menu point appears only if "Filter" is set to OFF in the super user menu.**

The available settings correspond to
- a preset water volume, measured with the flow meters in the coffee machine,
- the water hardness.



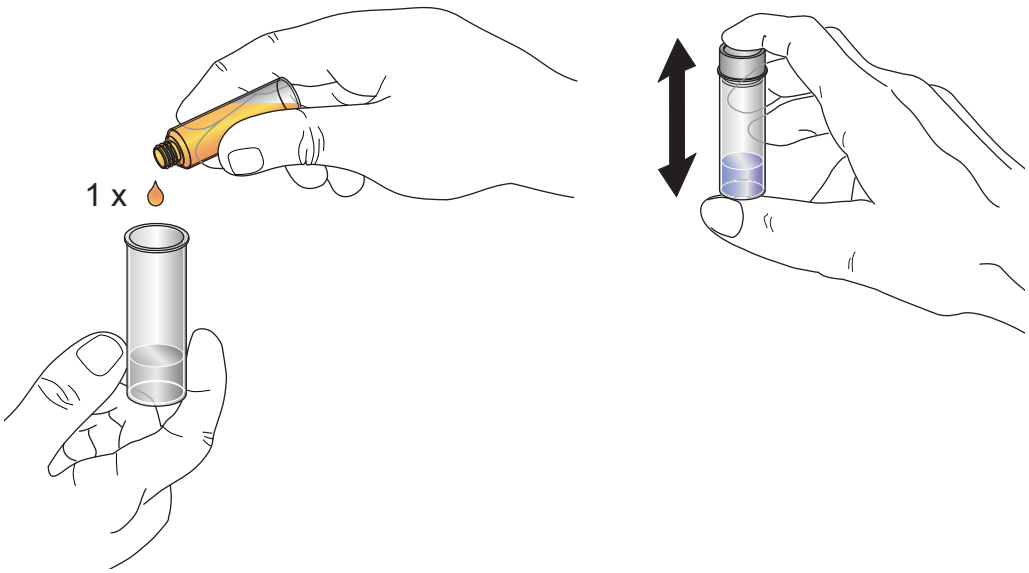
Determine water hardness

Use a **Brita® Professional Indicator Set (NNSA 5036)** as follow:



1. Fill the test tube with water up to the 5 ml mark.

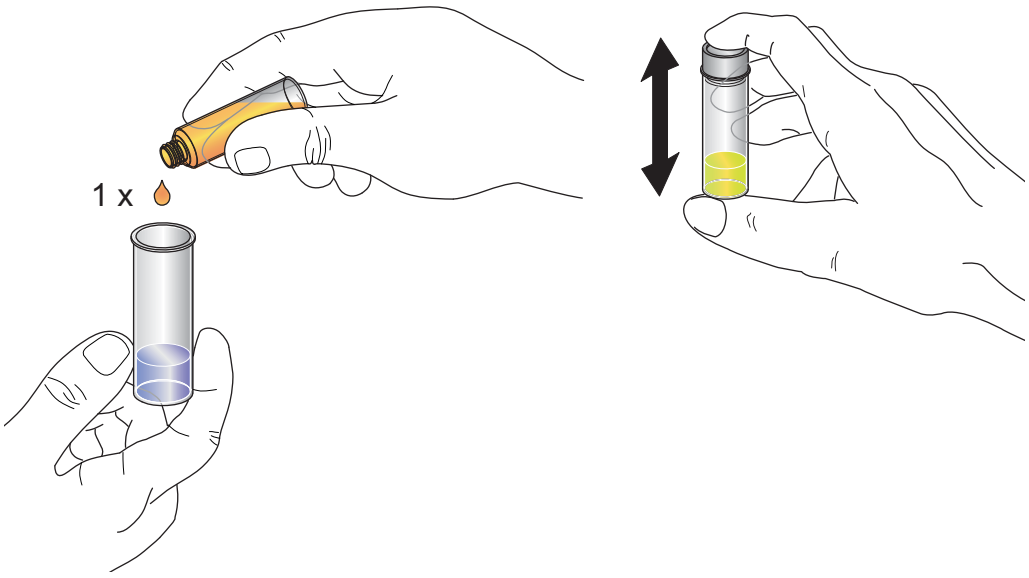
i As alternative, call the water company for information about the local water hardness.



2. Add one drop of indicator liquid and mix.



3. Compare with Brita water hardness table.



4. Continue adding one drop at a time and mix until solution turns yellow.



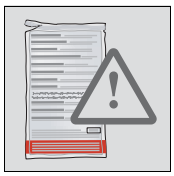
5. Calculate the water hardness by comparing the number of drops used to the Brita water hardness water table.

Use the following table to allocate the local water hardness to the correct water hardness level setting:

Water hardness level	Carbonate hardness				
	°f	°e	°dH - °KH	ppm ($CaCO_3$)	mMol/l
Soft (0)	0 - 16	0 - 11.2	0 - 9	0 - 160	0 - 1.6
Medium (1)	17 - 28	11.9 - 19.7	9.6 - 15.7	170 - 280	1.7 - 2.8
Hard (2)	29 - 43	20.4 - 30.2	16.3 - 24.2	290 - 430	2.9 - 4.3
Very hard (3)	≥ 44	≥ 30.9	≥ 24.7	≥ 440	≥ 4.4

National water hardness units

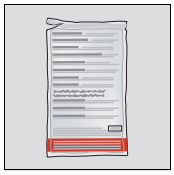
German degree ..... °dH
English degree ..... °e
French degree ..... °f
USA ..... ppm ($CaCO_3$)
SI-unit ..... mMol/l



Descaling alarm

Settings: ON / OFF
Factory setting: ON
Use this command to enable / disable the descaling alarm of the coffee machine.

☞ **This menu point appears only if the water filter setting is OFF in the super user menu.**

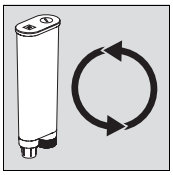


Start descaling

Settings: YES / NO
Use this command to start the descaling of the coffee machine. Refer to the user manual for required accessories, preparations and descaling sequence.

☞ **This menu point appears only if the water filter setting is OFF in the super user menu.**

Filter



Settings: OFF / ON / Change Filter
Factory setting: OFF
Use this menu point to install new filters in the water tanks, replace used water tank filters or prime these filters with water. Refer to the user manual for instructions.

Set this menu point to "OFF" if a direct water connection is used.

Refer to the following tables for water filter replacement and additional descaling depending on the average consumption:

Danger of malfunction! Water filters should not be placed in the water tanks if a direct water connection is used.

CS203 without DWC

Consumption: 0 - 40 L/month (20 L on average or 0 - 600 coffees/month)				
Water hardness	**French °H**	**Recommended**	**Descale after**	**Filter change**
Soft (0)	0 - 16	Do not use a filter	16 months	-
Medium (1)	17 - 28	Use a filter	16 months	4 months
Hard (2)	29 - 43	Use a filter	10.5 months	2.5 months
Very hard (3)	≥ 44	Use a filter	8.5 months	5 weeks

Consumption: 40 - 100 L/month (70 L on average or 600 - 1600 coffees/month)				
Water hardness	**French °H**	**Recommended**	**Descale after**	**Filter change**
Soft (0)	0 - 16	Use a filter	10 months	3.5 months
Medium (1)	17 - 28	Use a filter	6 months	7 weeks
Hard (2)	29 - 43	Use a filter	4 months	4 weeks
Very hard (3)	≥ 44	Use a filter	3 months	2 weeks

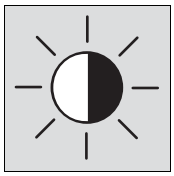
Consumption: > 100 L/month (120 L on average or more than 1600 coffees/month)				
Water hardness	**French °H**	**Recommended**	**Descale after**	**Filter change**
Soft (0)	0 - 16	Use a filter	6 months	2 months
Medium (1)	17 - 28	Use a filter	3.5 months	1 months
Hard (2)	29 - 43	Use a filter	2.5 months	2 weeks
Very hard (3)	≥ 44	Use a filter	2 months	1 week

CS223/224 without DWC

Consumption: 0 - 40 L/month (20 L on average or 0 - 600 coffees/month)				
Water hardness	**French °H**	**Recommended**	**Descale after**	**Filter change**
Soft (0)	0 - 16	Do not use a filter	20 months	-
Medium (1)	17 - 28	Use a filter	20 months	4 months
Hard (2)	29 - 43	Use a filter	20 months	2.5 months
Very hard (3)	≥ 44	Use a filter	20 months	5 weeks

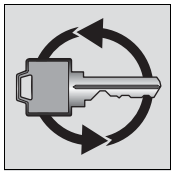
Consumption: 40 - 100 L/month (70 L on average or 600 - 1600 coffees/month)				
Water hardness	**French °H**	**Recommended**	**Descale after**	**Filter change**
Soft (0)	0 - 16	Use a filter	15 months	4 months
Medium (1)	17 - 28	Use a filter	7.5 months	2 months
Hard (2)	29 - 43	Use a filter	7.5 months	4 weeks
Very hard (3)	≥ 44	Use a filter	7.5 months	2 weeks

Consumption: > 100 L/month (120 L on average or more than 1600 coffees/month)				
Water hardness	**French °H**	**Recommended**	**Descale after**	**Filter change**
Soft (0)	0 - 16	Use a filter	9.5 months	9 weeks
Medium (1)	17 - 28	Use a filter	4.5 months	5 weeks
Hard (2)	29 - 43	Use a filter	4.5 months	2 weeks
Very hard (3)	≥ 44	Use a filter	4.5 months	1 week



Display contrast

Settings: 1 / 2 / 3 / 4 / 5
Factory setting: 3
Use this menu point to adjust the display of the coffee machine to the ambient light conditions.



Reset to factory settings

Settings: YES
Factory setting: YES
Use this menu point to reset the coffee machine to the factory settings.



Exit

Use this command to exit the super user menu and to resume stand-by mode.

7.3 Power user menu

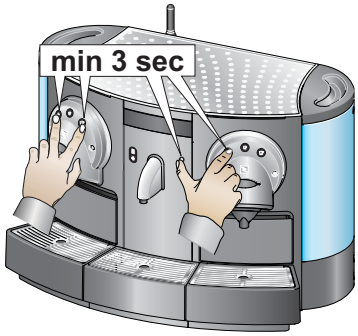
This menu
- is for service technicians only,
- allows basic settings and configurations,
- affects the super user menu structure.

☞ **The ASC software contains settings and configurations out of the super user menu and power user menu (see separate user manual).**

7.3.1 Access to power user menu

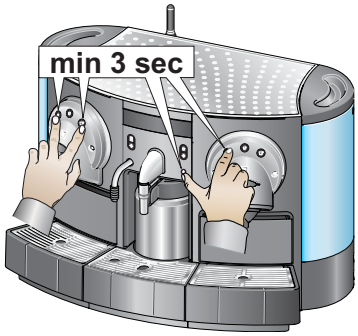
CS203

Standby



CS223/224

Standby

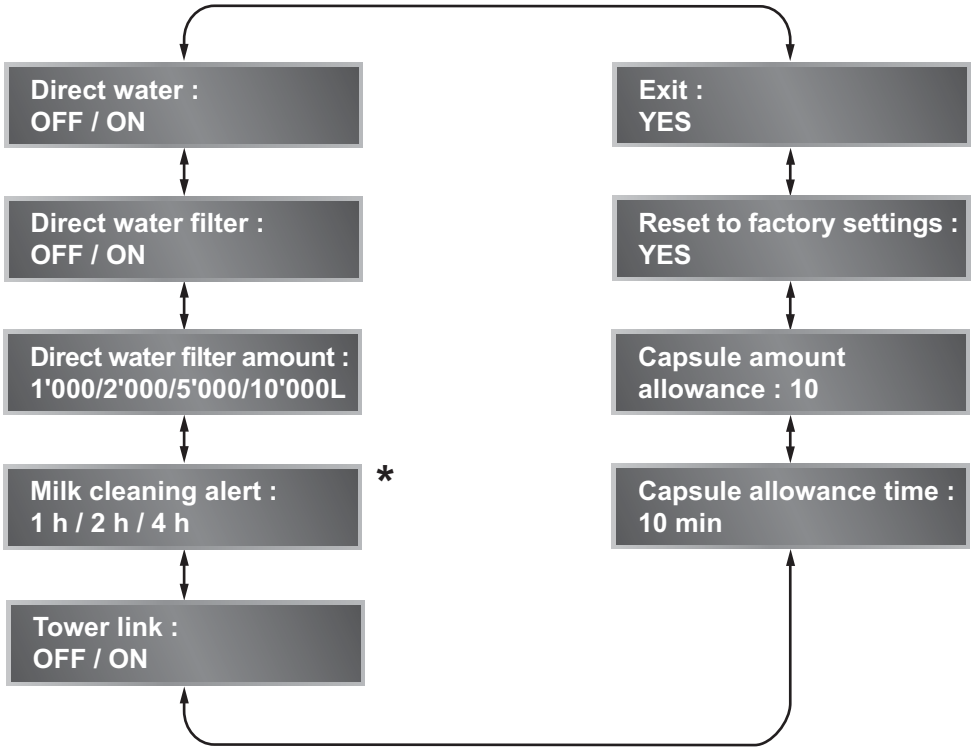


1. Switch coffee machine to stand-by mode.
2. Press buttons "small cup" and "large cup" on left coffee unit.
3. Additionally press button "small cup" on the right coffee unit together with stand-by button, until the first menu point is displayed.

☞ **For menu navigation refer to "Access to super user menu" on page 30.**

☞ **This menu must not be communicated to the customer.**

7.3.2 Power user menu selection



* Only for Gemini CS224 (NSF)

7.3.3 Power user menu points

Direct water



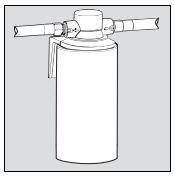
Settings: OFF / ON
Factory setting: OFF

Set this menu point to
- "OFF" if the water tanks are filled manually.
- "ON" only if the coffee machine is connected to the water supply.

☞ **See "Direct water connection (DWC)" on page 21 for more information.**

Danger of malfunction!
If menu point "Direct water" is set to ON, no water filters should be placed in the water tanks. Only an external water filter is permitted.

Direct water filter



Settings: OFF / ON
Factory setting: OFF

Set this menu point to "ON" if a direct water connection is used, which is equipped with an external water filter.

Additional descaling intervals

Refer to the following tables for additional descaling depending on the average consumption when using an external water filter:

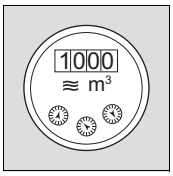
CS203 with DWC and external water filter

Water hardness		Average consumption		
		1'500 coffees/month (100 L/month)	3'000 coffees/month (200 L/month)	6'000 coffees/month (400 L/month)
Range	French °H	Descale after		
Soft (0)	0 - 16	16 months	8 months	4 months
Medium (1)	17 - 28	8 months	4 months	2 months
Hard (2)	29 - 43	8 months	4 months	2 months
Very hard (3)	≥ 44	8 months	4 months	2 months

CS223/224 with DWC and external water filter

Water hardness		Consumption		
		1'500 coffees/month (100 L/month)	3'000 coffees/month (200 L/month)	6'000 coffees/month (400 L/month)
Range	French °H	Descale after		
Soft (0)	0 - 16	10.5 months	5 months	2.5 months
Medium (1)	17 - 28	6.5 months	3 months	1.5 months
Hard (2)	29 - 43	4 months	2 months	1 months
Very hard (3)	≥ 44	3 months	6 weeks	3 weeks

Direct water filter amount

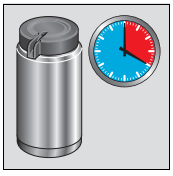


Settings: 1'000 L / 2'000 L / 5'000L / 10'000L
Factory setting: 5'000 L

Use this menu point to determine the change interval of the external water filter by setting a limit for the processed water in litres.

☞ **For additional information refer to the supplier documentation of the external water filter.**

Milk cleaning alert



CS223

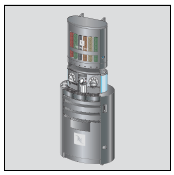
Fix setting: 4 h

The timer cannot be adjusted for a CS223 coffee machine.

CS224 (NSF)

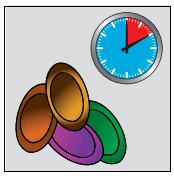
Settings: 1 h / 2 h / 4 h
Factory setting: 1 h

Use this menu point to set a timer that limits the residence time of the milk container in the coffee machine (only for CS224).



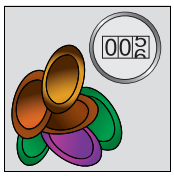
Tower link

Settings: OFF / ON
Factory setting: OFF
Use this menu point to transmit parameters, counters and alarms of the tower system with the Neslink device.
Prerequisite: The interface connector of the coffee machine has to be connected to the tower system with a special cable.



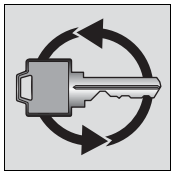
Capsule allowance time

Settings: 2 min / 3 min / 5 min / 10 min / 20 min / 30 min / 1 h
Factory setting: 10 min
Use this menu point for the tower system: If the preset time has elapsed without any coffee consumption, the capsules bought from the dispenser cannot be used with the coffee machine any more.



Capsule amount allowance

Settings: 2 - 20 capsules
Factory setting: 10
Use this menu point for the tower system: The dispenser doesn't dispense more than the preset number of capsules if no brewing has started yet.



Reset to factory settings

Setting: YES
Use this menu point to reset the coffee machine to the factory settings.



Exit

Use this command to exit the power user menu and to resume stand-by mode.

7.4 Parameter table

Parameter	Range	min.	max.	Factory setting	Adjustable by customer	Adjustable by Super user (3 buttons)	Adjustable by Power user (6 buttons)	Adjustable with ASC PC	Adjustable by NBO
System									
Country specific (setting: USA)	ROW, USA	NA	NA	ROW	No	No	No	Yes	No
Setting: Cup size programming	On/Off	NA	NA	Off	No	Yes	No	Yes	No
Machine version (optional hardware: steam version)	Water version (CS203); Steam version (CS223/224)	NA	NA	TBD	No	No	No	Yes	No
Direct water activation	On / Off	NA	NA	Off	No	No	Yes	Yes	No
Cup heater activation	Enabled or disabled	NA	NA	Disabled	No	Yes	No	Yes	No
Neslink status (airplane mode)	Normal mode, GPRS off	NA	NA	Normal	No	No	No	Yes	only "GPRS Off"
Auto-power off time	4 levels: 30 min, 1h, 2h, 12h	30 min	12 h	30 min	No	Yes	No	Yes	Yes
Service center number	15 numeric characters	NA	NA	NA	No	No	No	Yes	Yes
Language on the display: ENGLISH => English, ENGLISH_INT => English International, ARABIC, BRAZILIAN PORTUGUESE, BULGARIAN, CANADIAN FRENCH, CHINESE SIMPLIFIED, CHINESE TRAD, CZECH, DANISH, DUTCH, FINNISH, FRENCH => Français, GERMAN => Deutsch, GREEK, HUNGARIAN, HEBREW, ITALIAN => Italian, KOREAN, MALAYSIAN, NORWEGIAN, POLISH, PORTUGUESE, ROMANIAN, RUSSIAN, SLOVENIAN, SPANISH, SPANISH_LATAM, SWEDISH, TAIWANESE, THAI, TURKISH		NA	NA	English	No	Yes	No	Yes	Yes

i Use this parameter table as reference when working with the ASC maintenance software. Refer to ASC software manual.

Parameter	Range	min.	max.	Factory setting	Adjustable by customer	Adjustable by Super user (3 buttons)	Adjustable by Power user (6 buttons)	Adjustable with ASC PC	Adjustable by NBO
System									
Display contrast		1	10	3	No	Yes	No	Yes	Yes
Neslink									
Neslink installed	Yes or No	NA	NA	Depends on model	No	No	No	Yes	No
Neslink function enabled or not	Enabled or disabled	NA	NA	Enabled	No	No	No	Yes	Yes
Alarms as criteria for Neslink communication	Enabled or disabled	NA	NA	Enabled	No	No	No	Yes	Yes
Coffee consumption level for statistics shipment to NBO (limit for information package shipment)	200 -2000	200	2000	500	No	No	No	Yes	Yes
Preparation									
Hot water temperature	Low, Medium, High	NA	NA	Medium	No	Yes	No	Yes	Yes
Hot water amount	From 20ml to 400ml	20	400	125ml	Yes (depends on parameter #7)	No	No	Yes	No
Coffee temperature level	Low, Medium, High	NA	NA	Medium	No	Yes	No	Yes	Yes
Ristretto amount left		20	60	25	Yes (depends on cup size programming)	No	No	Yes	No
Espresso amount left		30	150	40	Yes (depends on cup size programming)	No	No	Yes	No
Lungo amount left		80	300	110	Yes (depends on cup size programming)	No	No	Yes	No
Ristretto amount right		20	60	25	Yes (depends on cup size programming)	No	No	Yes	No
Espresso amount right		30	150	40	Yes (depends on cup size programming)	No	No	Yes	No

Parameter	Range	min.	max.	Factory setting	Adjustable by customer	Adjustable by Super user (3 buttons)	Adjustable by Power user (6 buttons)	Adjustable with ASC PC	Adjustable by NBO
Preparation									
Lungo amount right		80	300	110	Yes (depends on cup size programming)	No	No	Yes	No
Steam time		5	60	20	Yes (depends on cup size programming)	No	No	Yes	no
Descaling									
Water Hardness	4 levels: Soft, Medium, Hard, Very hard	NA	NA	Medium	No	Yes	No	Yes	Yes
Setting for direct water connection filter life (filter setting liter)	1'000, 2000, 5000, 10000	1000	10000	5'000	No	No	Yes	Yes	No
Water filter installed or not (in water tank)	Yes or No	NA	NA	No	No	Yes	No	Yes	Yes
Water filter installed or not (direct water connection)	Yes or No	NA	NA	No	No	No	Yes	Yes	No
Descaling alarm function	Enabled or Disabled	NA	NA	Enabled	No	Yes	No	Yes	Yes
Milk Jug Changing time (USA only)	From 1 hour to 4 hour	1 h	4 h	1 h	No	No	Yes	Yes	No
General									
Machine unit 19 digit number	NA	NA	NA		No	No	No	Yes	No
Installation date by a technician	NA	NA	NA		No	No	No	Yes	No
Neslink activation date	NA	NA	NA		No	No	No	only rest to 00.00.0000	Yes

Parameter	Range	min.	max.	Factory setting	Adjustable by customer	Adjustable by Super user (3 buttons)	Adjustable by Power user (6 buttons)	Adjustable with ASC PC	Adjustable by NBO
Tower Parameters									
Time for dispensed capsule	“>2 min<” “>3 min<” “>5 min<” “>10 min<” “>20 min<” “>30 min<” “>60 min<”	2 min	60 min	10 min	No	No	Yes	Yes	Yes
Numbers of max pads to dispense without preparing	2 to 20	2	20	10	No	No	Yes	Yes	Yes
Tower link	0 = OFF 1 = ON	NA	NA	Disabled	No	No	Yes	Yes	Yes

8 MAINTENANCE

8.1 Neslink

Refer to separate manuals for
- remote maintenance of the coffee machine via Neslink (NBO),
- SIM card and GSM module settings,
- updating the Neslink basic firmware and the Neslink application software.

i This chapter contains basic maintenance work done by the customer as well as special maintenance instructions for the service technician.

8.2 Clean milk outlet

Although the milk container is designed as thermos, the milk heats up slowly during coffee machine operation and can spoil.

i The milk container is tested for an internal temperature rise of 5 °C after 4 hours at an ambient temperature of 30 °C.

☞ **Inform the customer**
- **to pay attention to national hygiene standards,**
- **to reduce the residence time of the milk container for locations with high room temperature.**

Therefore a timer limits the residence time of the milk container in the coffee machine.

☞ **The timer cannot be deactivated.**

If the set residence time is reached and the timer has expired
- a display message appears,
- the cappuccinatore unit is blocked,
- a rinsing with hot water has to be performed,
- the milk container has to be replaced,
- and the disposable nozzle with the straw have to be discarded.

i Refer to the user manual for cleaning the milk outlet.

The timer has different settings depending on the coffee machine model:

Timer for CS223 coffee machines

The timer has a fix setting of 4 hours and cannot be adjusted.

Timer for CS224 coffee machines

The timer can be adjusted from 1 to 4 hours in the power user menu (see page 41).
To reset the timer and unblock the cappuccinatore unit:
Pull out the drip tray with the milk container from the coffee machine for at least 3 sec.

⚠ Health hazard! Spoiled milk is detrimental to health! Do not prolong the residence time of a filled milk container in the coffee machine with this method.

8.3 Daily maintenance and cleaning

Refer to user manual for daily maintenance and cleaning procedure.

8.4 Change water filters (optional)

Refer to user manual for filter exchange procedure.

☞**The installation of Aqua Clarity water filters in the water tanks is highly recommended for hard or extra hard water.**

8.5 Descaling

Refer to user manual for descaling procedure.

☞ **A descaling alarm does not block the coffee machine anymore.**

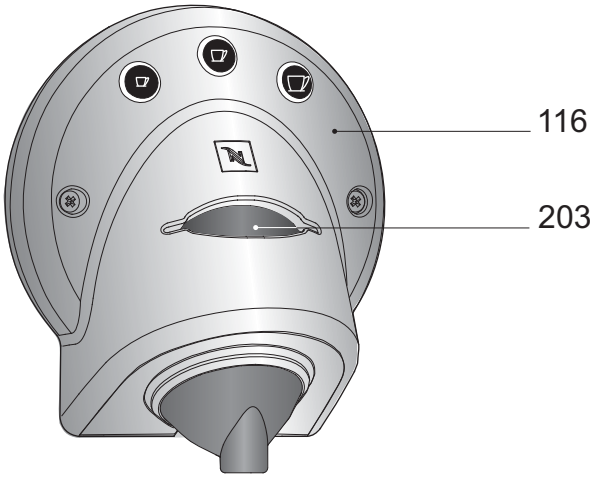
☞ **If the descaling process is interrupted before descaling is finished, a rinsing procedure must be done.**

8.6 Extraction unit maintenance

The extraction units are exposed to wear and tear during operation and contain wearing parts. Within the scope of a maintenance agreement it is advisable to exchange the wearing parts periodically.

8.6.1 Security check

⚠ Malfunction of the safety lid (203) can cause injuries! Finger tips that are inserted in the capsule slot can be squeezed.



Whenever a faceplate (116) is detached during maintenance, the correct function of the associated safety lid (203) must be tested after reassembly.

Procedure

1. Insert an obstacle (e.g. screwdriver, pencil etc.) in the capsule slot.
2. Switch on mains switch and press stand-by button.
3. The coffee machine performs a self-test and closes/opens the extraction units.
4. As soon as the safety lid detects the obstacle, the concerning extraction unit stops and the display message "Machine blocked - call service center" appears.
5. Remove the obstacle.

If the obstacle is clamped in the extraction unit or damaged:

- Check wiring of safety lid (203).
- Replace a defect safety lid (refer to page 78).
- Repeat security check.

8.6.2 Lubrication of extraction unit

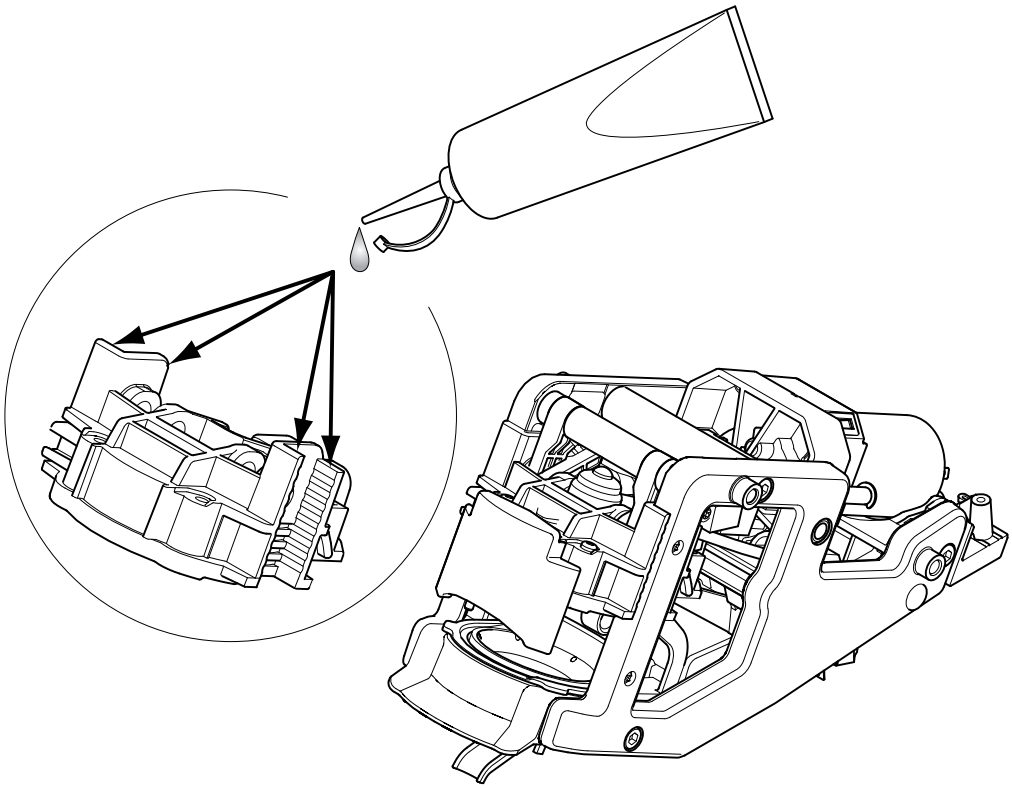
Specified lubricant for extraction unit

Molykote PG65 Plastislip, art. no: 01945866

Use only specified lubricant! Improper lubricants can decrease the service life of the extraction unit.

Use this lubricant for **vertical guiding ways** and **2nd generation motor spindles** only.

Lubricate vertical guiding ways



Lubricating points on extraction unit

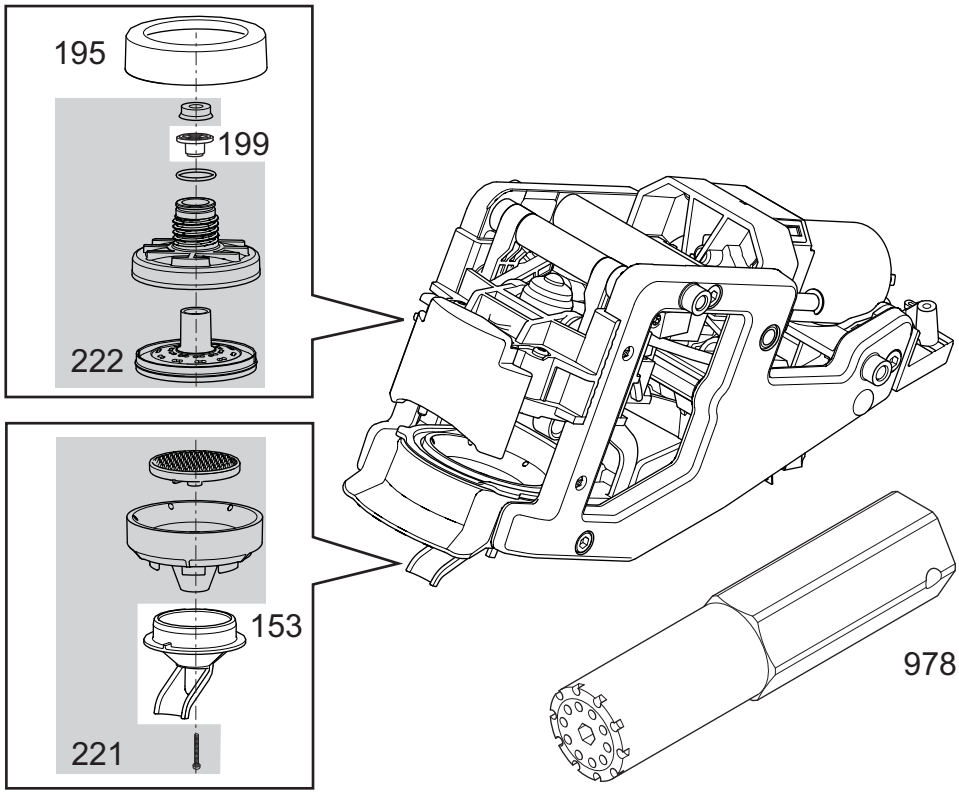
Production date	Lubrication interval
all generations	after every 20’000 coffee preparations

Lubrication procedure

1. Remove extraction unit (refer to page 76).
2. Lubricate the vertical guiding ways with a little grease.
3. Check smooth and quiet running of mechanism.

8.6.3 Wearing parts

i The special mounting tool (978) is necessary to remove the shower, a part of the spare support plate (222).



Pos.	Designation	Replacement	
		mandatory	optional
153	Outlet 702, extract unit, black		X
195	Seal 758, extract head V2, black, 80 shore, 2x0.5 mm, embossed		X
199	Thrust ring 702, seal, black, extraction unit	X	
221	Spare kit pyramid plate 702 V2	X	
222	Spare kit support plate 733	X	
978	Mounting tool 702, alu (EFR no. 44269)	—	—

☞ **Keep in stock the following wearing parts: Pos. no. 195, 199, 221, 222**

8.6.4 Maintenance schedule

i Refer to "Replacing worn parts" on page 74.

i After this maintenance the extraction unit will be able to run for about another 18'000 coffee preparations.

Maintenance work after every 20'000 coffee preparations per extraction unit:

- Replace pyramid plate and its support with set (221).
- Replace shower
- Replace gasket
- Replace pressure valve
- Replace driver (spur gear, 175) for spindle screw
- Clean extraction unit (brewing chamber, coffee outlet with cover etc.)
- Lubricate extraction unit, see page 49.

9 TROUBLESHOOTING

This chapter gives useful hints and information for fault finding. It is not intended as a complete list of possible errors and malfunctions.

9.1 Check list

With an acceptance check in accordance with this checklist, common errors are quickly found and corrected. Therefore, adhere to the sequence of the check list. Repair every occurring error and work the check list until it is completed.

Procedures	Checks / repair works
1 Inspect housing of the coffee machine for visible damage	• Replace damaged or broken housing parts • Replace a damaged power cord
2 Inspect accessory parts (milk container, water tanks, capsule containers, drip trays)	• Replace incomplete, damaged, broken or missing accessories • Clean dirty or bad smelling accessory parts (use only detergents that do not affect plastic) • Clean and polish corroded contact surfaces of drip trays • Remove filter cartridges from water tanks
3 Fill water tanks	• Check tightness of water tank valves • Replace leaking water tank(s)
4 Prepare coffee machine for operation and switch on mains switch	If stand-by button is not red backlighted and no cup lighting is visible for some seconds: • Check mains voltage • Check power cord • Check thermo fuses • Check secondary voltages of transformer
5 Read data with dongle (refer to separate user manual)	• Connect, verify software version and update if necessary • Save machine's data on PC (machine follow-up) • Analyse machine's data
6 Turn machine on (press stand-by button)	• Check display for messages
7 Prepare coffee (both coffee outlets), hot water and steam (CS223/224 only)	• Check display for messages • Check capsule insertion and ejection • Check if coffee machine is leaking
8 Perform function tests (see page 126)	
9 Check the coffee unit counters using the dongle (refer to separate user manual)	• If machine has reached 20'000 coffees (per extraction unit), replace extraction unit parts (see "Maintenance schedule" on page 50).
10 Descale coffee machine if necessary (see user manual)	
11 Save statistic data on PC (refer to separate user manual)	
12 Clean coffee machine (see user manual)	
End of check list	

9.2 Error messages

The coffee machine displays only two real error messages. The other messages concern operating errors or service notes (refer to "Display messages" on page 27).

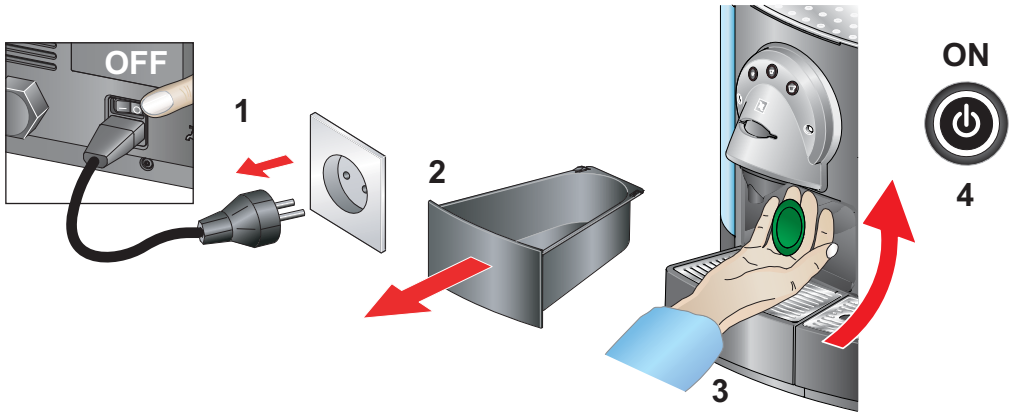
☞ **Bear in mind that more than one error can occur at the same time. The display shows the most important message first.**

9.2.1 Capsule not ejected

This error message appears after coffee preparation, if no ejected capsule has been detected by the light barrier under the extraction unit. After 3 unsuccessful ejection attempts, the concerning coffee unit will be locked and its coffee buttons turn to red.

Quick fix

Instruct customer by phone to perform this quick fix.



1) Switch off coffee machine and unplug power cord.
2) Remove capsule container of locked coffee unit.
3) Reach into ejection hole and detach stucked capsule.
4) Reconnect power cord and switch on coffee machine.

☞ **There is no risk of getting hurt or burned.**

☞ **Do not switch on coffee machine without removing the stucked capsule first completely. If parts of a damaged capsule remain in the coffee extraction unit, this error can reappear.**

Additional measures (if safety lid is open)

Check ejector mechanism of extraction unit, if error happens again (refer to "Extraction unit" on page 74).

1. Lit through capsule slot into brewing chamber with a pocket lamp.
2. Insert a tea-spoon etc. through capsule slot and remove foreign object(s) completely and carefully.

☞ **Pay special attention to the shower at the top of the brewing chamber.**

3. Reset coffee machine: Switch stand-by button to stand-by and ON again to resume operation.

9.2.2 Call *Nespresso* Club - Machine blocked

☞ **For fault localization, check first which buttons of the coffee/cappuccino units turn to red in combination with this error message.**

Possible reasons:

- Defective NTC temperature sensor on thermoblock
- NTC temperature sensor is not fixed
- Thermoblock defective
- Flow meter defective
- Micro switch of safety lid defective
- Motor of extraction unit blocked or defective
- Internal leakage
- Machine scaled

Remedy:

- Check the history bit counters in the statistic data file (refer to user manual for ASC software).

☞ **Every problem that leads to a ”machine blocked” message is tracked and monitored by history bits. For each history bit, two counters are in use: one which cannot be reset, and a resettable one.**

9.3 Drip tray display messages

The left and right drip tray, as well as the middle drip tray of the CS223/224 coffee machine have contacts that are inserted in a contact bank for water level and attendance detection. These contact points can be the reason of irrational display messages concerning the drip trays.

Erroneous display message and possible reasons

No drip tray

Consequence of corroded or defective contact(s):

- Contacts can corrode if exposed to a descaling agent.
- A deformed contact bank can be the reason for defective contacts.

Drip tray full

- Consequence of wet and short-out contacts by water drops (rarely reason, eg. after cleaning the drip trays).
- An internal leak can affect the cable connectors of the contact bank wiring.

Remedy:

1. Inspect contacts on drip tray:
   Dry, clean and polish contacts with an emery paper if necessary.
2. Inspect associated contact bank in coffee machine:
   Dry, clean and align contacts. Replace a corroded contact bank, refer to
   - "Replacing left / right contact bank" on page 73,
   - "Replacing middle contact bank" on page 94.
3. Check coffee machine for water leaks (see page 134).

☞ **Instruct customer to**
- dry contacts after cleaning the drip trays,
- clean drip tray contacts carefully and immediately after descaling.

9.4 Coffee capsule falls through

An inserted new coffee capsule falls through the extraction unit into the capsule container immediately.

Possible reasons:

- The extraction unit is not opened completely.
- The limit stop or the ejector in the extraction unit is stucked or damaged.
- Several capsules stucked in the extraction unit.

Remedy:

- Check for stucked capsule(s) in extraction unit (refer to "Capsule not ejected" on page 52).
- Check ejection mechanism.
- Replace complete extraction unit if defective.

9.5 Only hot water during coffee preparation

The used coffee capsule is not or only partly perforated on both sides.

Possible reasons:

- A second capsule is stucked in the brewing chamber of the extraction unit.
- The capsule is not well positioned in the brewing chamber.
- A deformed capsule border - the hot water flows straight to the coffee outlet.

Remedy:

- Check for stucked capsule(s) in extraction unit.

9.6 No or too less steam for milk preparation

Possible reasons:

- The steam nozzle is clogged.

☞ **Milk residues can curdle and clog the steam nozzle outlet.**

- The cappuccinatore unit is calcified.
- An internal leak can reduce the rate of steam flow.

Remedy:

- Unscrew steam nozzle. Clean nozzle or replace steam nozzle.

☞ **Inform customer to clean the steam nozzle with a steam jet periodically (see user manual). Reduce the timer setting for the milk cleaning alert (only for CS224, see page 41).**

- Perform descaling.
- Check for leaks and replace faulty parts (refer to "Performance checks for cappuccinatore unit (CS223/224 only)" on page 137).

9.7 Noisy extraction unit

Abnormal noises (grumbling) during the opening and closing of the extraction unit.

Possible reasons:

- Dry running guiding ways in extraction unit.
- Drive unit defective (electric motor with gear box).

Remedy:

1. Remove extraction unit (refer to "Extraction unit" on page 74) and check if mechanism is running smoothly and quietly.
2. Overhaul and grease extraction unit if necessary (refer to "Lubrication of extraction unit" on page 49).

9.8 Direct water connection problems

Stick to the following procedure if the direct water connection does not work after installation.

Check water supply installation

- Machine correctly connected to the cold water supply?
- Water supply opened?
- Water pressure within limits (0.8 - 10 bar)?
- Non-return valve mounted inverted?
  (See arrow head or similar sign on housing.)



Rinse water supply pipe first, if it was not used for a long time! Dirty water can clog the coffee machine.

Check coffee machine setting

- Water tank connection valve set to ON?
- Menu point "Direct water" set to ON in super user menu?

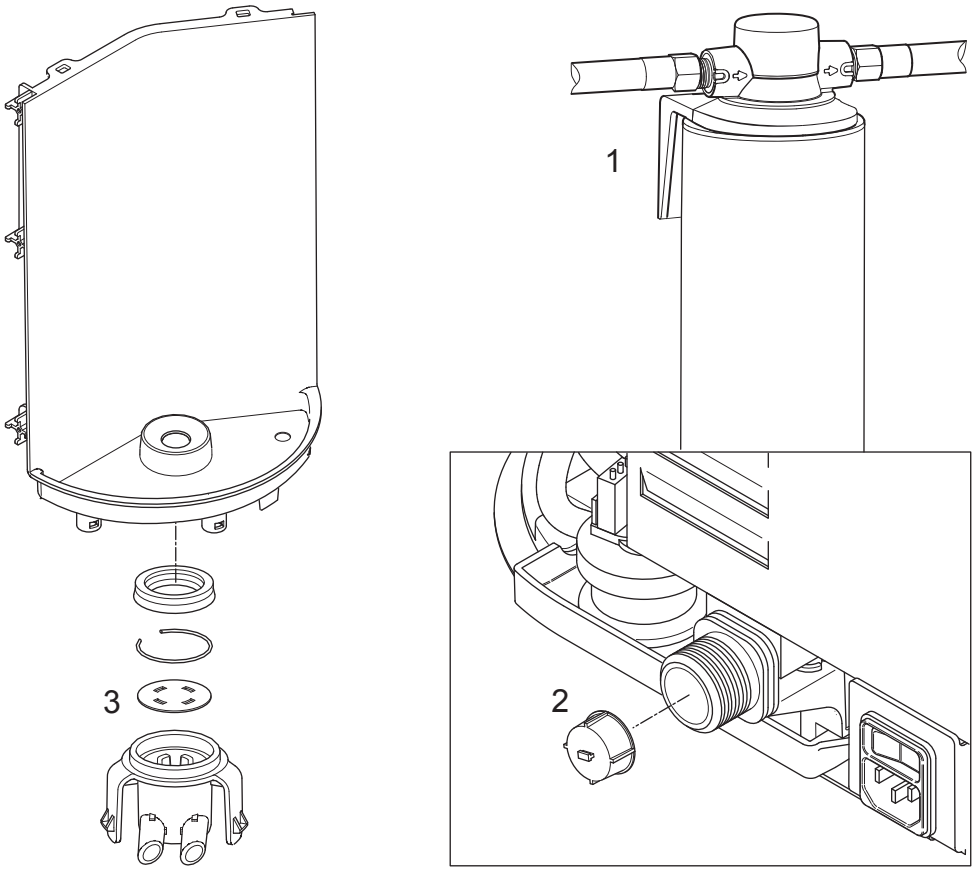
Check if coffee machine is clogged

The water circuit of the coffee machine is
- susceptible to floating particles,
- protected by filter elements that can be clogged.

☞ **Especially a high water consumption with a direct water connection can lead to clogging-up. Therefore an additional filter in the water pipe of the direct water connection is recommended.**

Close connection to water supply first, when checking the filter elements.

For a trouble-free flow of water it is necessary to inspect and clean all filter elements regularly.



1) External water filter (symbolic illustration)
2) Filter insert in direct water solenoid valve
3) Mesh bottom in valve lifters (2x)

☞ **For maintenance of an external water filter, refer to the supplier documentation.**

10 REPAIRS

These repair instructions
- help to localize components of the coffee machines with general drawings,
- are based on exploded drawings combined with repair and mounting tips,
- presuppose basic knowledge in repairing *Nespresso* coffee machines.

☞ **As a rule, identical components (eg. pumps, thermoblocks etc.) are presented in detail only once.**

This chapter contains special safety and assembly notices. Disregarding them may lead to injuries and damages.

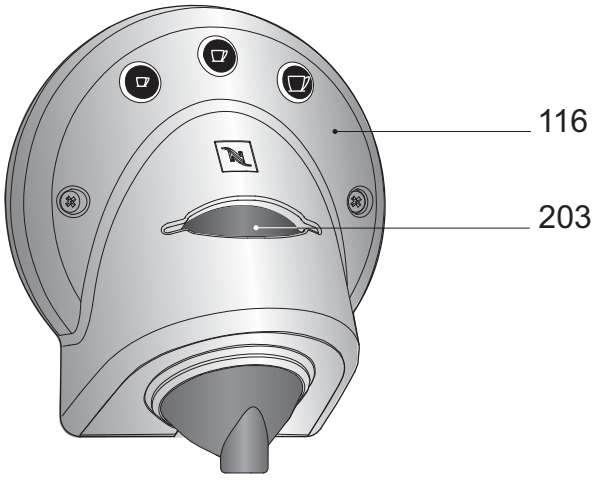
10.1 Safety instructions

Danger of electrocution!
Mains voltage inside the coffee machine.
Disconnect the mains plug before disassembly - the coffee machine must be voltage free.

Danger of burns!
Hot parts and water under pressure inside the coffee machine (all thermoblocks in particular).
Let coffee machine cool down before disassembly.

Danger of flooding in regard to the direct water connection!
During repair of the coffee machine on-site, turn off and lock stop valve of direct water connection. Attach a danger sign to prevent unauthorised operation.

10.1.1 Security check



Malfunction of the safety lid (203) can cause injuries! Finger tips that are inserted in the capsule slot can be squeezed.

Whenever a faceplate (116) is detached during service or repair, the correct function of the associated safety lid (203) must be tested after reassembly.

Procedure

1. Insert an obstacle (e.g. screwdriver, pencil etc.) in the capsule slot.
2. Switch on mains switch and press stand-by button.
3. The coffee machine performs a self-test and closes/opens the extraction units.
4. As soon as the safety lid detects the obstacle, the concerning extraction unit stops and the display message "Machine blocked - call service center" appears.
5. Remove the obstacle.

If the obstacle is clamped in the extraction unit or damaged:

- Check wiring of safety lid (203).
- Replace a defect safety lid (refer to page 78).
- Repeat security check.

10.2 General

10.2.1 Repair and mounting tips

These general advices are completed with specific repair tips in this chapter.

Additional information

For components not mentioned in this repair chapter, refer to the exploded drawings in chapter "Exploded drawings" on page 150.

Screw connections

Do not overtighten screws. Plastic threads and inserts are delicate.

Snap connections

Parts of the case and components of the coffee machine are connected screwless with latches.

☞ **When loosening these connections, proceed with care and patience to avoid causing any damage.**

Designation of spare parts

Only use original spare parts from your official supplier for maintenance and repair work. Spare parts lists and exploded drawings are subject to change. To obtain the last version, please visit the web shop or contact your official spare parts supplier.

The components in the following illustrations are indexed with position numbers. Added position numbers in brackets refer to similar, mirror-inverted parts not shown in the illustration.
See separate spare parts list for corresponding spare part numbers.

☞ **Distinguish between spare parts of the CS203 and CS223/224 coffee machines.**

Electrostatic discharge protection

When installing a new display or printed circuit board, the service technician must be earthed with a grounding band.

Wiring arrangement

Random changes in the wiring arrangement during a repair can cause
- electromagnetic interferences,
- squeezed wires,
- insulation defects due to contact with hot parts,
- insulation problems if low and high voltage wires are not separated,
- NESLINK interferences.

Protective measures

- Do not change the course of internal wiring during repair.
- Make sure that wires are distant form hot parts - use existing cable clips.

Residual water

- Need to be done before any transport of machine.
- If it is necessary to pull off hoses from components, hold ready a small beaker and a towel to collect and wipe away leaking water.
- A special procedure (emptying mode) is necessary to empty the fluid system of the coffee machine for repair or shipment:

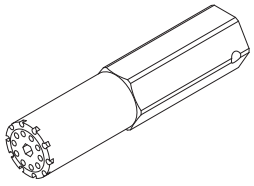
1. Check if there is no display message "Drip tray full". Empty full drip trays if necessary.
2. Switch machine to stand-by (stand-by button turns red after shut-down procedure).
3. Remove both water tanks.
4. Press and hold for 5 sec: Portion and fill up buttons for hot water together with middle coffee button "medium cup" of right coffee unit.

i In case of machine transport at a temperature below 0°C, an emptying mode must be done to prevent fluid system damage due to freezing residual water.

10.2.2 Tools and accessories

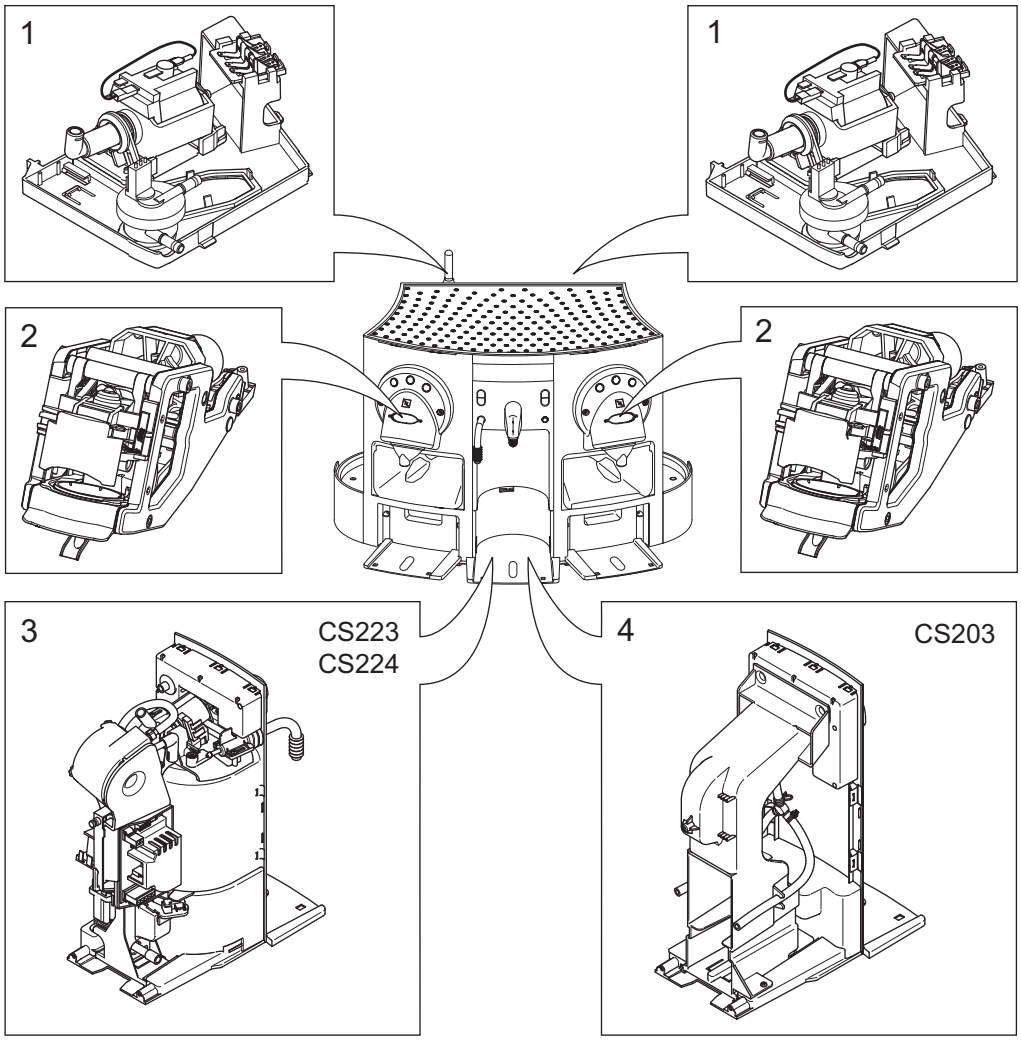
With the following assortment of tools, all repairs described can be made:

- TORX-screwdriver set TX6, TX10, TX15, TX20, TX25, TX30 (can be substituted partly by torx bits of special mounting tool)
- Slotted screwdriver no. 4
- Phillips (cross tip) screwdriver no. 0
- Open wrench, no. 10
- Open wrench, no. 8
- Long-nosed pliers
- Gripping pliers with serrated gripping surface
- Straight tweezers with long, fine tips
- O-ring pick with hook
- Torch
- Beaker and towel
- Special mounting tool with Torx bits (pos. no. 978, EF article no. 0044269) for shower in extraction unit



10.2.3 Overview of plug-in modules

The coffee machine has a modular design for ease of servicing:



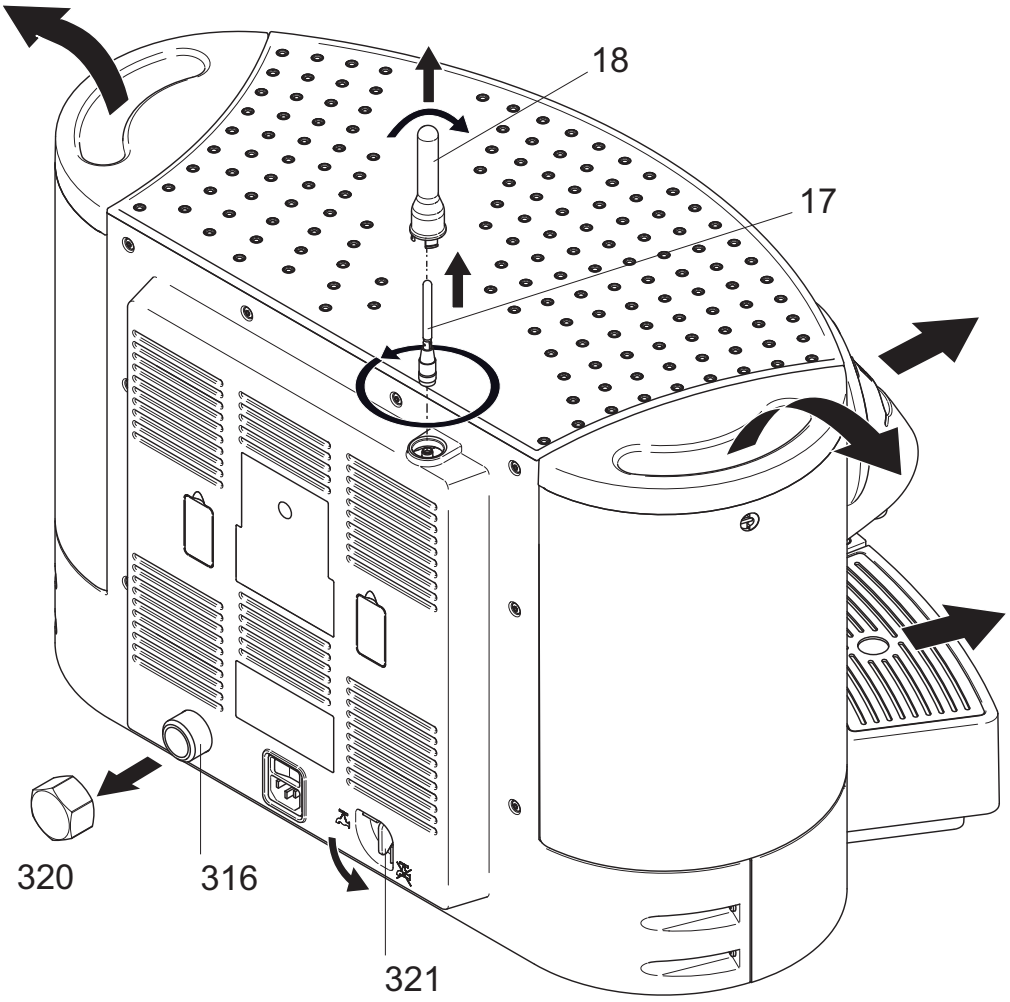
Position	Module	Components	Reference
1	Coffee pump / flow meter module	Pump	page 69
		Flow meter	
		Contact bank	
2	Extraction unit	Wearing parts	page 74
		DC motor	
		Spindle	
3	Hot water / steam module (CS223/224 only)	Keyboard	page 80
		Thermoblock	
		Pump	
		Cappuccino module PCB	
		Micro switches	
4	Hot water module (CS203 only)	Keyboard	page 90
		Contact bank	

10.3 General disassembly

This subchapter gives information how
- to open the casing of the coffee machine for a basic inspection and leakage check,
- the parts of the casing are mounted.

10.3.1 Opening the casing

i The following disassembly steps are required for most of the repair work.



1. Remove the power cord and all accessories first: water tanks, drip trays and capsule containers.



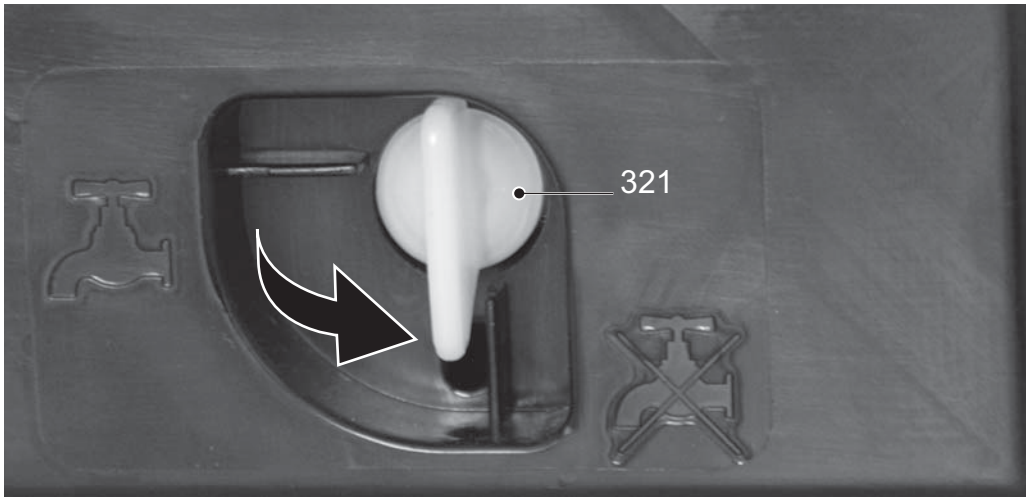


2. Rotate antenna cover (18) a quarter turn clockwise.
3. Pull off antenna cover (forcefully if necessary).

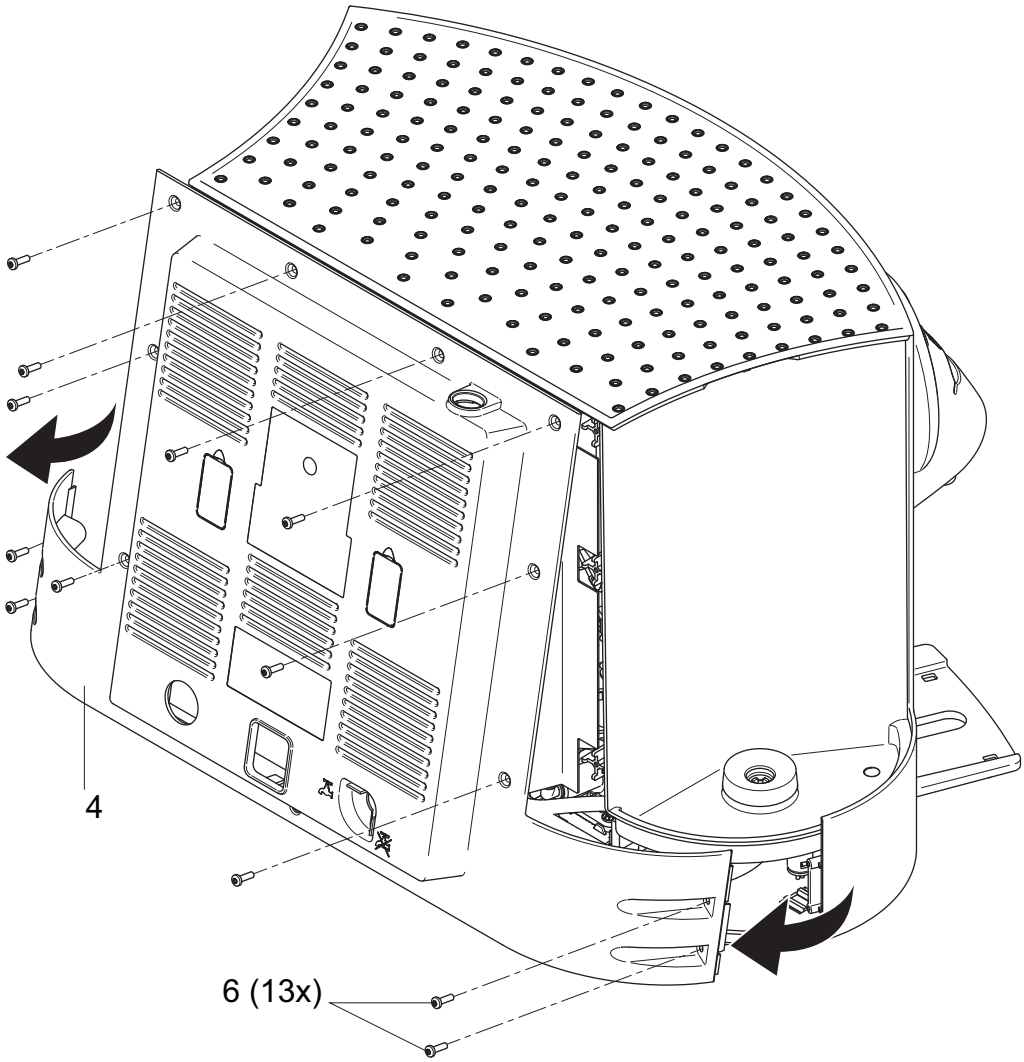


Use small gripping pliers with a serrated gripping surface if tightened fast.

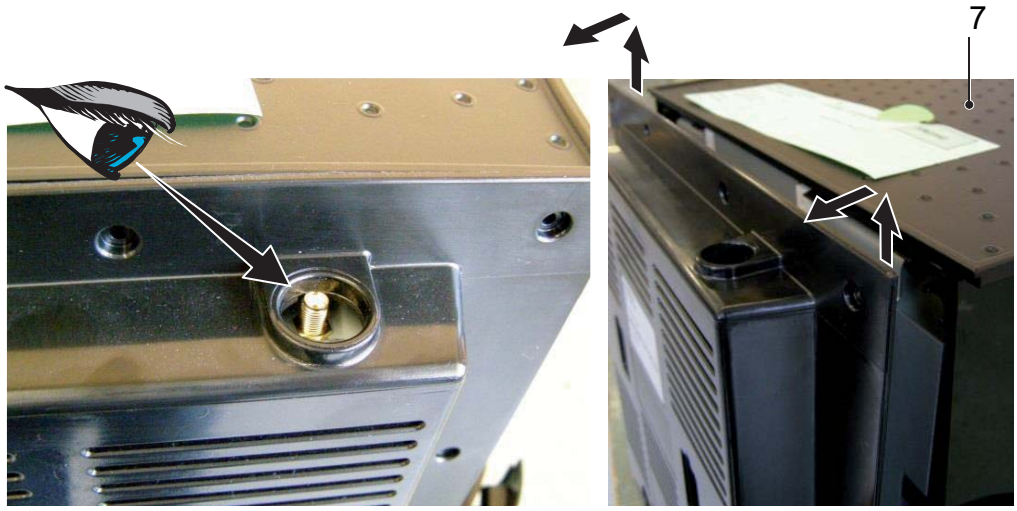
4. Unscrew antenna (17) counterclockwise by hand.



5. Unscrew cover (320) from direct water connection (316).
6. Turn water tank connection valve (321) to position OFF (align lever with aperture in back wall).



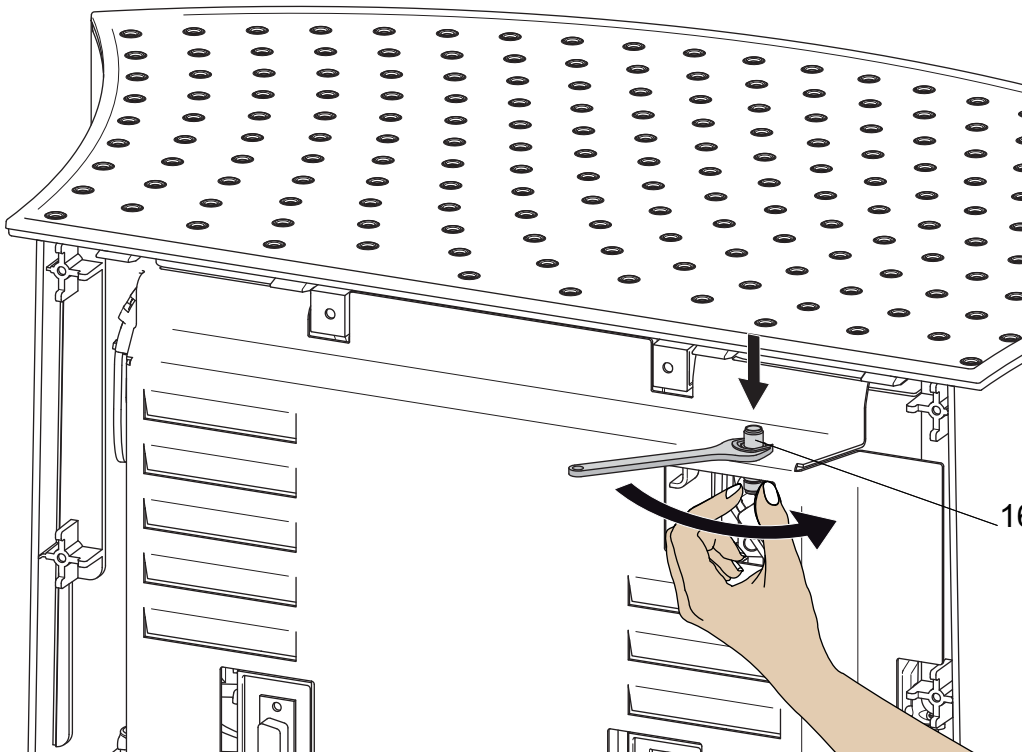
7. Unscrew all 13 screws (6, TX10) from the back wall (4).
8. Swing out bottom of back wall at first.



9. Lift back wall upwards and backwards and pull it off from antenna connector.

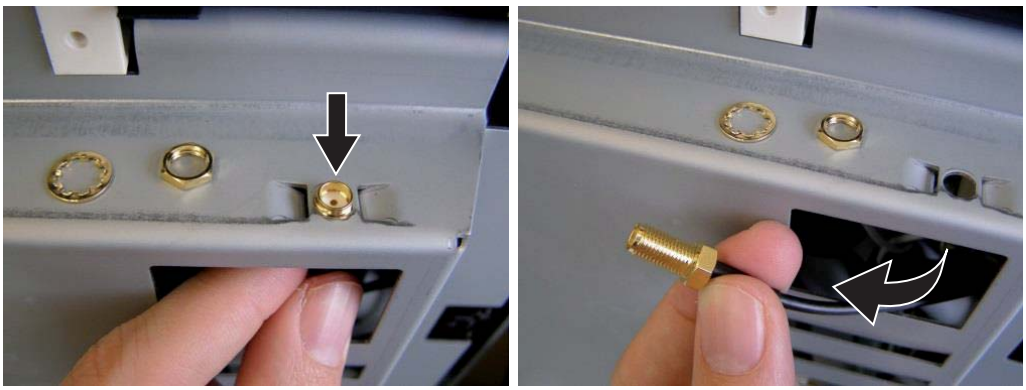
i Make sure the back wall is parallel to the rear edge of the heating plate (7).

Caution! Antenna cable (16) is fragile. Handle with care!



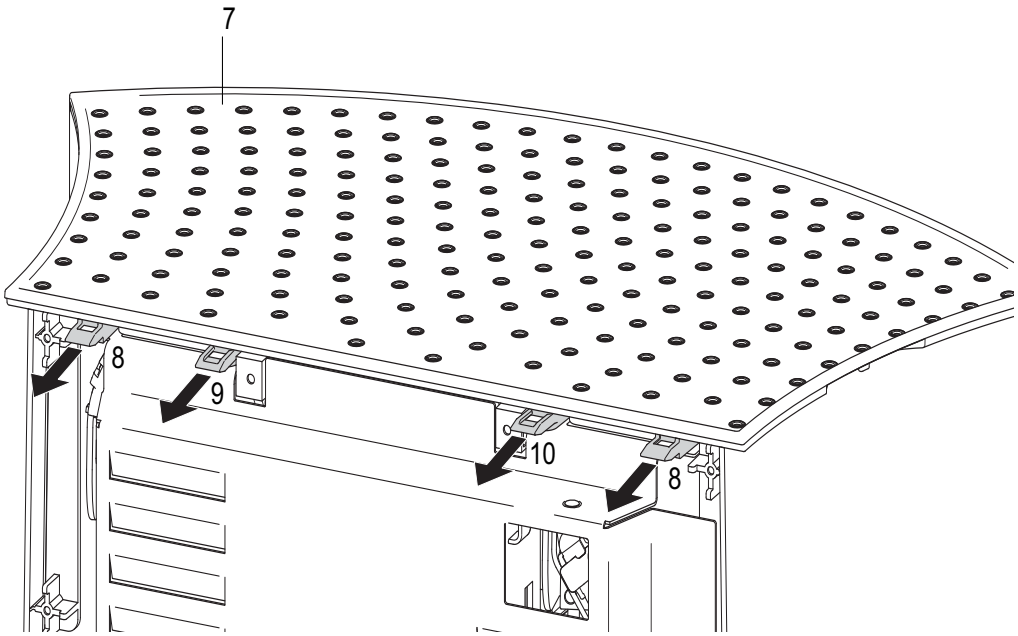
Fix bottom of antenna connector by hand to prevent it from rotating.

10. Unscrew nut from antenna connector (16) with a no. 8 wrench.

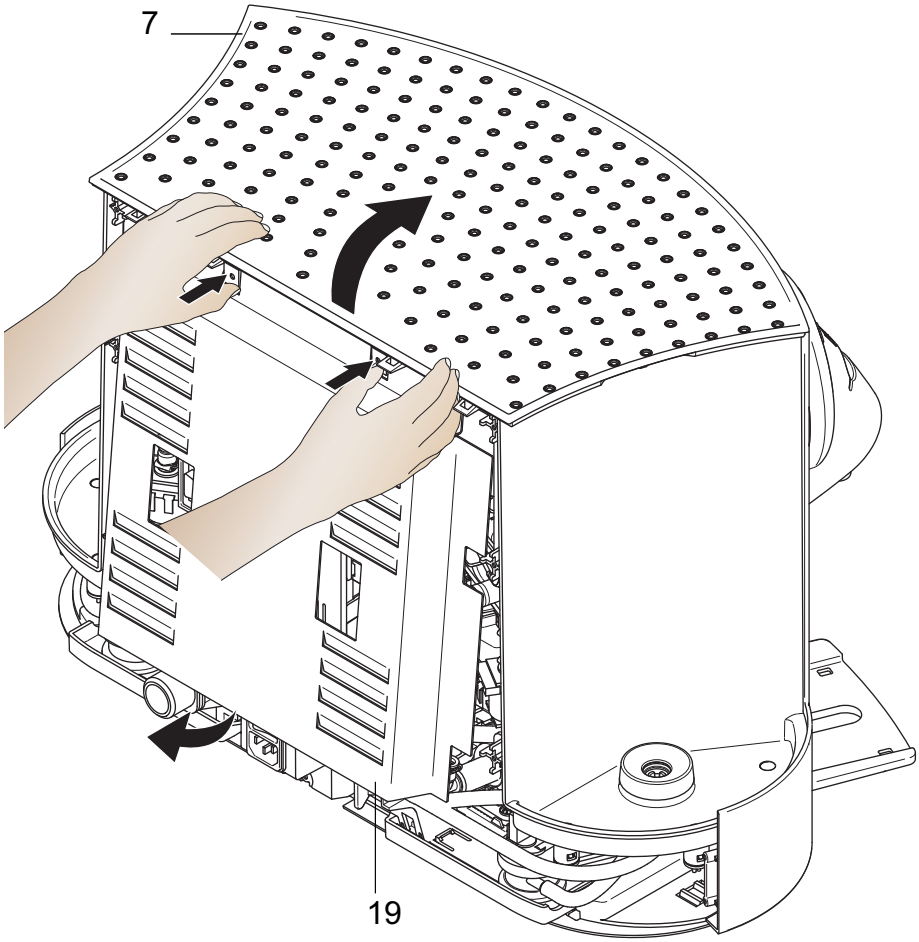


Take care not to lose the washer and nut.

11. Push antenna connector down through its mounting hole.

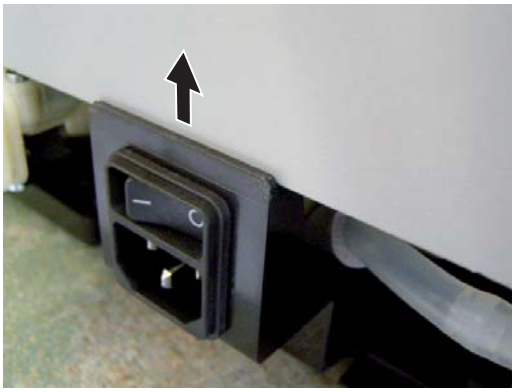


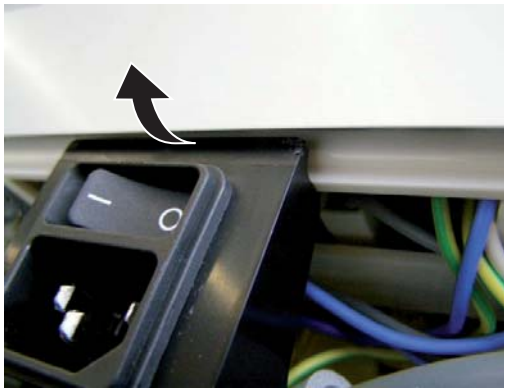
12. Use pliers to pull out 4 locking levers (2 x 8, 9, 10) under the heating plate (7).



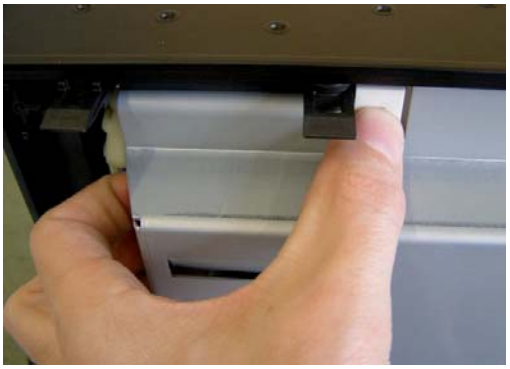
13. Remove heating plate (7) together with metal shield (19) as follows:

i The locking levers are attached with elongated holes to the heating plate and have a limit stop.



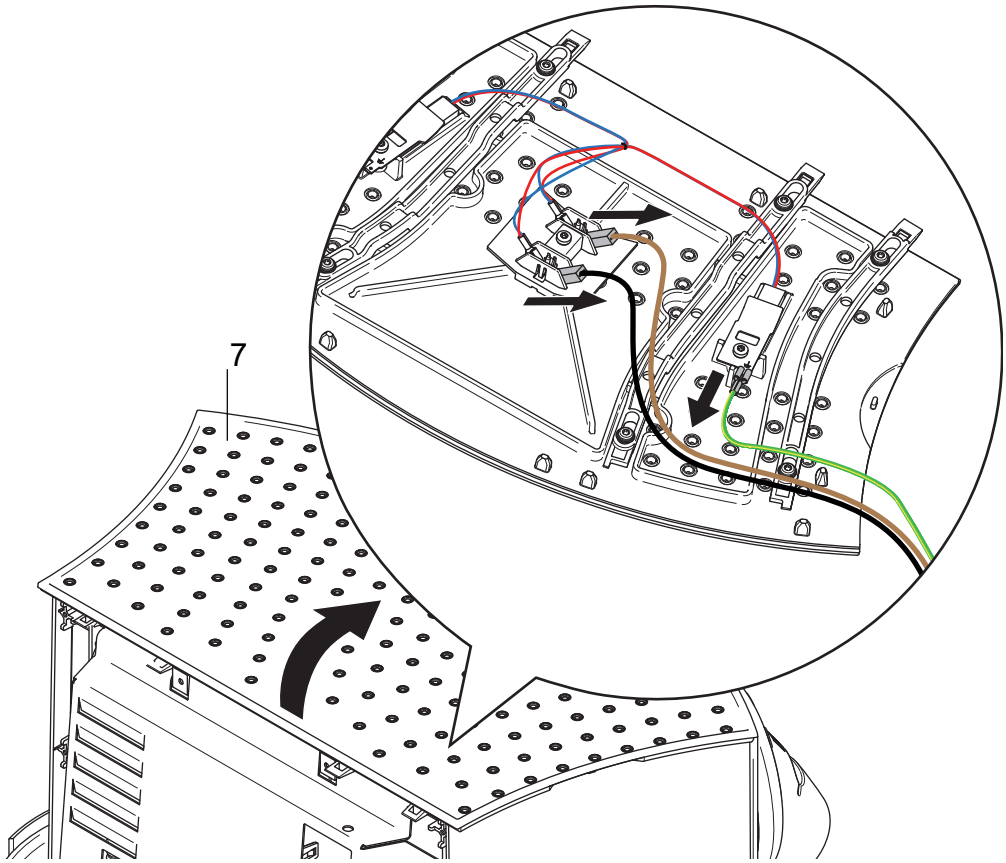


- Lift heating plate a little at the backside and pull bottom edge of metal shield out of cable plug support.



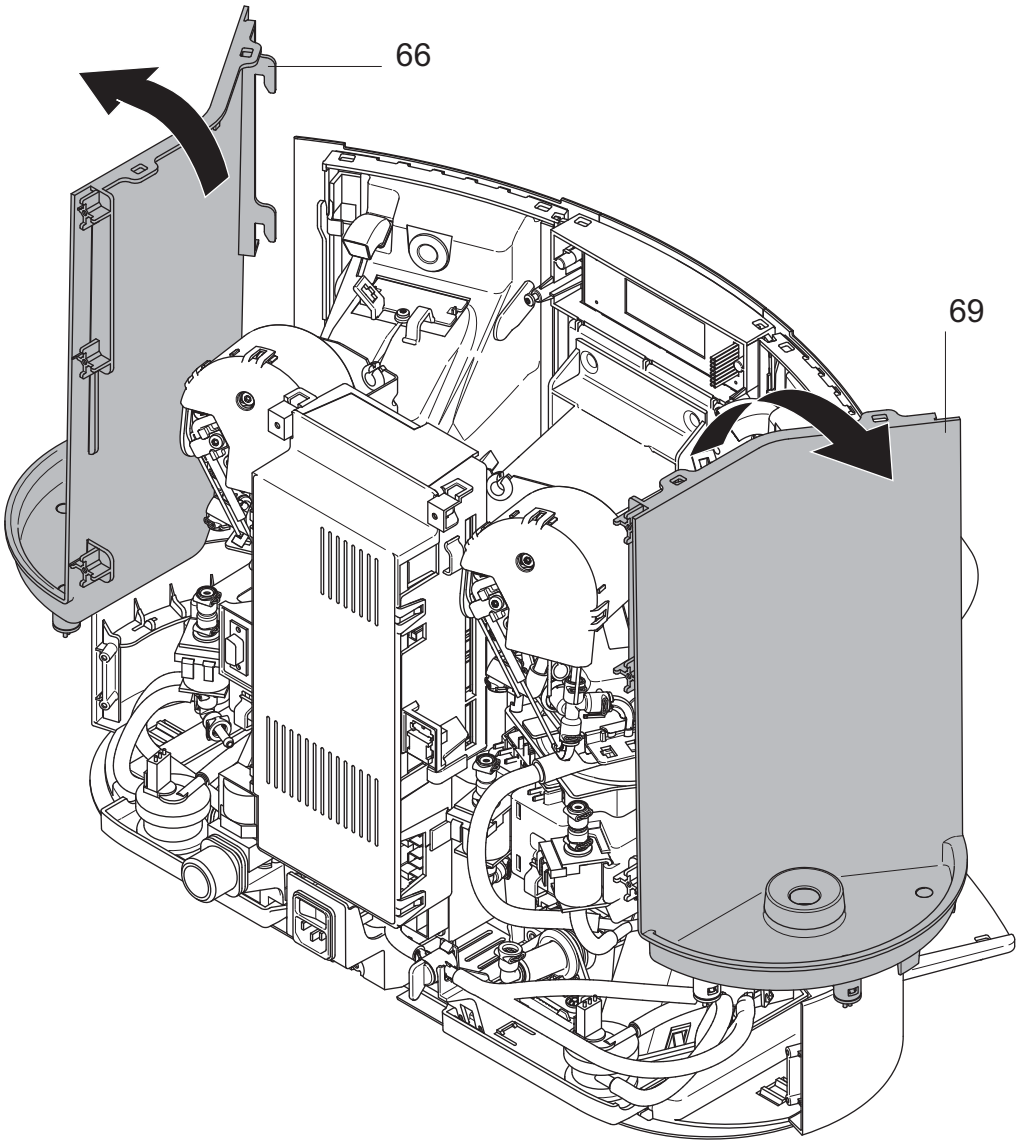


- Unblock metal shield by pressing it upwards and at the same time press in both white plastic studs.
- Finally lift heating plate out of the positioning holes at the front side of the coffee machine.



Remove receptacles with the help of a small flathead screwdriver.

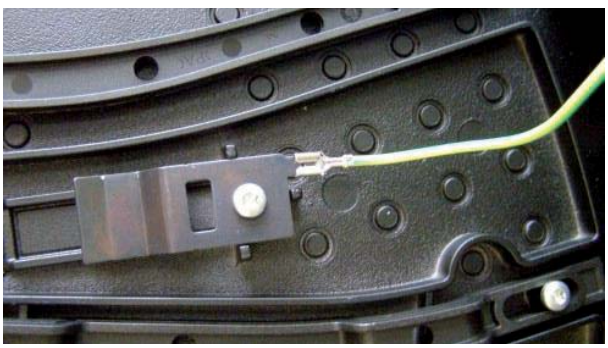
14. Detach ground wire at the underside of the heating plate (7).
15. Detach both insulated Faston receptacles from terminal block on the underside of the heating plate (only for CS203 heating elements).



When laying down the water tank supports (66, 69), do not tension the wiring of the water tank lighting.

16. To get access to lateral placed components of the coffee machine: Simply lift right and left water tank supports (66, 69) out of the anchoring.

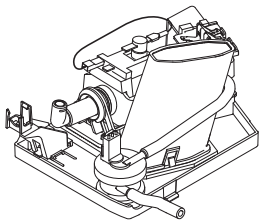
Repair tip

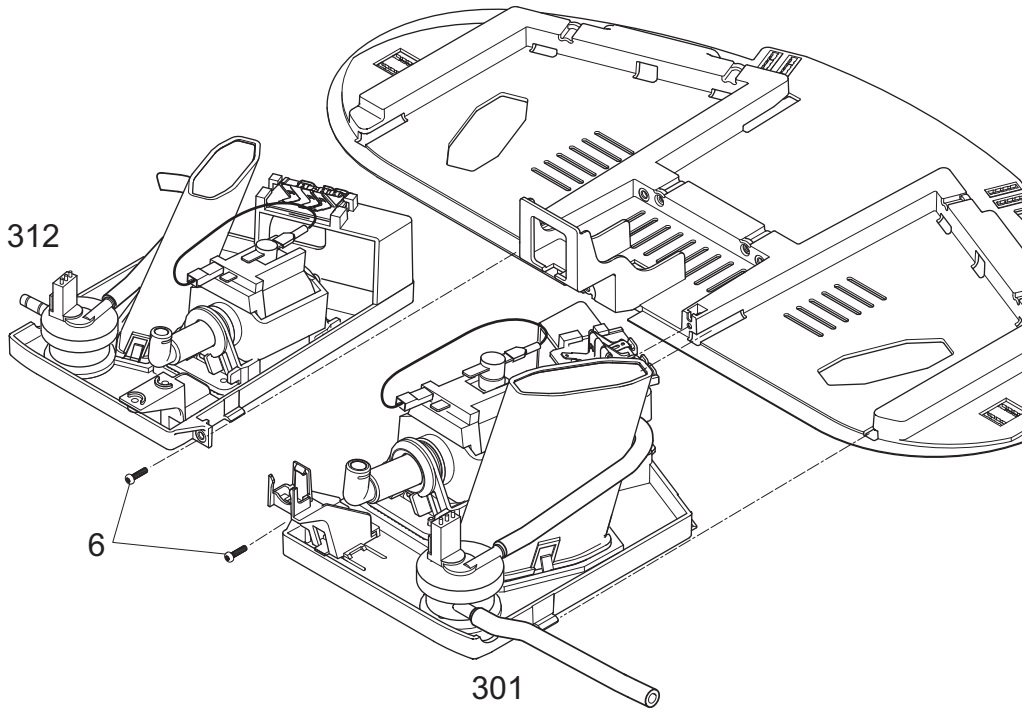


- Do not forget to reconnect the ground wire at the underside of the heating plate.

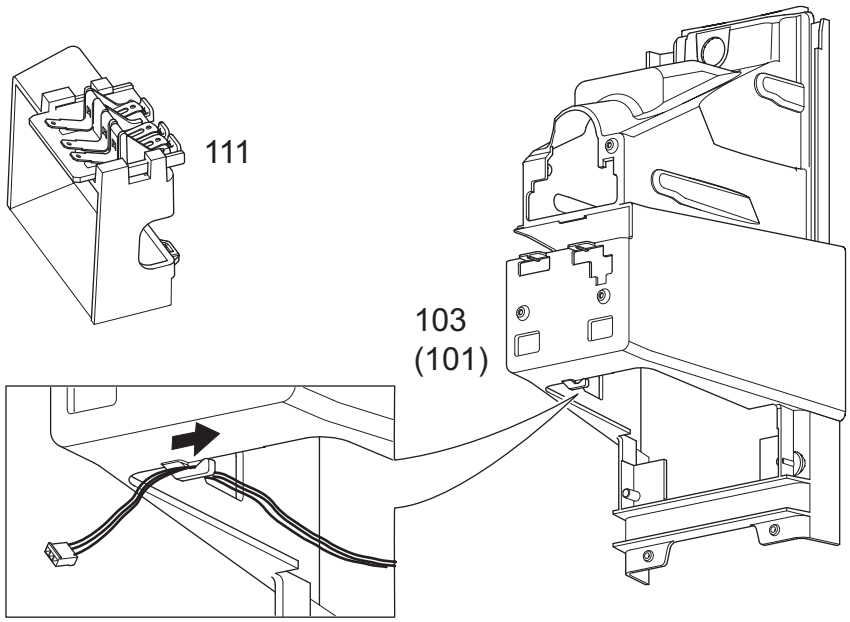
10.4 Coffee pump / flow meter module

10.4.1 Removing coffee pump / flow meter module



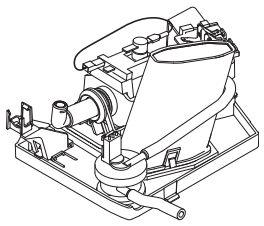


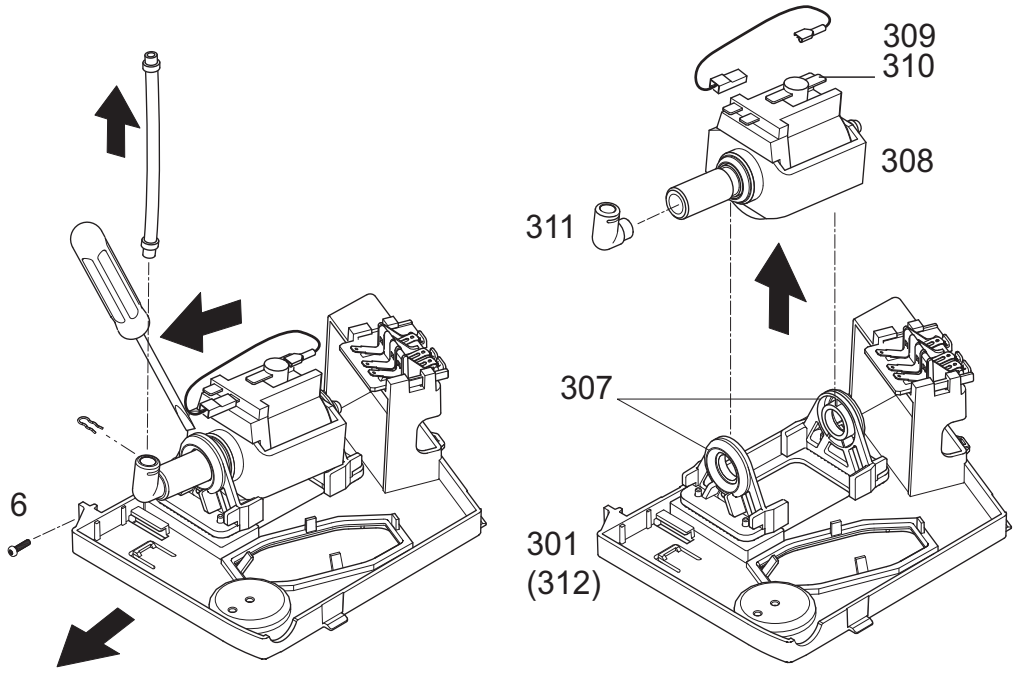
- Loosen screw (6) and pull out drawer (301 or 312) partially.
- Disconnect resp. disassemble all restricting cable and hose connections.



☞ **The wiring of contact plate (111) is fixed with a cable clip at the underside of the extraction unit holder (103 or 101). Make sure to remove wiring from cable clip before pulling out drawer.**

10.4.2 Replacing coffee pump





i The pump on the right coffee pump / flow meter module is illustrated as example.

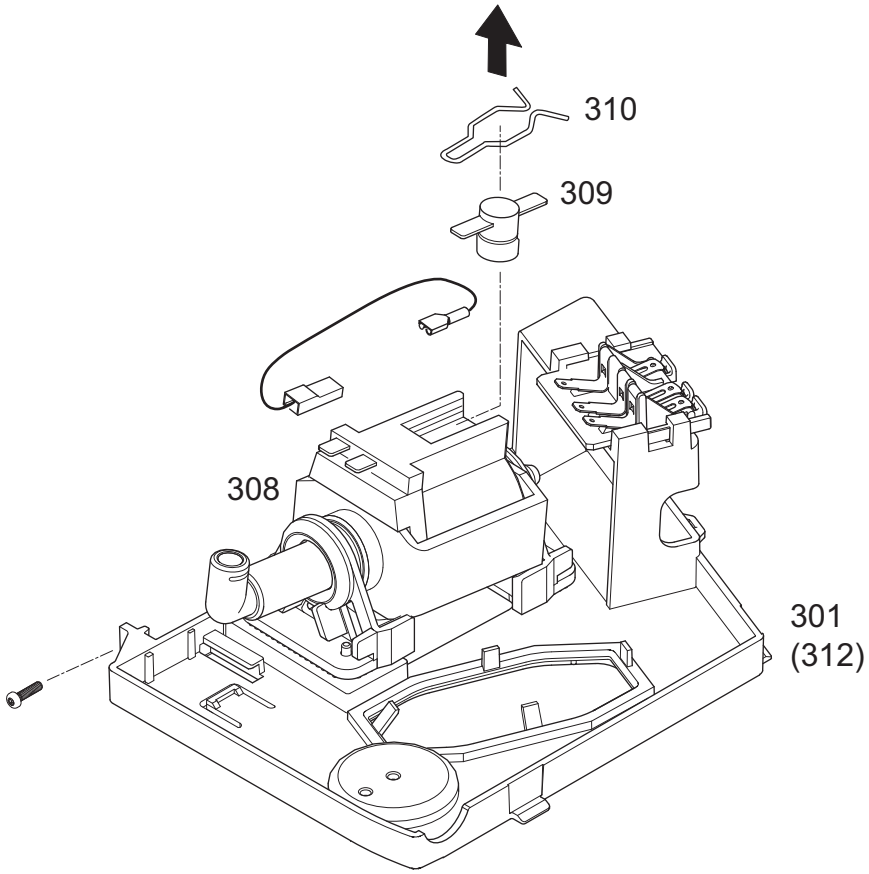
Pos.	Designation
301	Drawer 702, right, black, V3
312	Drawer 702, left, black, V3
307	Pump holder 680
308	Pump CP.04.116.0/ST/S/P V2
309	Thermostat 115C/13,5A 1NT01L, connection 2xFZ6.3x0.8 mm, straight
310	Clip thermostat, 1NT/01
311	Fluid connection elbow 702, 90°, neutral

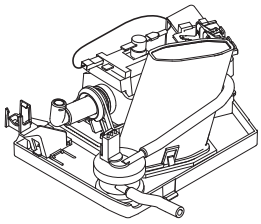
Repair tips

- When installing a new pump (308) the fluid connection elbow (311) may have to be realigned. The white plastic lid on the pump is rotatable and has two flat surfaces onto which the flat wrench can be placed.
- To avoid possible flow fluctuations make sure not to kink hoses during reassembly.

☞ **The white fluid connection elbow (311) is specially designed to avoid the clocking of the pump (less noise due to 0.6 mm hole diameter).**
Do not replace it with a standard fluid connection elbow (black case) used in other coffee machines.

10.4.3 Replacing thermostat of coffee pump

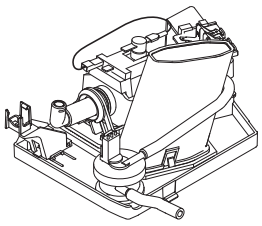


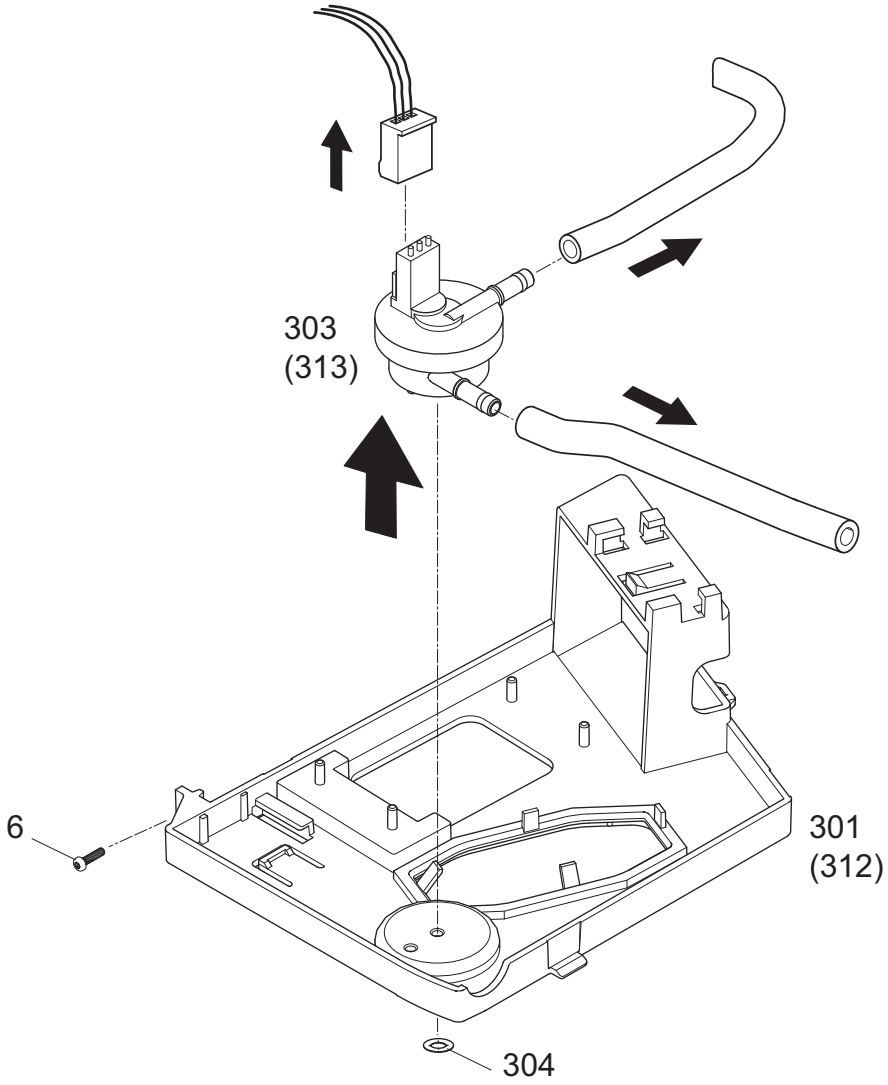


The pump of the right coffee pump / flow meter module is shown as example.

Pos.	Designation
301	Drawer 702, right, black
308	Pump CP.04.116.0/ST/S/P V2
309	Thermostat 115C/13,5A 1NT01L, connection 2xFZ6.3x0.8 mm, straight
310	Clip thermostat, 1NT/01
312	Drawer 702, left, black

10.4.4 Replacing flow meter





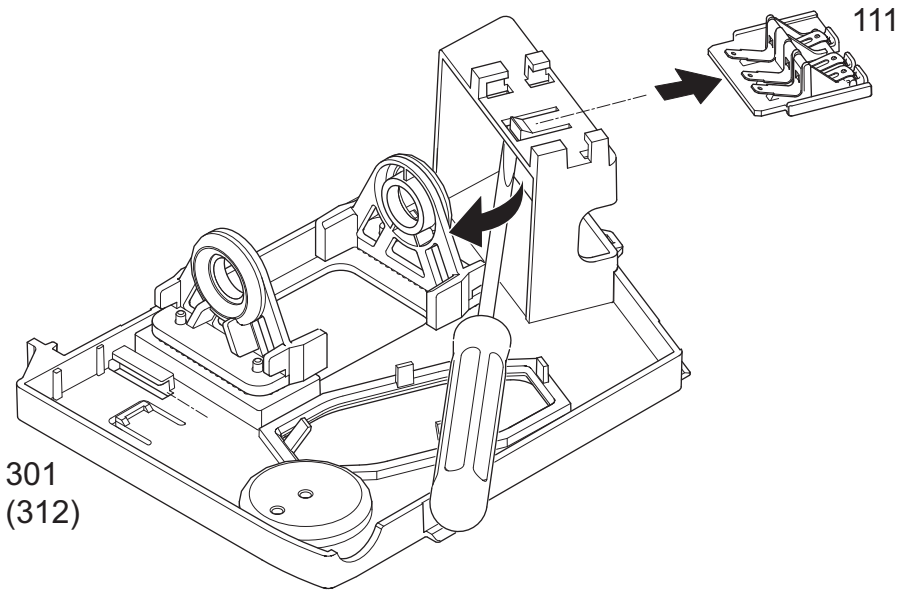
i The flow meter on the right coffee pump / flow meter module is illustrated as example.

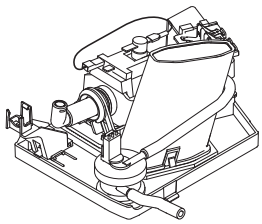
Pos.	Designation
6	Screw KST/PT, 3.0x12, blue galvanized, round head, Torx-10, CA point
301	Drawer 702, right, black
303	Flow meter FHKSC12 R, 270°
304	Holding ring, D=3 mm, type Starlock P-6490
312	Drawer 702, left, black
313	Flow meter FHKSC12 R, 90°

Repair tip

- Loosen screw (6) and pull out drawer (301, 312) partially to gain access to flow meter (303, 313). Replace holding ring (304).

10.4.5 Replacing left / right contact bank





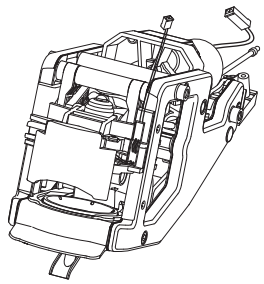
i The contact bank on the right coffee pump / flow meter module is illustrated as example.

Pos.	Designation
111	Spare contact plate 702, complete
301	Drawer 702, right, black
312	Drawer 702, left, black

Repair tips

- For access to the contact bank (111) remove coffee pump / flow meter module.
- In case of corroded contacts check the other contact bank(s) also.

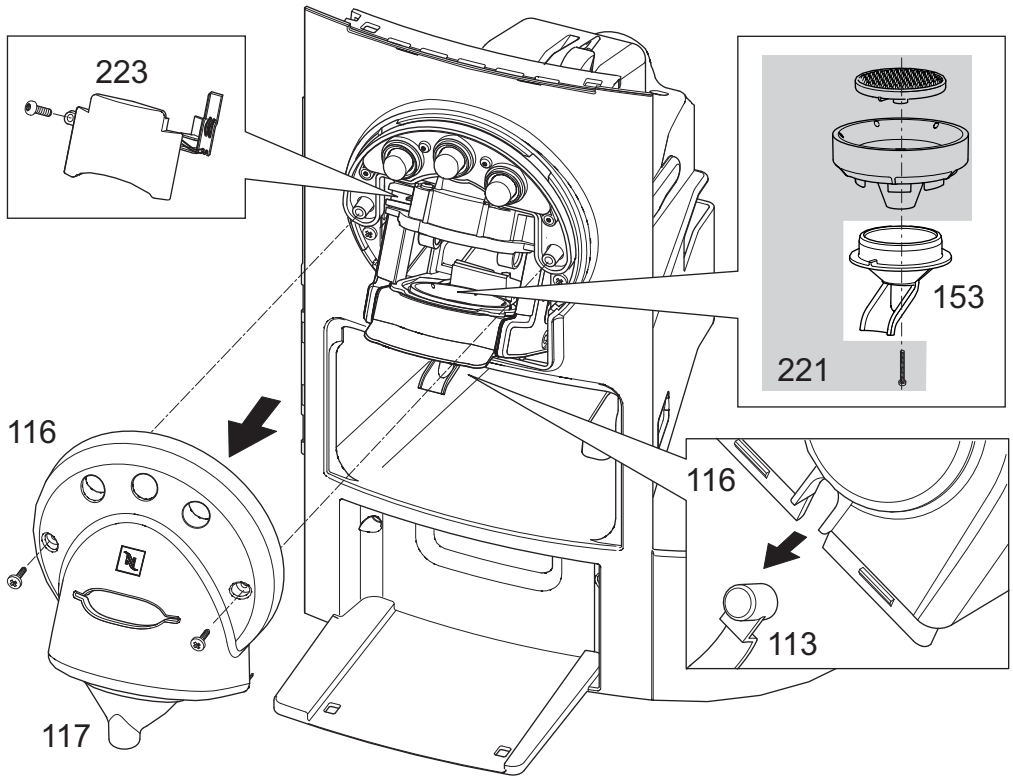
10.5 Extraction unit



The left and right extraction units
- are identical and interchangeable,
- can be serviced and repaired the same way.

10.5.1 Replacing worn parts

The wearing parts of the brewing chamber can be replaced on-site without removing the extraction unit.



General repair tips

- The jaw must be open and the safety lid (223) must be unscrewed to remove worn parts.

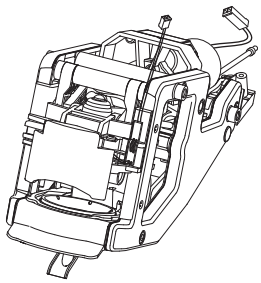
How to open a closed jaw:

1. **Switch machine to stand-by mode.**
2. **Enter super user menu (jaw of extraction unit opens automatically).**
3. **Exit super user menu.**
4. **Switch machine off with mains switch.**

The cup lighting (113) is inserted in a recess at the underside of the faceplate (116).

- Hold fast the cup lighting (113), when removing the faceplate (116) with cover (117) from the coffee outlet.
- When mounting the faceplate (116) again, make sure that the cup lighting (part of 113) is inserted in the recess correctly.
- Perform a security check with the safety lid (203) after reassembly (refer to page 57).

Worn parts of lower brewing chamber (set no. 221)

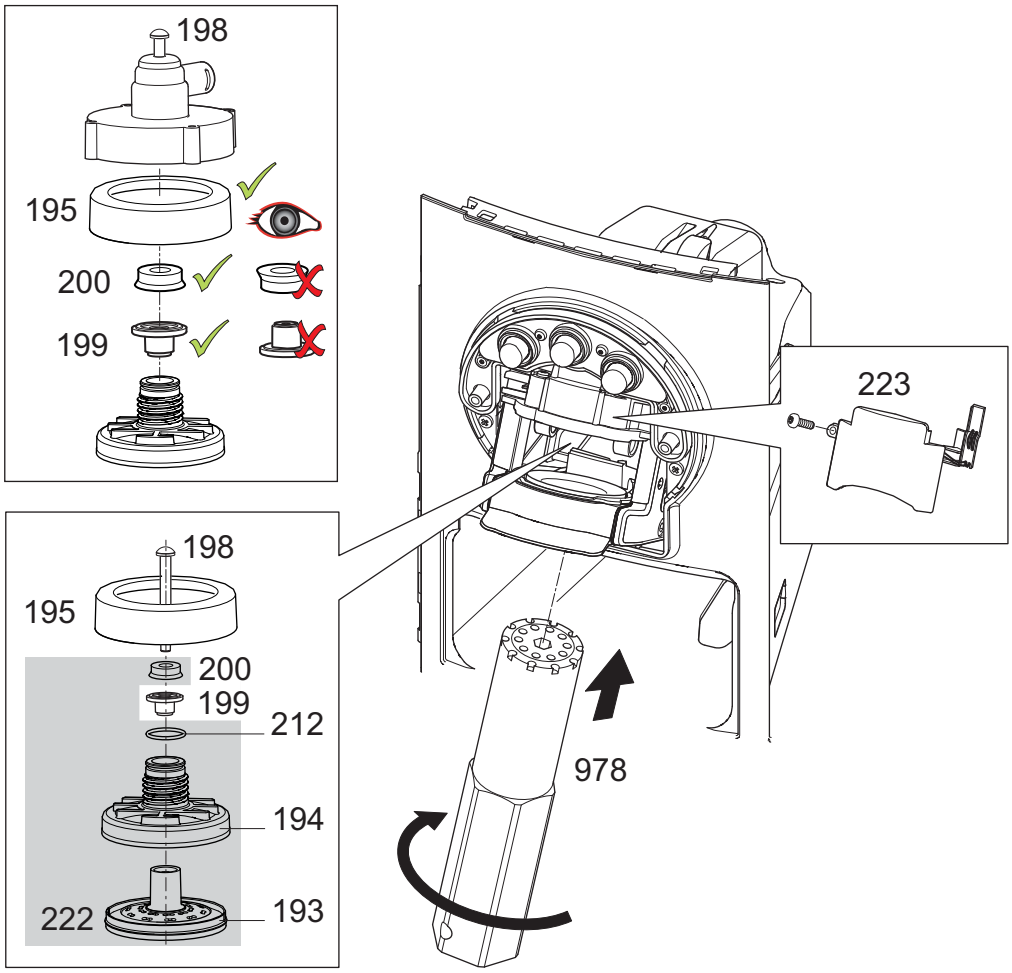


Repair tips (refer to preceding illustration)

- While loosen screw (152) press down and fix pyramid plate (156) with finger.
- Lift ejector and lever up a stucked pyramid plate support (155) with a slotted screw-driver if necessary. Then remove outlet (153).
- Before mounting new parts
  - exchange worn parts of upper brewing chamber first if needed,
  - clean coffee outlet (153) or replace it if needed,
  - clean brewing chamber.
- When mounting the outlet (153) again, make sure that the centering pin is in the recess of the diecast part. Do not overtighten screw (152).

Worn parts of upper brewing chamber (set no. 222)

i To get access to the upper brewing chamber, all wearing parts of the lower brewing chamber must be removed first.

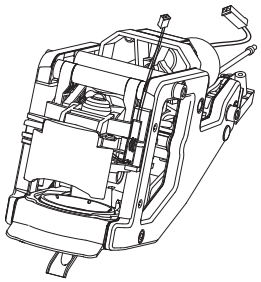


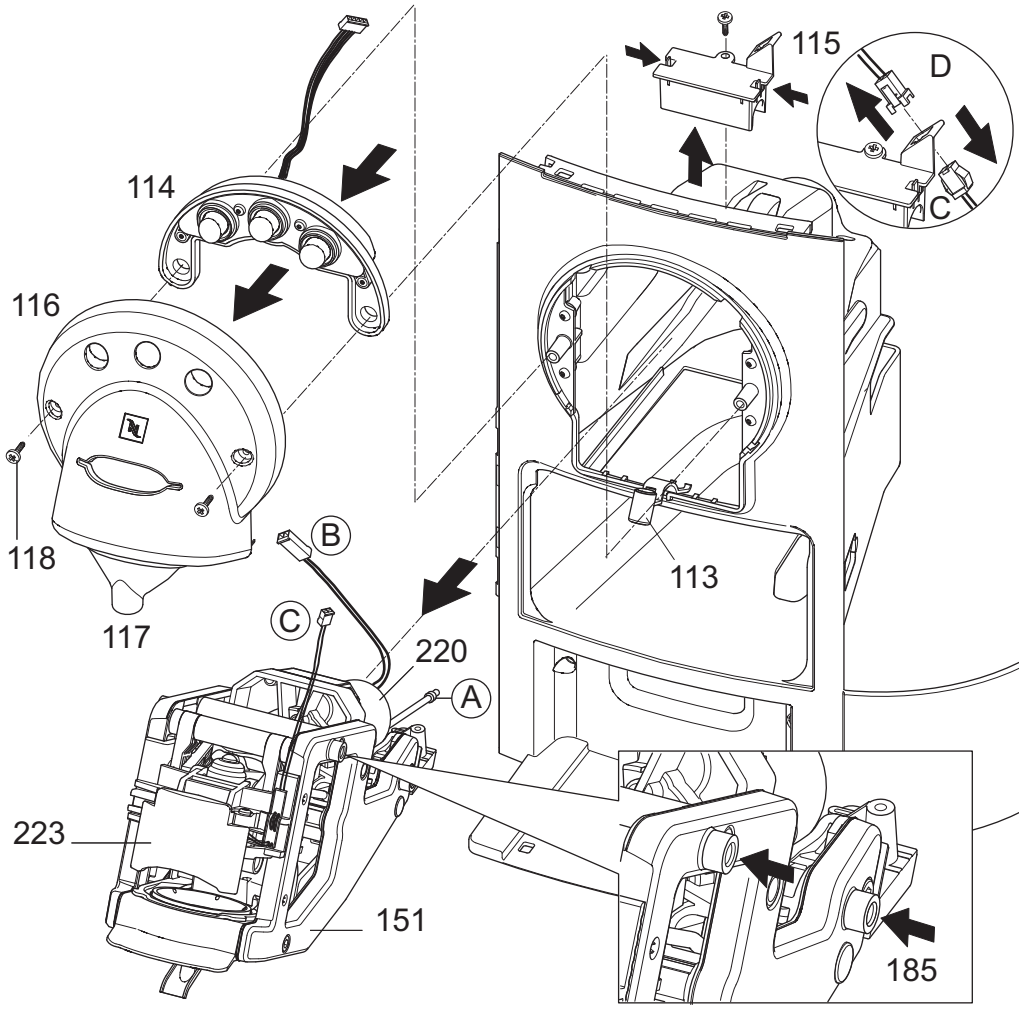
Repair tips

- Unscrew shower (193) with special mounting tool (978, EF article no. 0044269) only.
- Pay attention not to lose the thrust ring (199).
- The sleeve (200) can be stucked and may be difficult to remove. Use an O-ring pick-up tool or a dental pick to remove it.
- All parts from set (222) must be mounted.

- When mounting new parts, check the correct fitting position of sleeve (200), thrust ring (199) and seal (195) - see detail drawing.

10.5.2 Replacing extraction unit





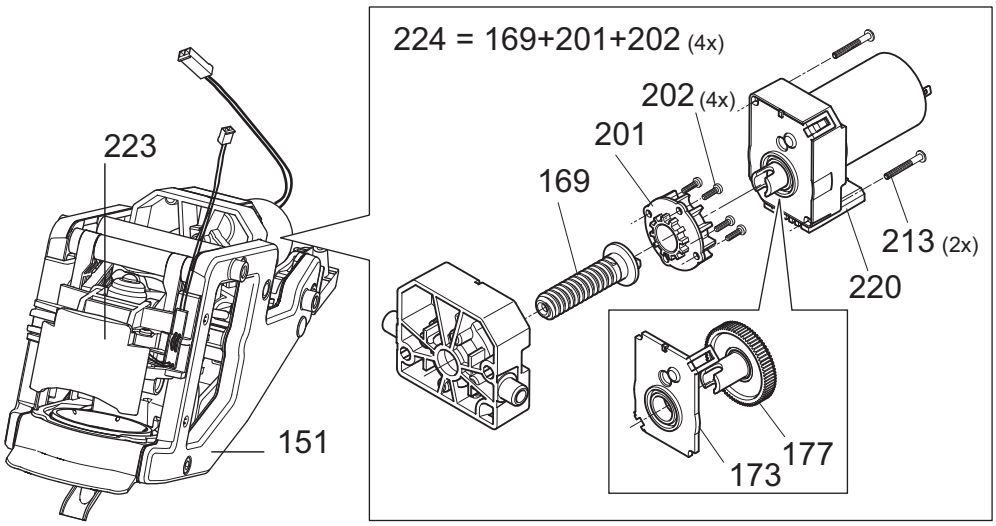
i The right extraction unit is illustrated as example.

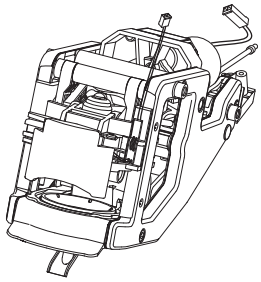
1. Remove hose (A) from fluid connector (462) at thermoblock.
2. Remove protective cover (504), (refer to "Replacing display, PCBs and transformer" on page 102).
3. Unplug connector (B) of motor (220) from power PCB.
4. Disconnect cable connection to micro switch of safety lid (223), see detail (D).
5. Remove cable connector (C) from holder (115), see detail (D).
6. Unscrew holder (115). Then press the two latches together and remove holder from casing.
7. Loosen 2 screws (118) and remove faceplate (116) with cover (117).
8. Hold fast the cup lighting (part of 113), when removing faceplate (116) with cover (117) from coffee outlet.
9. Remove keyboard module (114) and let it hang down on its cable.
10. Hold and press down cup lighting (part of 113) while pulling out the extraction unit (151).

Repair tips

- Pay attention to the 4 shock absorbers (185) on the extraction unit (151). They can fall off easily.
- Hold and press down cup lighting (part of 113) while inserting the extraction unit (151) back into the casing.
- After reassembly of the extraction unit, make sure that there is a sufficient cable loop at the cable duct (104) to guarantee a checkless movement of the safety lid (203).
- When mounting the faceplate (116) again, check if the cup lighting (part of 113) is inserted in the recess correctly.
- Perform a security check with the safety lid (223) after reassembly (refer to page 57).

10.5.3 Replacing motor and spindle of extraction unit



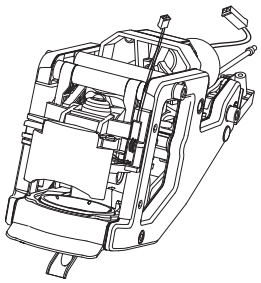


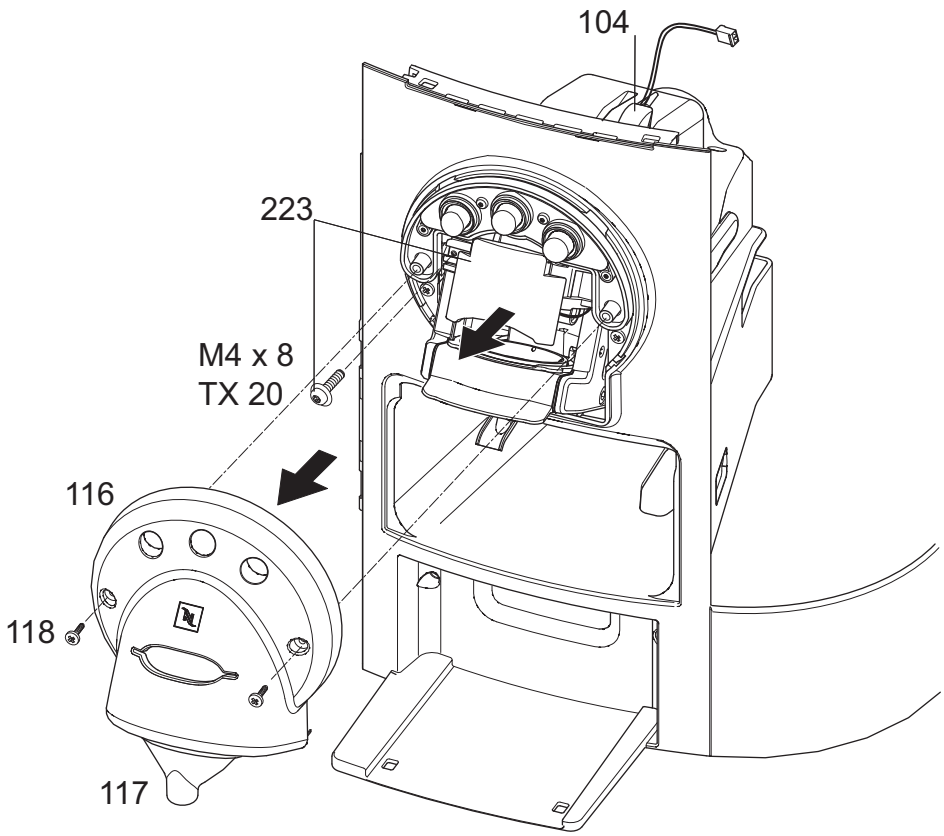
Pos.	Designation
173	Cover 640 gear box V2
177	Spur gear 702 straight Z75 V2
213	Screw KST/PT 3.0x25 blue galvanized, round head, Torx-10, CA point
220	Spare driver 733, extract unit, complete
224	Spare spindle set 702, complete

Repair tips

- The jaw of the extraction unit must be closed to remove the motor (restricted access to motor fastening screws (213)).
- For lubrication of the extraction unit refer to page 49.
- Perform a security check with the safety lid (223) after reassembly (refer to page 57).

10.5.4 Replacing safety lid with micro switch



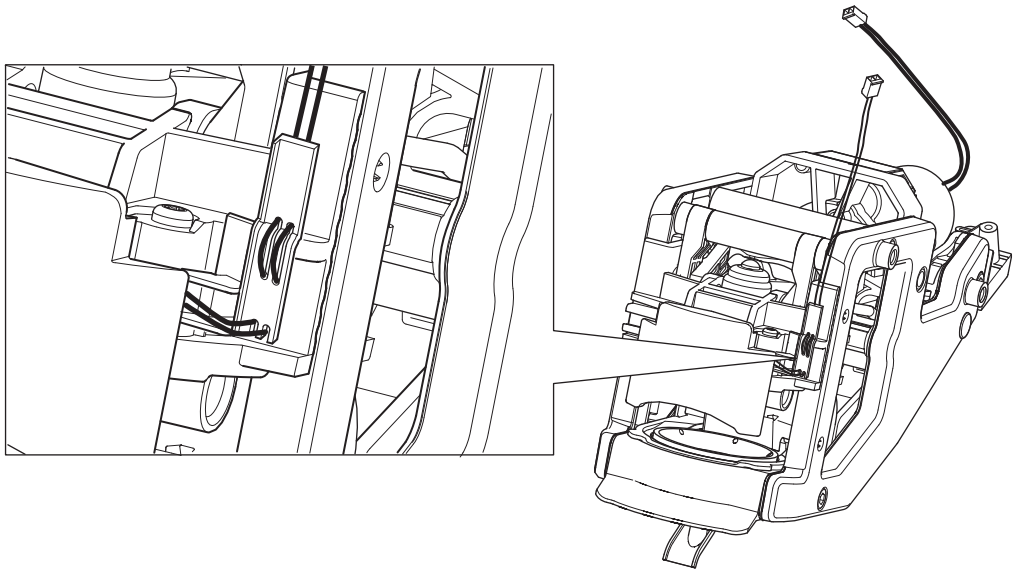


Pos.	Designation
104	Cable duct 702, black, V2
116	Faceplate 702 outlet, chrome plated, V2
117	Cover 702, outlet, black, V4
118	Screw M3x6, blue galvanized, flat head, Torx-20
223	Spare safety lid 702

Repair tips

- After exchange of the safety lid (223), make sure that there is a sufficient cable loop at the cable duct (104) to prevent any stress on the micro switch cable during the up-and-down motion of the extraction unit.
- Perform a security check with the safety lid (223) after reassembly (refer to page 57).

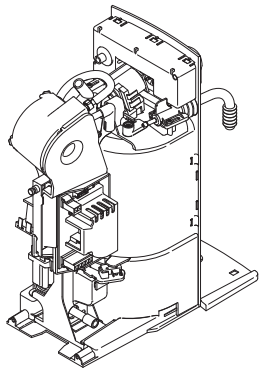
☞ **The micro switch can only be replaced together with the complete safety lid.**

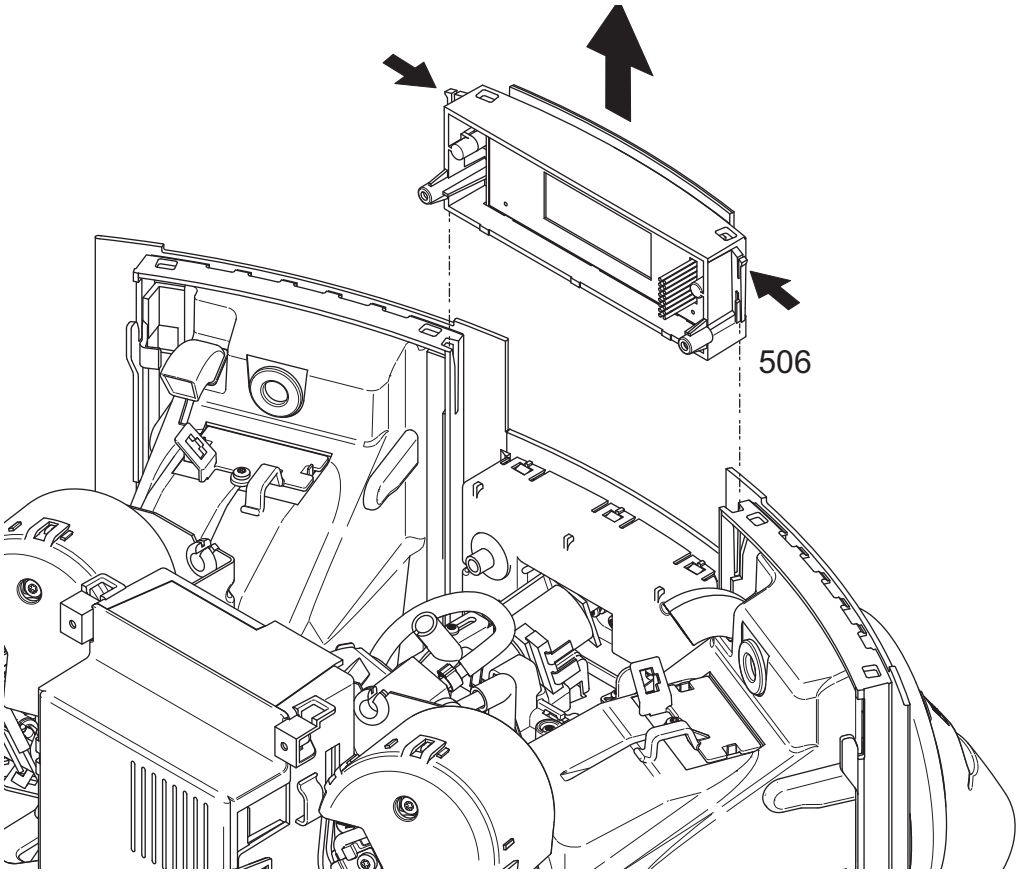


- Pay attention to correct wiring of micro switch cable during reassembly.

10.6 Hot water / steam module (CS223/224 only)

10.6.1 Removing display





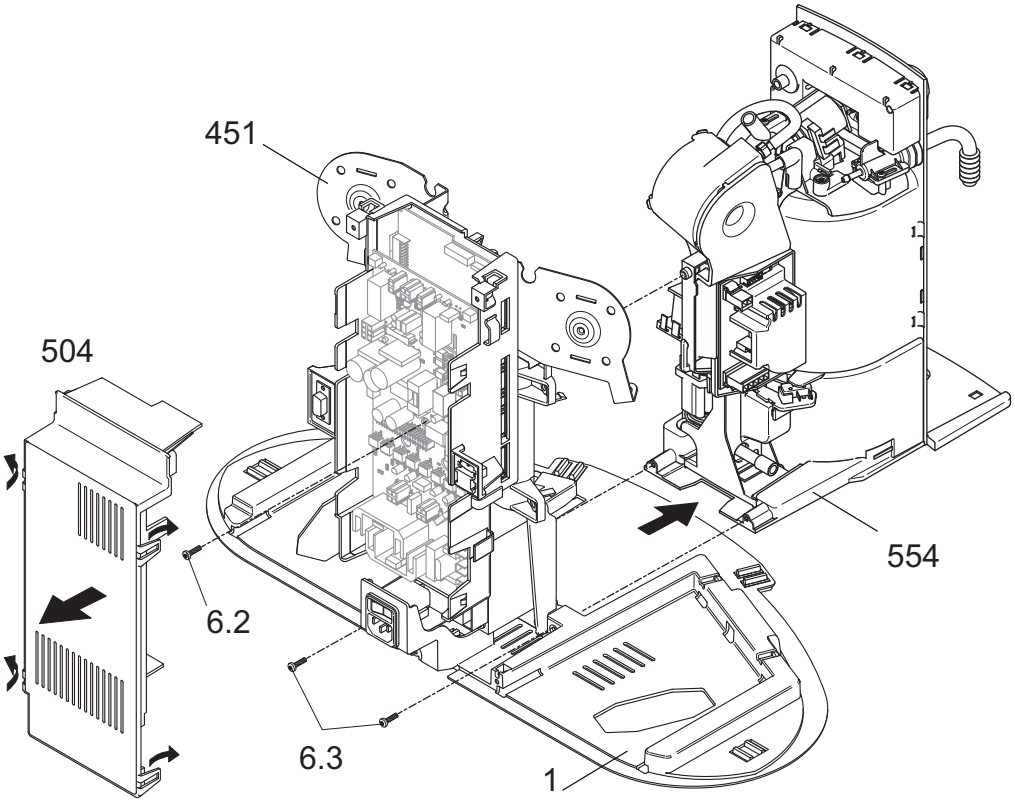
i This step is necessary for the removal of the hot water / steam module or the Neslink device.

Caution
Display latches are fragile. Handle with care!

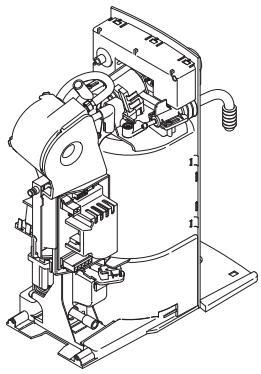
1. Remove display (506): Press in 2 lateral latches and lift unit out of guiding slots.
2. Lay down unit on coffee machine with display upward.

☞ **It is possible to replace the cappuccino keyboard without removing the hot water / steam module at first (refer to page 84).**

10.6.2 Removing hot water / steam module



1. Unlatch cover (504) of control box (4 latches).
2. Unscrew central fastening screw (6.2, TX10) of the hot water / steam module.
3. Unscrew 2 screws (6.3, TX10) at the base (1).
4. Pull out hot water / steam module (554) at the front of the coffee machine.
5. Unplug restricting cable and hose connections.

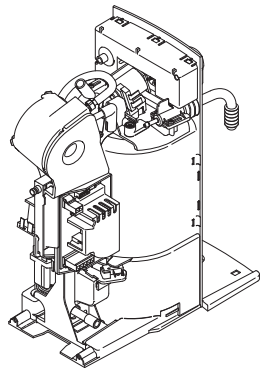


i Remove hot water / steam module to get access to following components:

- Thermoblock (607)
- Solenoid valve (571)
- Pump (612)
- Cappuccino module PCB (604)
- Micro switch (568)

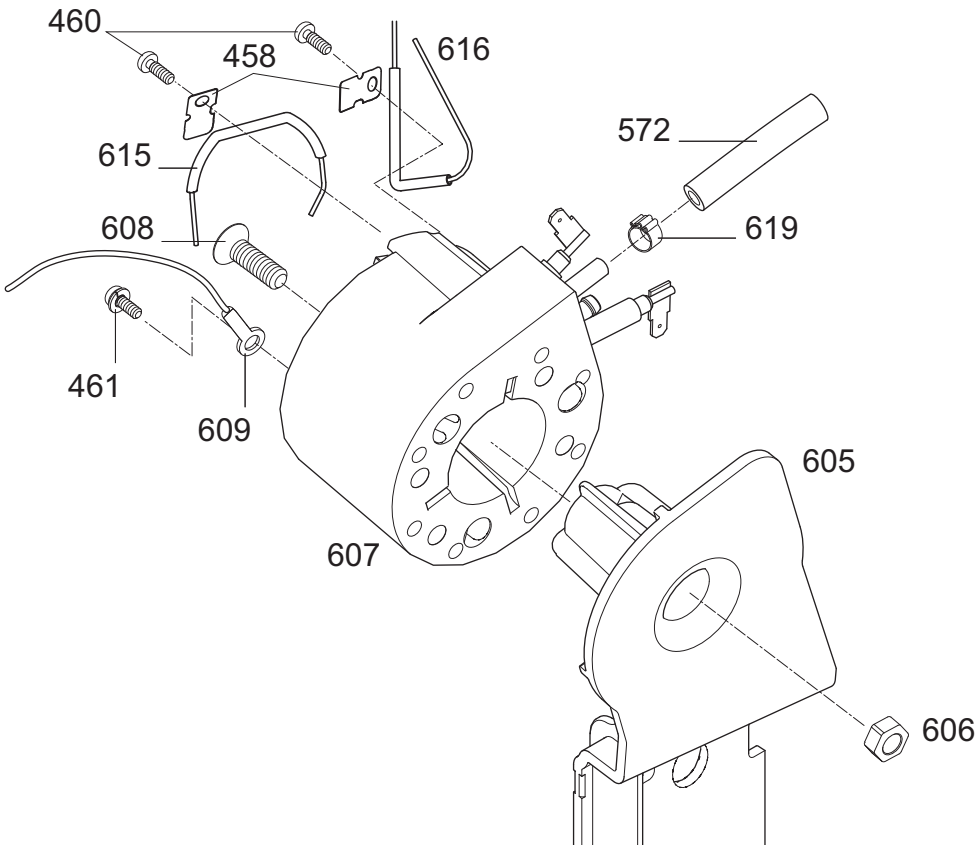
Take care that screw 6.2 does not fall into control box.

10.6.3 Replacing steam thermoblock of hot water / steam module



The steam thermoblock (607) is for the hot water / steam module (CS223/224) only. Do not exchange with a coffee thermoblock by mistake.

The NTC temperature sensor (609) and the temperature fuses (615, 616) are for the steam thermoblock (607) only. Do not exchange with versions for coffee thermoblocks by mistake.

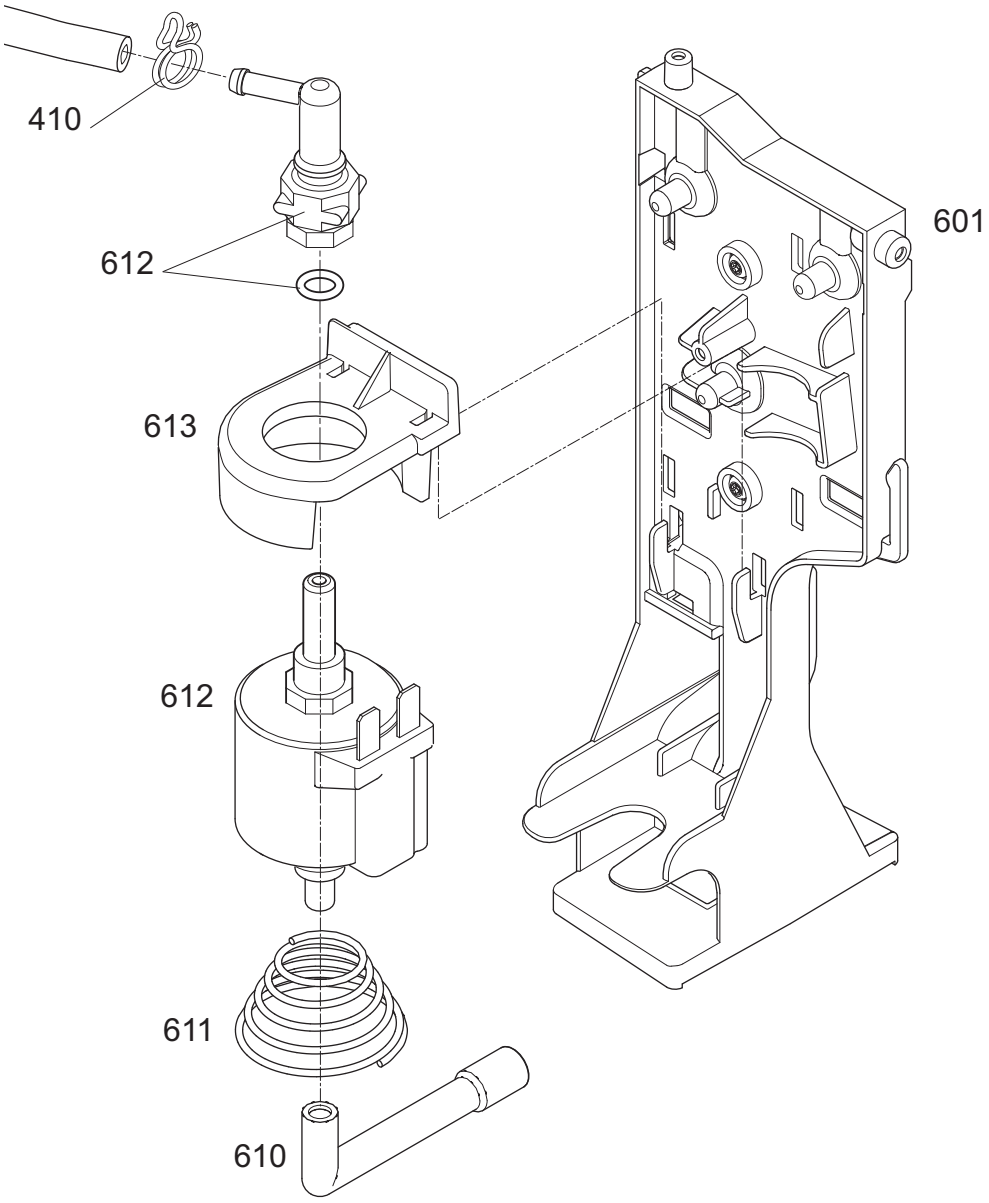


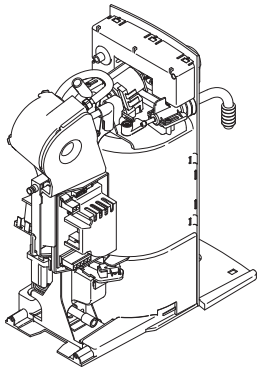
Pos.	Designation
458	Clip STB, TB2001, 0.5x10.0x21.0 mm
460	Screw GF/Tapt. M4.0x8, blue galvanized, round head, spring ring, Torx-20
461	Screw GF/Tapt., M5.0x8, geomet, round head/spring ring, Torx-25, greased
605	Holder 702, thermoblock 2003, cappuccino
606	Nut M6, 6-face, blue galvanized
607	Thermoblock TB2003/N 230V/1080W V4, nipples, tabs, M5-thread
608	Screw M6x16, blue galvanized, countersunk head, Torx-30
609	Sensor 640, thermoblock, complete, V2
615	STB wire 702 EU 192C (1xE5) with temperature fuse
616	STB wire 734 EU 192C (1xE5) with temperature fuse
619	Hose clamp 8.0-9.0 mm

Repair tips

- For access to the steam thermoblock (parts 607, 609, 615 and 616), refer to "Removing hot water / steam module" on page 81.
- Handle the delicate wires of the NTC temperature sensor (609) with care.
- When mounting a safety clip (458), make sure that the housing of the temperature fuse is positioned exactly below the safety clip.

10.6.4 Replacing pump of hot water / steam module





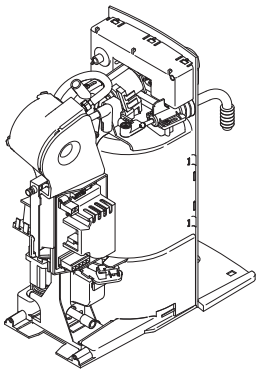
Pos.	Designation
410	Spring clip D= 7,7x1,3mm V2
601	Holder 702, V2, black, cappuccino
610	Moulded hose 770 Silicone
611	Pressure spring, concentric, 1.6xD17.0/38.0mm, L=21.0mm, n= 4.5 (pump)
612	Pump MPP.1.01.023.0, thermostat fix mounted
613	Pump holder 702, black, 70 shore, cappuccino

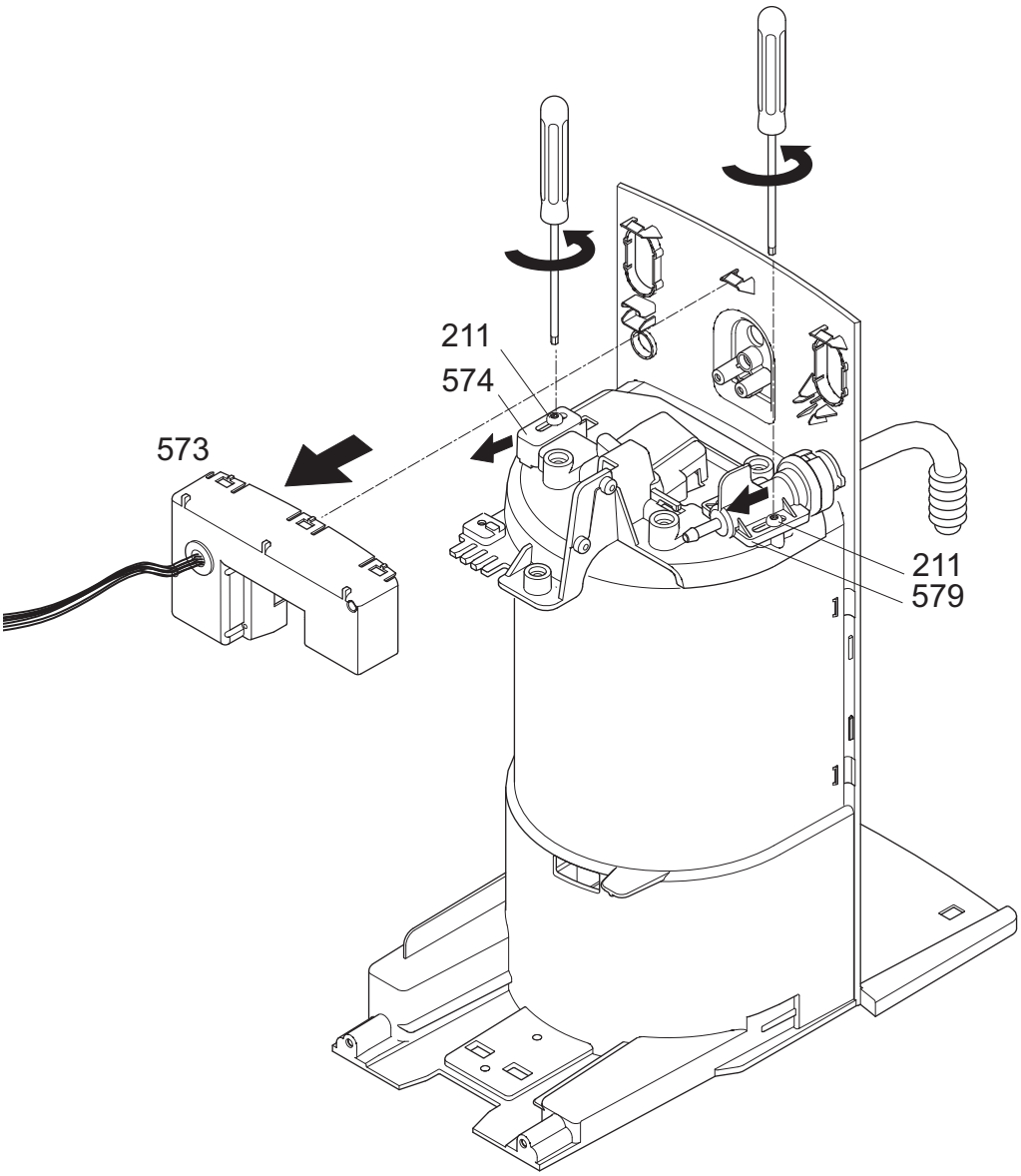
Repair tips

- For access to the pump (612), refer to "Removing hot water / steam module" on page 81.
- To avoid possible flow fluctuations, make sure not to twist hoses during reassembly.

i The pump of the hot water / steam module has no replaceable thermostat.

10.6.5 Replacing cappuccino keyboard of hot water / steam module



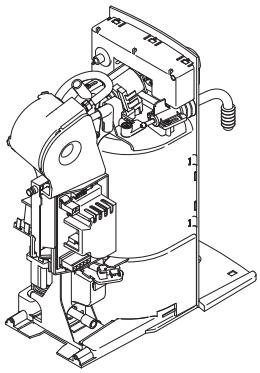


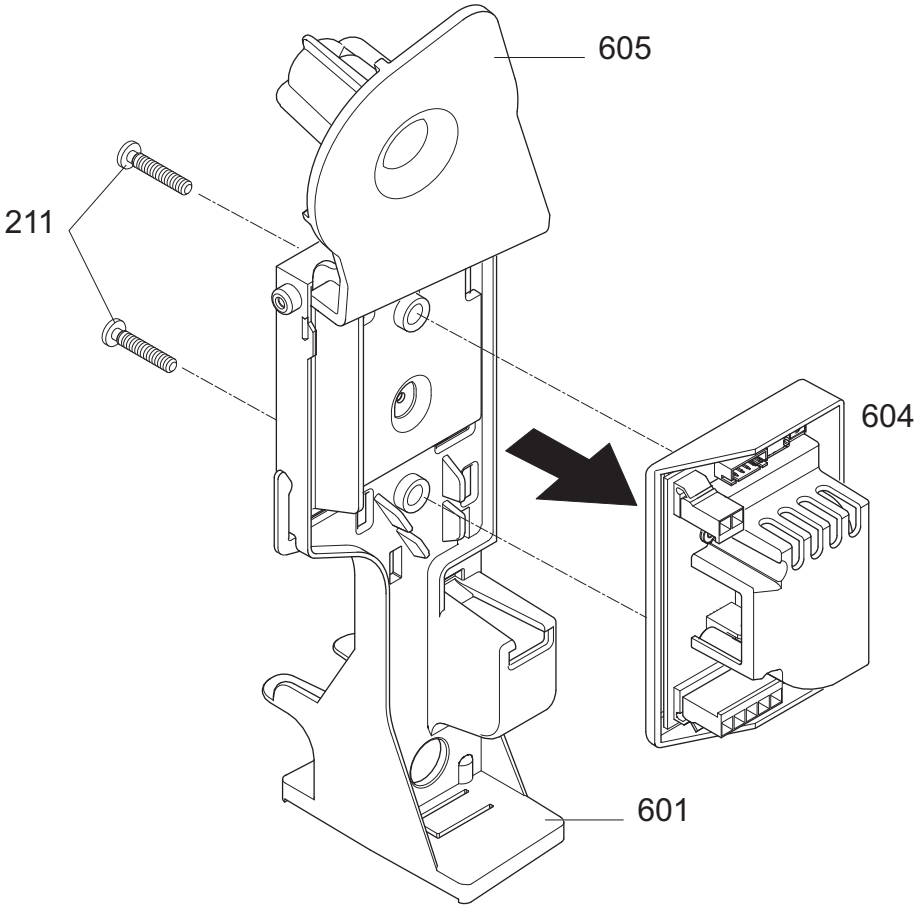
Pos.	Designation
211	Screw KST/PT, 3.0x10, blue galvanized
573	Keyboard module 734 cpl. (on/off, steam, hot water)
574	Holder 702, left, V2, black
579	Support 702, for hot water tube, black

Repair tip

- The cappuccino keyboard (573) can be replaced without pulling out the complete hot water / steam module. Remove display first (see page 80).

10.6.6 Replacing cappuccino power PCB of hot water / steam module



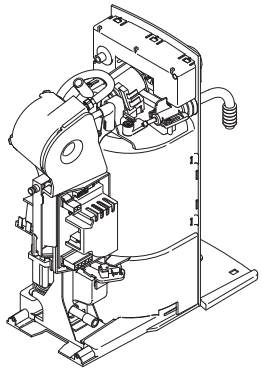


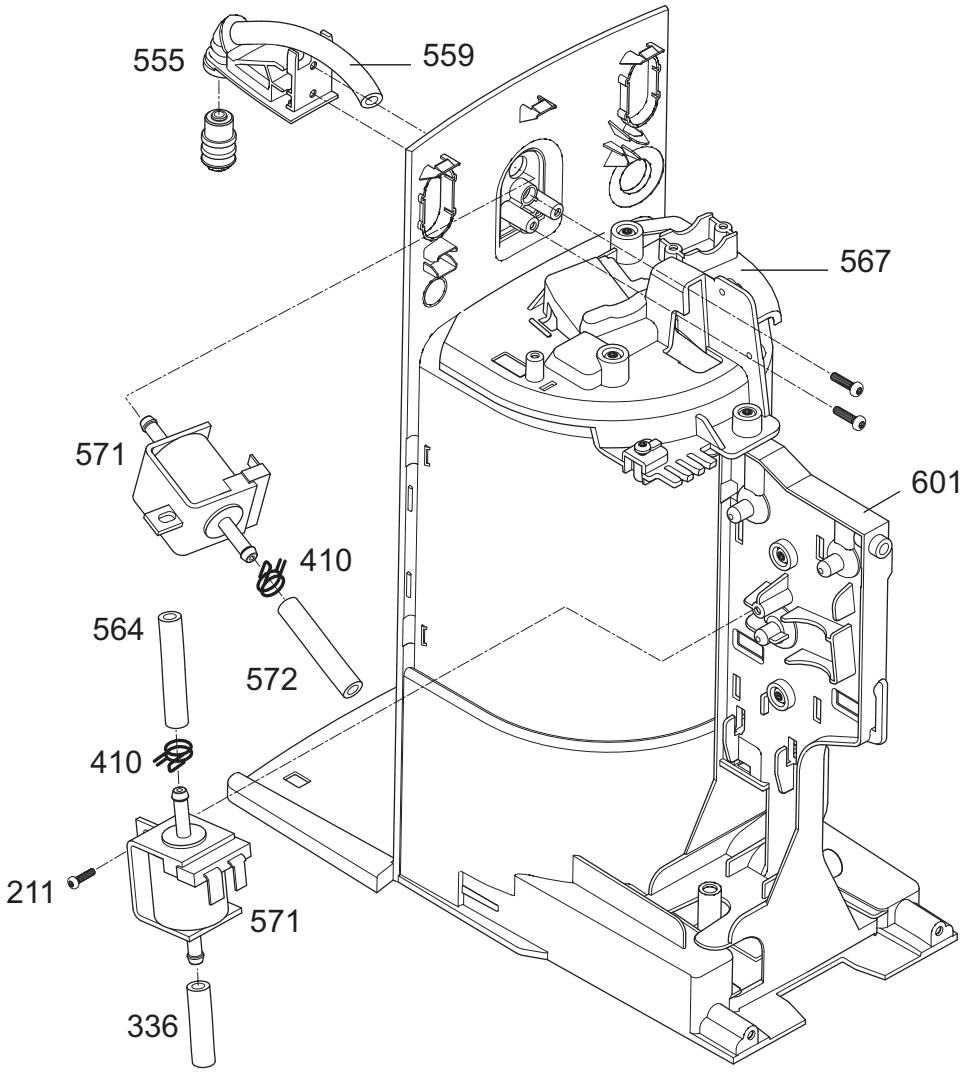
Pos.	Designation
211	Screw KST/PT, 3.0x10, blue galvanized, round head
601	Holder 702, V2, black, cappuccino
604	Power PCB 734, cpl.
605	Holder 702, thermoblock 2003, cappuccino

Repair tip

- For access to the cappuccino power PCB (604), refer to "Removing hot water / steam module" on page 81.
- Additional to the screwed connection, the protective case of the cappuccino power PCB is attached with 4 latches to the holder (601).

10.6.7 Replacing solenoid valves of hot water / steam module





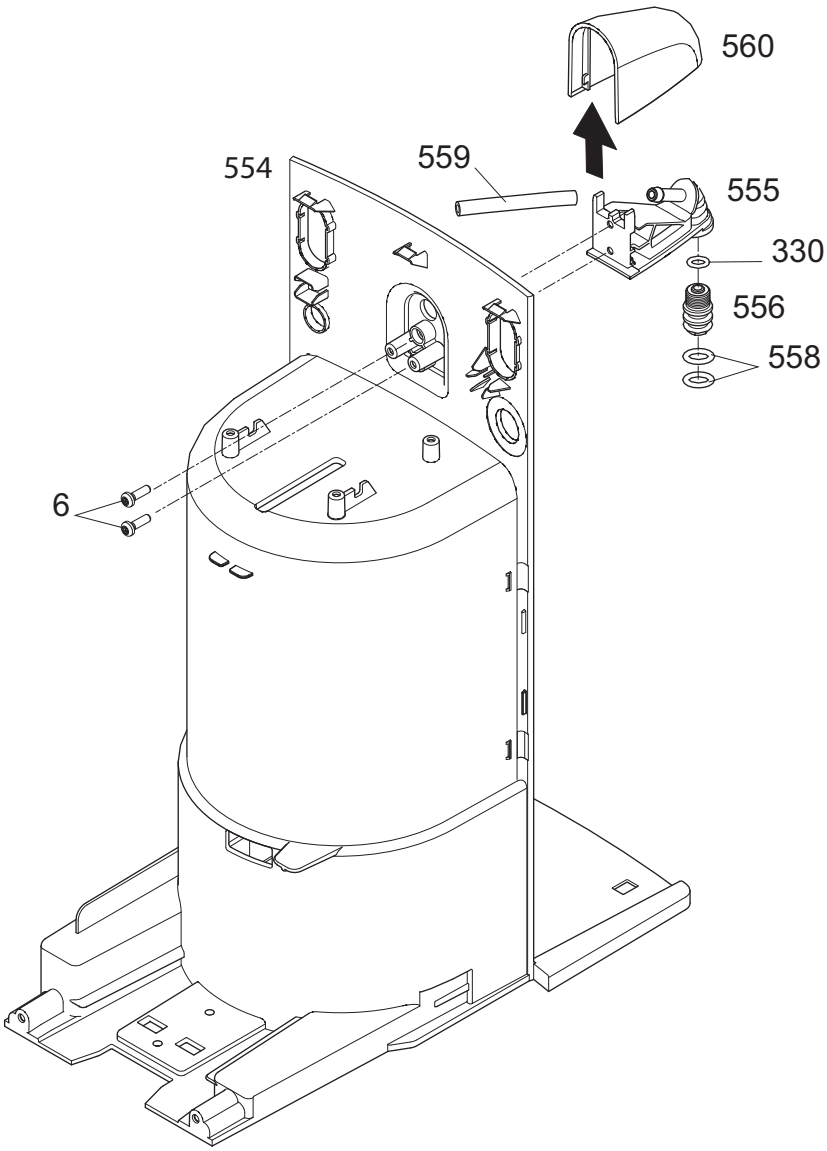
i These valves are fail-safe, that is a closed valve opens if subjected to an overpressure of approx. 12 bar. Therefore the fitting position of the valves is crucial. Do not exchange with standard solenoid valves by mistake!

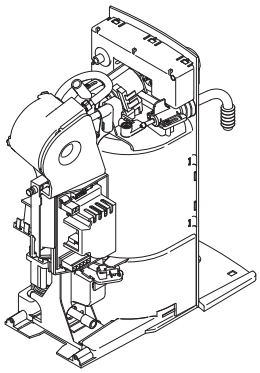
Pos.	Designation
211	Screw KST/PT, 3.0x10, blue galvanized
410	Spring clip, D=1.3mm, V2, for silicone hose
567	Plate 702, hood, V2, cappuccino, black
571	Magnetic valve, DEV122-1560 V3, 2-side connection
601	Holder 702, V2, black, cappuccino

Repair tips

- The solenoid valve at the steam outlet (555) can be replaced without pulling out the complete hot water / steam module. Refer to "Removing display" on page 80.
- The solenoid valve at the steam outlet (555) must not built in reversed. Check fitting position of valve before replacement. The other solenoid valve can be mounted only in the correct position.
- For access to the lower solenoid valve, refer to "Removing hot water / steam module" on page 81.

10.6.8 Replacing steam outlet of hot water / steam module





i Outlet and cover of the CS203 steam outlet are assembled identically.

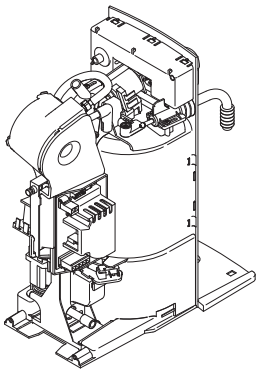
Pos.	Designation
6	Screw KST/PT 3.0x12, blue galvanized
330	O-ring 5.28x1.78 mm, EPDM
554	Front panel 702, cappuccino, V4, black
555	Outlet 702, cappuccino, black
556	Nozzle body 702, complete
558	O-ring 8.00x2.62 mm, Silicone/2-K
560	Cover 702, nose, cappuccino chrome

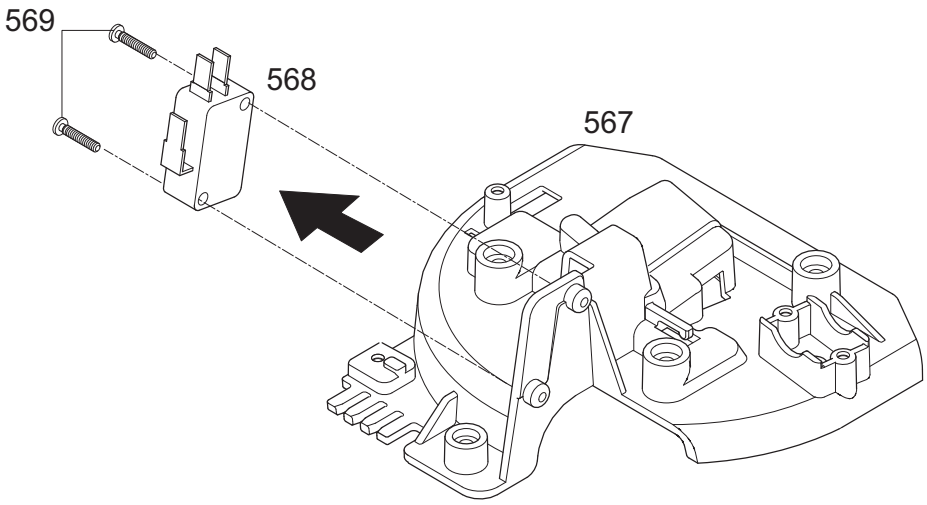
Repair tips

- To unscrew steam nozzle (556), use a flat wrench with 8 mm span.
- To detach the gripped-in cover (560), unscrew the steam outlet (555) first.

Take care not to damage the cover.

10.6.9 Replacing micro switch for milk container detection

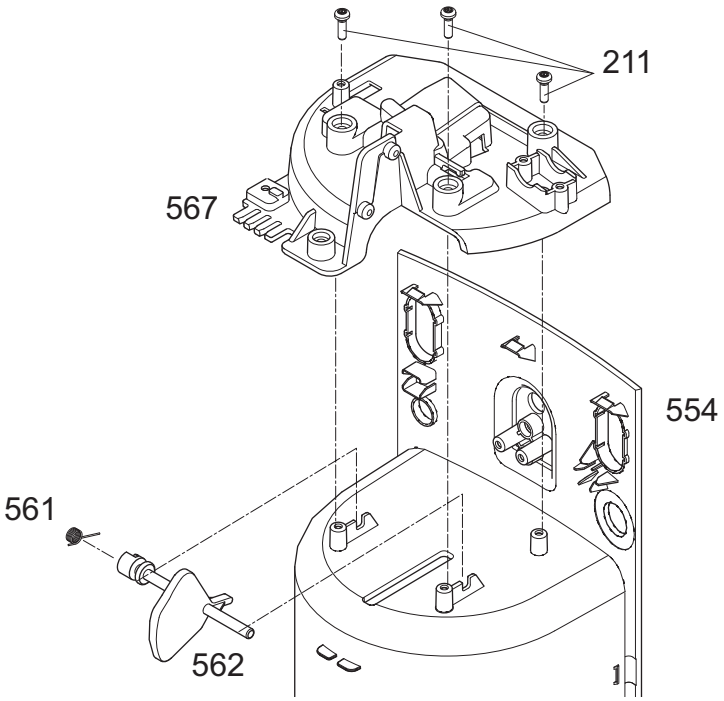




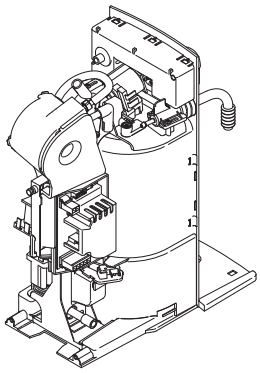
Pos.	Designation
567	Plate 702, hood, V2, cappuccino, black
568	Micro switch D41R-QGAC V2, connection 4.8x0.8 mm
569	Screw KST/PT, 3.0x16, blue galvanized, round head, Torx-10, CA point

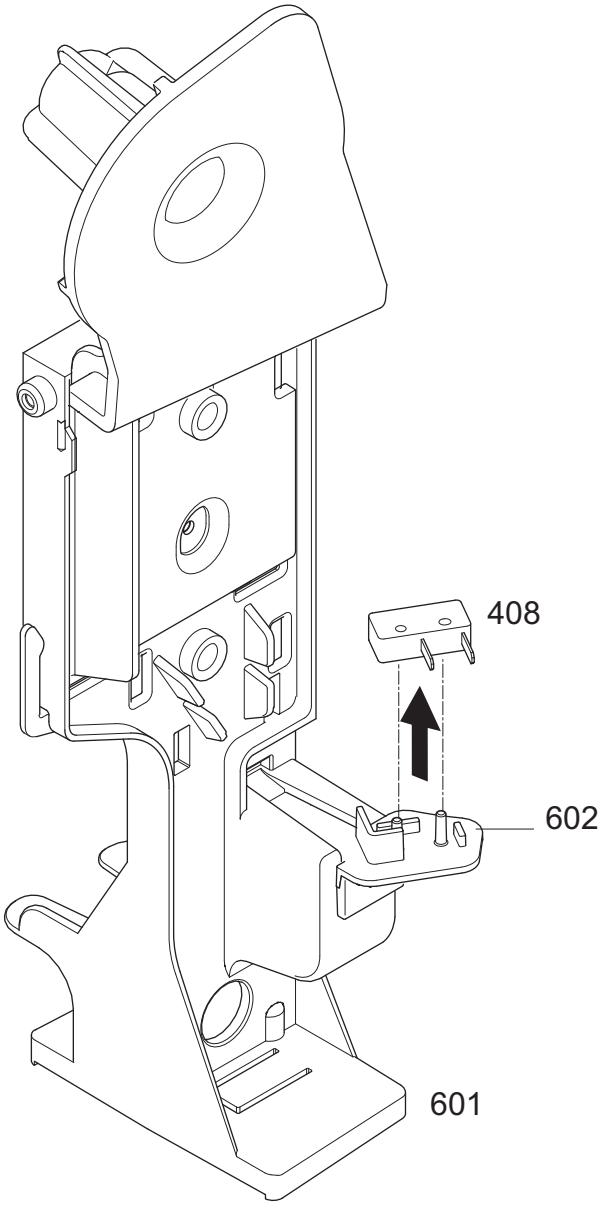
Repair tip

- For access to cappuccino power PCB refer to "Removing hot water / steam module" on page 81.
- For cam switch (562) replacing, see following illustration:



10.6.10 Replacing micro switch for middle drip tray detection





i Note that the CS203 middle drip tray is detected with a contact bank instead.

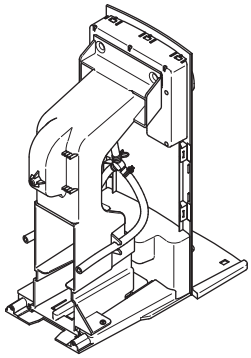
Pos.	Designation
408	Micro switch, XCG55V-81-LZ187
601	Holder 702, black, cappuccino
602	Holder 702, switch, cappuccino, black

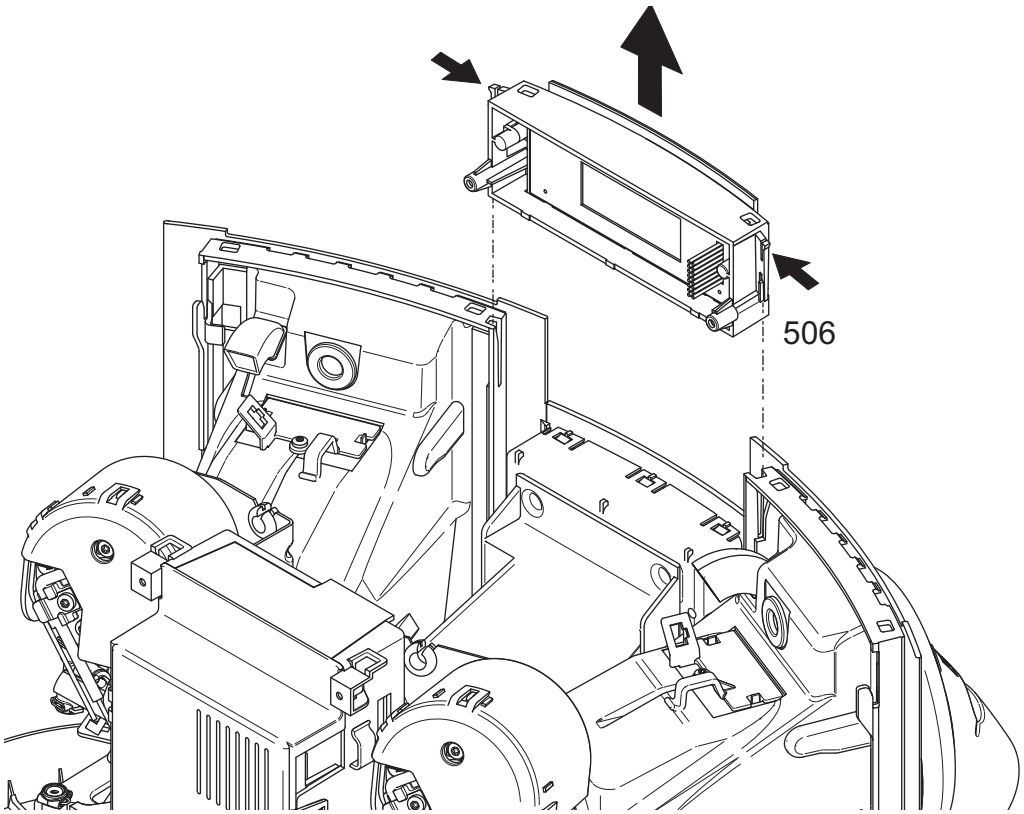
Repair tip

- For access to the micro switch (408), refer to "Removing hot water / steam module" on page 81.

10.7 Hot water module (CS203 only)

10.7.1 Removing display

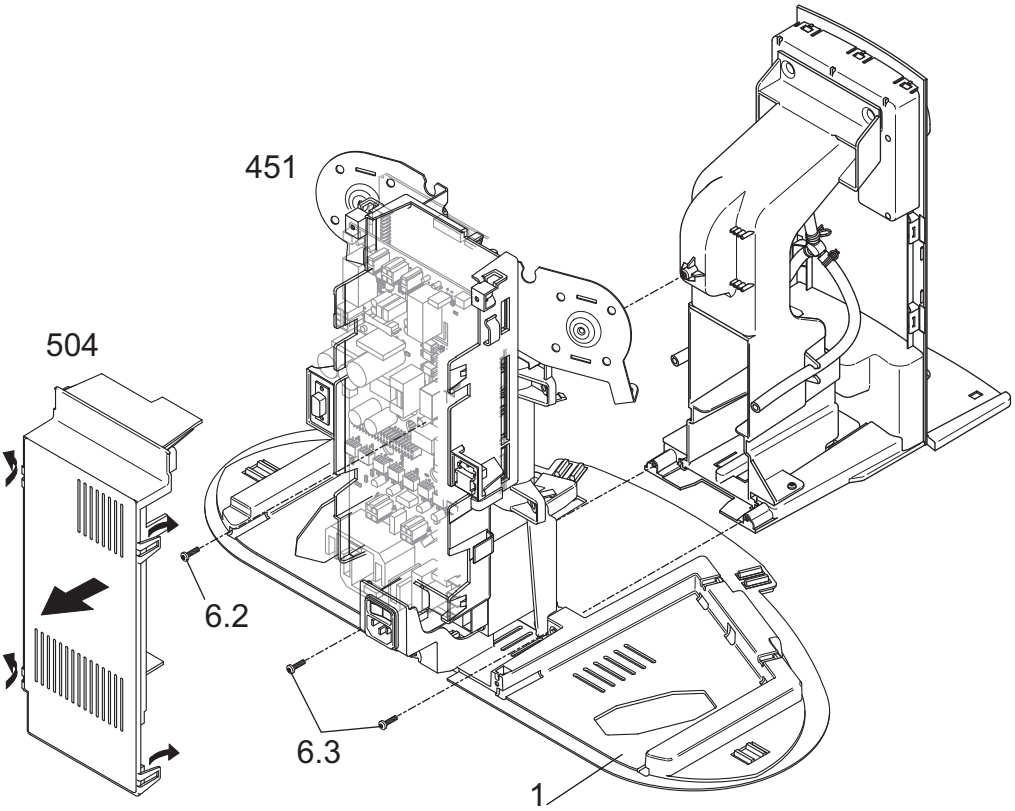


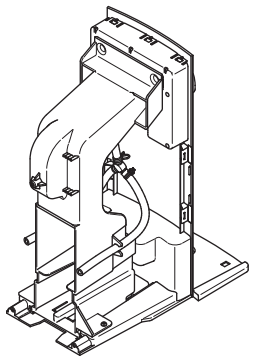


i This step is necessary for the removal of the hot water module.

1. Remove display (506): Press 2 lateral latches and lift unit out of guiding slots.
2. Lay down unit on coffee machine with display upward.

10.7.2 Removing hot water module





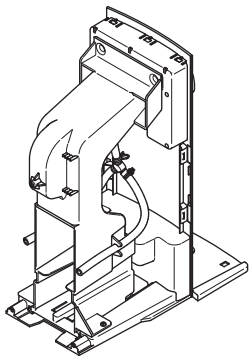
1. Unlatch cover (504) of control box (4 latches).
2. Unscrew central fastening screw (6.2, TX10) of the hot water module.
3. Unscrew 2 screws (6.3, TX10) at the base (1).
4. Pull out hot water module at the front of the coffee machine.
5. Unplug restricting cable connections.

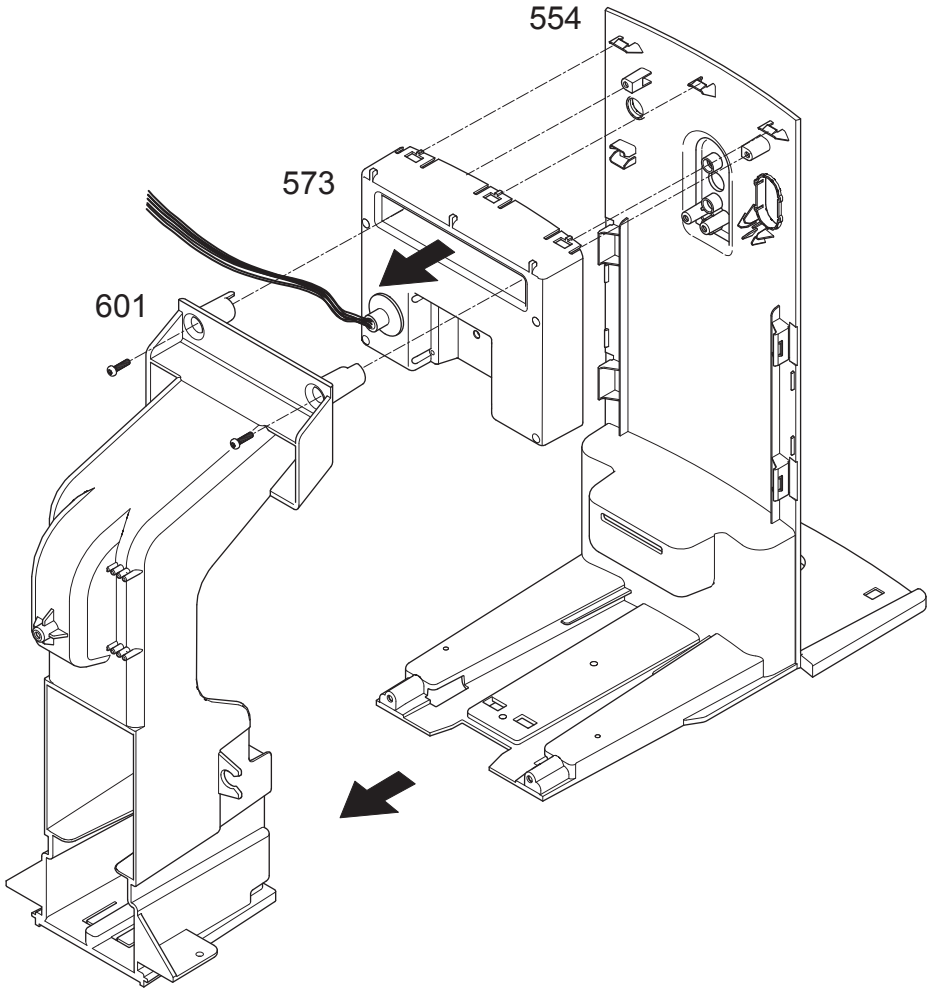
i Remove hot water module to get access to following components:

- Hot water keyboard (573)
- Hot water outlet (555, 560)
- Contact bank (111)

Take care that screw 6.2 does not fall into control box.

10.7.3 Replacing hot water keyboard



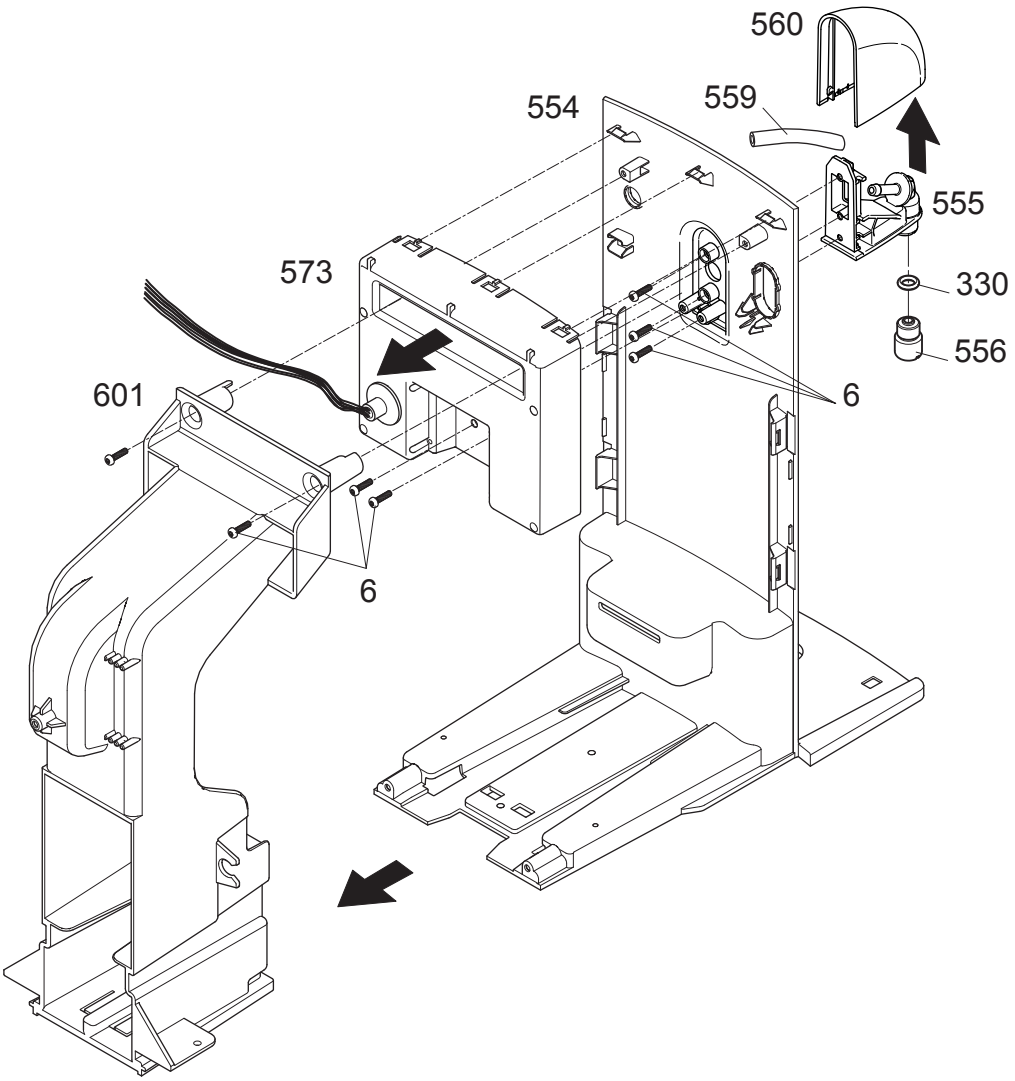


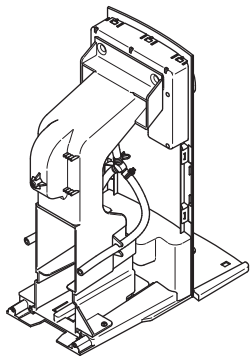
Pos.	Designation
554	Front faceplate 705, water V4
573	Keyboard module 733, cpl., hot water
601	Holder 705, V2, black

Repair tip

- For access to the hot water keyboard (573), refer to "Hot water module (CS203 only)" on page 90.

10.7.4 Replacing hot water outlet





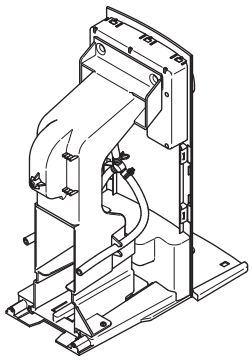
Pos.	Designation
330	O-ring 5.28x1.78 mm, EPDM
554	Front faceplate 705, water, V4
555	Outlet 705, water, black
556	Nozzle body 705, water
560	Cover 705, water, chrome
573	Keyboard module 733, cpl., hot water
601	Holder 705, V2, black

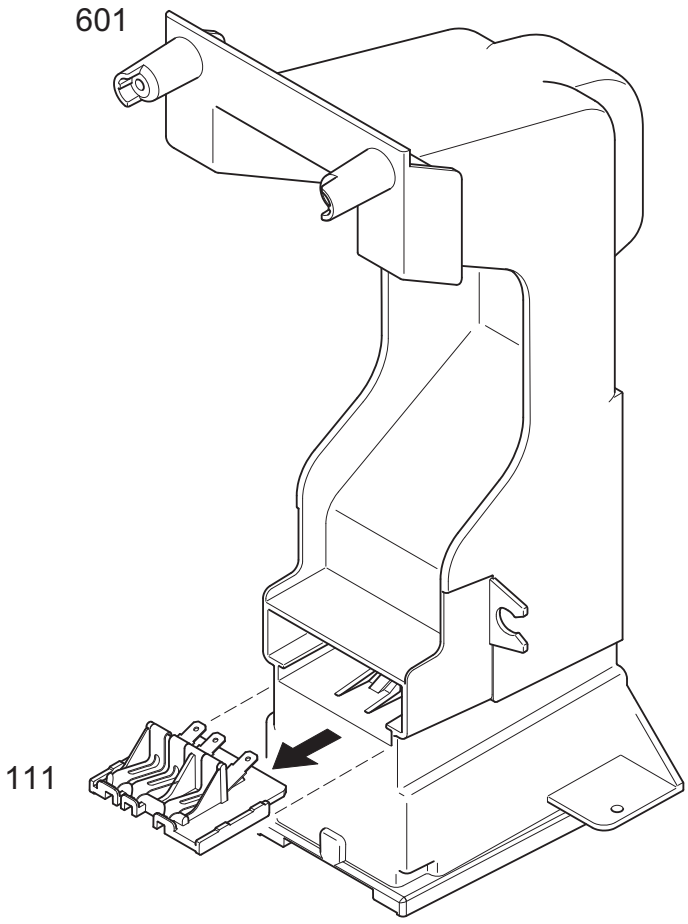
Repair tip

- To detach the gripped-in cover (560), unscrew the steam outlet (555) first.

Take care not to damage the cover.

10.7.5 Replacing middle contact bank





Pos.	Designation
111	Spare contact plate 702, complete
601	Holder 705, V2, black, water

Repair tip

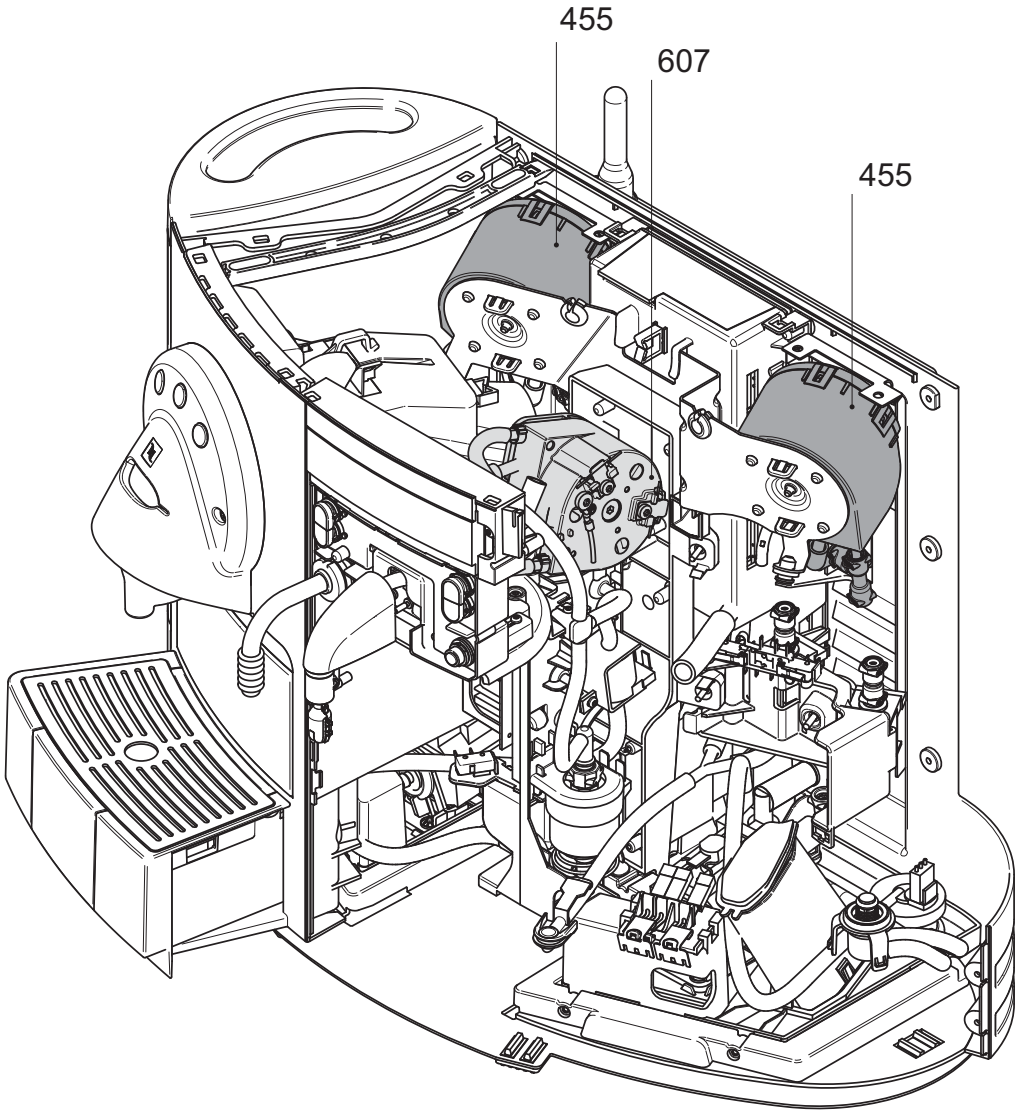
- In case of corroded contacts check the other contact banks also.

10.8 Basic coffee machine - non-modular parts

☞ **In the general drawings the components to repair or to replace are shaded for easy recognition. Similar components of the plug-in modules are light shaded for reference.**

10.8.1 Replacing coffee thermoblocks

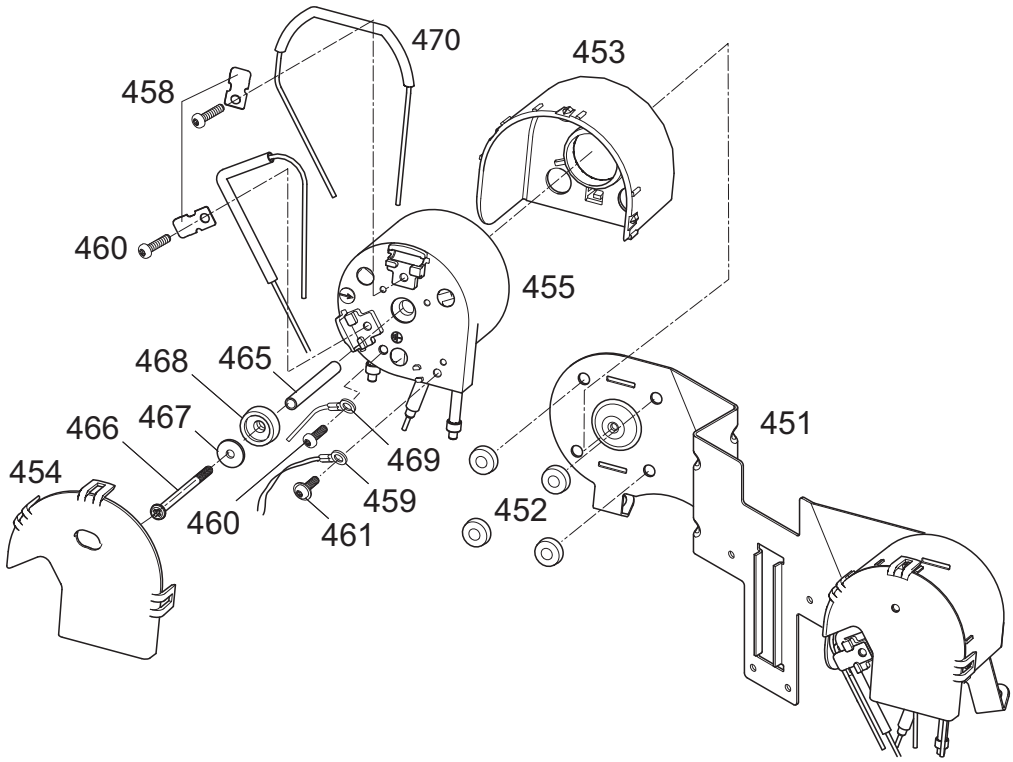
Position of components



Pos.	Designation
455	Thermoblock TB2003/L 230V/1080W V2, welded nipples, connection FZ4.8x0.8 mm
607	Thermoblock TB2003/N 230V/1080W V4, nipples, tabs, M5-thread

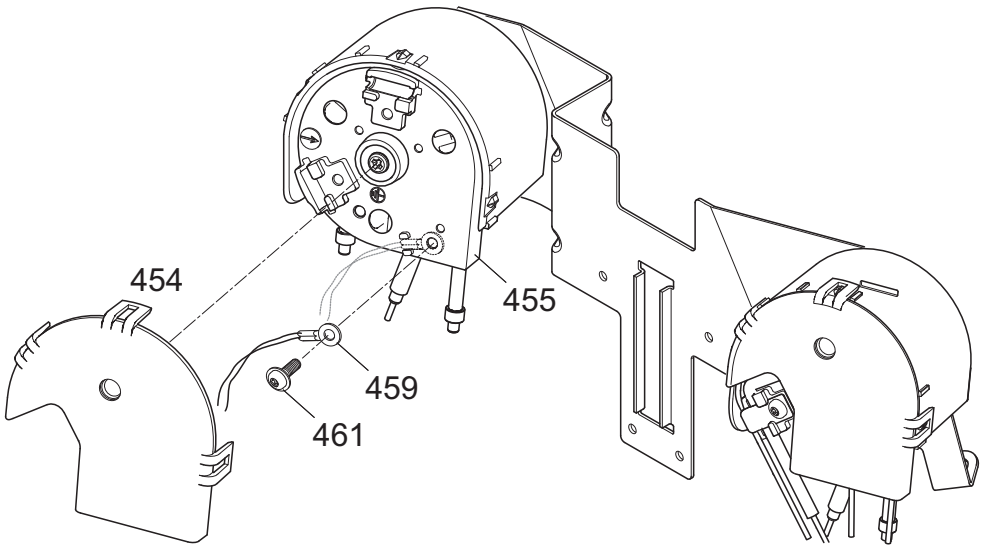
☞ **For replacing steam thermoblock (607), refer to page 82.**

Coffee thermoblock - component parts



Pos.	Designation
451	Holder 702, thermoblock 2003, V2, zinc plated
452	Insulation holder 737, neutral, 40 shore
453	Cover 702, thermoblock, neutral
454	Lid 702, thermoblock, neutral
455	Thermoblock TB2003/L 230V/1080W V2, welded nipples, connection FZ4.8x0.8 mm
458	Clip STB, TB2001, 0.5x10.0x21.0 mm
459	Sensor 770 thermoblock, complete, V2
460	Screw GF/Tapt. M4.0x8, blue galvanized, round head, spring ring, Torx-20
461	Screw GF/Tapt., M5.0x8, geomet, round head/spring ring,Torx-25, greased
465	Spacer sleeve 737, blue zinc plated, Di=4.5/Da=6.0/L=52 mm
466	Screw GF/Tapt., M4.0x60, blue galvanized, round head, Torx-20, m/shaft, greased
467	Lock washer, D4.3x14.0x1.6 mm, blue galvanized, M4
468	Insulation ring 737, silicone, 40 shore
469	Mf wire 733 EU yellow-green
470	STB wire 733 EU 167C (1xE5)

Replacing NTC temperature sensor

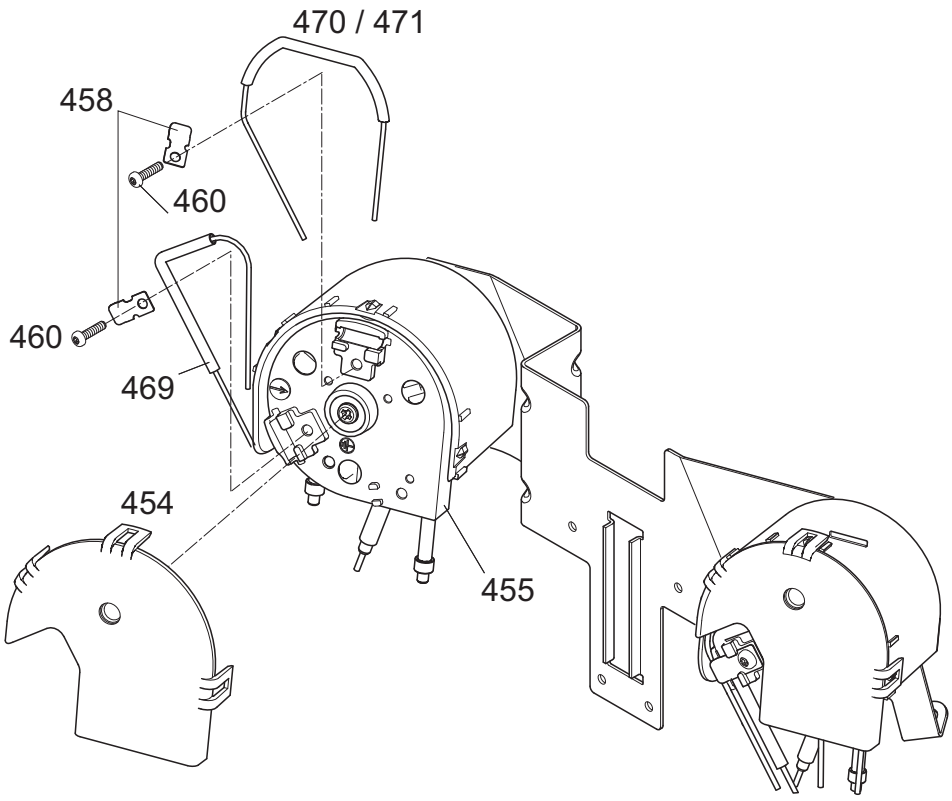


Pos.	Designation
454	Lid 702, thermoblock, neutral
455	Thermoblock TB2003/L 230V/1080W V2, welded nipples, connection FZ4.8x0.8 mm
459	Sensor 770 thermoblock, complete, V2
461	Screw GF/Tapt., M5.0x8, geomet, round head/spring ring,Torx-25, greased

Repair tip

- Handle the delicate wires of the NTC sensor (459) with care.

Replacing temperature fuses



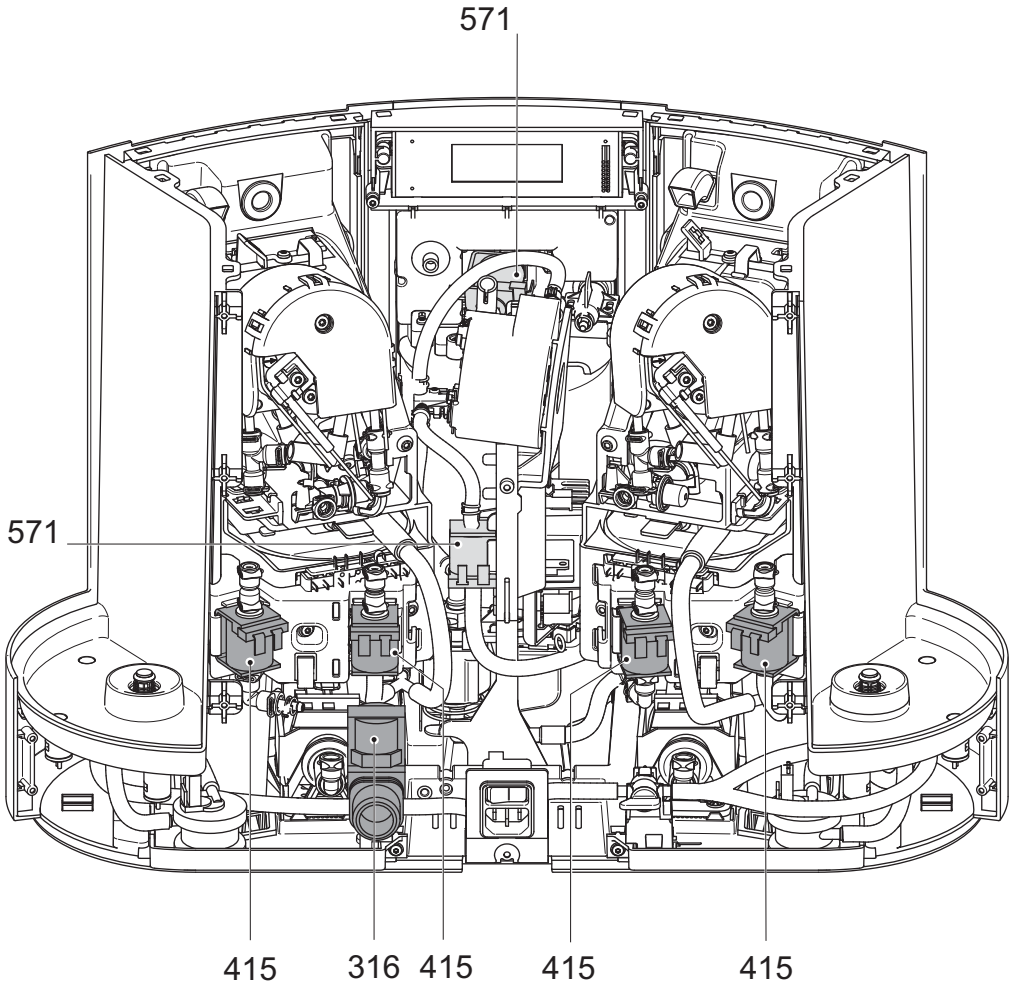
Pos.	Designation
454	Lid 702, thermoblock, neutral
455	Thermoblock TB2003/L 230V/1080W V2, welded nipples, connection FZ4.8x0.8 mm
458	Clip STB, TB2001, 0.5x10.0x21.0 mm
460	Screw GF/Tapt. M4.0x 8, blue galvanized, round head, spring ring, Torx-20
470	STB wire 733 EU 167C (1xE5)
471	STB wire 733 EU 167C (1xE5)

Repair tip

- When mounting a safety clip (458), make sure that the housing of the temperature fuse is positioned exactly below the safety clip.

10.8.2 Replacing solenoid valves

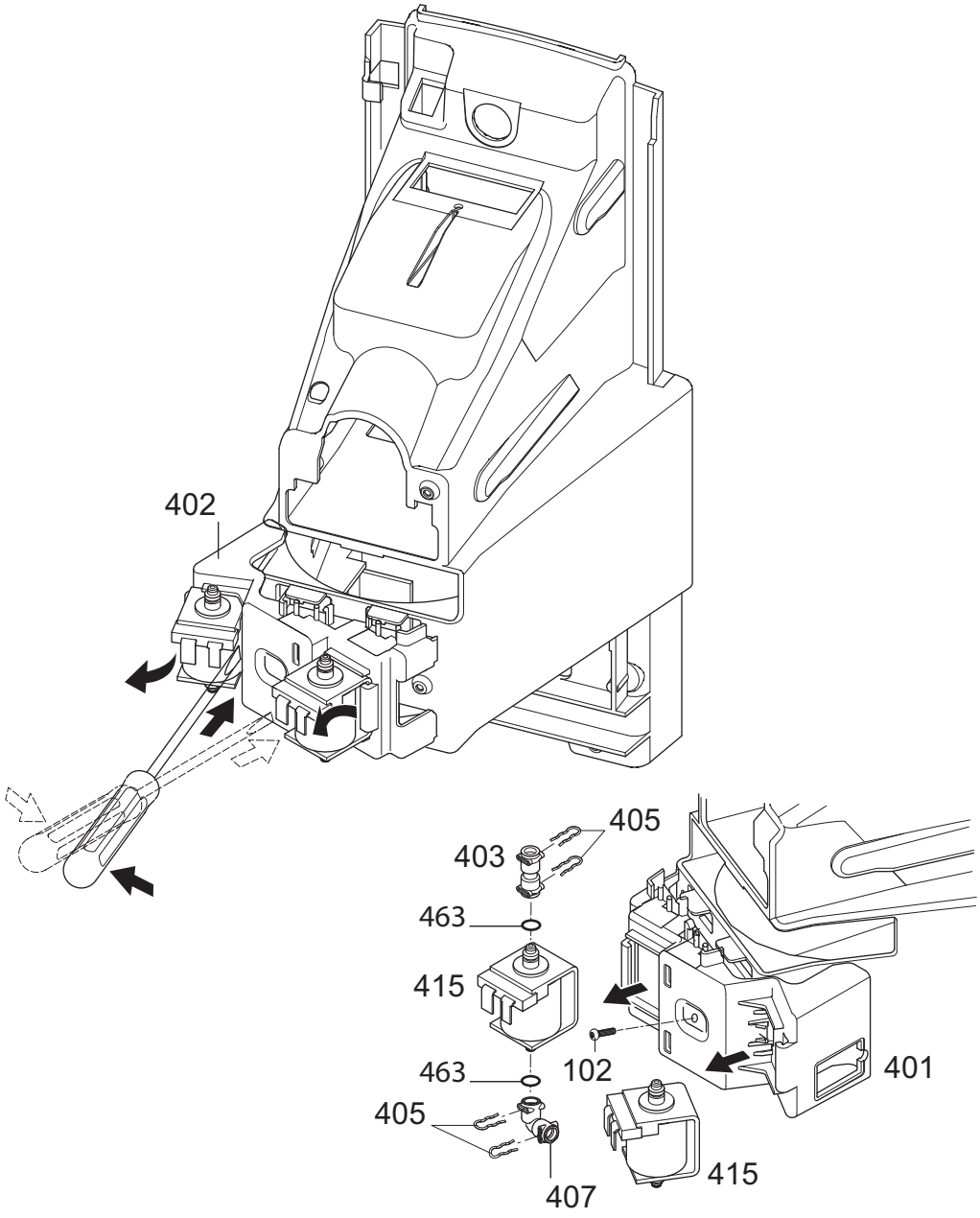
Position of components



Pos.	Designation
316	Magnetic valve, 220-240 V, 2/2-way, closed, type 1.007.126-E3-00-E
415	Magnetic valve DEV122-1560 V2, 2-side, FEP, connection long
571	Magnetic valve, DEV122-1560 V3, 2-side connection

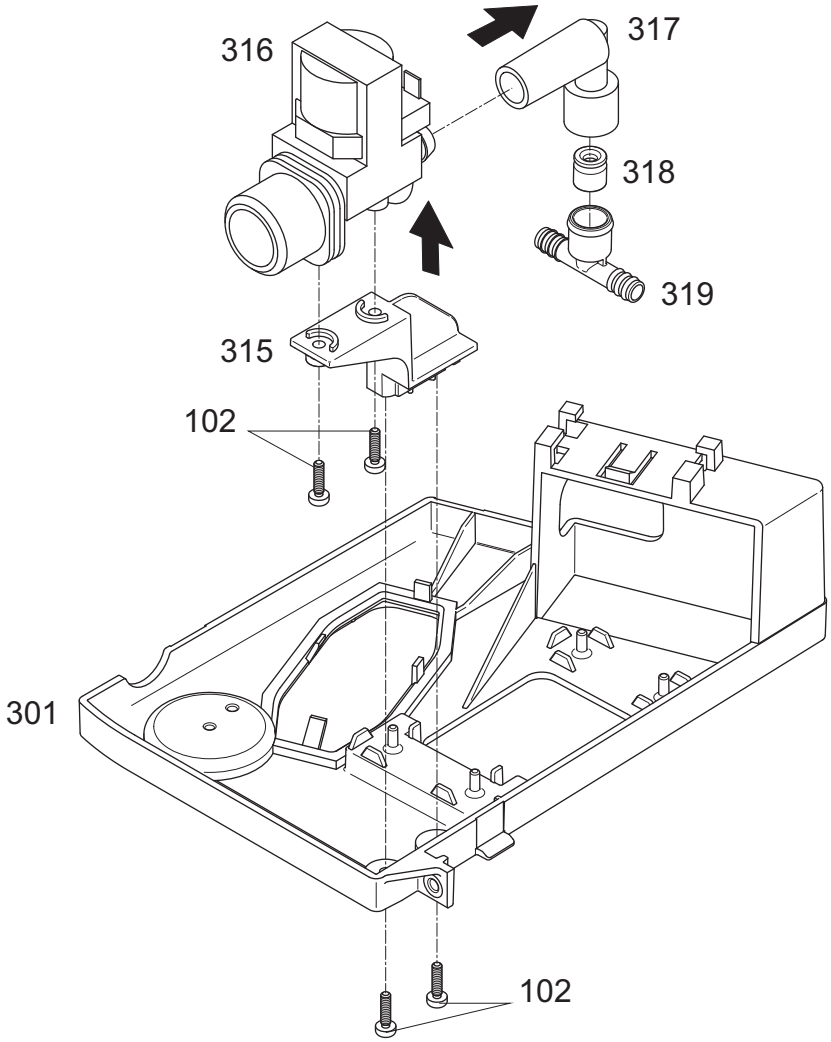
☞ **For replacing solenoid valves (571), refer to page 86.**

Replacing solenoid valves of coffee units



Pos.	Designation
102	Screw KST/PT, 3,5x12, blue galvanized, round head, Torx-15
401	Valve holder 702, right, V2, black
402	Valve holder 702, left, V2, black
403	Fluid connection, I-shape, short, V2, anthracite, 2xF
405	Clip, D=4 mm, L=12 mm, Inox
407	Fluid connection, L-shaped, 90°, short, anthracite, 2xF
415	Magnetic valve DEV122-1560 V2, 2-side, FEP, connection long
463	O-ring D3.40x1.90 mm, 70 shore, red, 2-components silicone

Replacing solenoid valve of direct water connection



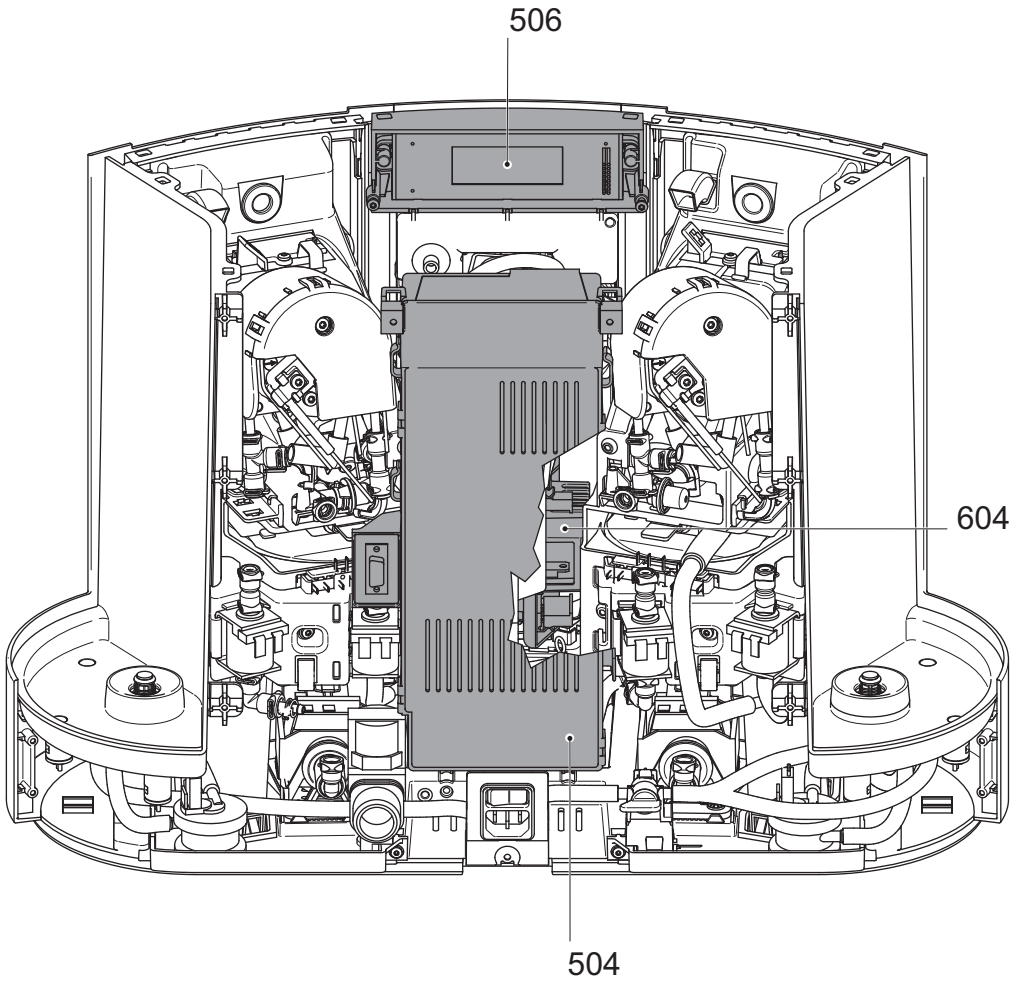
Pos.	Designation
102	Screw KST/PT, 3.5x12, blue galvanized, round head, Torx-15
301	Drawer 702, right, V3
315	Holder 702, valve, 2-way, black
316	Magnetic valve, 220-240 V, 2/2-way, closed, type 1.007.126-E3-00-E
317	Elbow 702, silicone, transparent, water supply connection
318	Cartridge RV-DW 10 DN6
319	Fluid distributor 702 T-shaped

10.8.3 Replacing display, PCBs and transformer

Caution
Electrical parts and wiring are not compatible with previous Gemini coffee machine models. Use the old service manual for these coffee machines.

i Try to download the customer settings with dongle and PC or laptop before replacing the control box or the control PCB.

Position of components



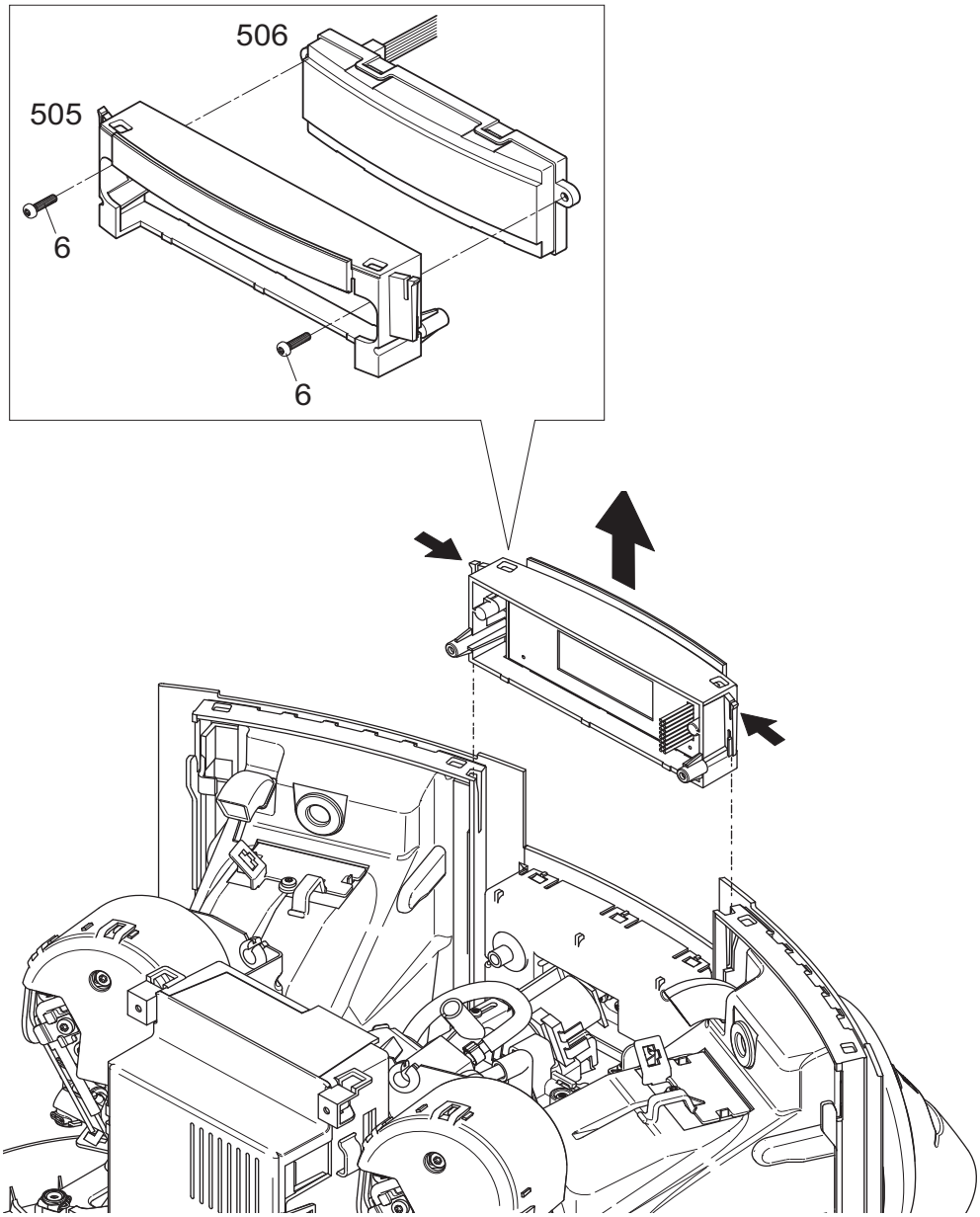
Pos.	Designation	Designation in wiring diagrams
504	Control box 733 complete	Control PCB and power PCB
506	Display 733, complete, lighting	LCD 2 x 20 digits
604*	Power PCB 734, complete	Cappuccino module, steam PCB

* CS223/224 only

☞ **See "Wiring diagrams" on page 121 and following for connector arrangement.**

☞ **For replacing the power PCB 734 (604) refer to page 85.**

Replacing display



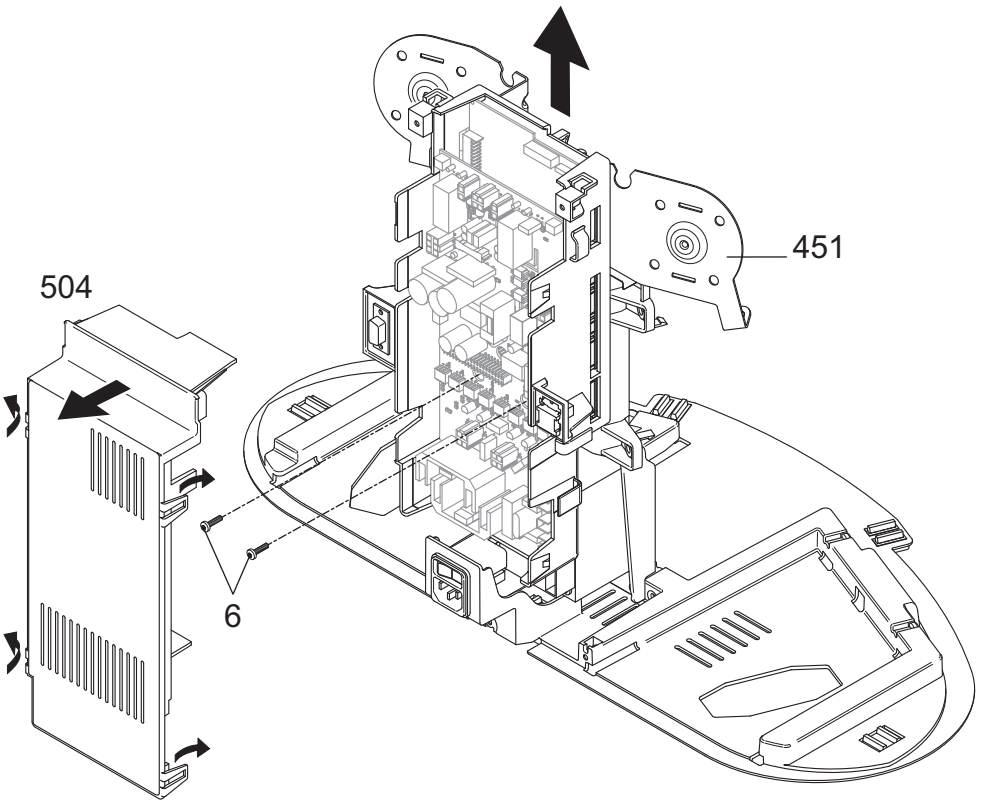
Caution
Display latches are fragile. Handle with care!

Caution
Use ESD protection measures.

Pos.	Designation
6	Screw KST/PT, 3,0x12, blue galvanized, round head, Torx-10, CA point
505	Cover 705, front
506	Display 733, complete

Replacing control box

Caution
Use ESD protection measures.



Pos.	Designation
6	Screw KST/PT, 3,0x12, blue galvanized, round head, Torx-10, CA point
451	Holder 702, thermoblock 2003, V2, zinc plated
504	Control box 733 complete

1. Unlatch cover (504) of control box (4 latches).
2. Disconnect wiring.
3. Unscrew 2 fastening screws (6) of control box.
4. Slide control box up the holder (451) and remove.

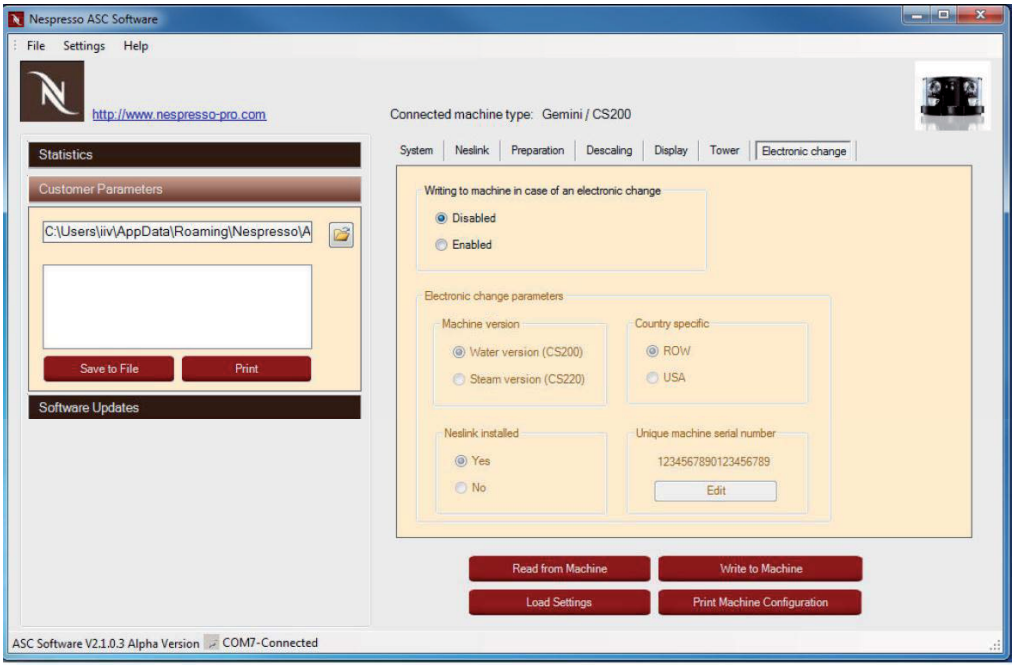
Repair tips

- Reconnect wiring with the help of the wiring diagrams (see page 121 and following).
- After exchanging the control box an initialization of the coffee machine is mandatory.

Requirements for initialization:

- PC or laptop (Windows XP / 7 / 8)
- ASC maintenance software
- Dongle for the connection to the coffee machine

For easy initialization a special window is provided in the ASC maintenance software.



i This menu display is subject to change.

Enter the required information for initialization:

- Coffee machine type:
  - Water version CS200 (CS203) or
  - Steam version CS220 (CS223/CS224)

i The same electronics is used for both coffee machine types.

- Installation location / country:
  - ROW (rest of world)
  - USA

i In USA and Canada an additional feature is needed to be NSF compliant.

- Neslink installed:
  - Yes
  - No (some countries do not have Neslink)

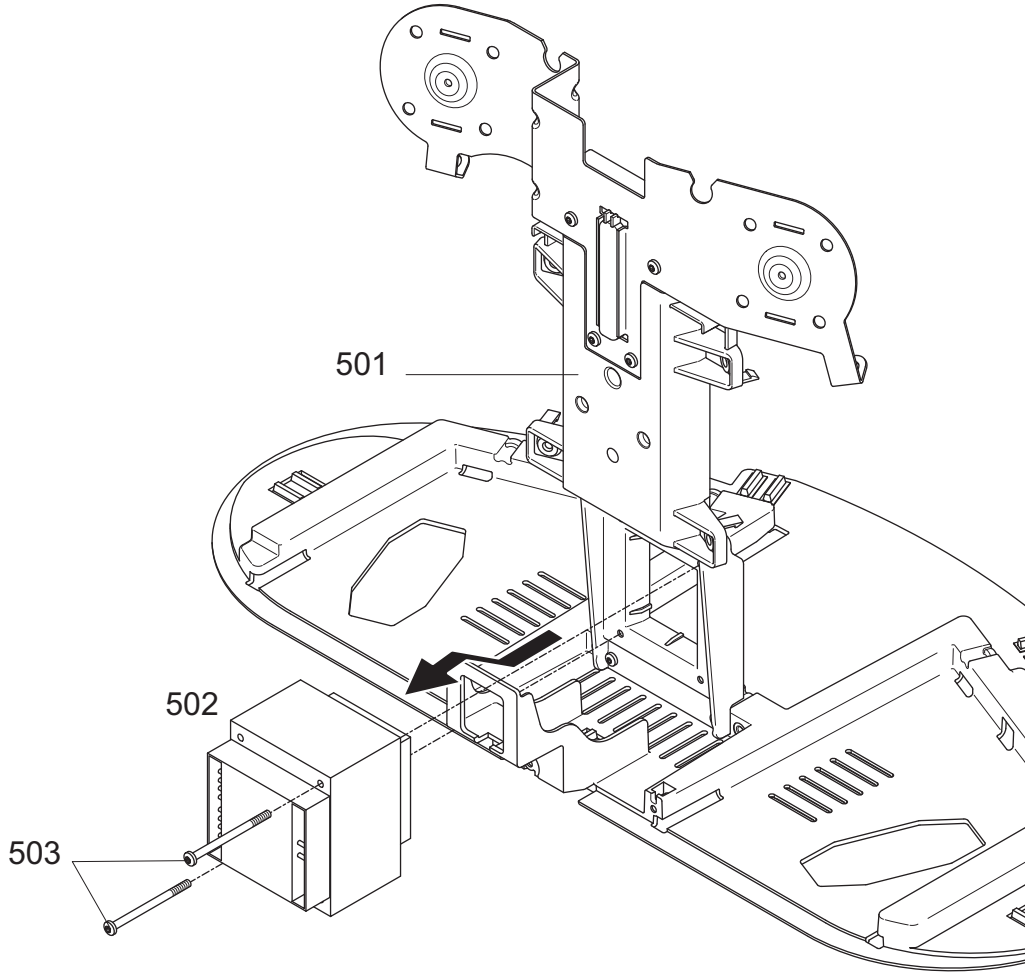
- Unique machine serial number:
  - 19 digit code (see rating plate)

Further possible entries and options:

- Download a new software version in the coffee machine.
- Reactivate the Neslink device in case it was previously disabled under "Air plane mode" (= GPRS off)
- Enter date when machine was installed.

i Refer to "Parameter table" on page 43.

Replacing transformer

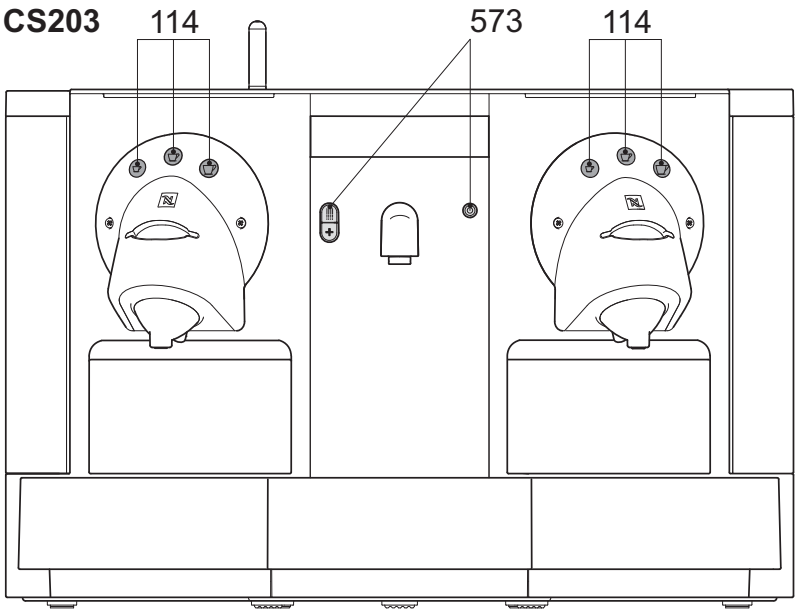


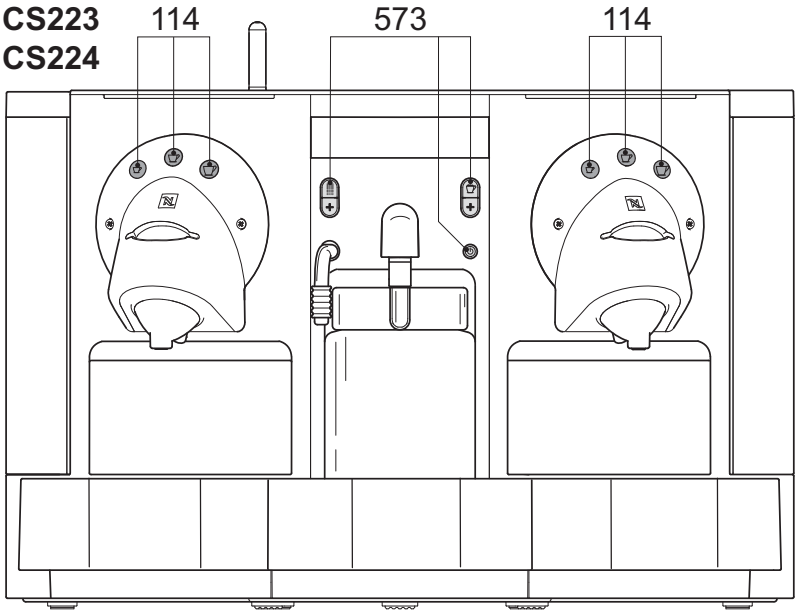
Pos.	Designation
501	Holder 702, transformer, V3
502	Transformer 733, complete
503	Screw KST/PT 3.5x50, blue galvanized, round head, Torx-10 (WN 1452)

☞ **The transformer (502) has a built-in temperature fuse that cannot be replaced separately.**

10.8.4 Replacing keyboards

Position of components



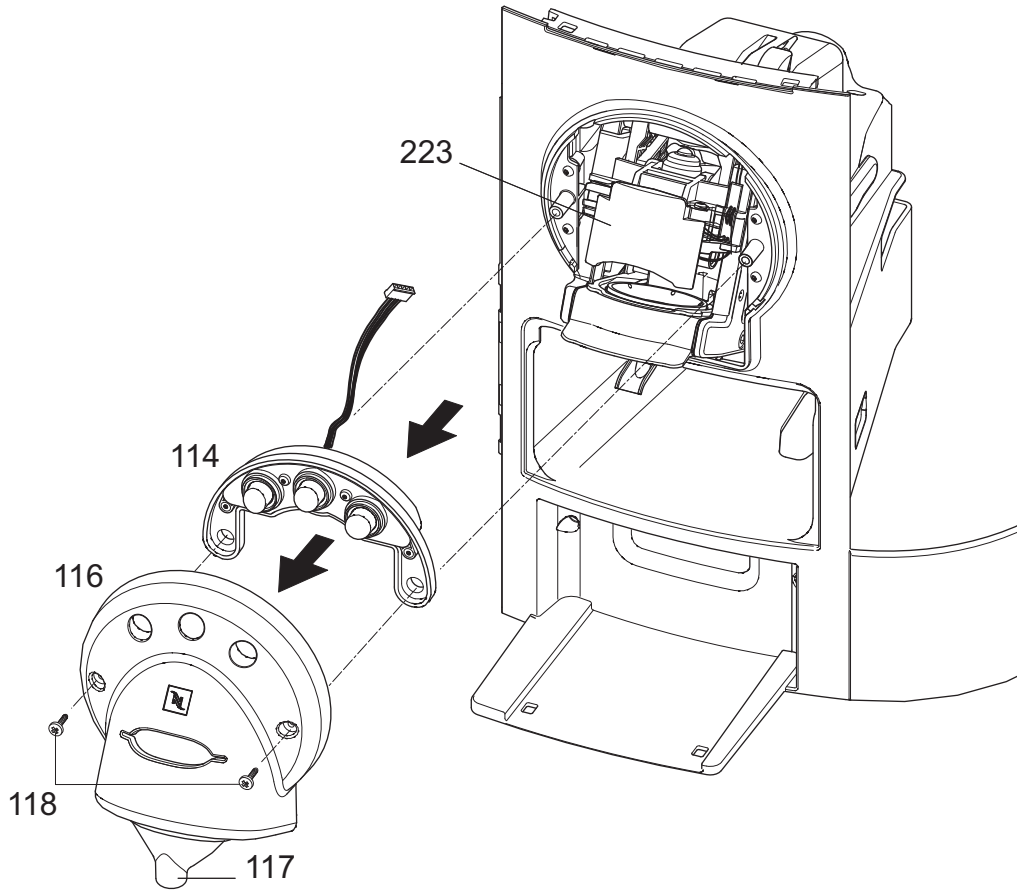


Pos.	Designation
114	Keyboard module 733 complete, coffee, buttons lighting white
573	Keyboard module 733 complete (on/off, hot water), **CS203 only**
573	Keyboard module 734 complete (on/off, steam, hot water), **CS223/224 only**

☞ **For keyboard module (573) refer to**
- "Replacing cappuccino keyboard of hot water / steam module" on page 84,
- "Replacing hot water keyboard" on page 92.

Replacing keyboards of coffee units

i The right coffee unit is illustrated as example.



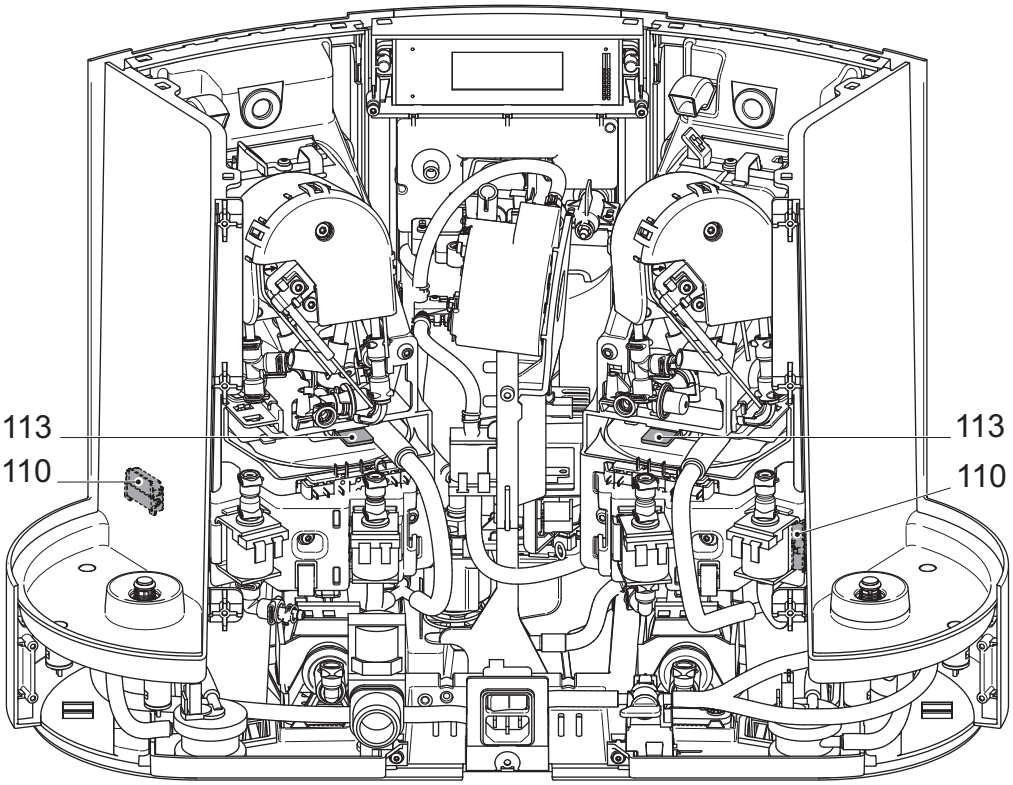
Pos.	Designation
114	Keyboard module 733 complete, coffee, buttons lighting white
116	Faceplate 702 outlet, V2, chrome plated
117	Cover 702, outlet, V4, black
118	Screw M3x6, blue galvanized, flat head, Torx-20

Repair tip

- Perform a security check with the safety lid (223) after reassembly (refer to page 57).

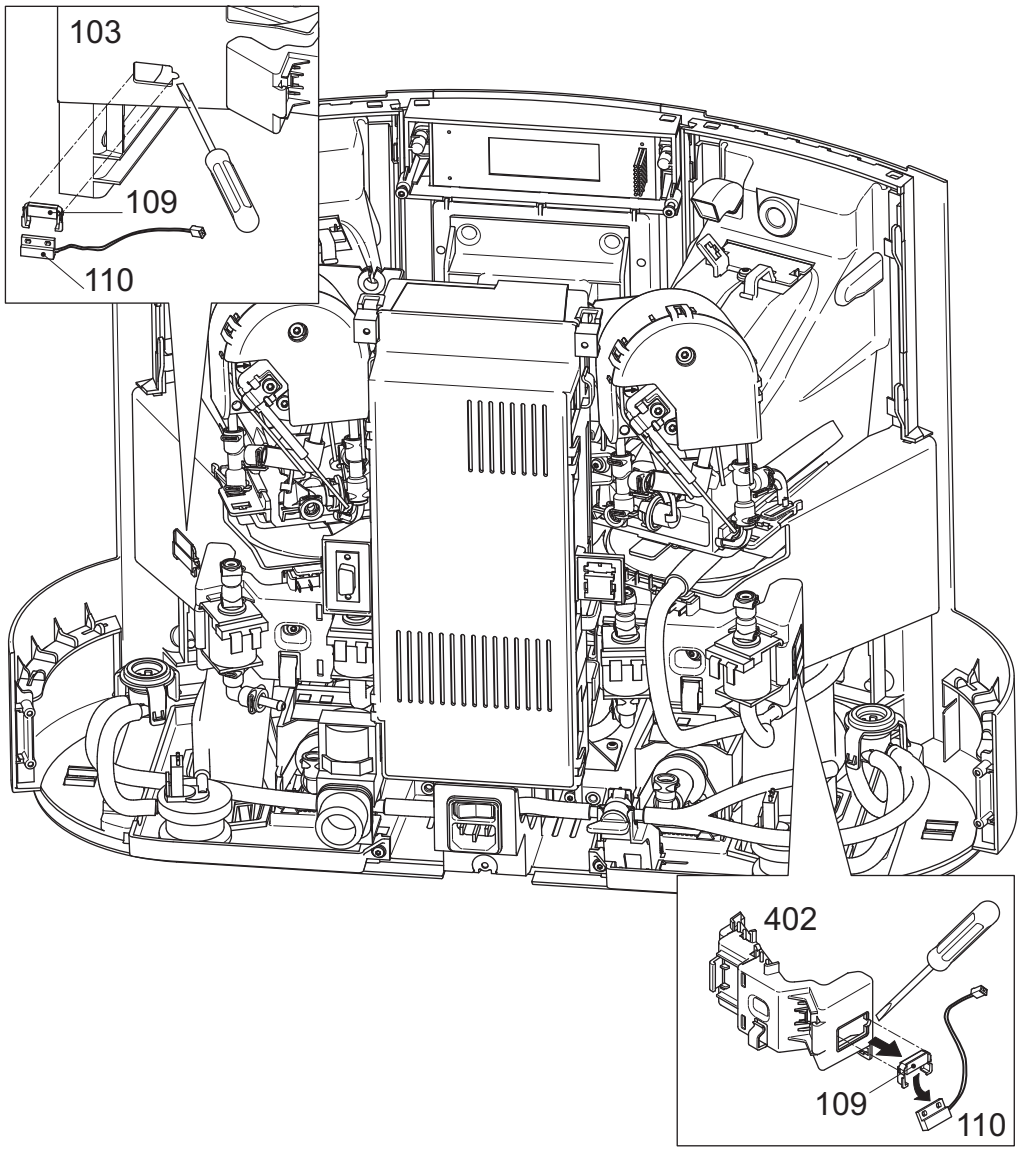
10.8.5 Replacing detection sensors

Position of components



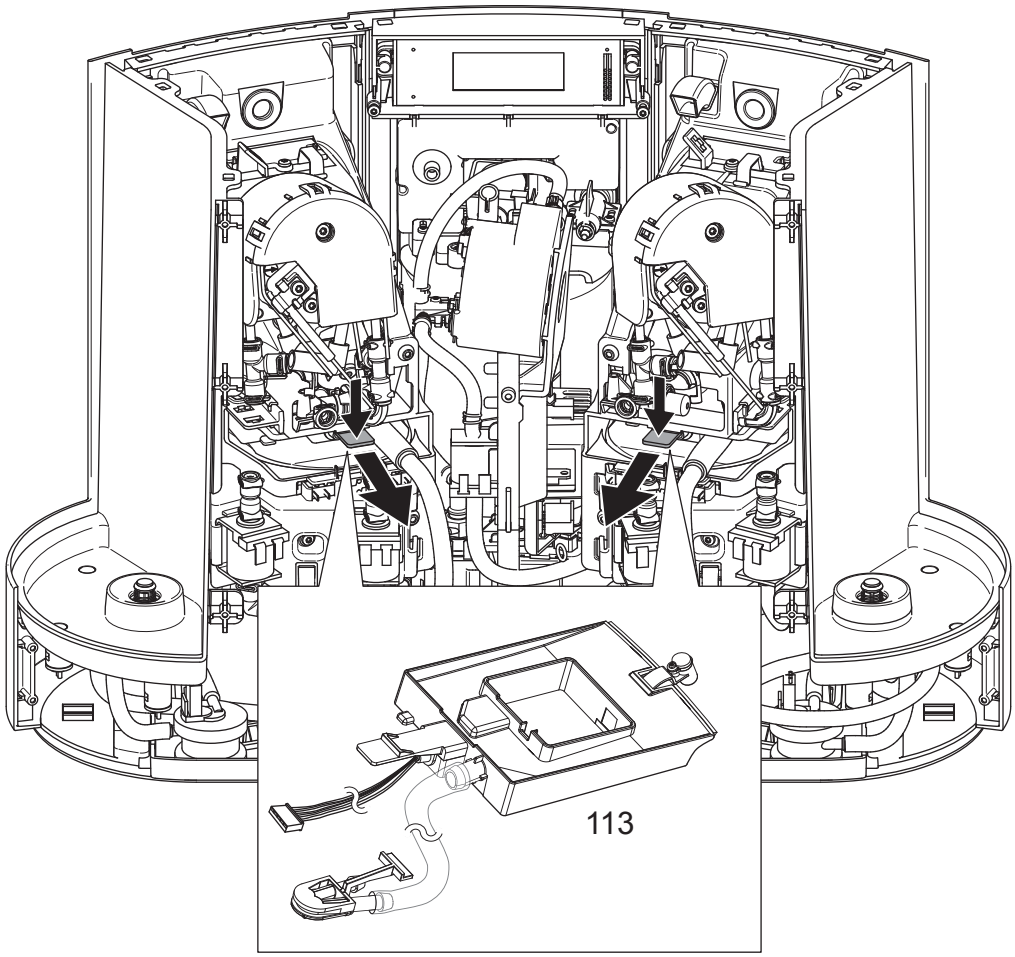
Pos.	Designation
110	Reed sensor 702 complete, water tank
113	IR sensor module 733, cup lighting

Replacing reed sensor



Pos.	Designation
103	Holder 702, extraction unit, V3, right, black
109	Support 702, reed sensor, V3, black, water tank
110	Reed sensor 702, complete
402	Valve holder 702, left, V2, black

Replacing IR sensor module



Pos.	Designation
113	IR sensor module 733, cup lighting

☞ **The IR sensor module has a drain hose that discharges condensed water into the drip tray.**

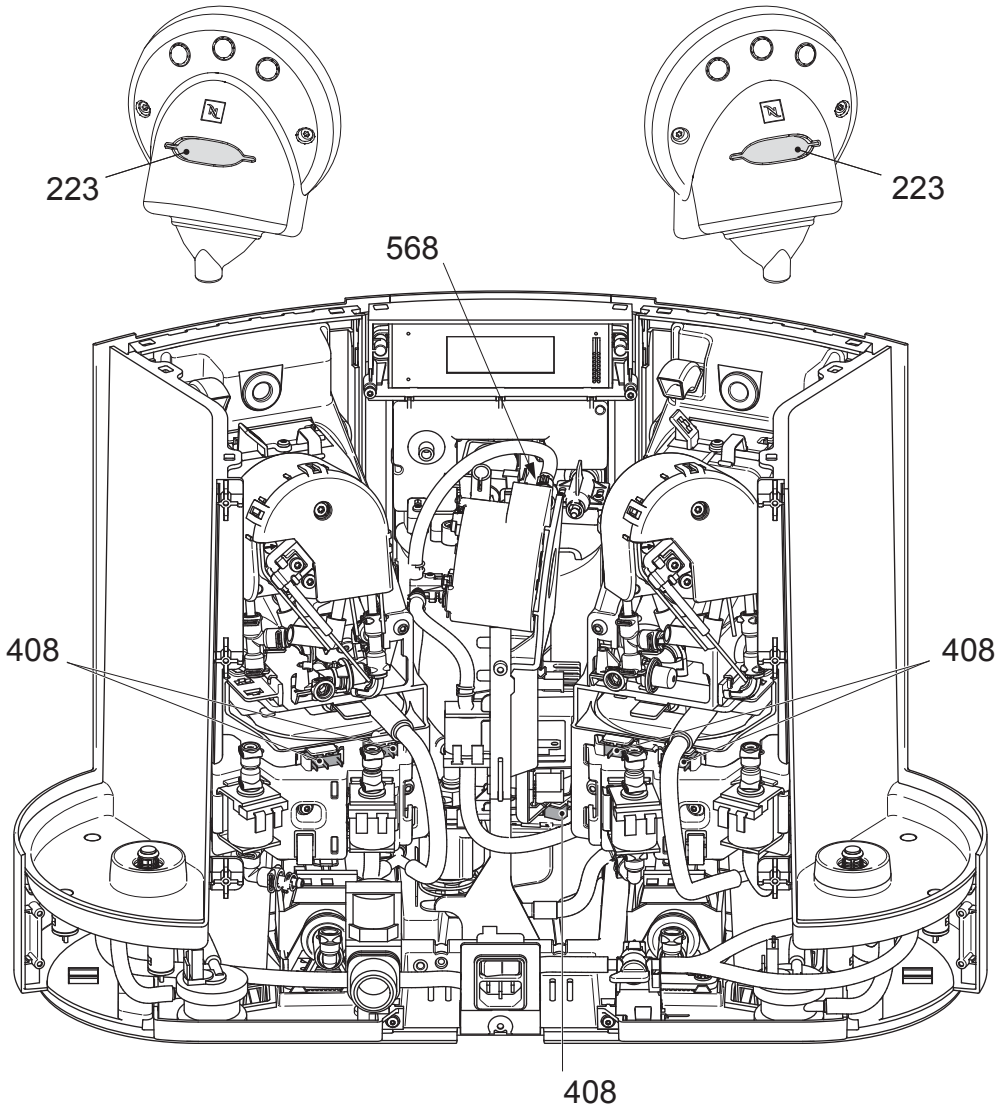
Repair tip

- To exchange the IR sensor module
  - remove extraction unit first (refer to "Replacing extraction unit" on page 76),
  - disconnect sensor cable connector,
  - disconnect drain hose,
  - detach hose at the back that blocks the access to the IR sensor module.

10.8.6 Replacing micro switches

Position of components

i All micro switches have plug contacts except the micro switch of the safety lid (223).

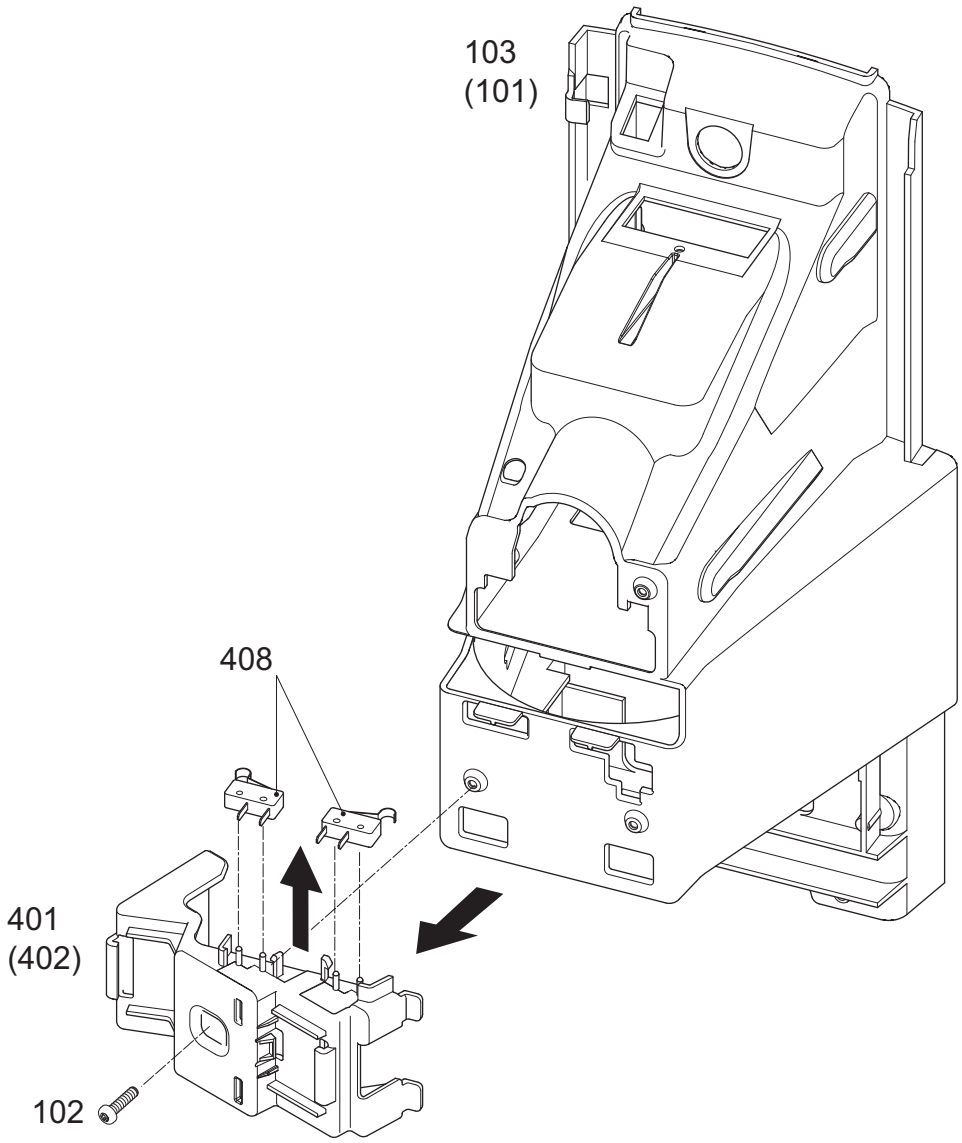


Pos.	Designation
223	Spare safety lid 702
408	Micro switch XCG55V-81-LZ187
568	Micro switch D41R-QGAC V2, 0.1 A/250 V, connection 4.8x0.8 mm

☞ **For replacing safety lid (223), refer to page 78.**

☞ **For replacing micro switch (568), refer to page 88.**

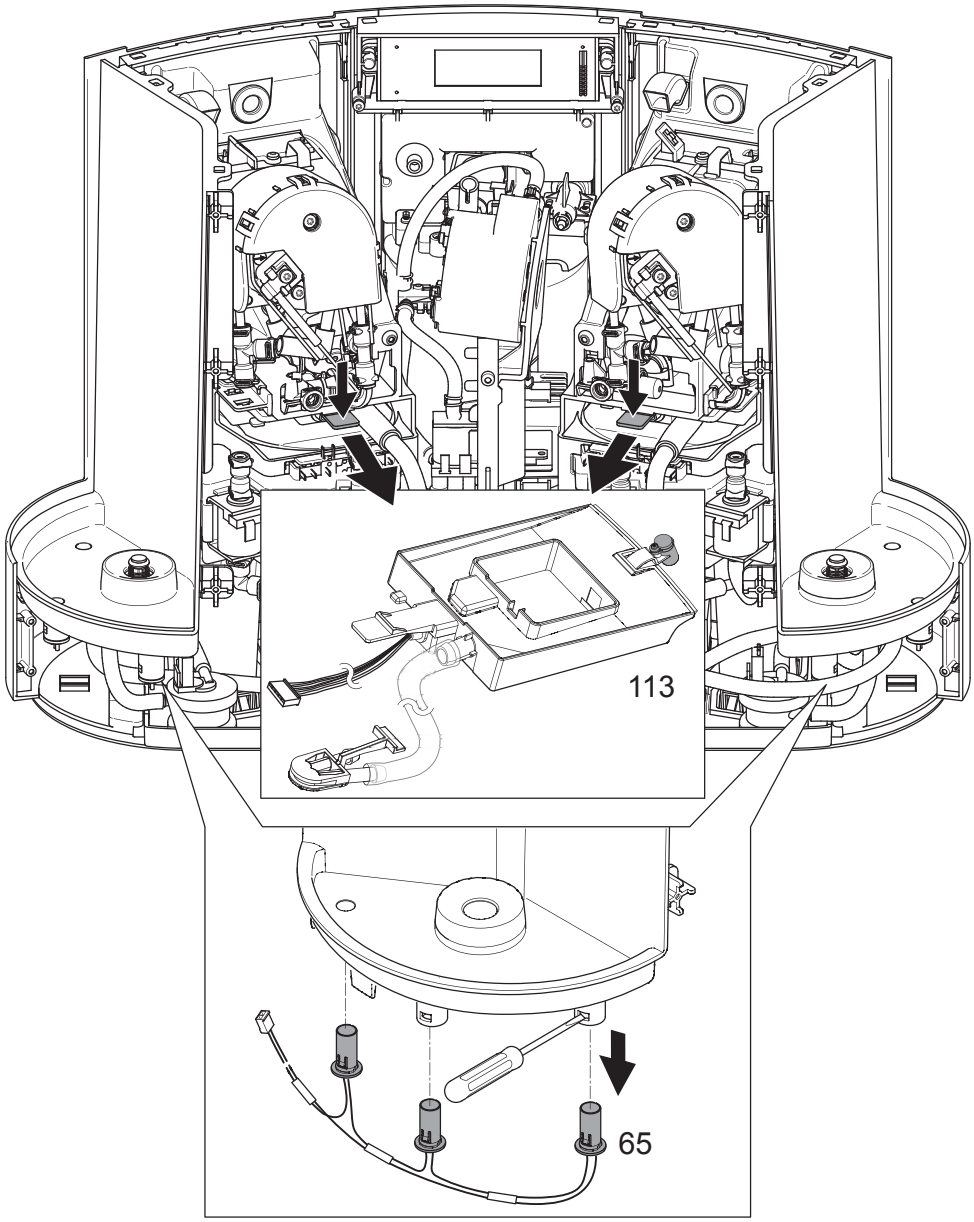
Replacing micro switches for capsule container detection



Pos.	Designation
101	Holder 702, extraction unit, V4, left, black
102	Screw KST/PT, 3.5x12, blue galvanized, round head, Torx-15
103	Holder 702, extraction unit, V3, right, black
401	Valve holder 702, right, V2, black
402	Valve holder 702, left, V2, black
408	Micro switch XCG55V-81-LZ187, lever

i The micro switches of the right coffee unit are illustrated as example.

10.8.7 Replacing illumination components

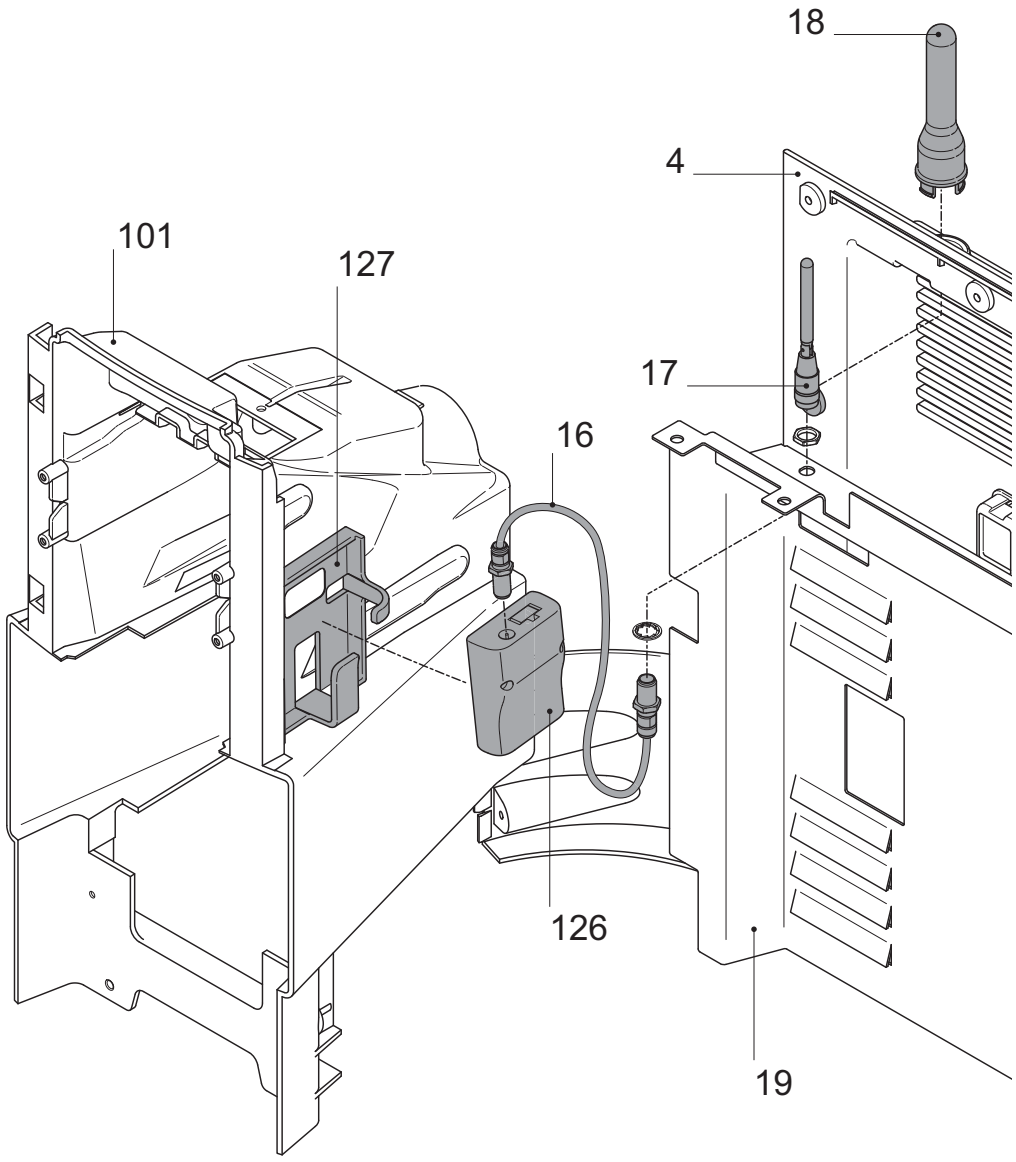


Pos.	Designation
65	LED 733, tank lighting
113	IR sensor module 733, cup lighting

Repair tips

- The backlighting of the coffee buttons is part of the keyboard module. For replacement refer to page 107.
- The cup lighting is part of the IR sensor module (113). For replacement
  - remove extraction unit first (refer to page 76),
  - disconnect sensor cable connector,
  - detach drain hose,
  - detach hose at the back that blocks the access to the IR sensor module.

10.8.8 Replacing Neslink device



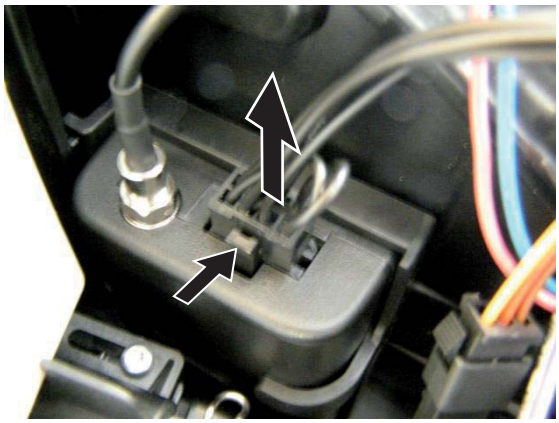
Pos.	Designation
4	Rear cover 733, black CH
16	GSM antenna cable CAB.212
17	GSM antenna TG.09.0113
18	Antenna cover 733
19	Metal shield 733
101	Holder 702, brewing unit, V4
126	GSM module SON8SIM
127	Support 733, for radio module

i For antenna removal refer to "General disassembly" on page 61.

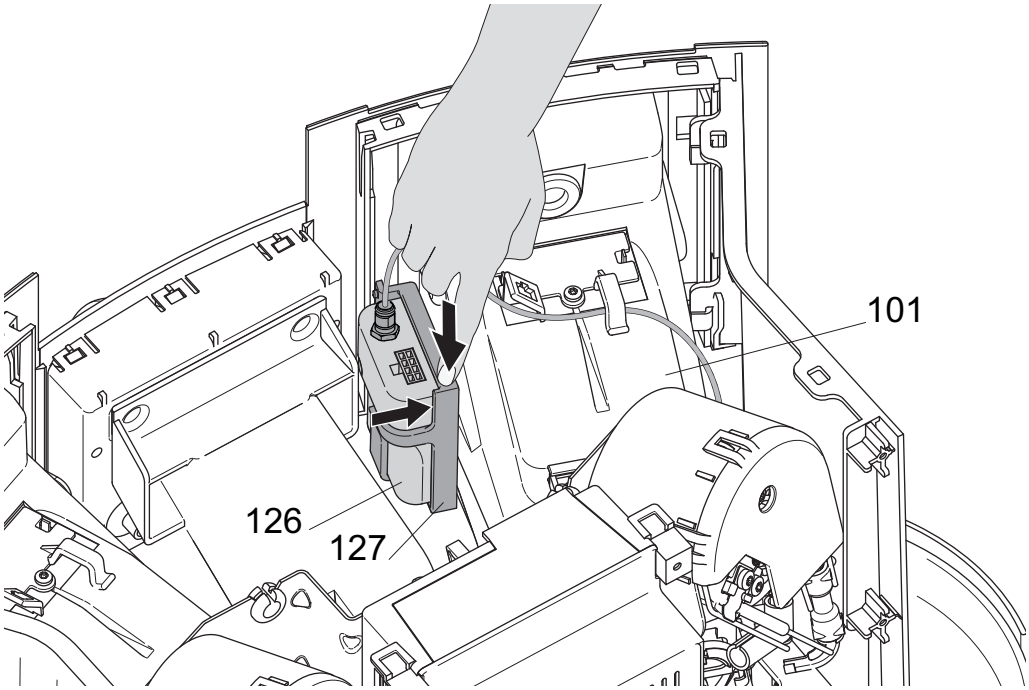
Repair tips

Caution
Use ESD protection measures.

1. Remove display (506) first (see page 80) to allow access to the Neslink device (126).

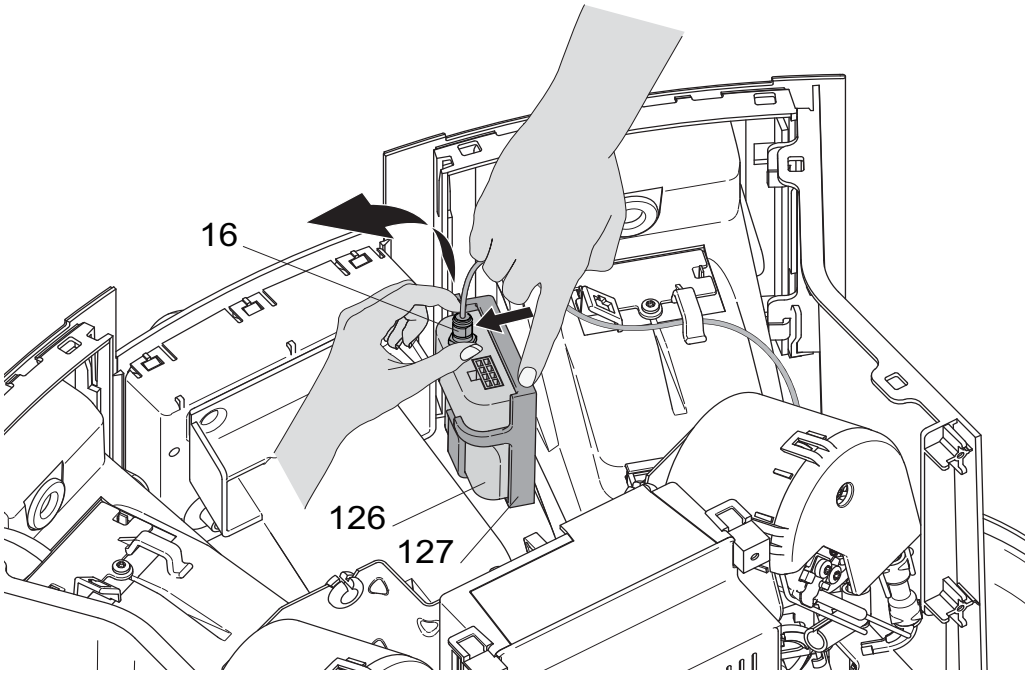


2. Release connector lock and remove cable connector from Neslink device.



3. The Neslink device (126) is locked under the top edge of its support (127). To remove the Neslink device proceed as follows:

   - Place a finger on the side of the support (127) and press it against the brewing unit (101) to fix it.



- At the same time grasp antenna connector (16) and pull Neslink device out laterally from below the top edge of the support.
- As soon as Neslink device (126) is released, lift it out of support (127).



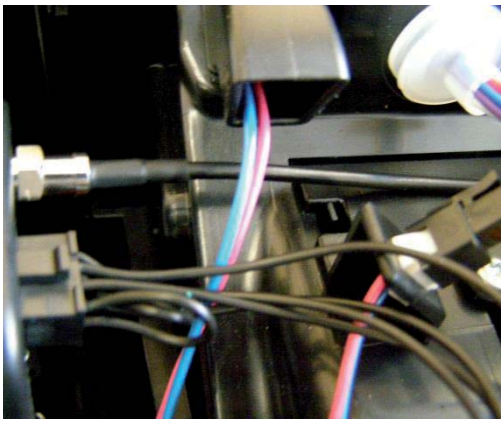
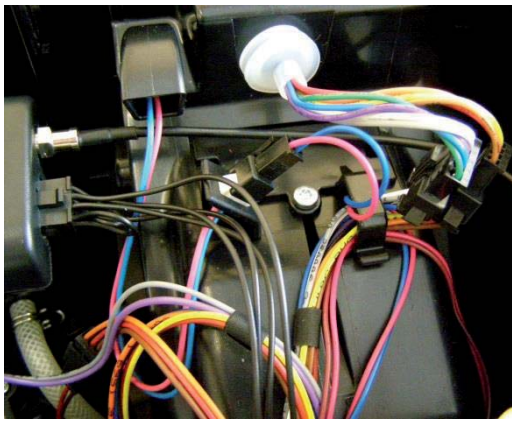
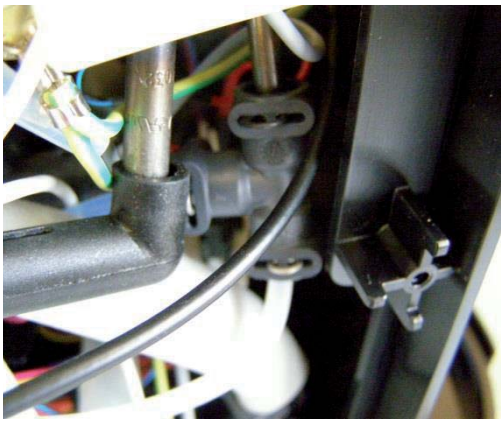
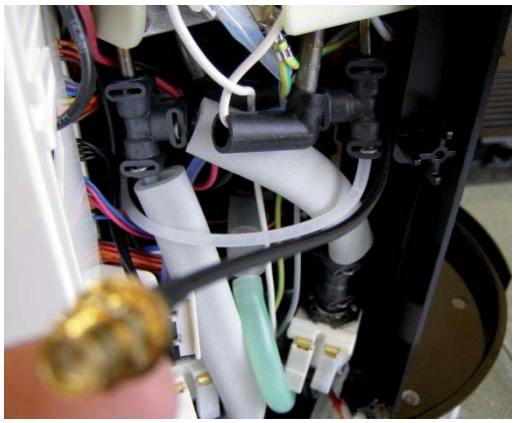


4. Unscrew antenna connector (16) with a no. 8 wrench.
5. Remove and re-use SIM card (refer to separate manuals).

Caution
Antenna cable (16) is fragile. Handle with care!

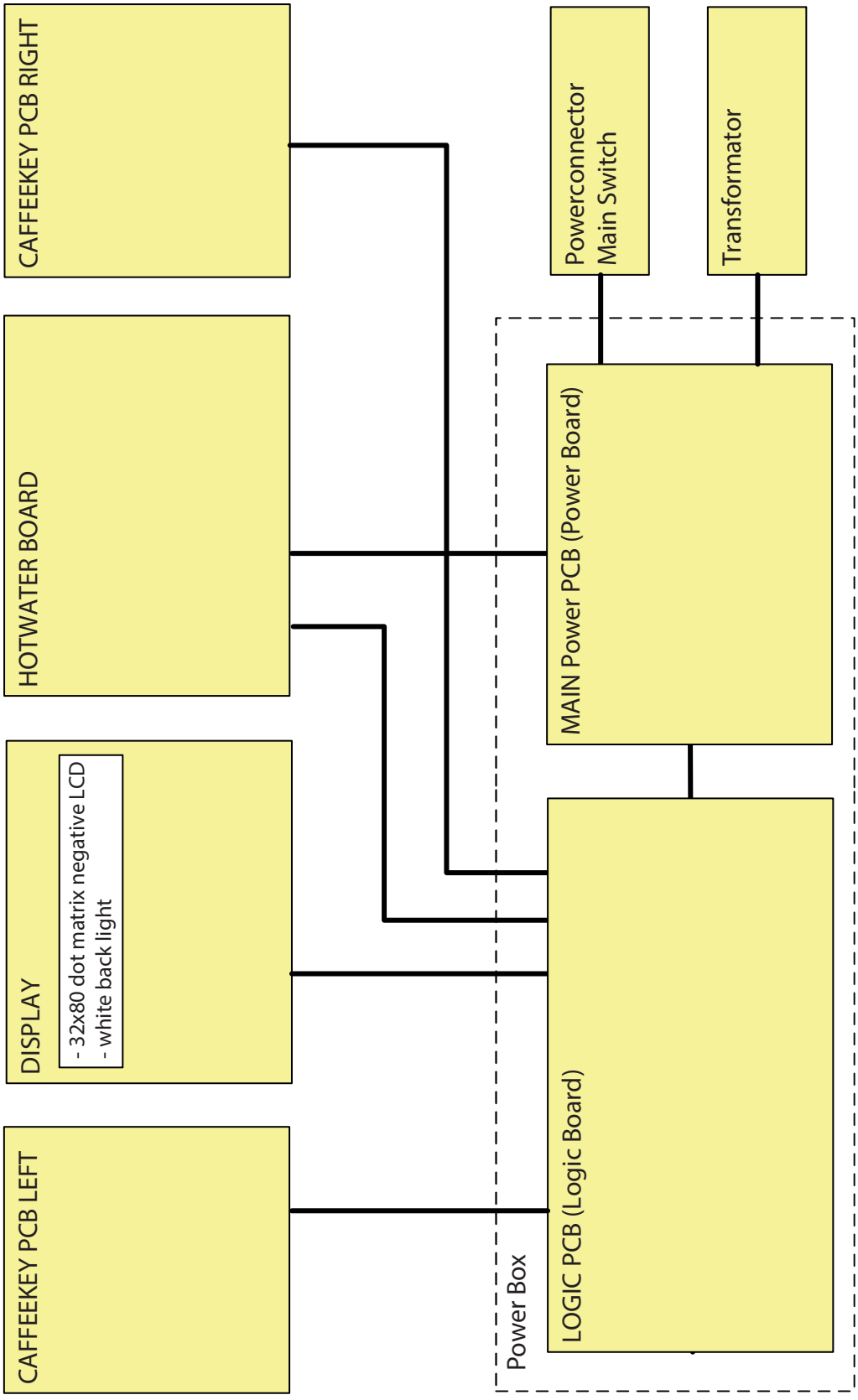
Assembly tip

- Check cable routing during assembly of new Neslink device:

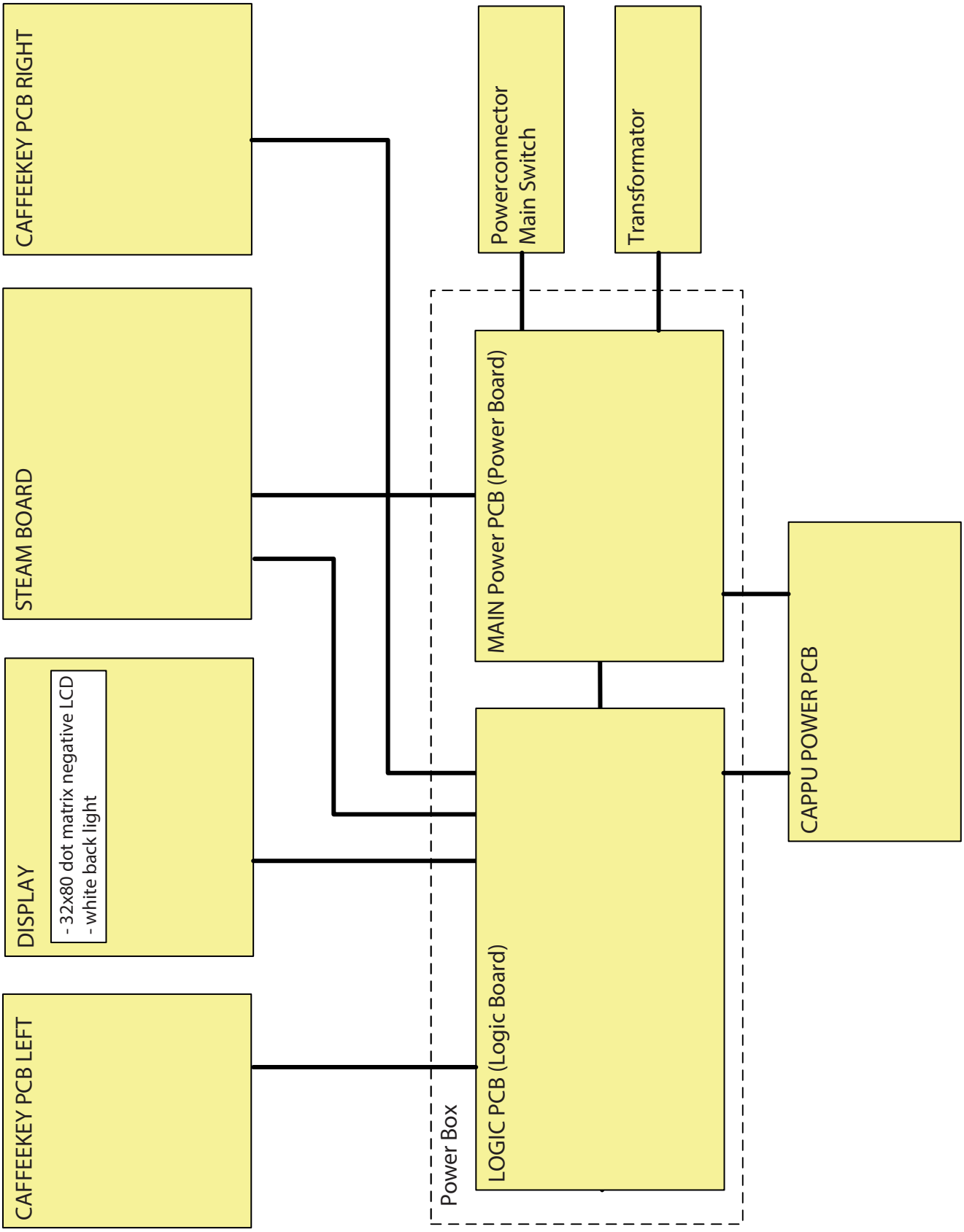





10.9 Block diagrams

10.9.1 Block diagram of CS203 coffee machine (EF 903 / EF 733)



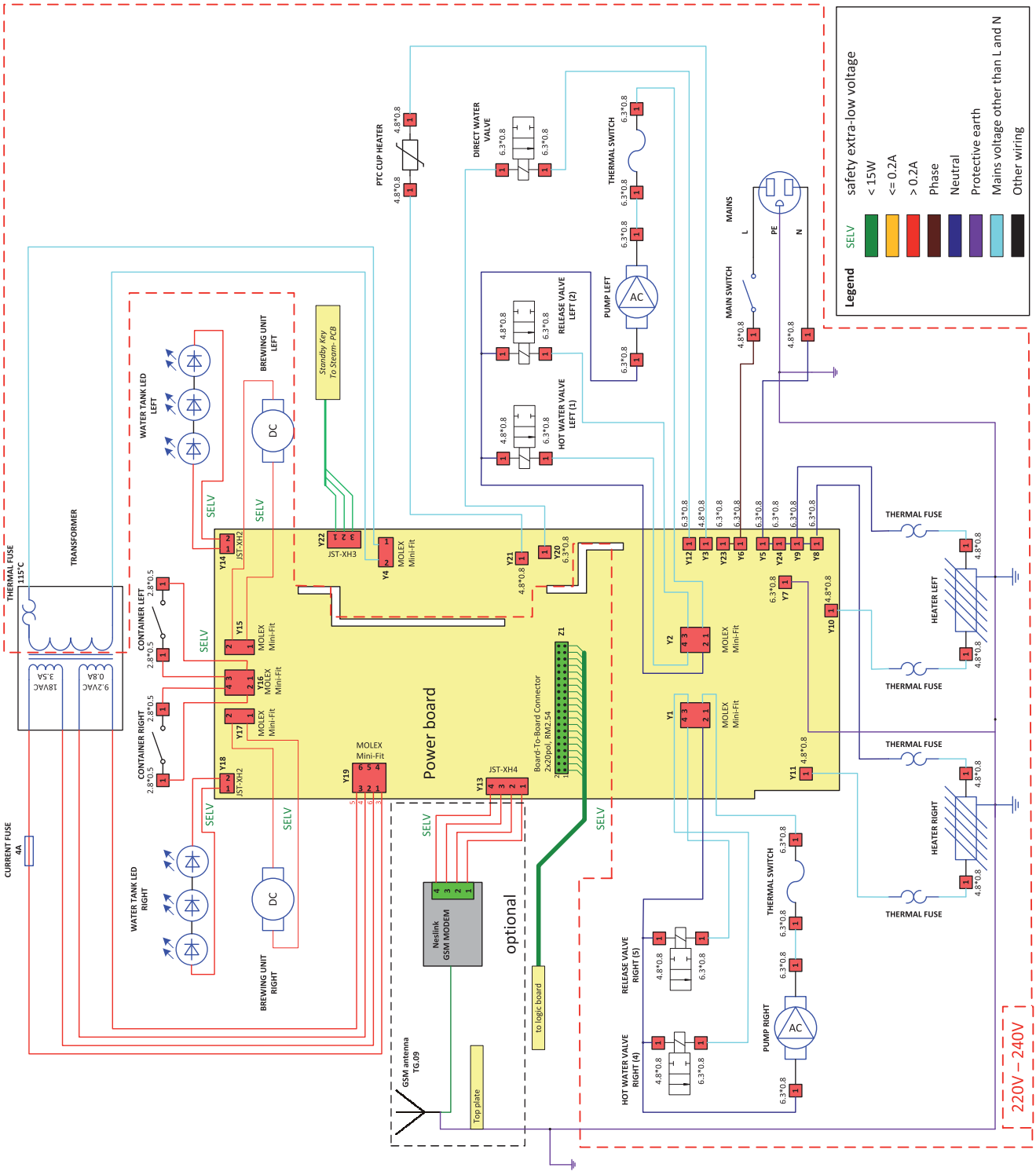
10.9.2 Block diagram of CS223/224 coffee machines (EF 904 / EF 727 / EF 734)



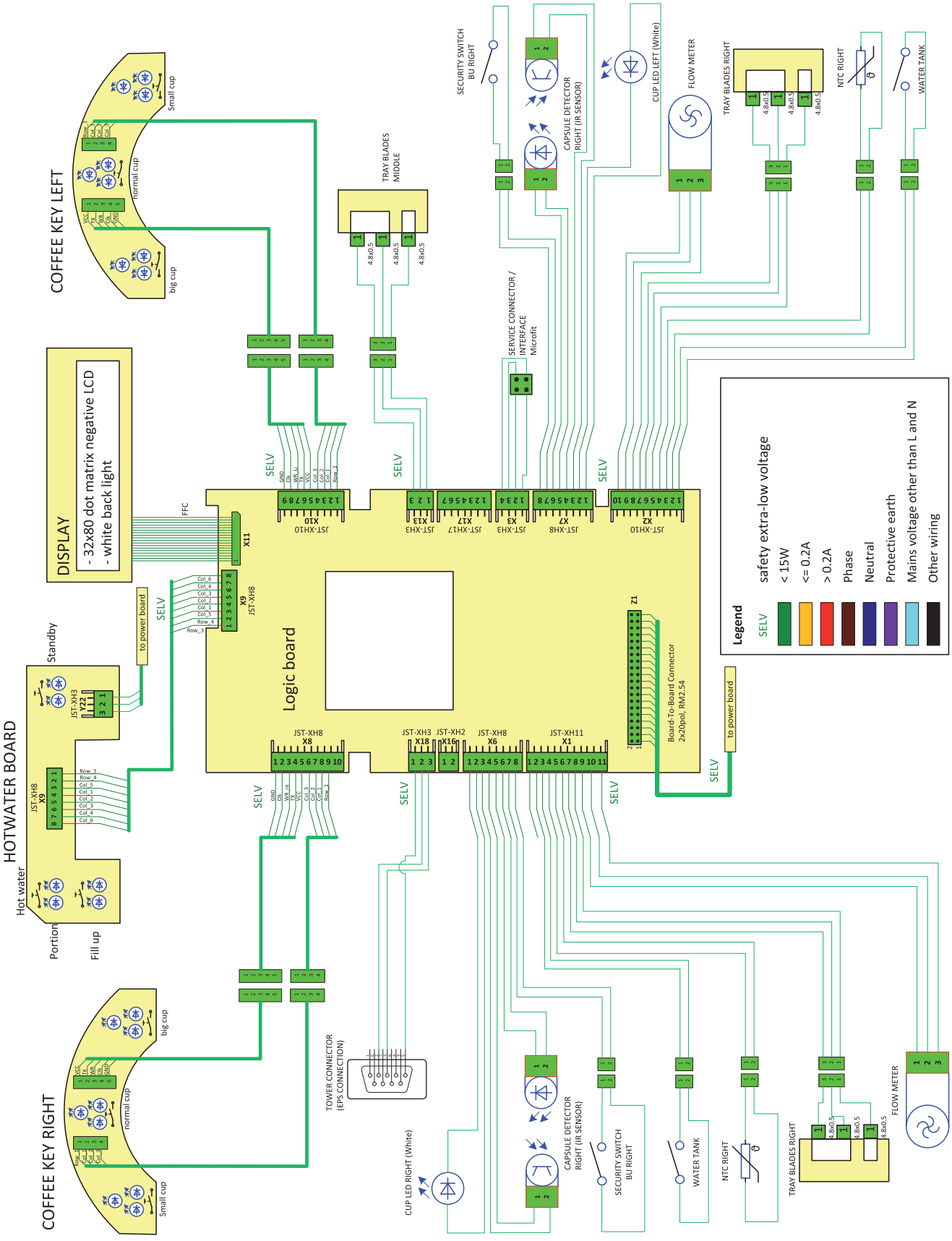
10.10 Wiring diagrams

10.10.1 Wiring diagrams of CS203 coffee machine (EF 733 / EF 903)

Power board

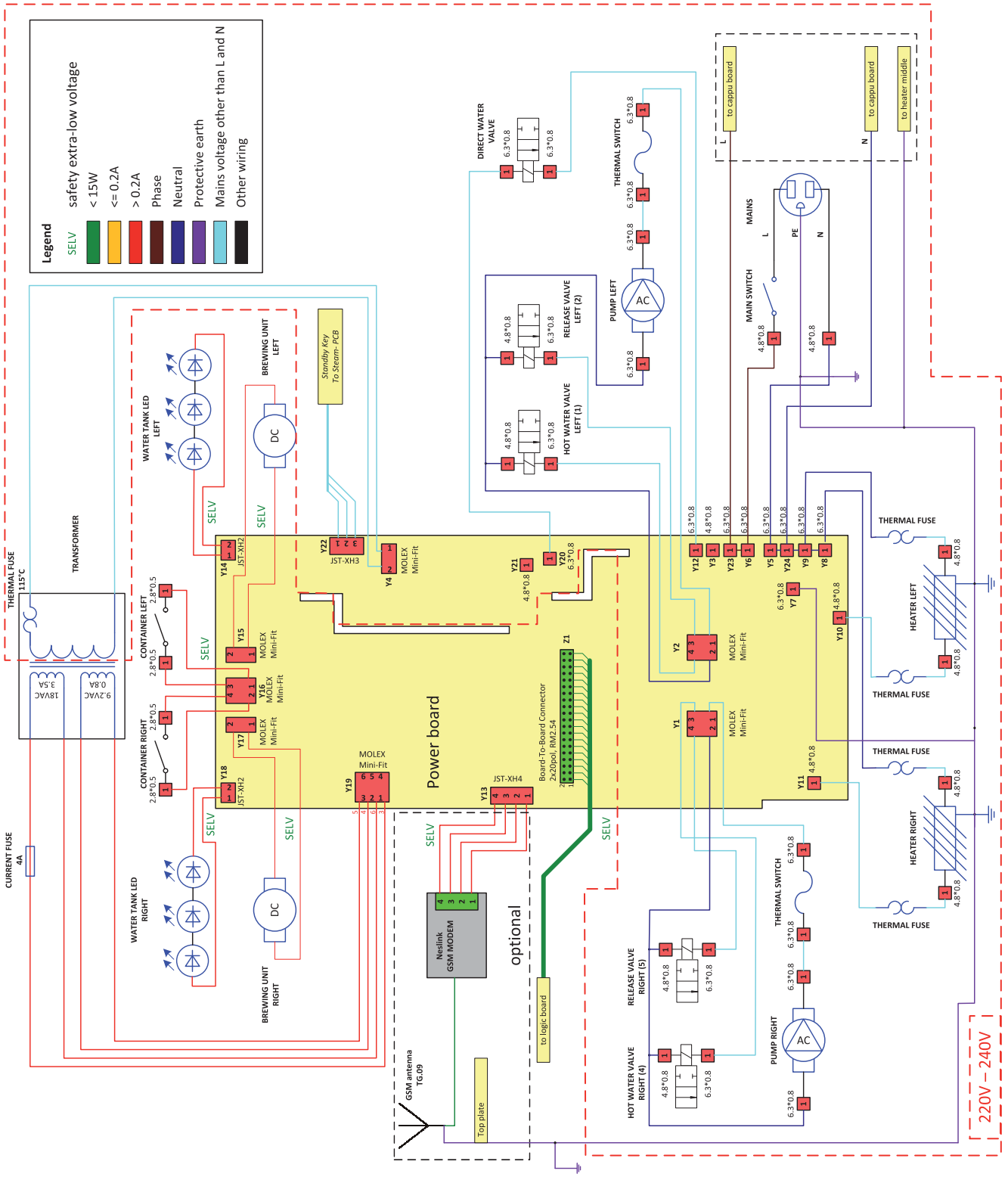


Wiring diagram of CS203 (continued)

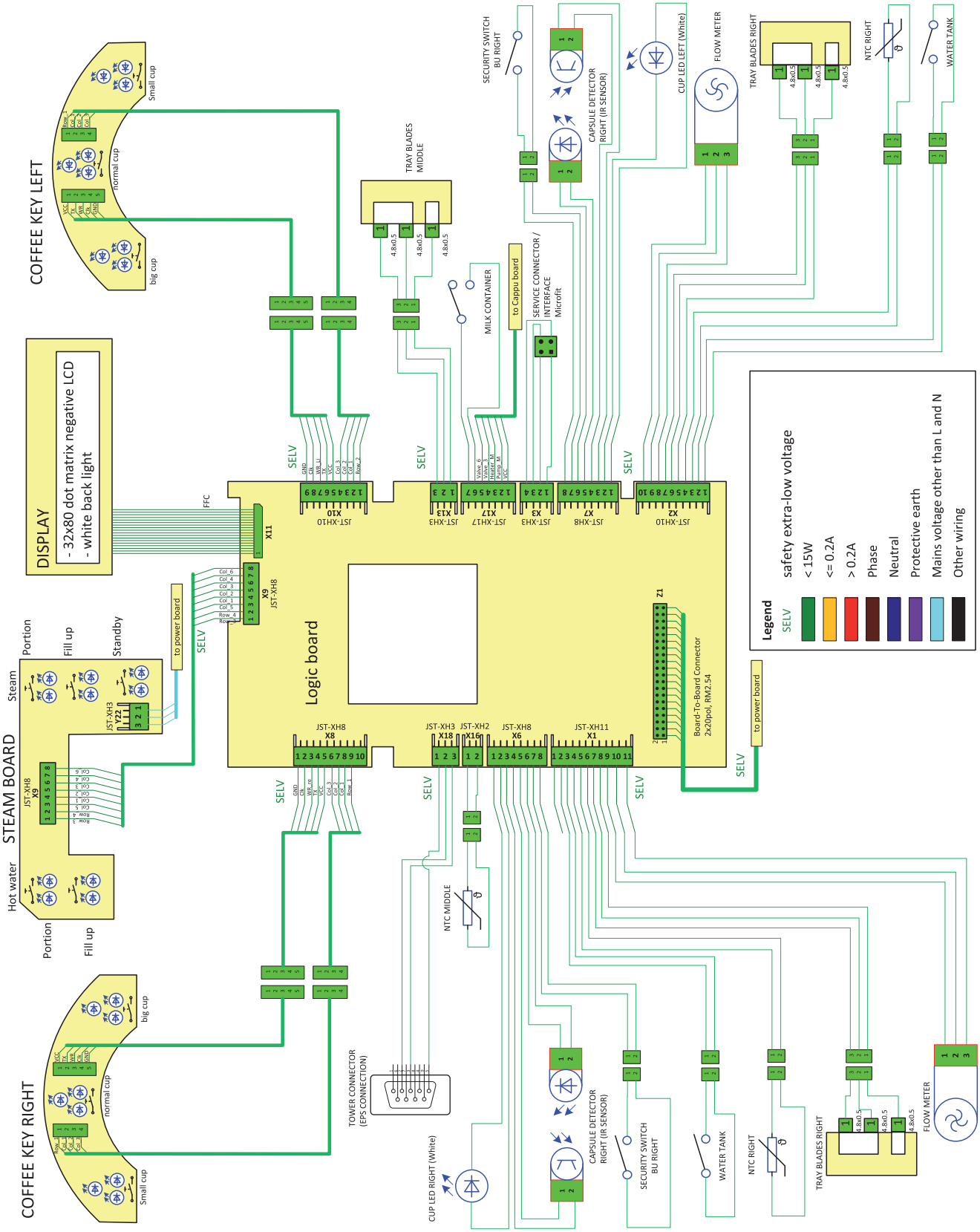


10.10.2 Wiring diagrams of CS223 and CS224 coffee machines (EF 727 / EF 733 / EF 904)

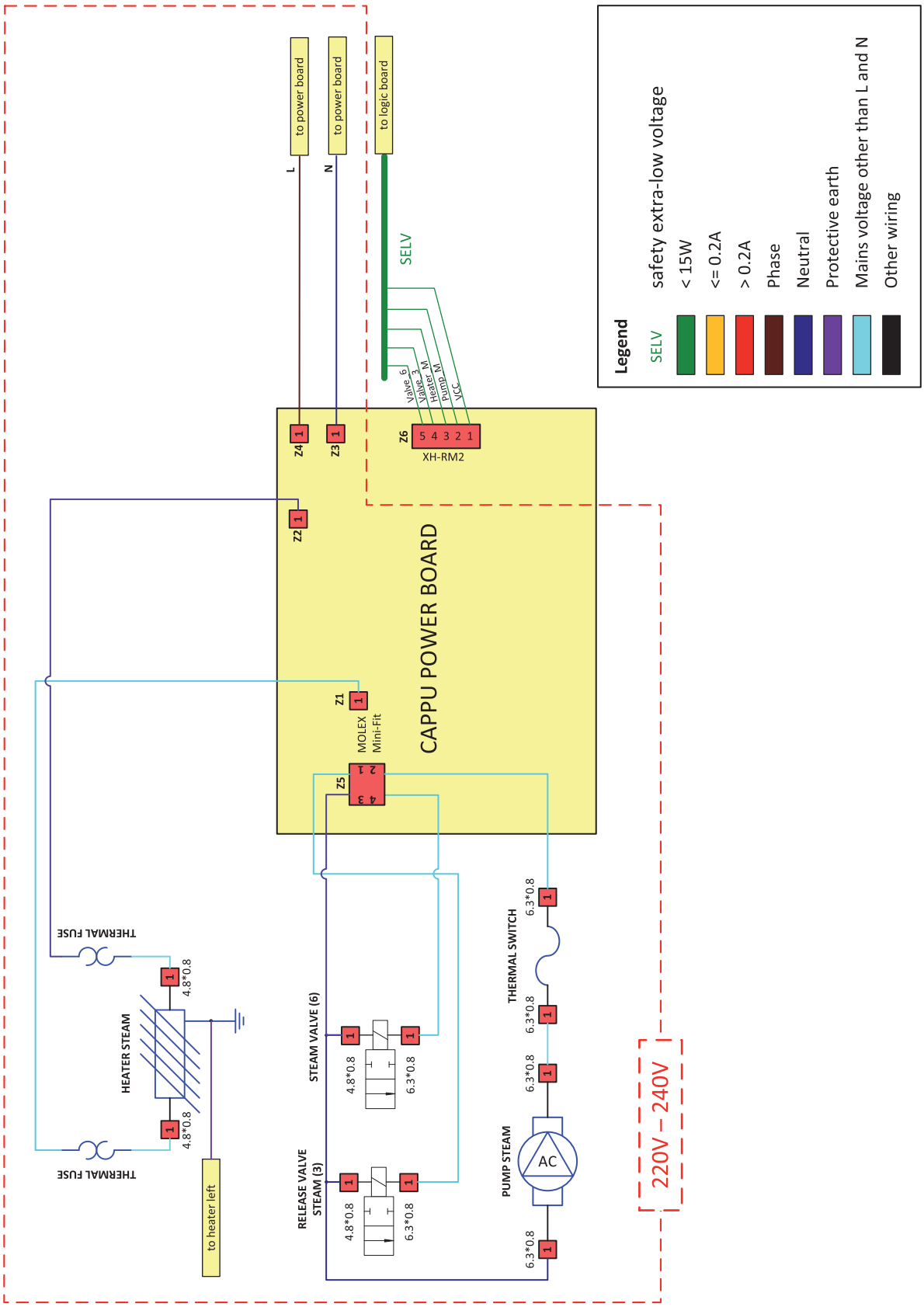
Power board



Wiring diagram of CS223 and CS224 coffee machines (continued)



Wiring diagram of CS223 and CS224 coffee machines (continued)



11 FUNCTION TESTS

11.1 Safety instructions

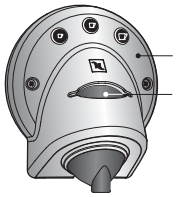
Some function tests are performed with an energized, partly opened coffee machine.

Danger of electrocution!
Mains voltage inside the coffee machine.
Do not touch any live part while performing tests.

Danger of burns!
Hot parts and water under pressure inside the coffee machine.
Do not touch any hot parts while checking for leakages!
Always wear protective goggles.

Malfunction of the safety lid (203) can cause injuries!

Finger tips that are inserted in the capsule slot can be squeezed.



Whenever a faceplate (116) is detached during a function test, the correct function of the associated safety lid (203) must be tested after reassembly.

11.2 Required equipment



1) Pressure tester (EFR no. 42213)
2) Optional - Adapter 702 (EFR no. 49803) for ES range pressure gauge (EFR no. 16195)
3) Pressure adapter 702 cpl. (EFR no. 49804)
4) PC or laptop with ASC software for NESLINK test
5) Dongle with USB cable and machine cable for NESLINK test
6) Safety clip
7) Timer
8) Electronic thermometer (or digital multimeter suitable for temperature measurement)
9) Table scales
10) Measuring beaker

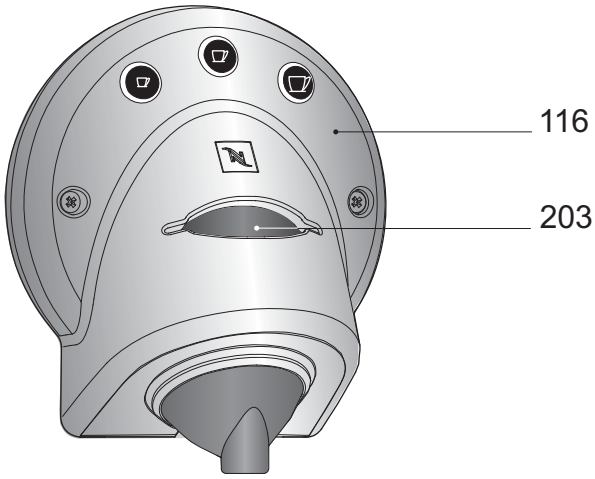
☞ **The pressure tester (1) is designed especially for the pressure adapter 702 (3). If a ES range pressure gauge (EFR no. 16195) is used instead, the optional adapter 702 (2) is necessary.**

☞ **The pressure adapter (3) is delivered together with the safety clip (4).**

i A PC or laptop with ASC software is also necessary to initialize the coffee machine after replacement of the control box.

11.3 Security check of safety lids

Malfunction of the safety lid (203) can cause injuries! Finger tips that are inserted in the capsule slot can be squeezed.



Whenever a faceplate (116) is detached during a function test, the correct function of the associated safety lid (203) must be tested after reassembly.

Procedure

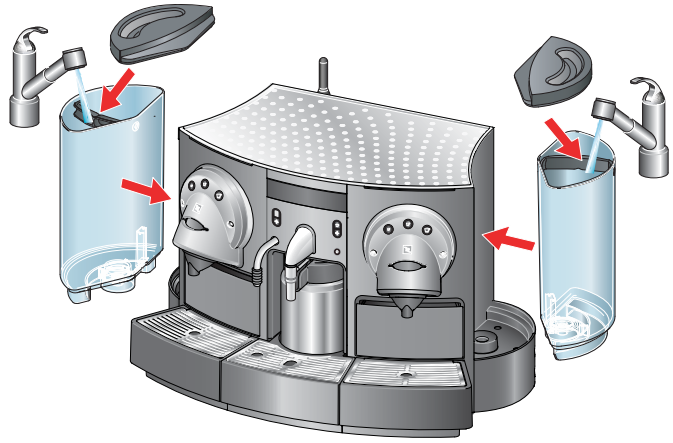
1. Insert an obstacle (e.g. screwdriver, pencil etc.) in the capsule slot.
2. Switch on mains switch and press stand-by button.
3. The coffee machine performs a self-test and closes/opens the extraction units.
4. As soon as the safety lid detects the obstacle, the concerning extraction unit stops and the display message "Machine blocked - call service center" appears.
5. Remove the obstacle.

If the obstacle is clamped in the extraction unit or damaged:

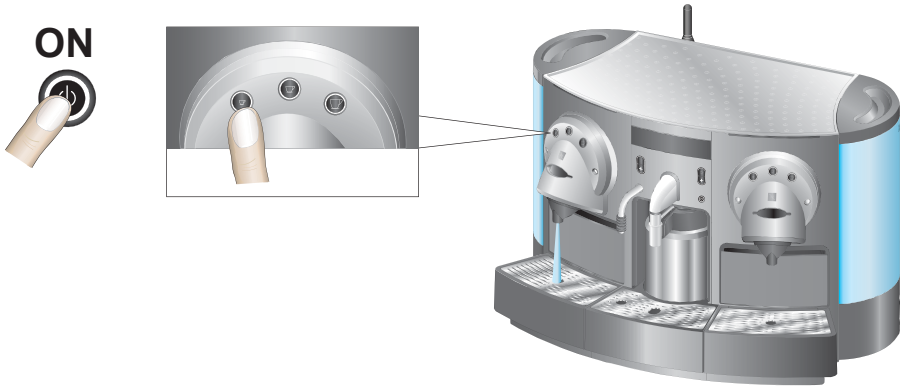
- Check wiring of safety lid (203).
- Replace a defect safety lid (refer to page 78).
- Repeat security check.

11.4 Measure coffee temperature

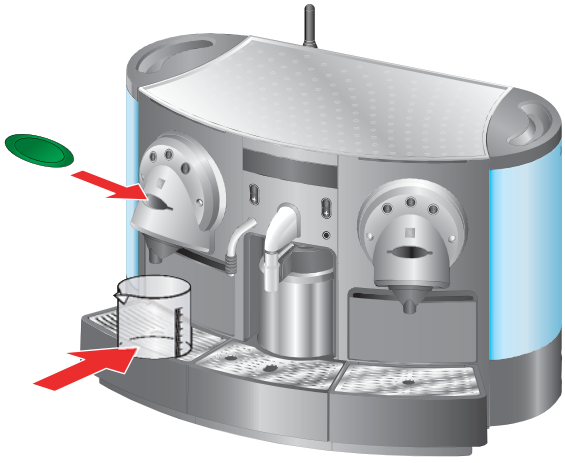
Perform the measurement of temperature for each coffee unit separately.



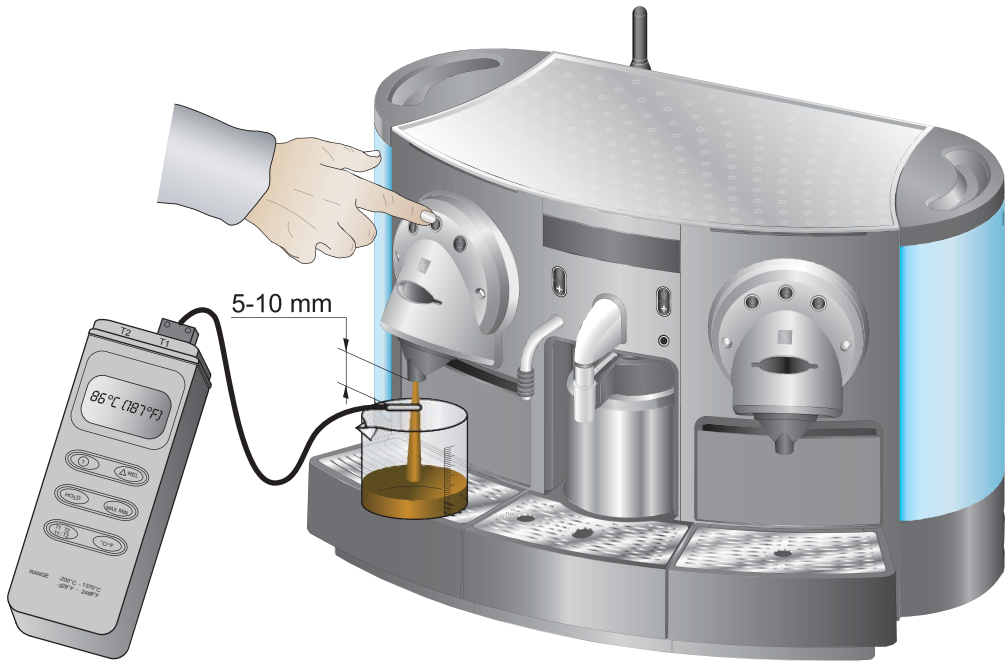
1. Fill water tanks with cold water.
   Insert water tanks in coffee machine.



2. Switch on the coffee machine and press stand-by button.
3. After the heating up period, press the coffee button "small cup" to preheat the coffee outlet with hot water.



4. Place a measuring cup under the coffee outlet.
5. Insert a capsule in the capsule slot (Cosi is best suited).



6. Press coffee button "medium cup".

☞ **The programmed cup length should be 40 ml or more.**

7. Wait until the measuring cup contains 20 ml of coffee.
8. Then measure the coffee temperature approx. 5 - 10 mm under the coffee outlet.

☞ **The coffee temperature should be 86 °C ± 3 °C (187 °F ± 5.4 °F).**

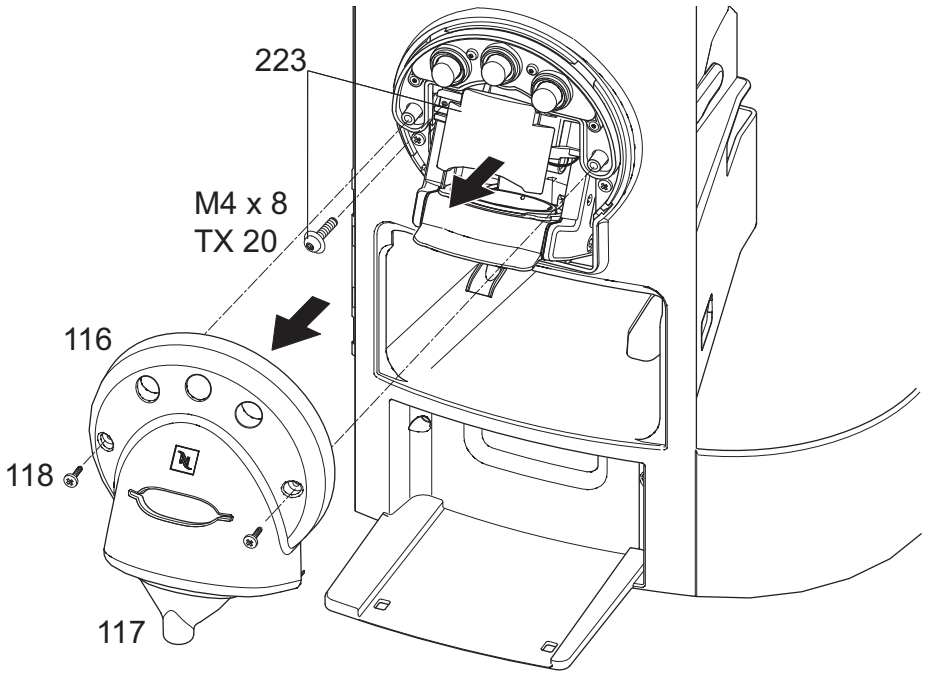
9. If necessary, change coffee temperature gradually with the help of menu point "coffee temperature" (see "Super user menu points" on page 33).

☞ **This menu point setting is valid for both coffee units.**

11.5 Measure flow rate of coffee units

Perform the flow rate measurement for each coffee unit separately.

11.5.1 Preparation



i The preparation and test configuration is the same as for the pressure and leakage checks.

1. Open jaw of extraction unit.

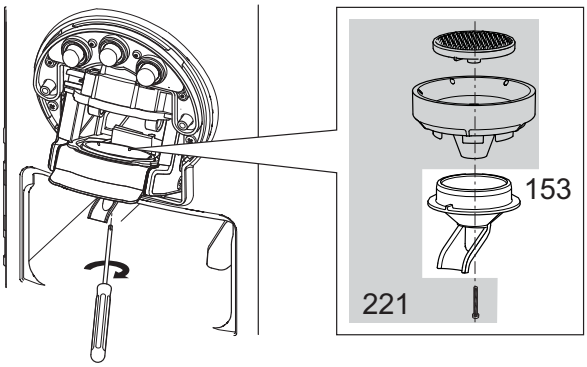
How to open a closed jaw:
1. Switch machine to stand-by mode.
2. Enter super user menu (jaw of extraction unit opens automatically).
3. Exit super user menu.
4. Switch machine off with mains switch.

2. Remove faceplate (116) with cover (117) from the coffee outlet.

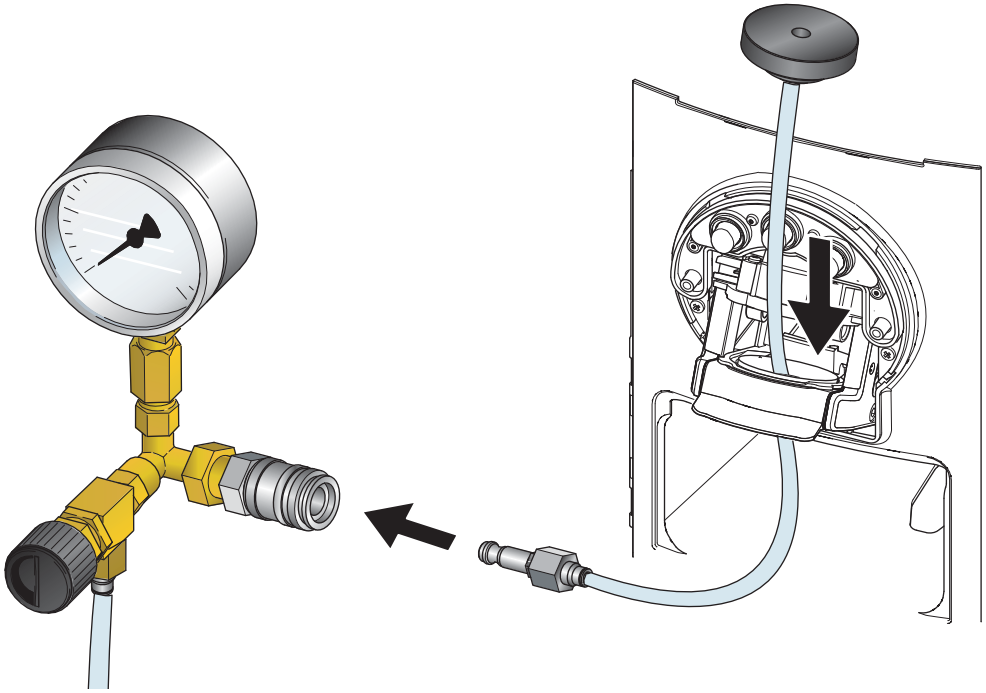
☞ **Hold fast the cup lighting, when removing the faceplate (116) from the coffee outlet.**

The cup lighting is inserted in a recess at the underside of the faceplate (116).

3. Remove safety lid (223).

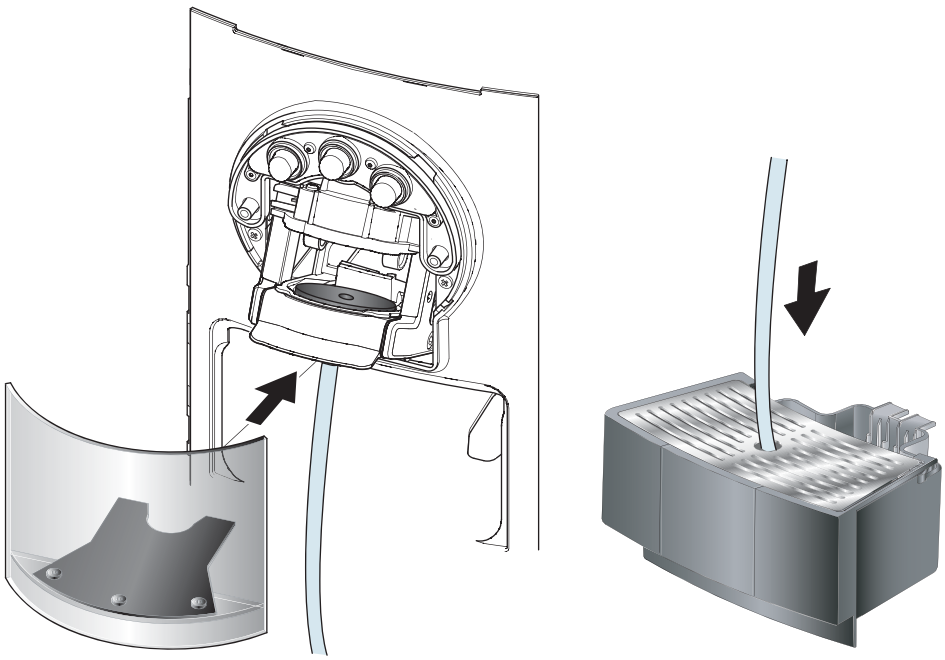


4. Remove outlet (153) and parts of spare kit (221).



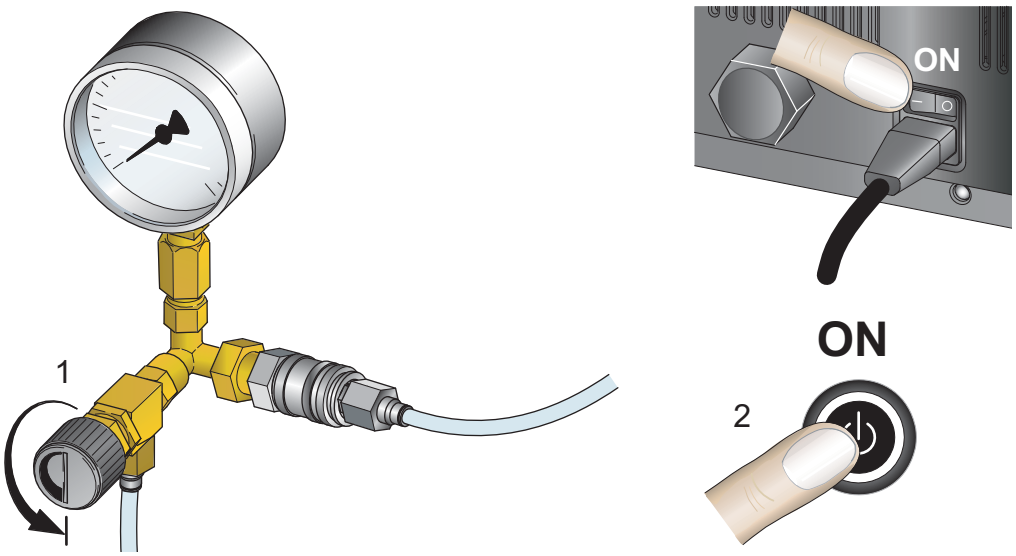
5. Insert pressure adapter (EFR no. 49804) in extraction unit and connect it to pressure tester (EFR no. 42213).

Danger of injuries to eyes and burns!
Hot water under pressure can spurt out of extraction unit.
Always attach the safety clip for protection.

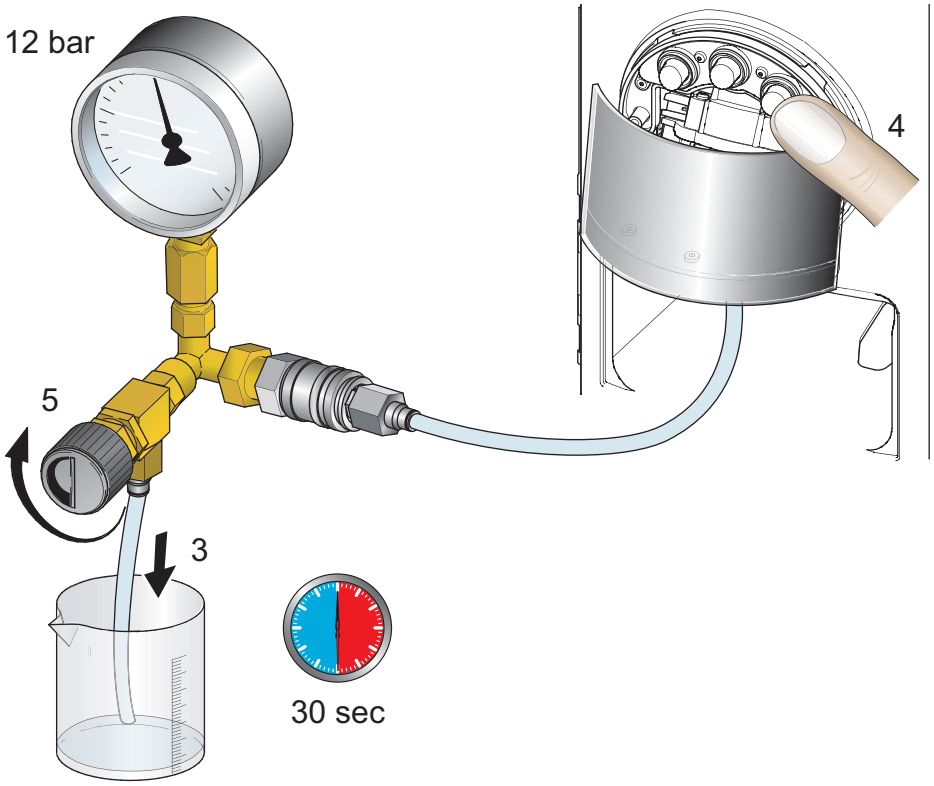


6. Attach safety clip.
7. Put drain hose of pressure tester in drip tray.

11.5.2 Test run



1. Open valve at pressure tester fully (turn counter-clockwise).
2. Switch on the coffee machine and press stand-by button.
   Both coffee outlets are rinsed automatically.



3. Place a measuring beaker under the drain hose of the pressure tester.
4. After heating up, press the "large cup" button.

☞ **The programmed cup length should be 110 ml or more.**

5. Turn the valve clockwise until the manometer indicates 12 bar.

☞ **Constantly monitor the manometer and if required readjust the valve. As the temperature increases, so does the pressure, readjust the pressure to 12 bar when required.**

6. Carry out measurement for 30 sec.

Result:

At least 60 - 110 ml of water must be in the measuring beaker.

Conclusions:

- Should less than 60 ml leak out, then the pump is defective or there is a leak in the water system.
- Large deviations in the indicated pressure while measuring (± 4 bar) means that the pump is defective.

11.6 Pressure and leakage checks for coffee units

11.6.1 Preparation

i If possible, perform pressure and leakage checks after the flow rate measurement.

1. Remove back wall and heating plate (refer to "General disassembly" on page 61).

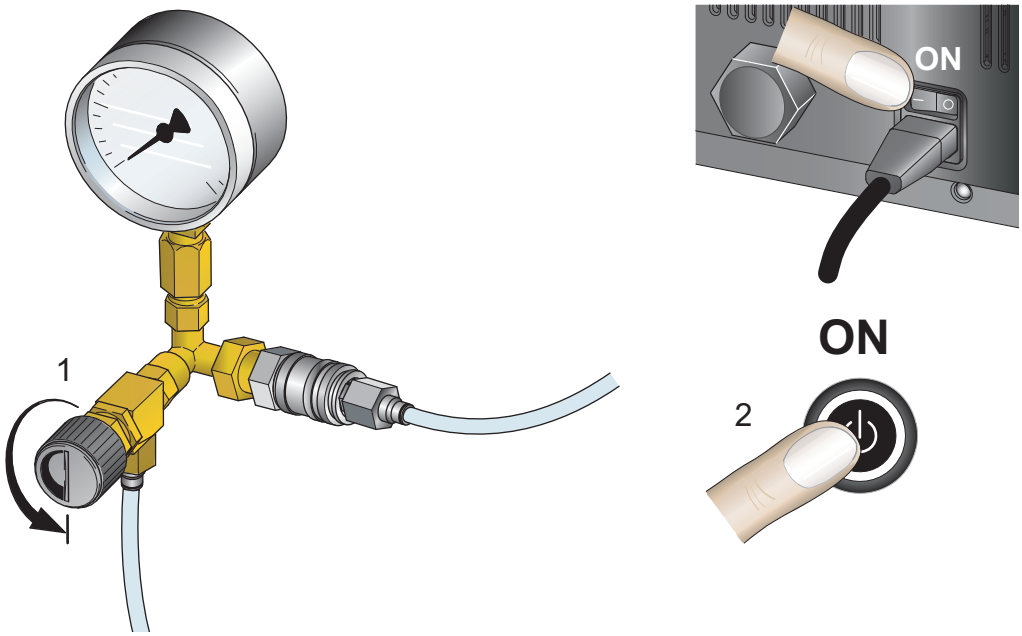
⚠ Danger of injuries to eyes and burns!
Hot water under pressure can spurt out of extraction unit.
Always attach the safety clip for protection.

2. Install pressure tester according to "Preparation" on page 131.

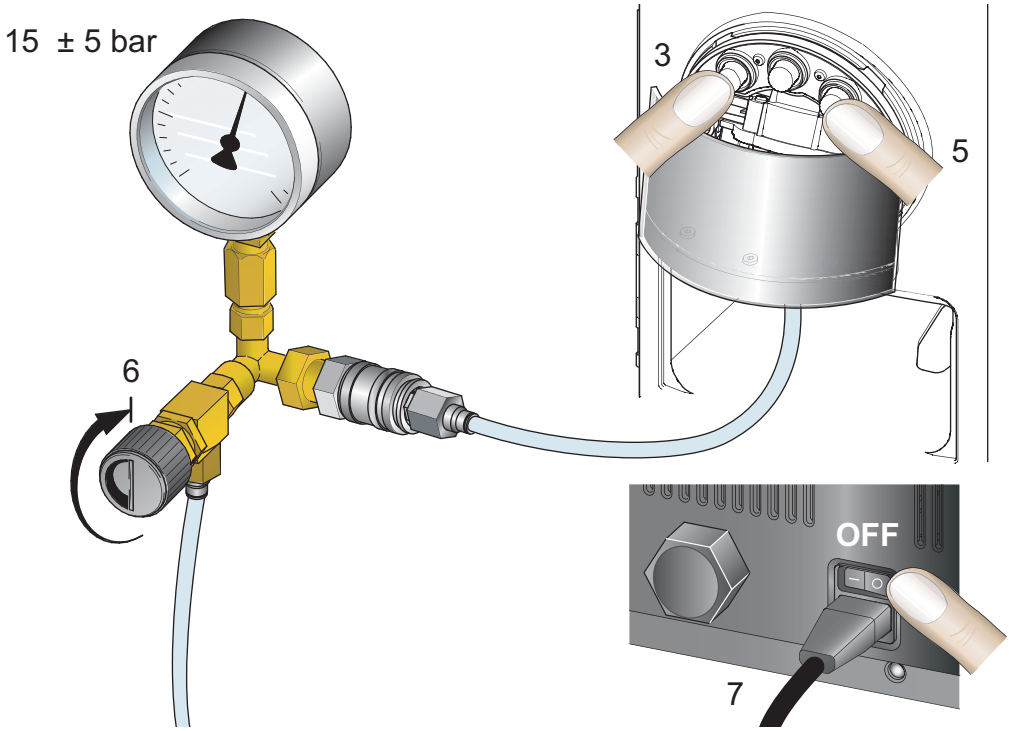
☞ **Instead of using a beaker, the drain hose can be put in a drip tray.**

3. Connect coffee machine to mains.

11.6.2 Test run

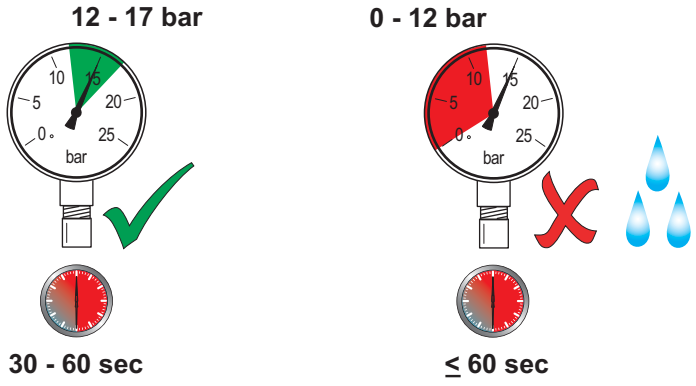


1. Open valve at pressure tester fully (turn counter-clockwise).
2. Switch on the coffee machine and press stand-by button.
   Both coffee outlets are rinsed automatically.



3. After heating up, press the coffee button "small cup".
4. Let the water flow out of the drain hose completely.
5. Press coffee button "large cup".
6. Close the valve completely.
7. Switch off coffee machine with mains switch as soon as the manometer shows a pressure of 15 ± 1.5 bar.

Danger of pump damage!
Do not run the pump for more than 50 sec with the valve closed.



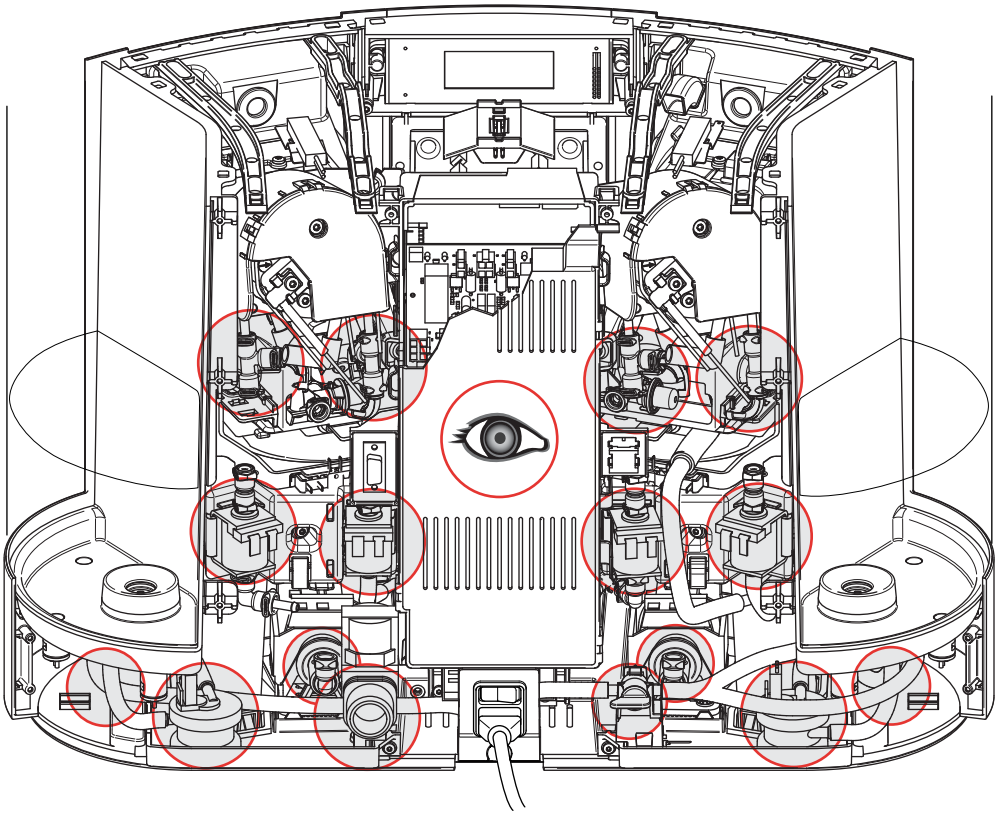
8. Check manometer reading:
   - Pressure between 12 and 17 bar after 30 till 60 seconds .....water circuit is tight
   - Pressure below 12 bar within 60 seconds ..... water circuit is leaking

9. If water circuit is tight, open the valve and let all water flow out of the pressure tester. Then test the other coffee water circuit accordingly.
10. If the water circuit is leaking, proceed with the leakage checks.

Leakage checks

☞ **Search for leaks as long as the water circuit is under pressure. If necessary put coffee water circuit under pressure again until the inspection is finished.**

i Checkpoints of both coffee units are shown. Check the coffee water circuit under pressure only.



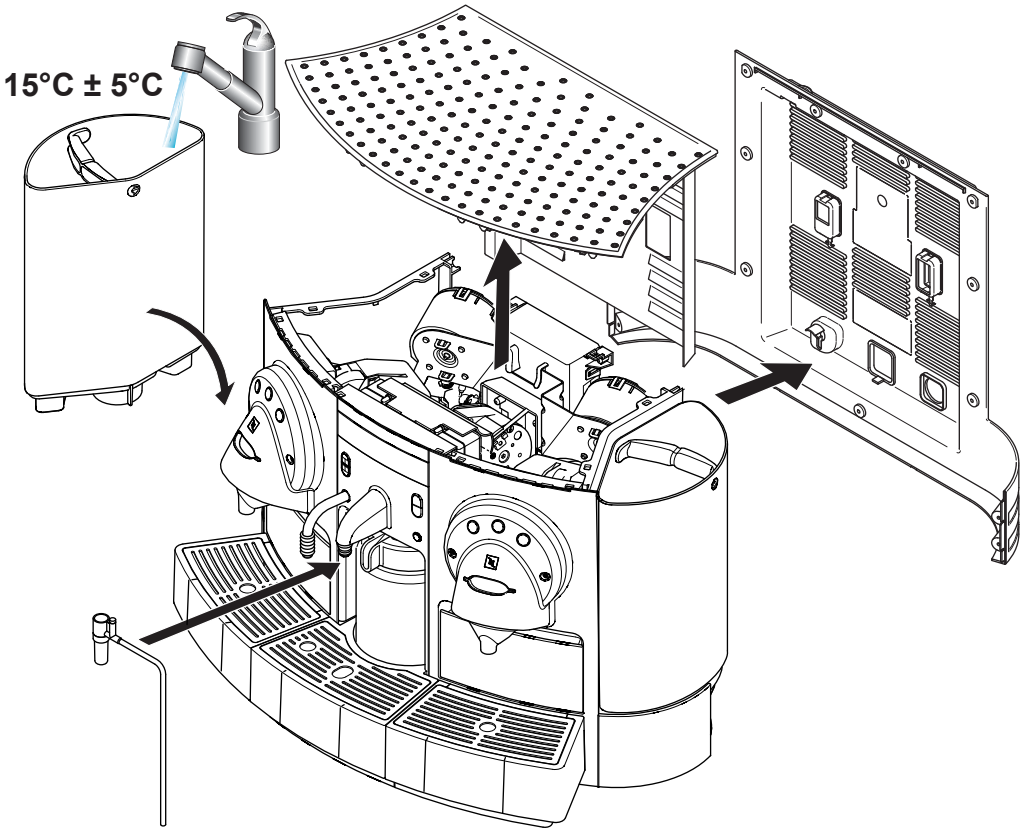
⚠ Danger of pump damage! Do not run the pump for more than 50 sec with the valve closed.

1. Check all the following parts under pressure for audible and visible leaks:
   - Extraction unit
   - Thermoblock
   - Pump
   - Solenoid valves
   - Hose connections

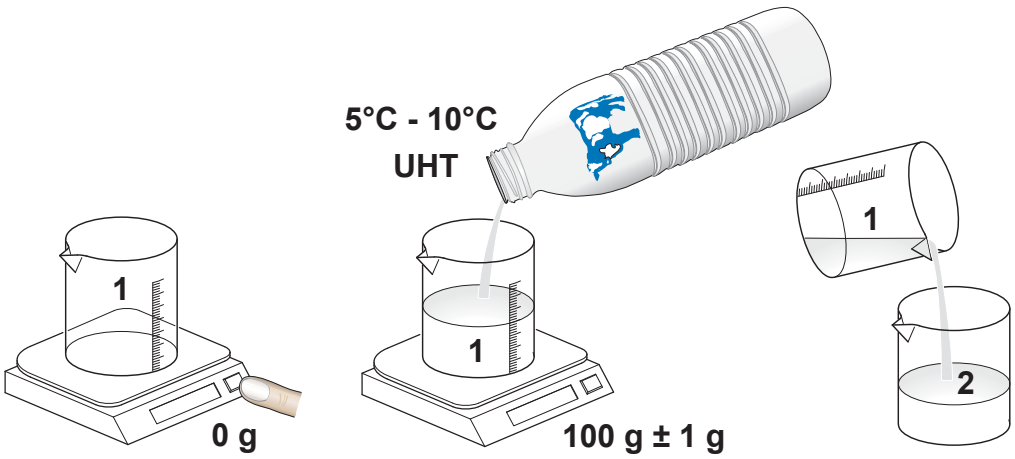
2. Check low pressure hose connections subsequently.
3. Open the valve and let all water flow out of the pressure tester.
4. Replace leaky components (refer to repairs chapter).

11.7 Performance checks for cappuccinatore unit (CS223/224 only)

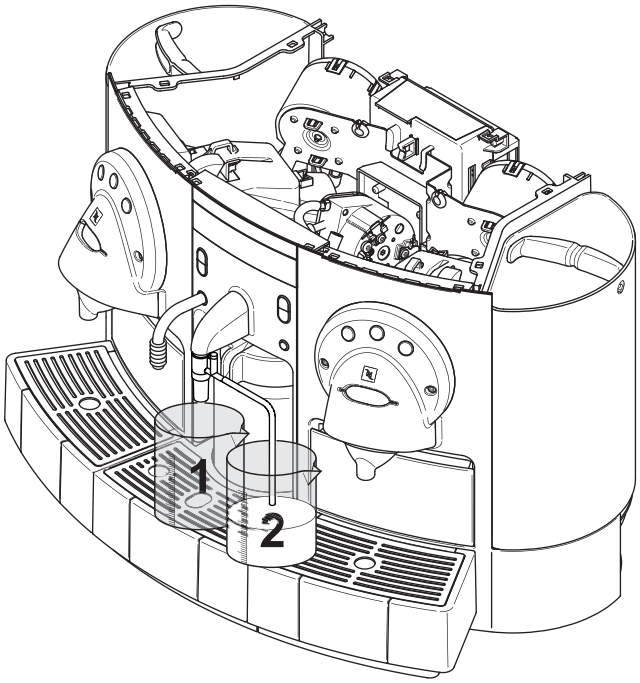
Leak test



1. Remove back wall and heating plate (refer to "General disassembly" on page 61).
2. Fill left water tank with water at 15°C ± 5°C temperature. Insert water tank in coffee machine.
3. Place a new disposable nozzle on the steam outlet and fix a straw on it.



4. Place an empty measuring beaker (1) on the table scales and tare to 0.
5. Fill measuring beaker with 100 g ± 1 g of cold milk (between 5°C to 10°C).
6. Empty the milk into a second beaker.

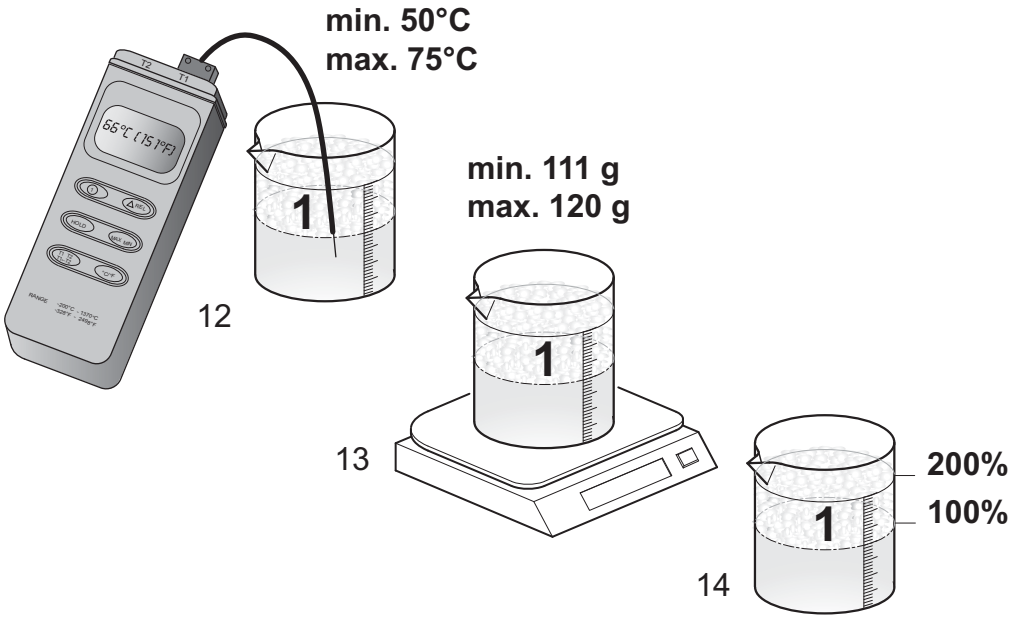


7. Place the measuring beaker (1) under the disposable nozzle and the second beaker (2) under the straw.
8. Connect coffee machine to mains.
9. Switch on the coffee machine and press stand-by button.
10. After heating up, press and hold fill up button for hot milk, until the total quantity of milk has been sucked from the beaker (2).

☞ **Tip beaker (2) if necessary to remove rest of the milk.**

11. Check all the following parts under pressure for audible and visible leaks during milk foam preparation:
    - Pump
    - Thermoblock
    - Solenoid valves
    - Hose connections

Once all milk has been sucked out of beaker (2) and the milk foam preparation is finished, perform the following tests quickly.



Temperature Test

12. Measure the temperature of the milk in beaker (1).

☞ **The temperature should be between minimum 50°C and maximum 75°C.**

Milk foam - weight increase test

13. Measure the weight of the filled beaker (1).

☞ **In comparison to 100 g of milk (see point 5), the weight increase should be as follow:**

Minimum ..... 11% (111 g)

Ideal ..... 12 - 15% (112 - 115 g)

Maximum ..... 20% (120 g)

Milk foam - volume check (optional)

14. Check if the milk foam has approximately double the volume of the liquid milk before preparation.

11.8 NESLINK test

This function test is explained in the ASC software manual.
Refer to page 127 for the necessary equipment.

11.9 Protective earth (PE) continuity test

11.9.1 What is the protective earth continuity test about?

This test is necessary
- for class 1 equipment (three-wire power cord with protective earth)
- after a repair whenever a general disassembly was performed.

11.9.2 General

Legal regulation

In case of a repair/modification of the coffee machine, the repair centre is bound by law to protect the user/consumer by
- restoring the regular condition of the appliance and
- performing the respective tests according to EN/IEC 60335-1 “Safety of household and similar electrical appliances” and national regulations (e.g. DIN VDE 0701).

Description

Protective earth continuity measurements are made between the protective earth terminal of the power plug and
- all thermoblock casings,
- the cup heater (only for Gemini CS203).

This test assures that
- the ground (earth) connection does not have an interruption between the mains plug of the power cord and the thermoblocks resp. cup heater,
- the permissible ground resistance is less than 0.3 Ohms (with a test current of 200 mA DC).

Test equipment

i Ask *Nespresso* for recommendations about test equipment.

Special test equipment is needed that complies with the regulations to perform protective earth continuity measurements. Detailed requirements and tolerances must be verified by your local authorities or measurement supplier in any case.

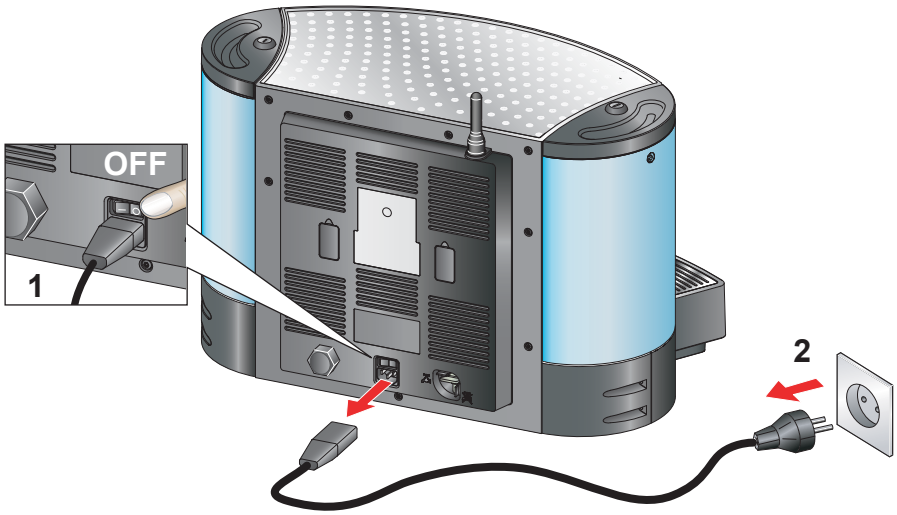
Test report

For legal reasons a repair or test report should be prepared and filed with following information
- customer (name, address)
- type and serial number of coffee machine
- date of repair/test(s)
- performed test(s)/measuring value(s)
- used test equipment
- signature

11.9.3 Test sequence

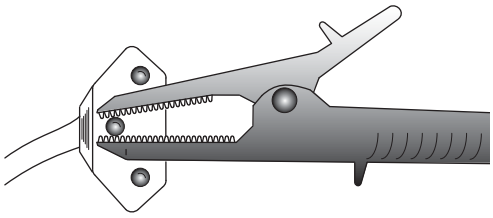
Danger of electrocution!
Do not plug in the coffee machine during the protective earth continuity test.
Read and observe safety instructions in user manual of test equipment.

i This test sequence is not applicable for coffee machines with two-wire power cords (without ground pin).

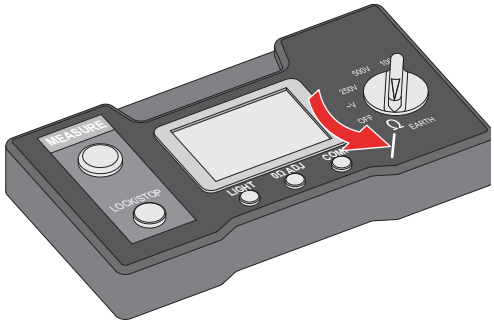


1) Switch off coffee machine.
2) Unplug mains connector then unplug power cord from coffee machine.
3) Remove back wall (refer to "General disassembly" on page 61).
4) Reconnect power cord to coffee machine.

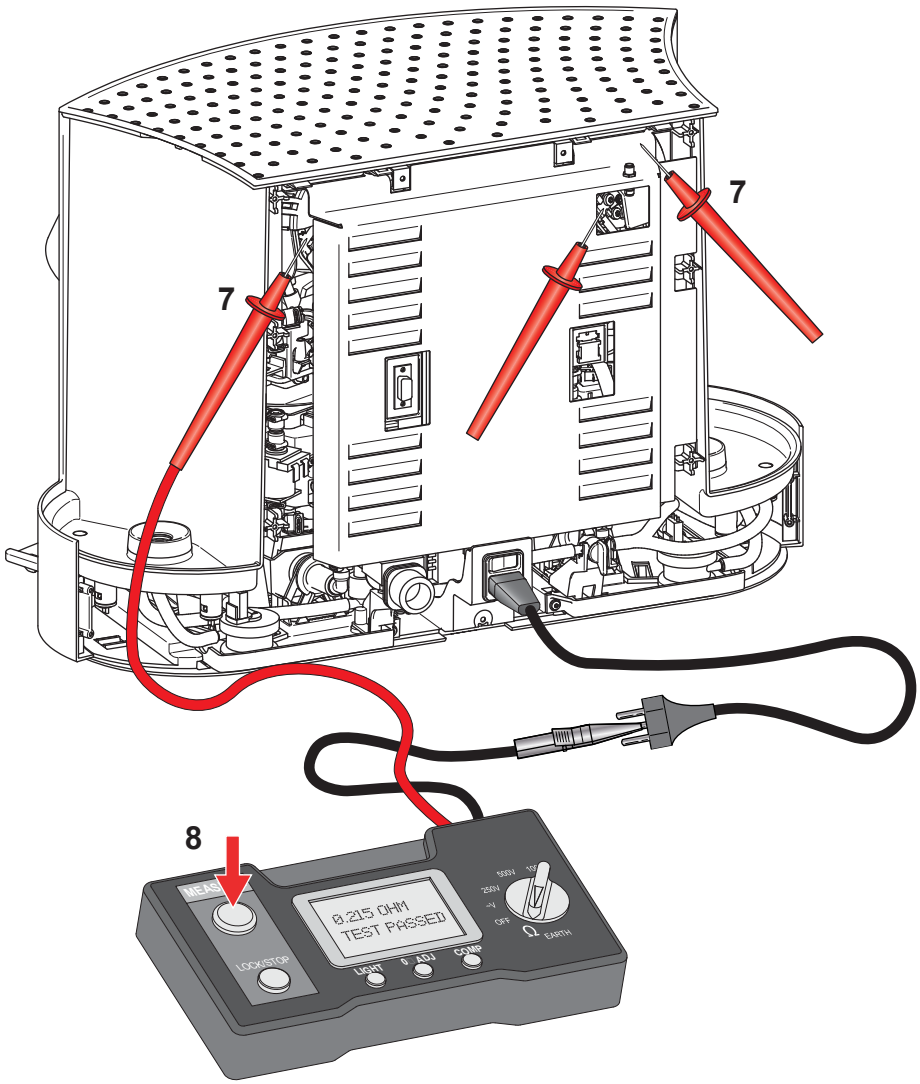
i Symbolic illustration of test equipment.



5) Connect black measuring cable to ground pin of power plug with an alligator clip (example shown: Swiss power plug).



6) Switch on test equipment and select protective earth continuity test.

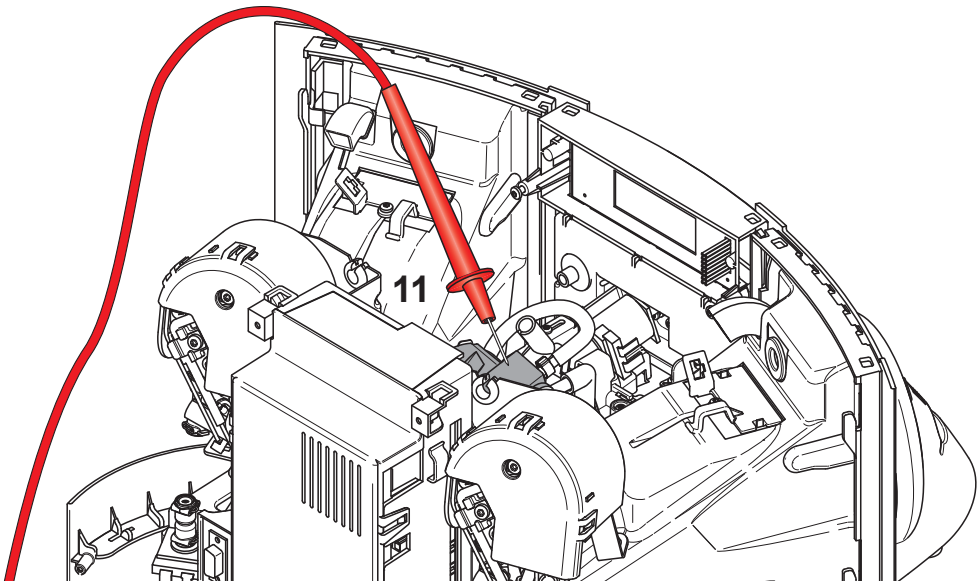


7) Touch with red test probe:
   - metal shield
   - left and right thermoblock casing

8) For each measuring point press "measure" button and read off displayed resistance.

☞**The resistance must be lower than 0.3 Ohm.**

9) Fill in measured value(s) in a test report.



For CS223/224 coffee machine only:

10) Remove the heating plate with metal shield to get access to the third thermoblock (refer to "General disassembly" on page 61).
11) Touch case of thermoblock with red test probe.
12) Press "measure" button and read off displayed resistance.

☞**The resistance must be lower than 0.3 Ohm.**

13) Fill in measured value in a test report.

i Perform this test at first. Then reassemble heating plate with metal shield and continue with point 7.

11.9.4 What to do if the protective earth continuity test fails

- Check/measure ground wire connection of power cord; replace if necessary.
- Check and retighten ground terminal screws if necessary.

11.10 Protective insulation test

11.10.1 What is the protective insulation test about?

i Perform the protective earth (PE) continuity test at first, if it is mandatory.

This test is necessary
- for class 1 and 2 equipment (with/without protective earth)
- after a repair whenever a general disassembly was performed.

11.10.2 General

Legal regulation

In case of a repair/modification of the coffee machine, the repair centre is bound by law to protect the user/consumer by
- restoring the regular condition of the appliance and
- performing the respective tests according to EN/IEC 60335-1 “Safety of household and similar electrical appliances” and national regulations (e.g. DIN VDE 0701).

Description

The insulation test
- assures that wiring and insulation of the coffee machine fulfill the normative requirements after a repair,
- rates the insulation capability of the coffee machine,
- is a very dangerous test because of a high test voltage (500 V DC).

For the insulation test, phase and neutral wire are shunted at the power plug. Then a test voltage is applied between phase/neutral and selected parts of the coffee machine.

Test equipment

i Ask *Nespresso* for recommendations about test equipment.

Special test equipment is needed that complies with the regulations to perform insulation and withstanding voltage tests. Detailed requirements and tolerances must be verified with your local authorities or measurement supplier in any case.
Ideally the test equipment has a national power socket for testing, so that the coffee machine can plugged in directly. Otherwise a special shunt is necessary to connect the phase and neutral pin of the coffee machine’s power plug.

Test report

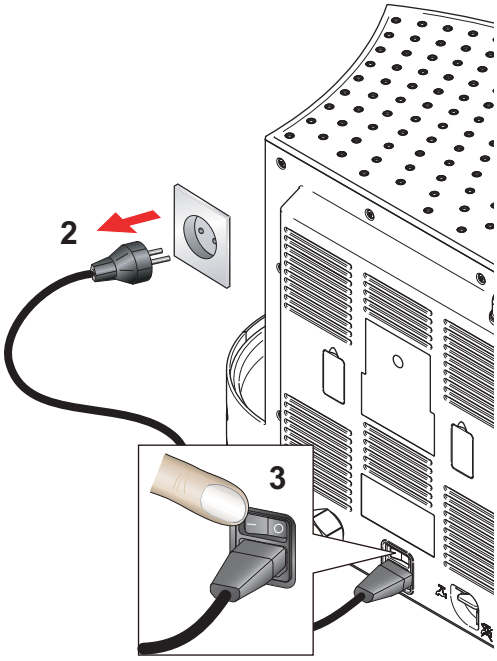
For legal reasons a repair or test report should be prepared and filed with following information
- customer (name, address)
- type and serial number of coffee machine
- date of repair/test(s)
- performed test(s)/measuring value(s), test points
- used test equipment
- signature

11.10.3Test sequence

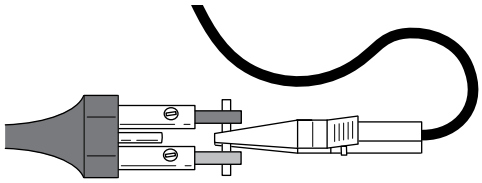
Danger of electrical shock/short circuit!
Do not plug in the coffee machine during insulation test.

Danger of electrical shock!
Do not touch tip of test probes.
Do not touch metallic parts of coffee machine during test.
Read and observe safety instructions in user manual of test equipment.

1) Prepare coffee machine for insulation test:
   - Empty or remove water tanks.
   - Remove all drip trays.
2) Switch off coffee machine and unplug mains connector.
3) Switch on coffee machine.



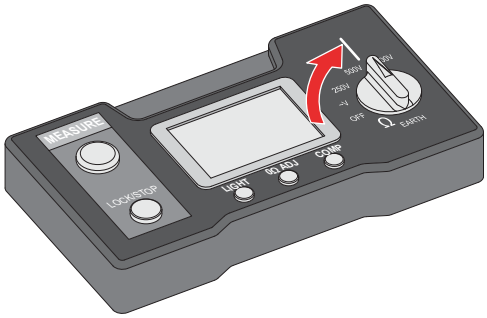
4) Connect the phase and neutral pin of the power plug together with a test adapter (procured by the repair centre).
5) Connect the black measuring cable to the test adapter (see image).
6) Check that the coffee machine's main switch is on position I (ON).



i A Swiss power plug is shown here as an example.

i Use a short circuit plug or special alligator clips etc. as substitute for this test adapter.

7) Switch on test equipment and select an insulation test voltage of 500 V DC.



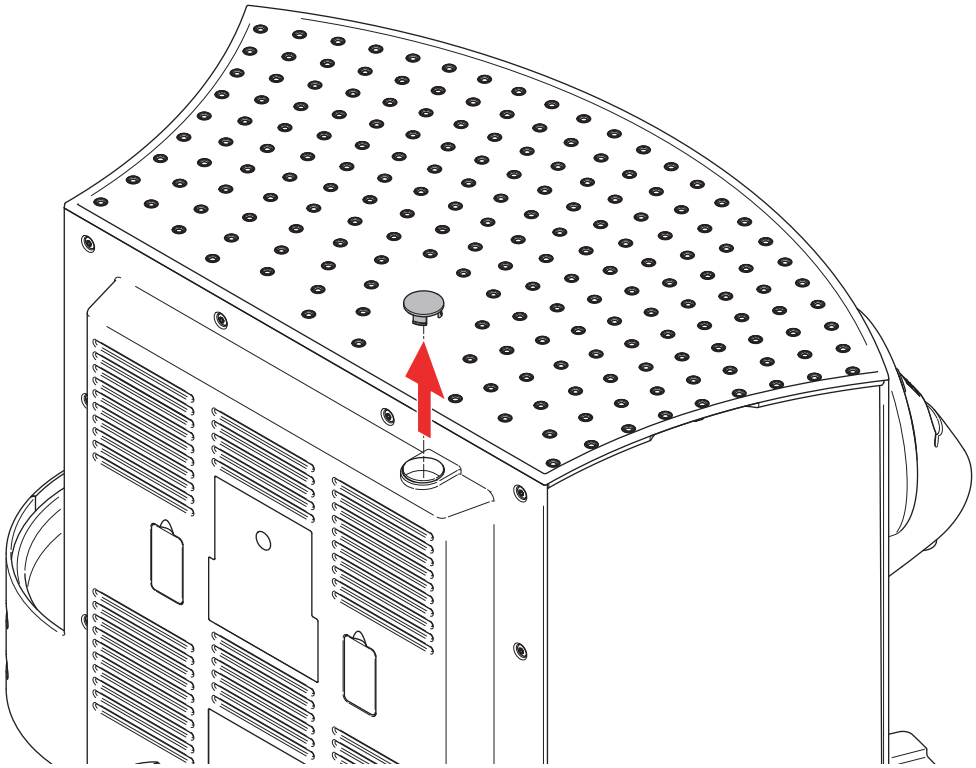
i Symbolic illustration of test equipment.





Remove antenna cover on all Gemini machine versions with Neslink device:

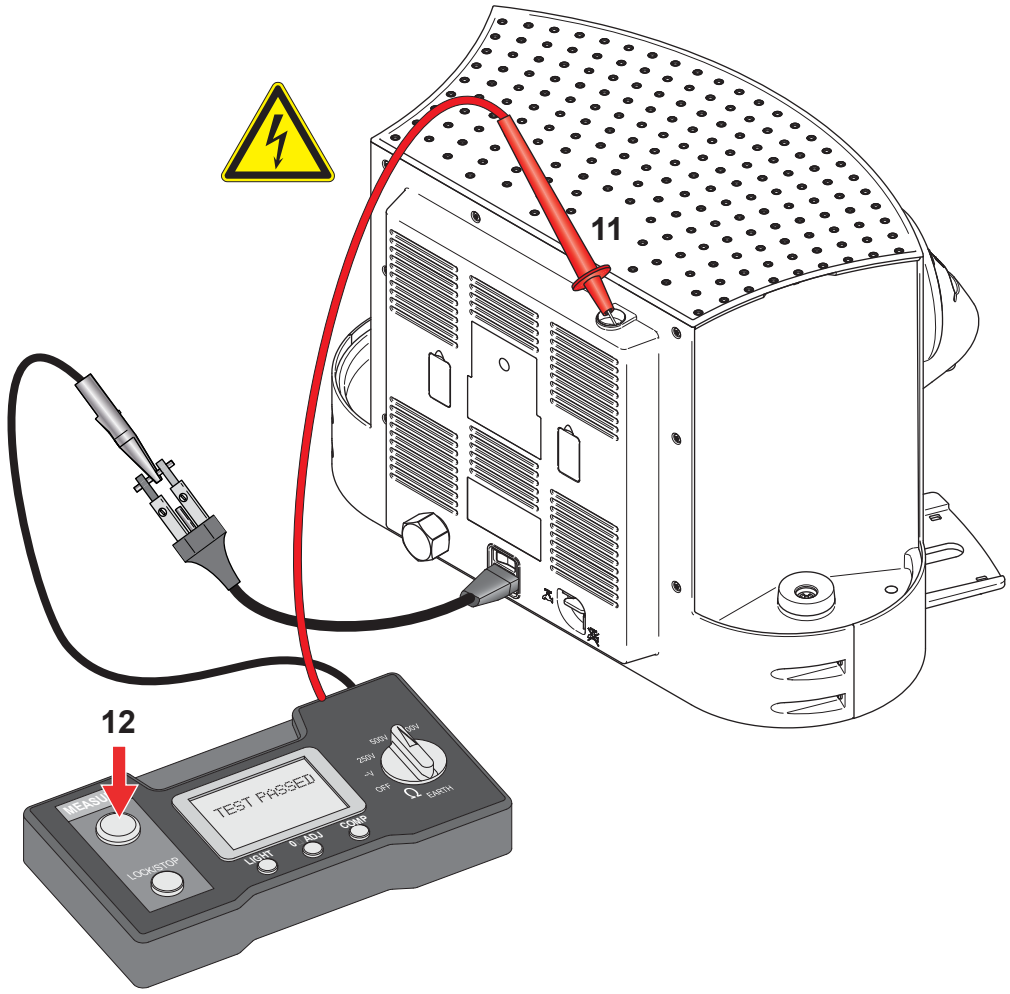
8) Rotate antenna cover (18) a quarter turn clockwise.
9) Pull off antenna cover (forcefully if necessary).



Remove blind cover before assembling the rear cover.

For all Gemini machine versions without Neslink device:

10) Remove blind cover from rear cover.



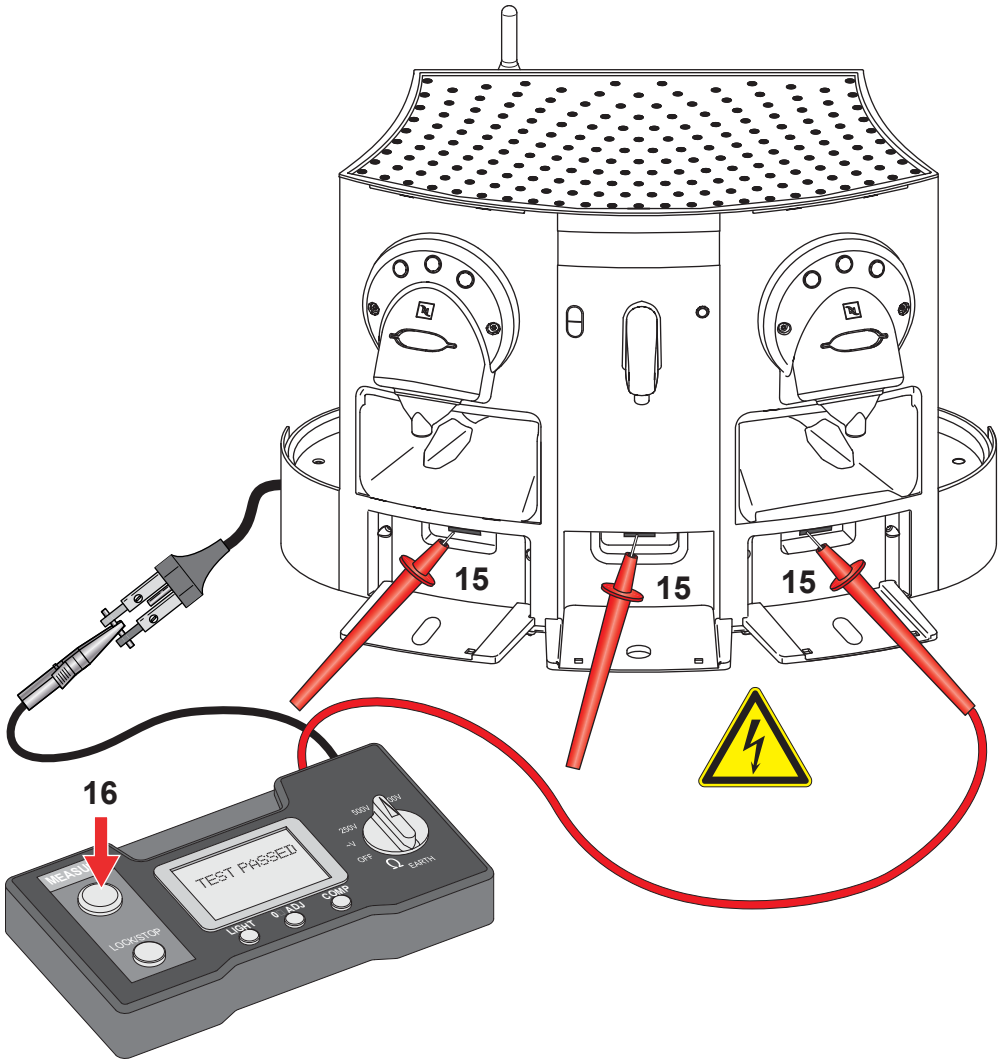
11) Insert tip of red test probe into opening and touch metal shield.
12) Press "measure" button and read off displayed resistance or test result.

☞**The insulation resistance must always be higher than 300 kOhm (300,000 Ohm).**

13) Fill in result in a test report.
14) Reassemble antenna cover resp. blind cover.

i With this test the heating plate and metal shield can be checked.

i Some test equipment displays test passed or failed instead of the insulation resistance.

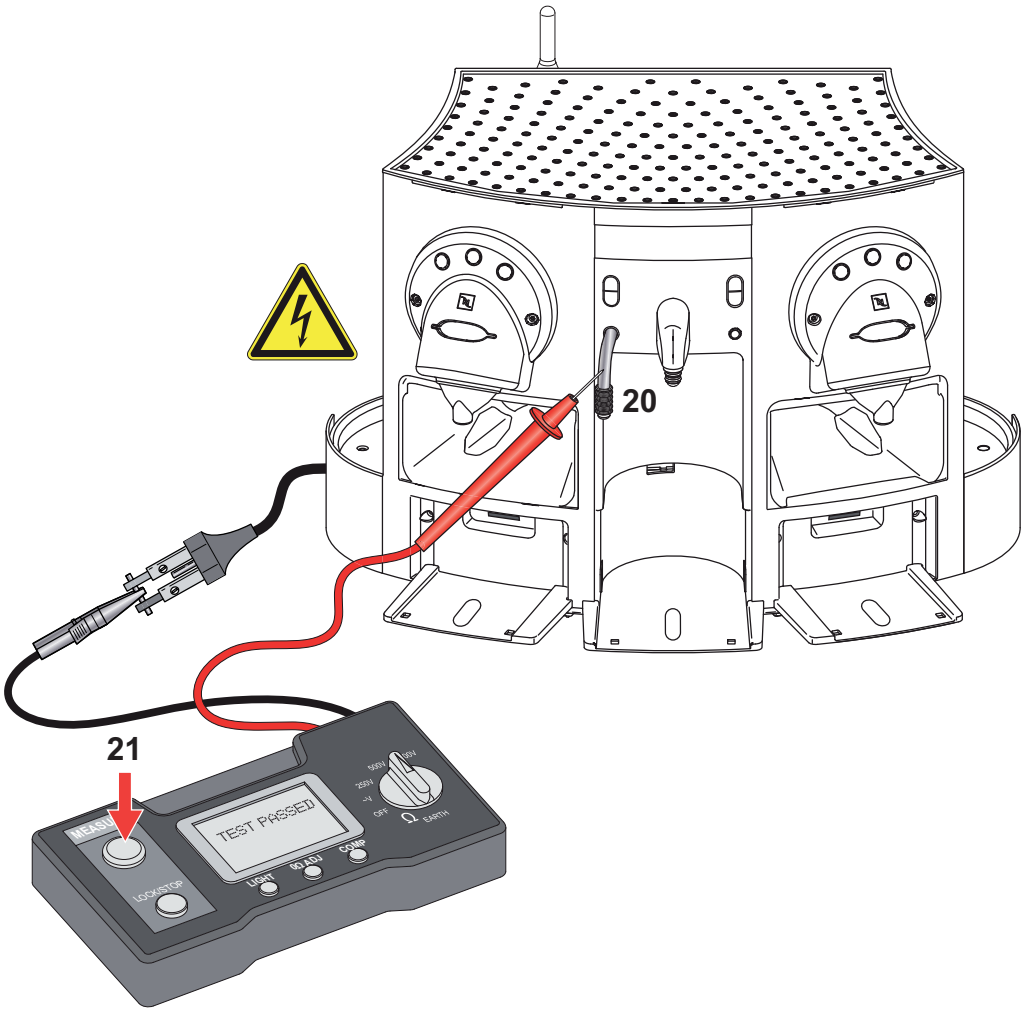


15) Touch with red test probe left, middle (CS203 coffee machine only) and right contact banks for drip tray water level detection.
16) For each measuring point press "measure" button and read off displayed resistance or test result.

☞**The insulation resistance must always be higher than 300 kOhm (300,000 Ohm).**

17) Fill in results in a test report.
18) Switch off test equipment.
19) Short red with black test probe to make sure that test voltage is discharged.

Additional measurement for CS223/224 coffee machine only



20) Touch hot water tube with red test probe.
21) Press "measure" button.
22) Read off displayed insulation resistance or test result.

☞**The insulation resistance must always be higher than 300 kOhm (300'000 Ohm).**

23) Fill in result in a test report.
24) Switch off test equipment.
25) Short red with black test probe to make sure that test voltage is discharged.

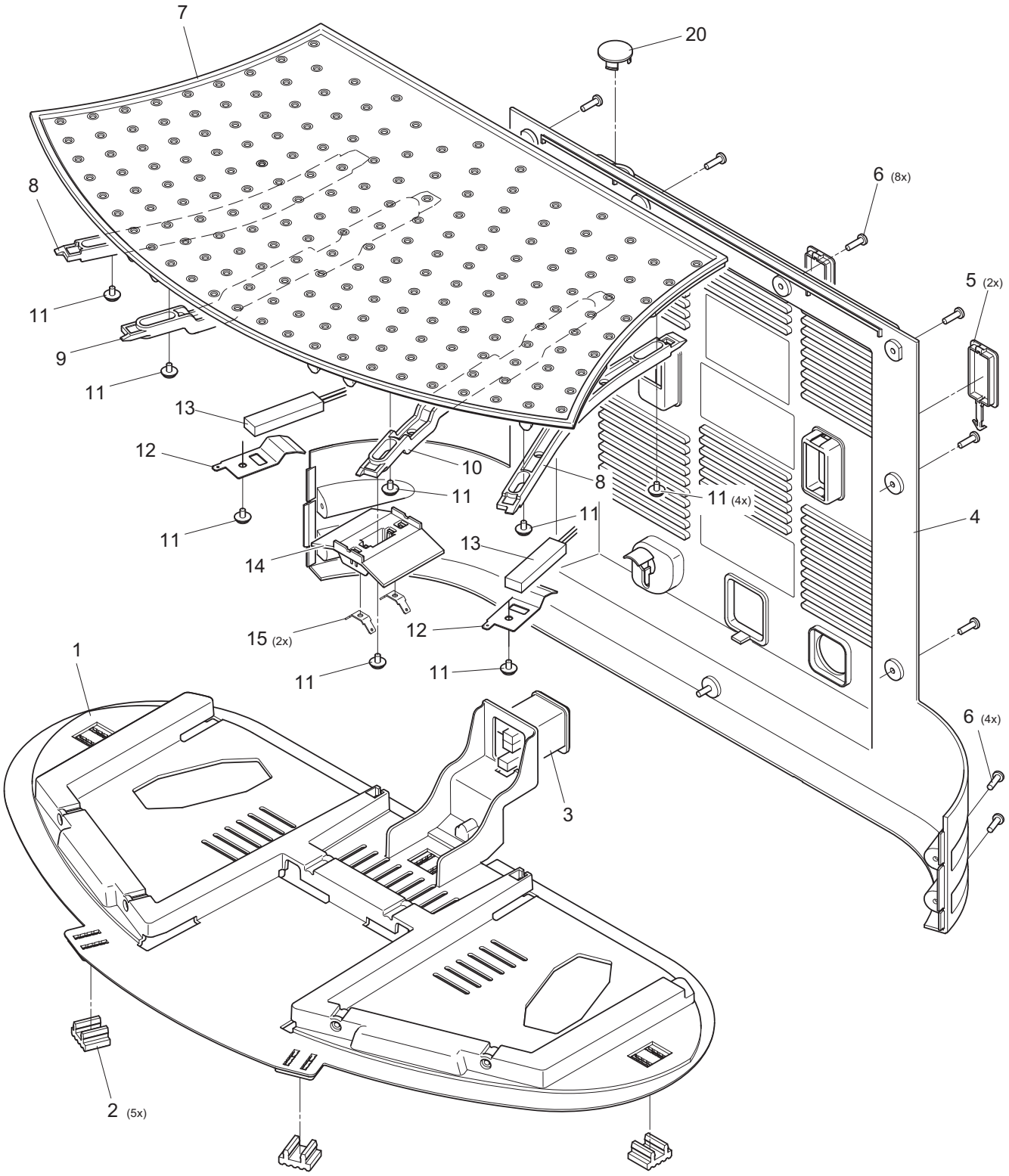
11.10.4What to do if the insulation test fails

Risk of damage!
A sparkover can damage electronic circuits etc.

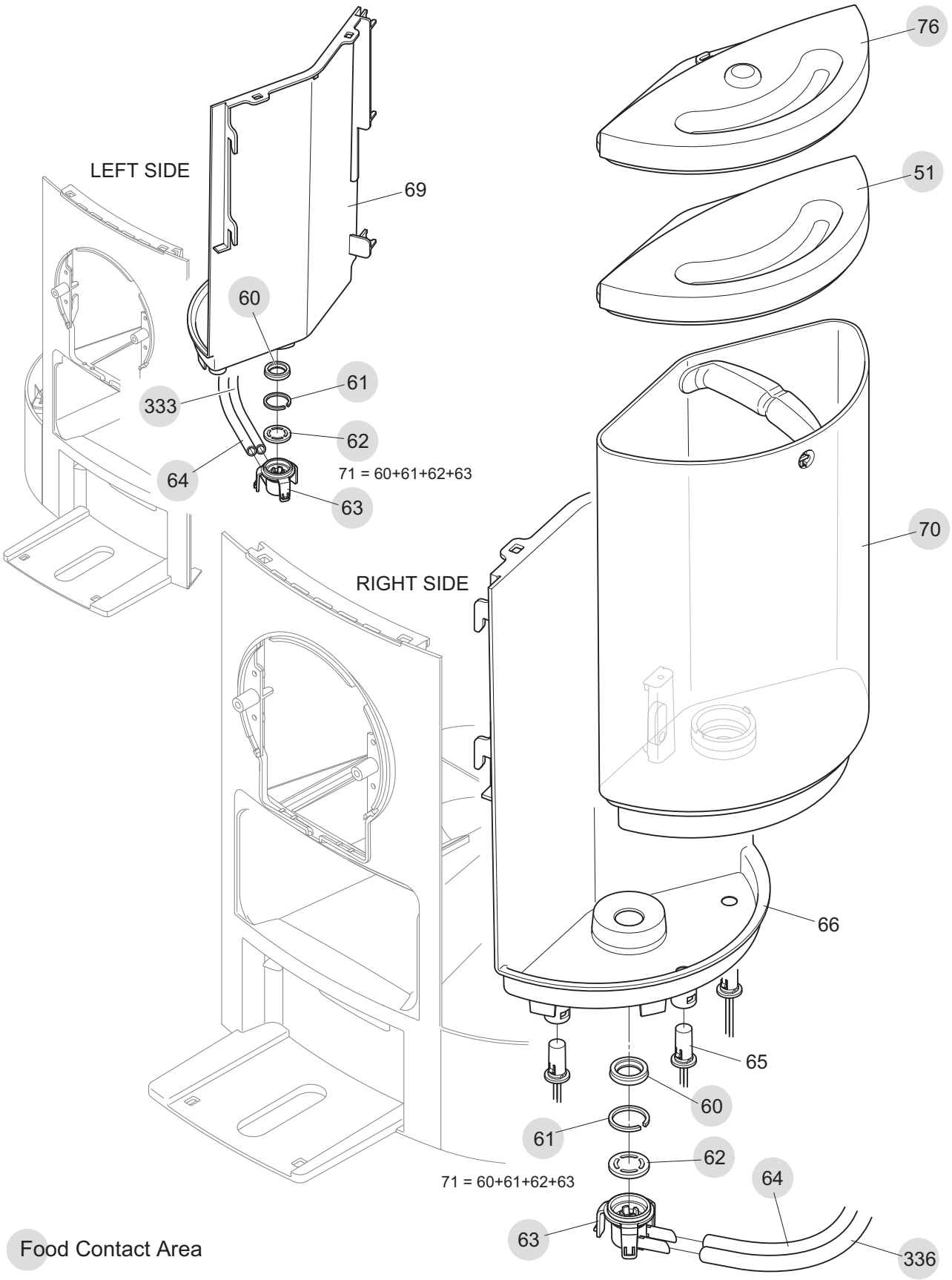
- Assume that the coffee machine is defect after a failed insulation test.
- Check wiring and locate fault. After fault clearance proceed with troubleshooting check list (see page 51).

12 EXPLODED DRAWINGS

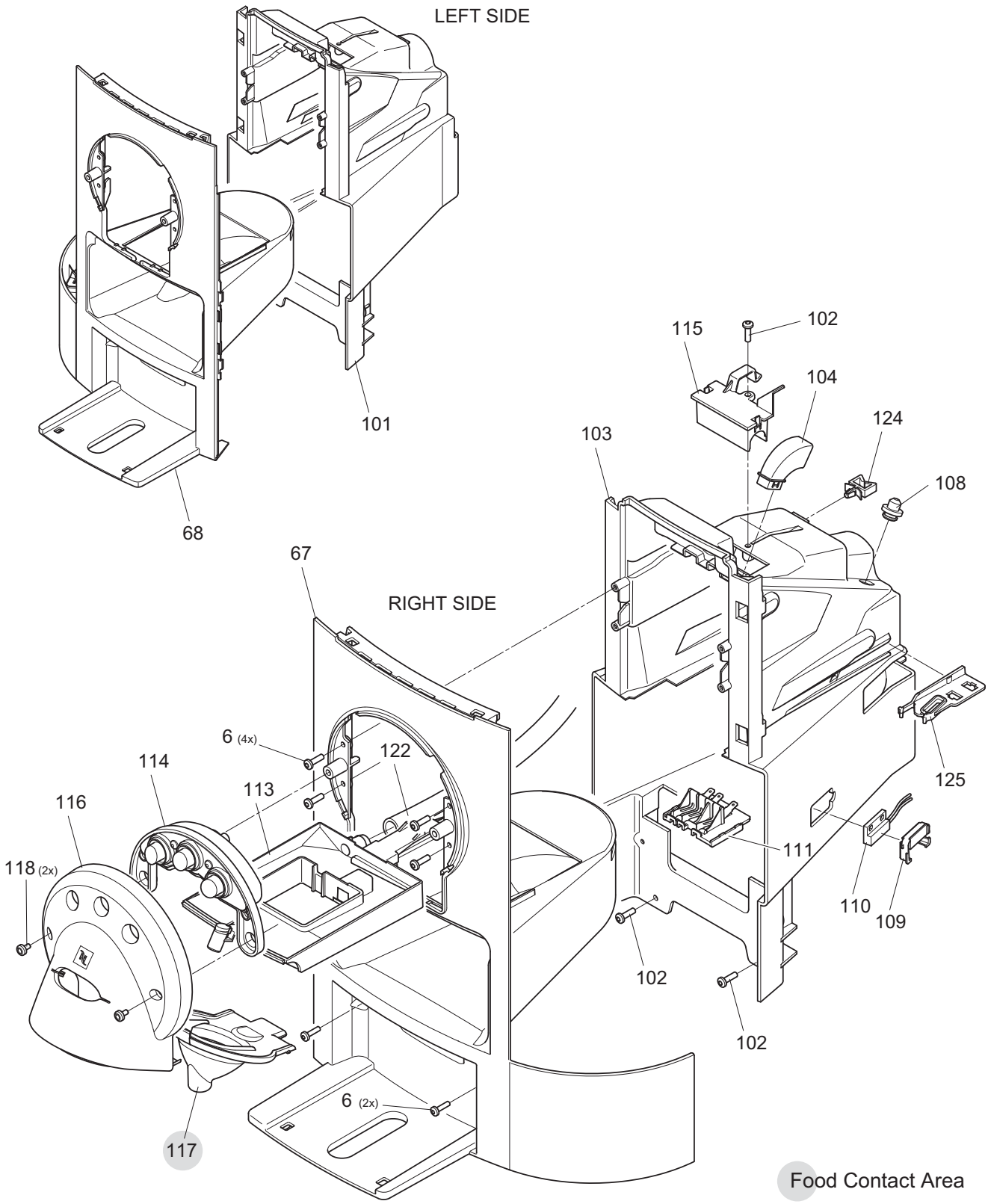
12.1 Exploded drawings of CS203 coffee machine (EF 733)



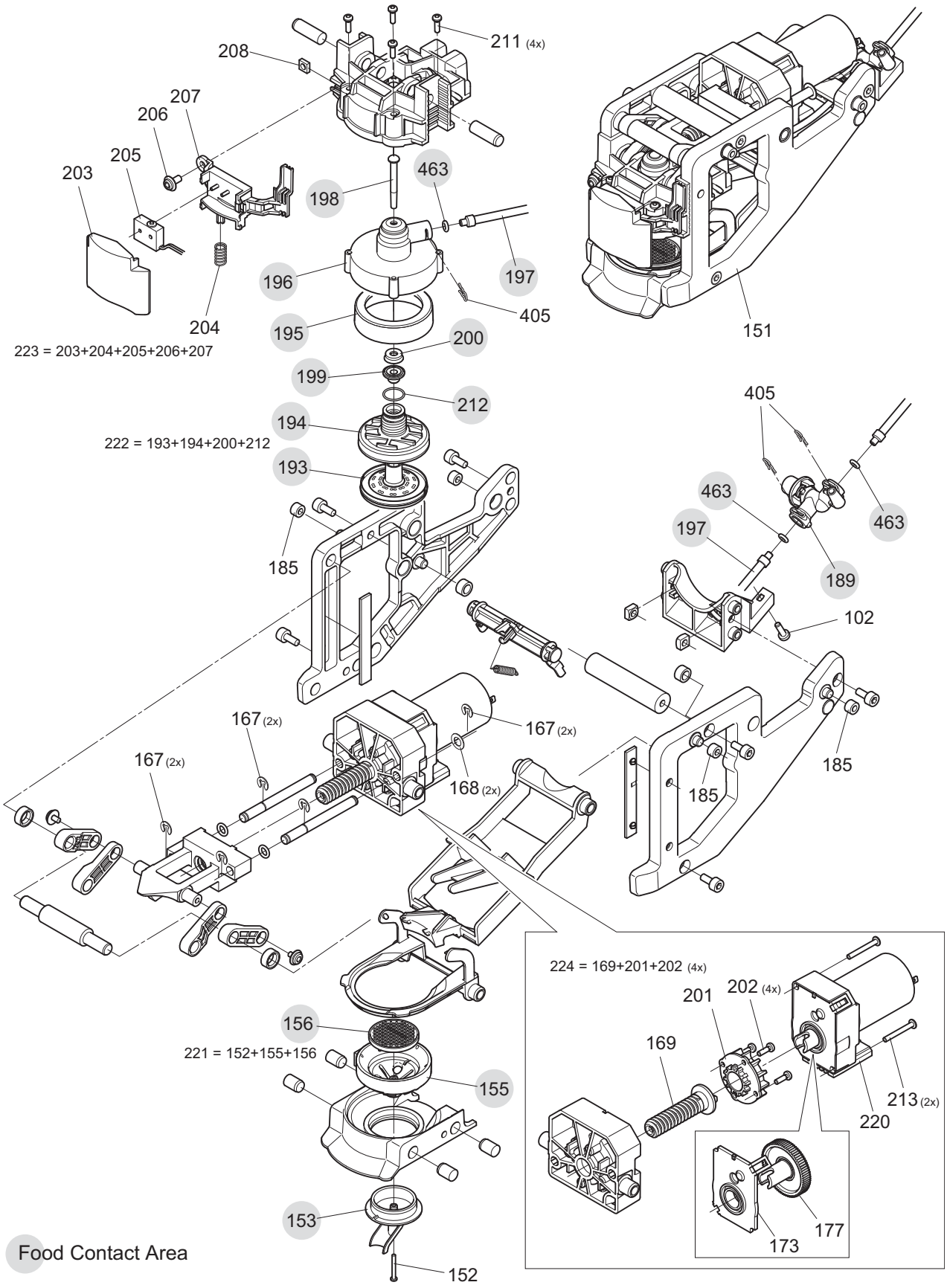
Exploded drawing cont. (CS203 / EF 733)



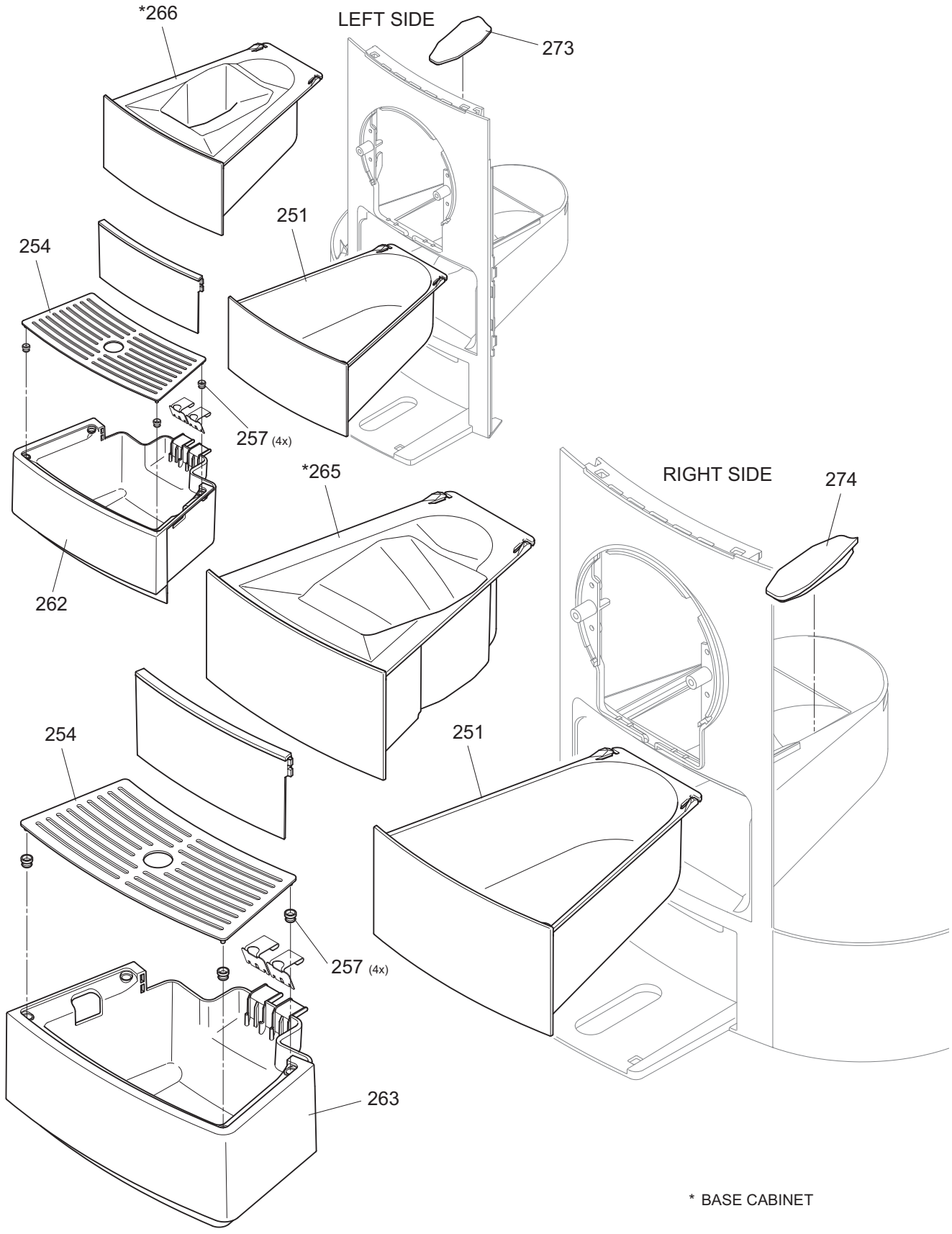
Exploded drawing cont. (CS203 / EF 733)



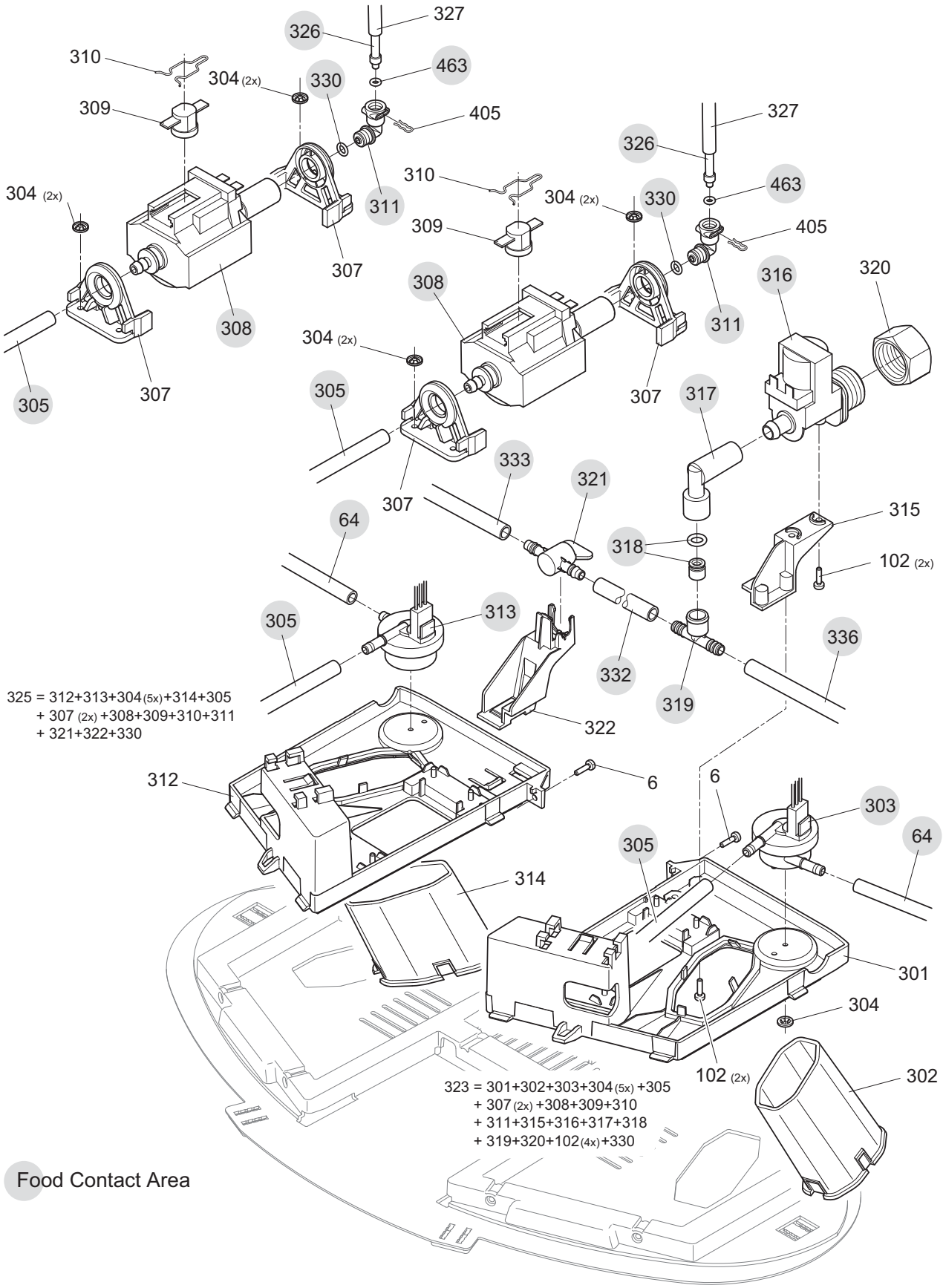
Exploded drawing cont. (CS203 / EF 733)



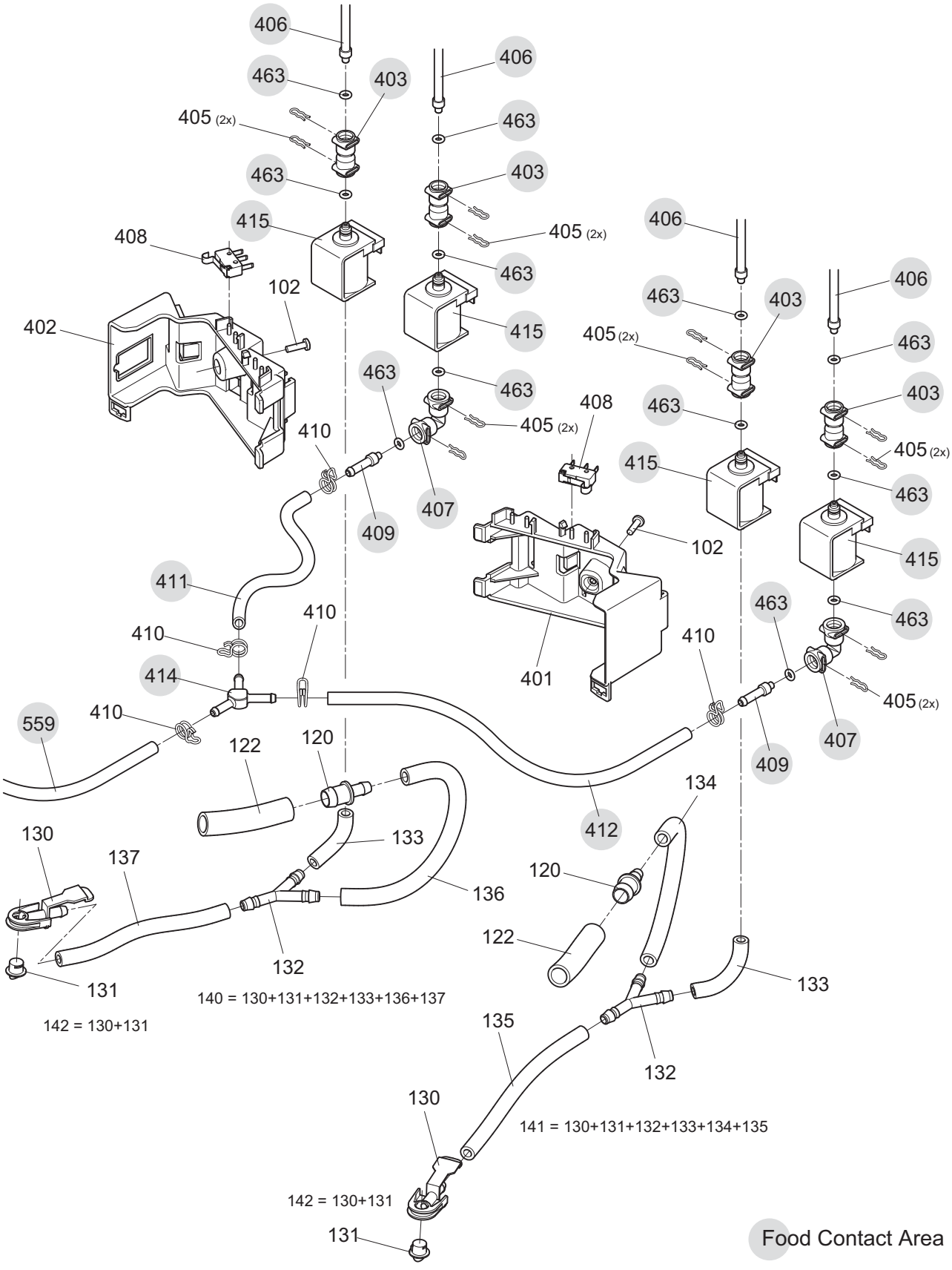
Exploded drawing cont. (CS203 / EF 733)



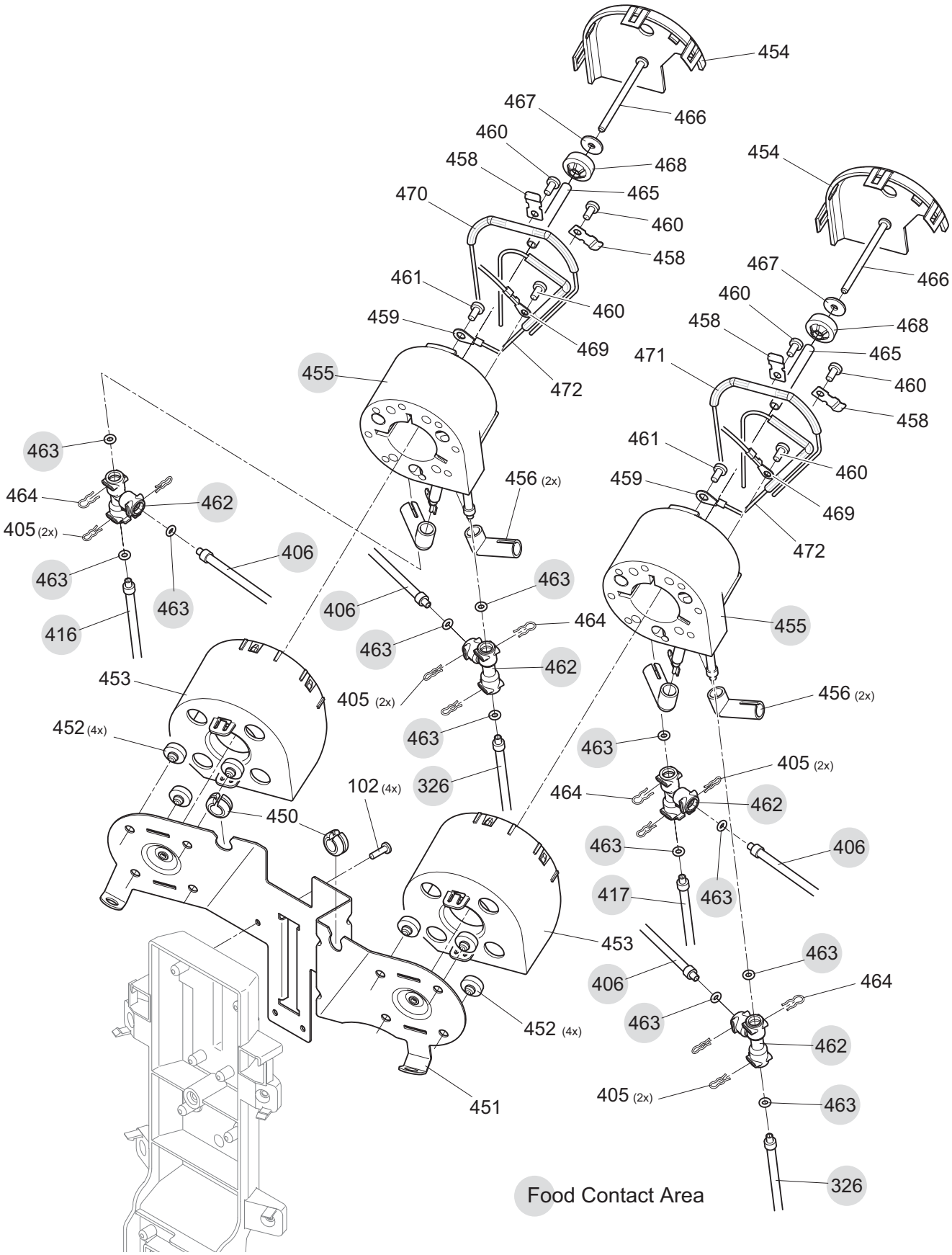
Exploded drawing cont. (CS203 / EF 733)



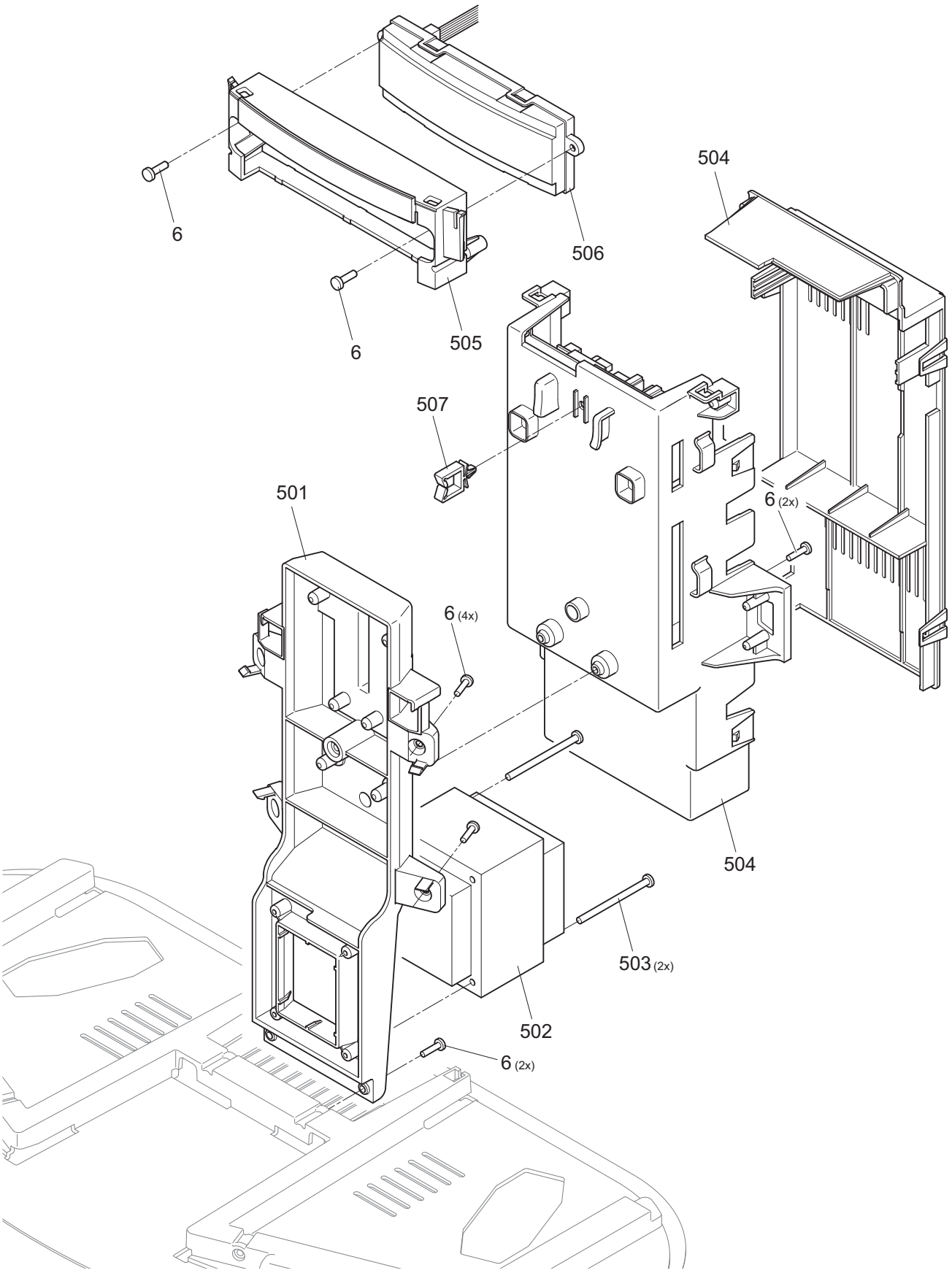
Exploded drawing cont. (CS203 / EF 733)



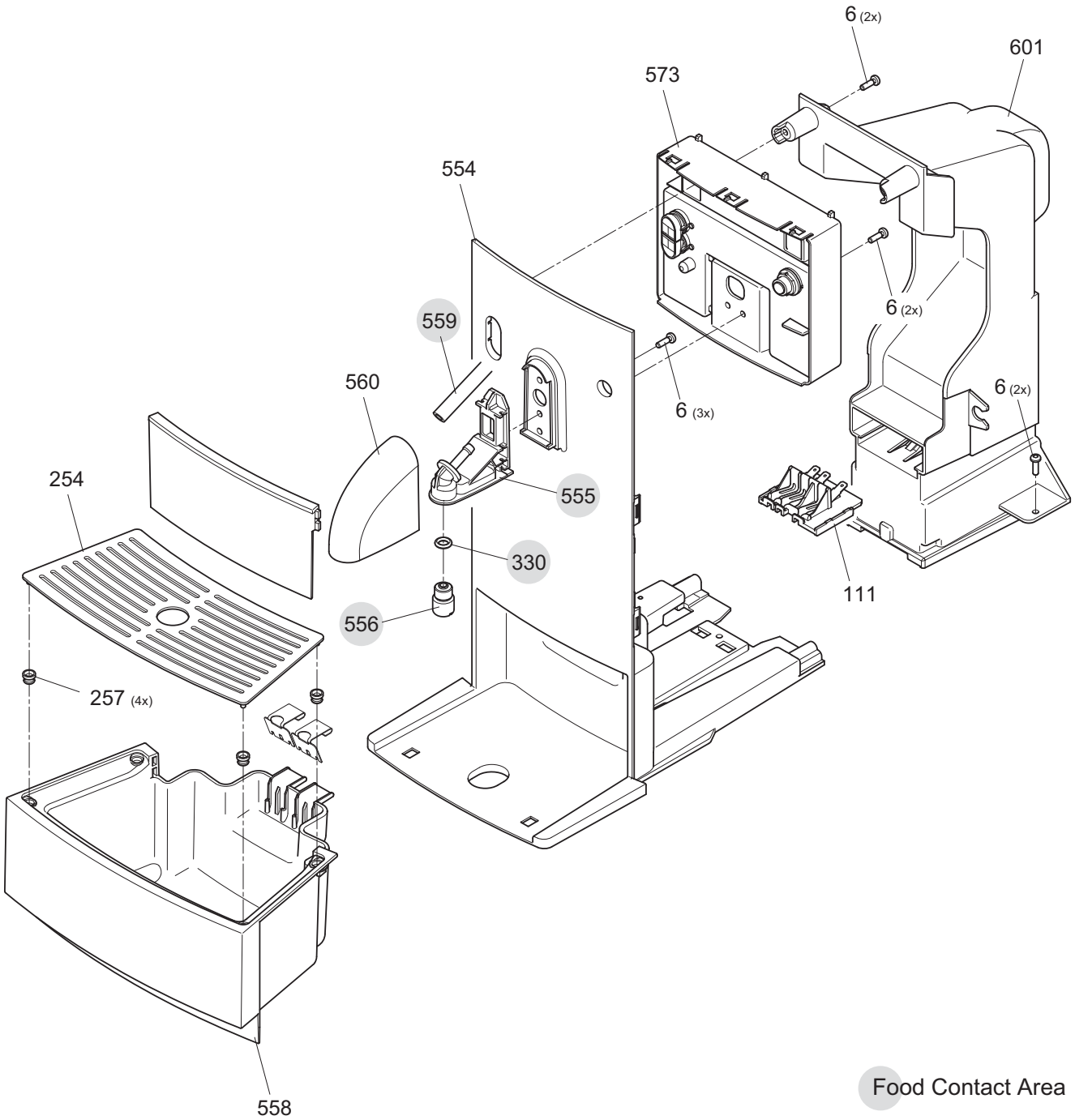
Exploded drawing cont. (CS203 / EF 733)



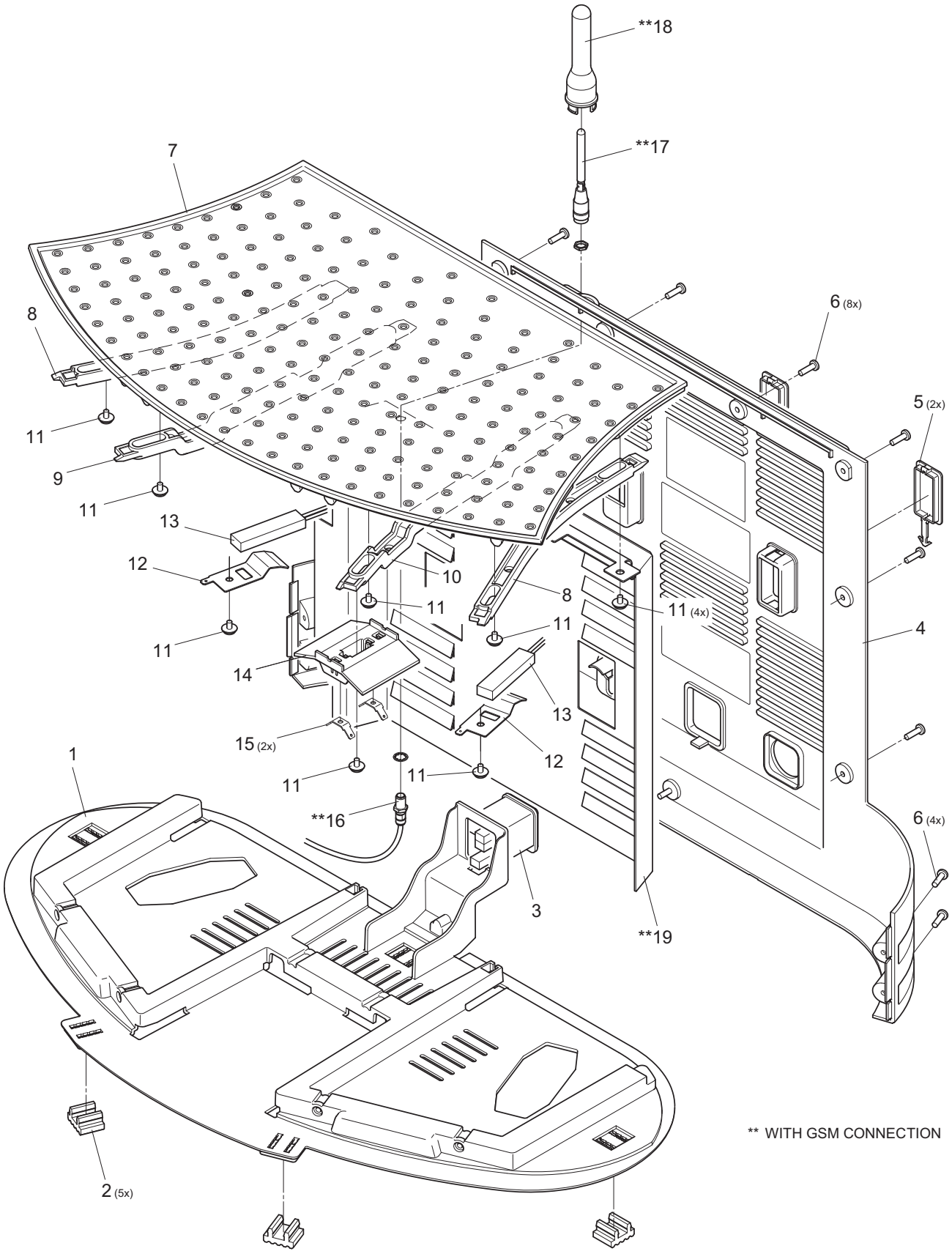
Exploded drawing cont. (CS203 / EF 733)



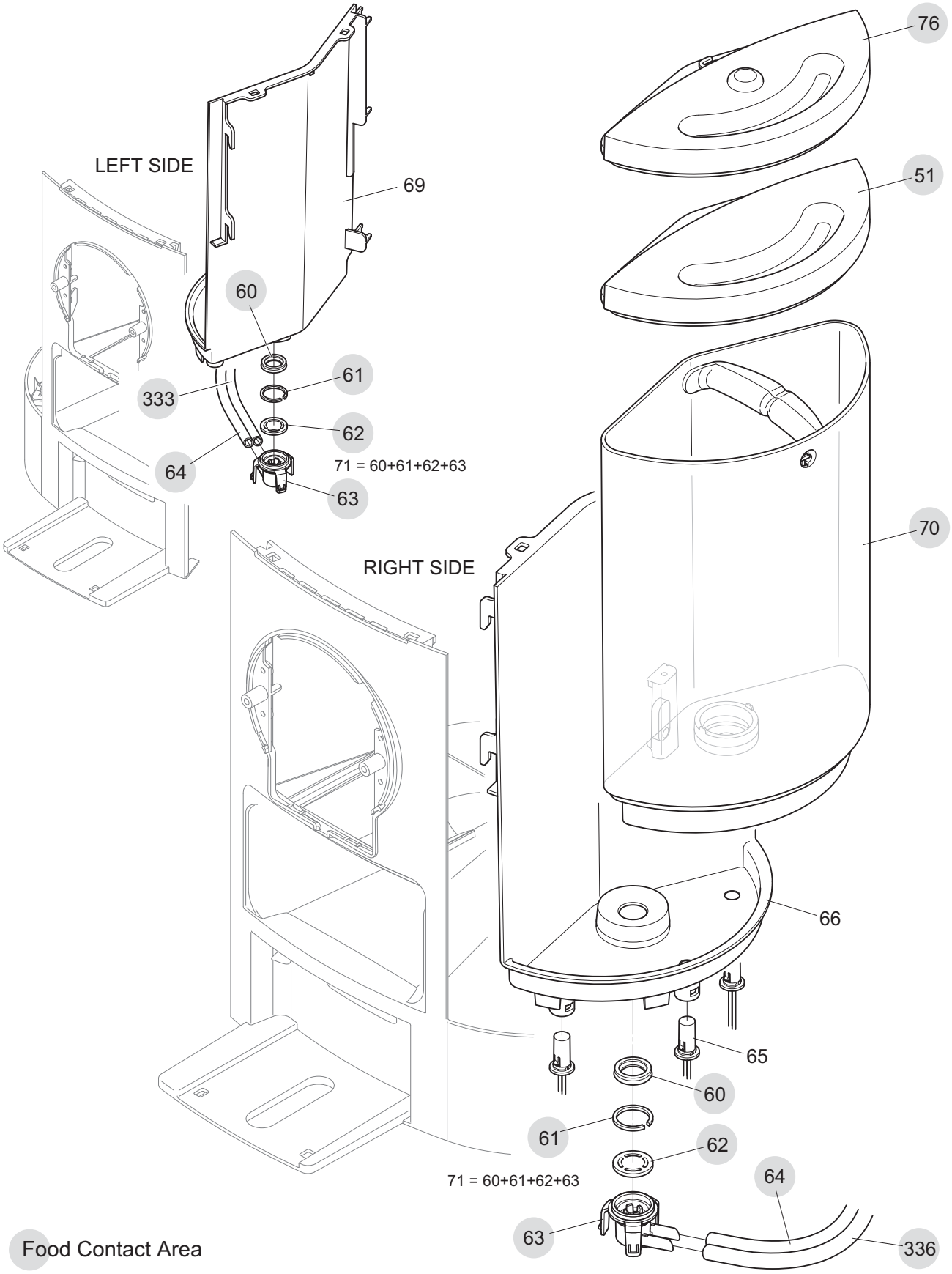
Exploded drawing cont. (CS203 / EF 733)



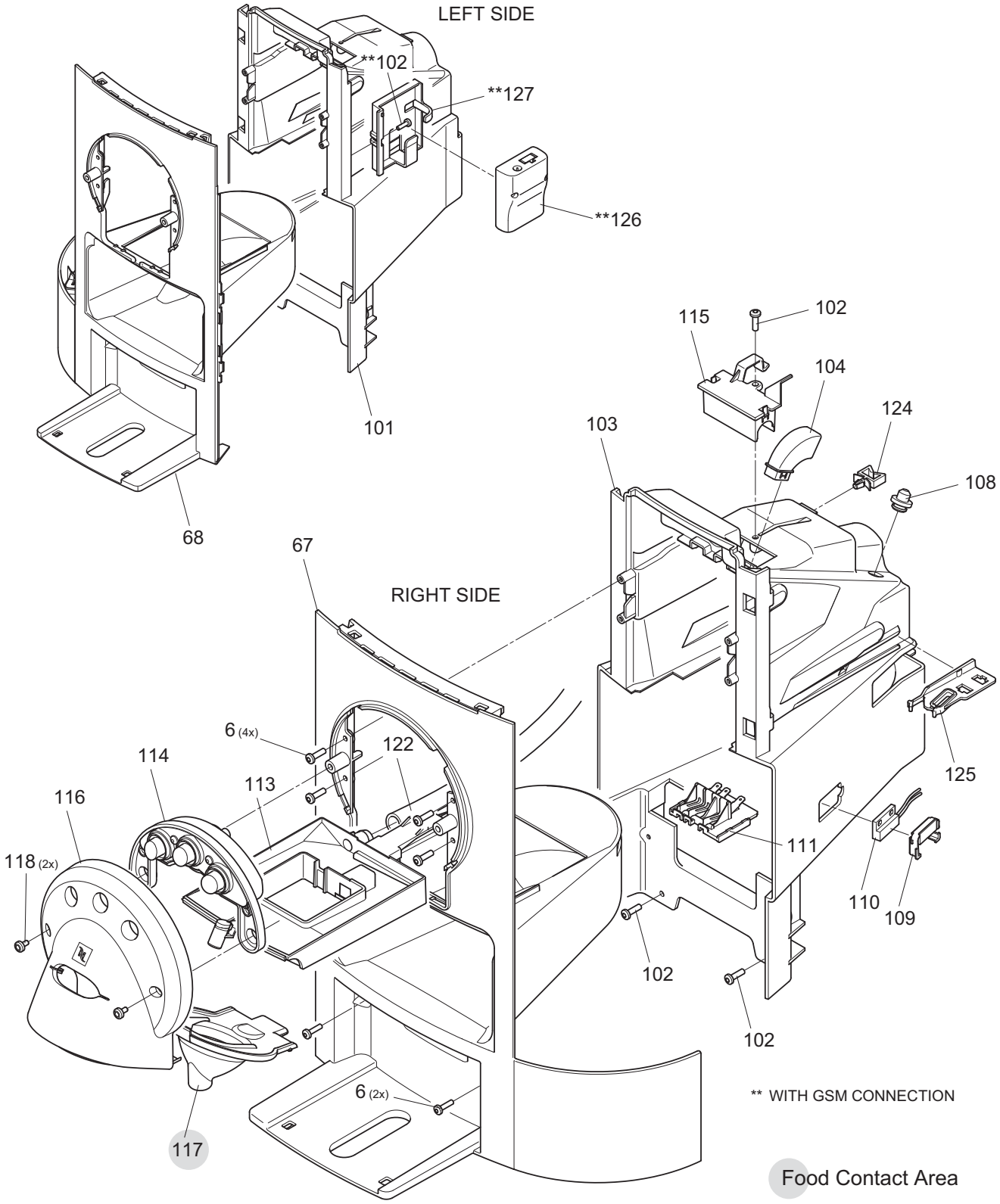
12.2 Exploded drawings of CS203 coffee machine (EF 903)



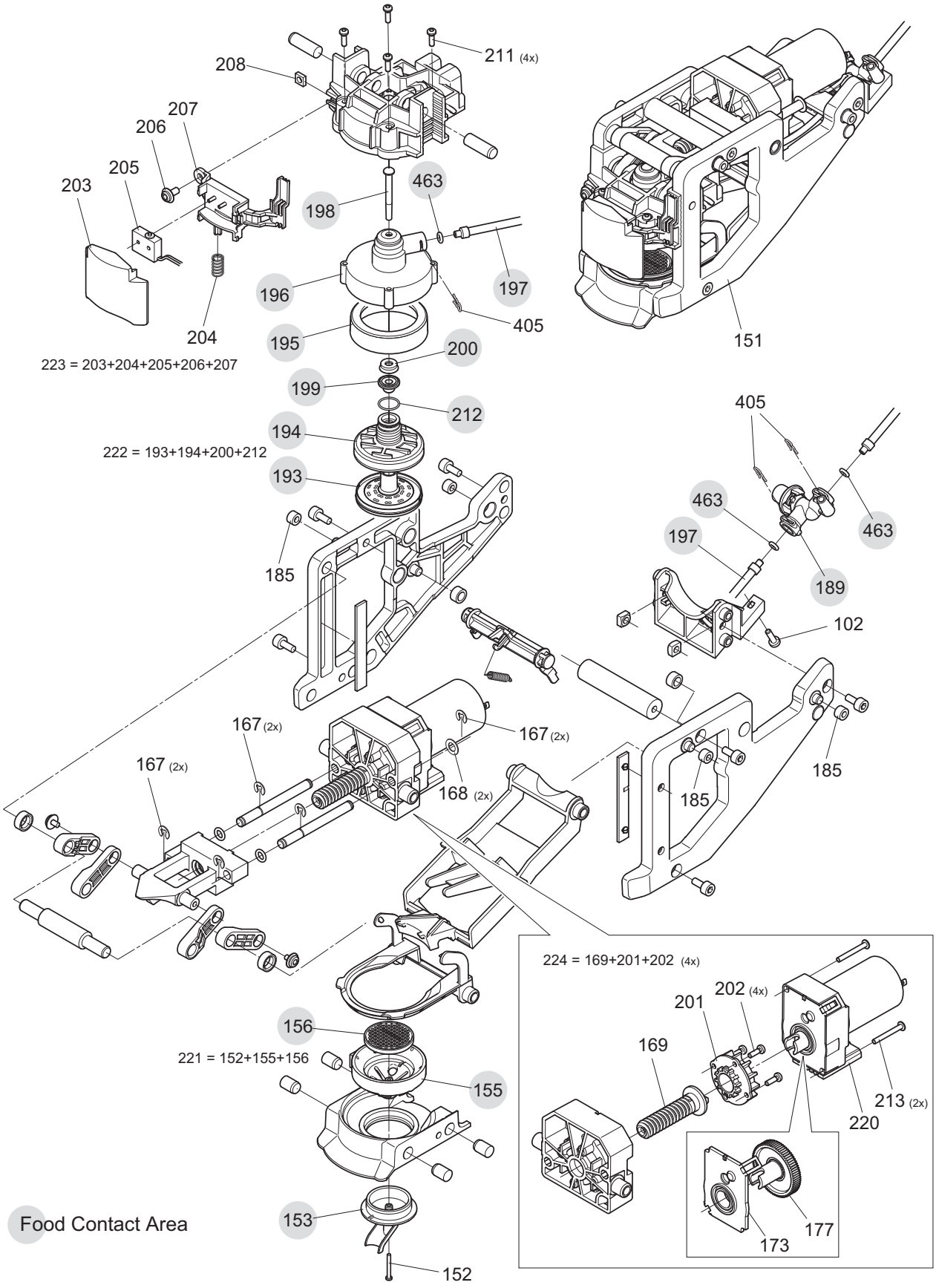
Exploded drawing cont. (CS203 / EF 903)



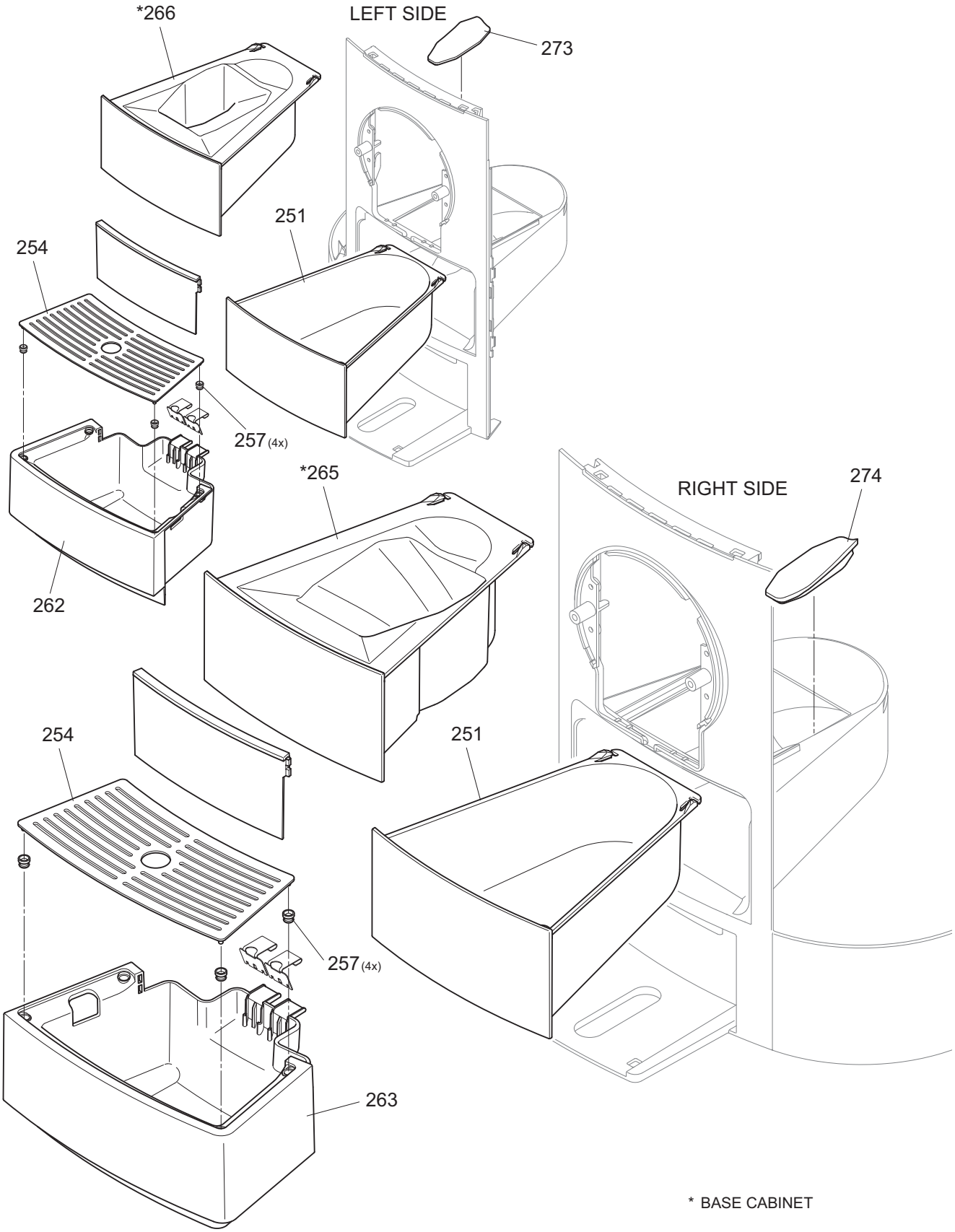
Exploded drawing cont. (CS203 / EF 903)



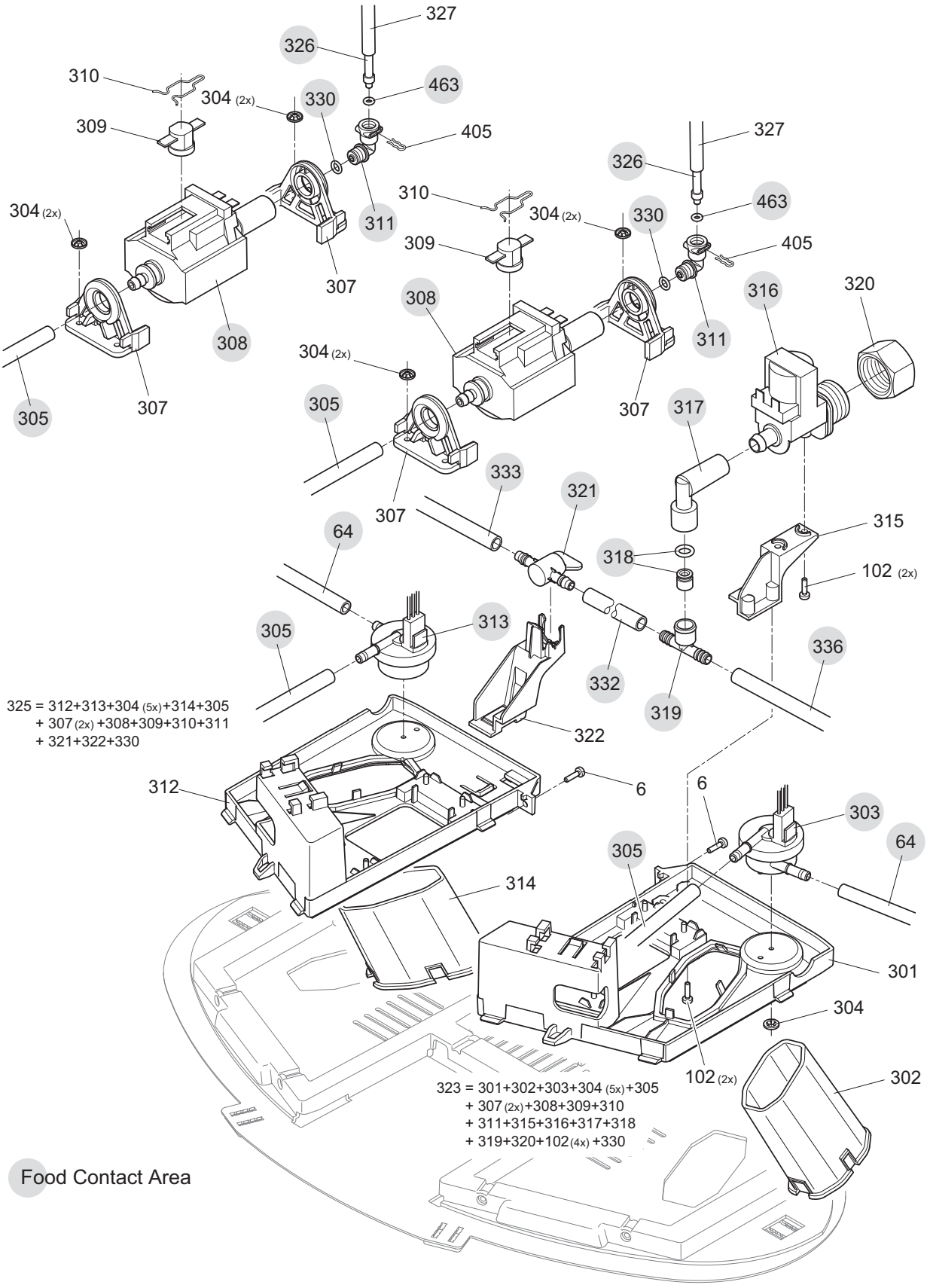
Exploded drawing cont. (CS203 / EF 903)



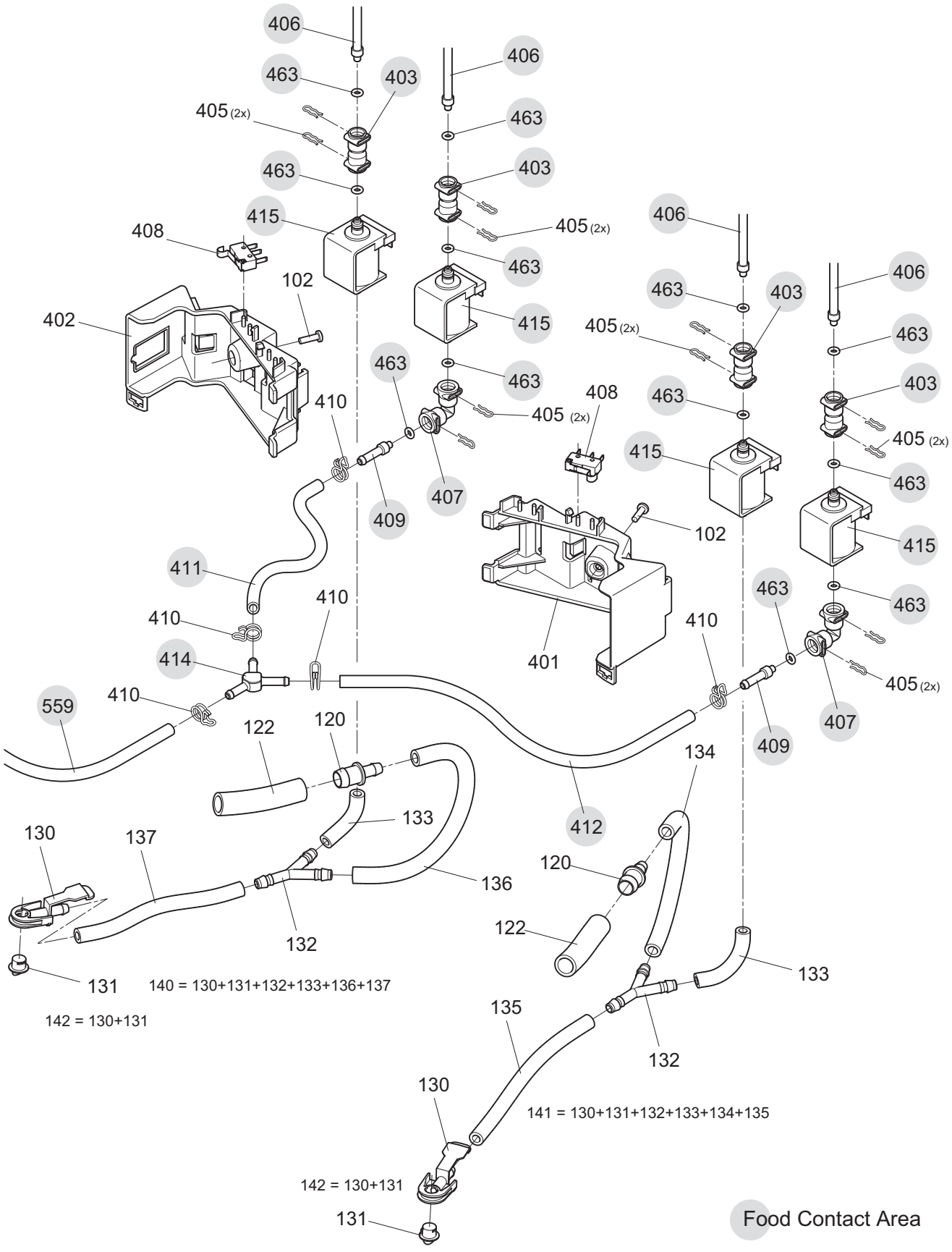
Exploded drawing cont. (CS203 / EF 903)



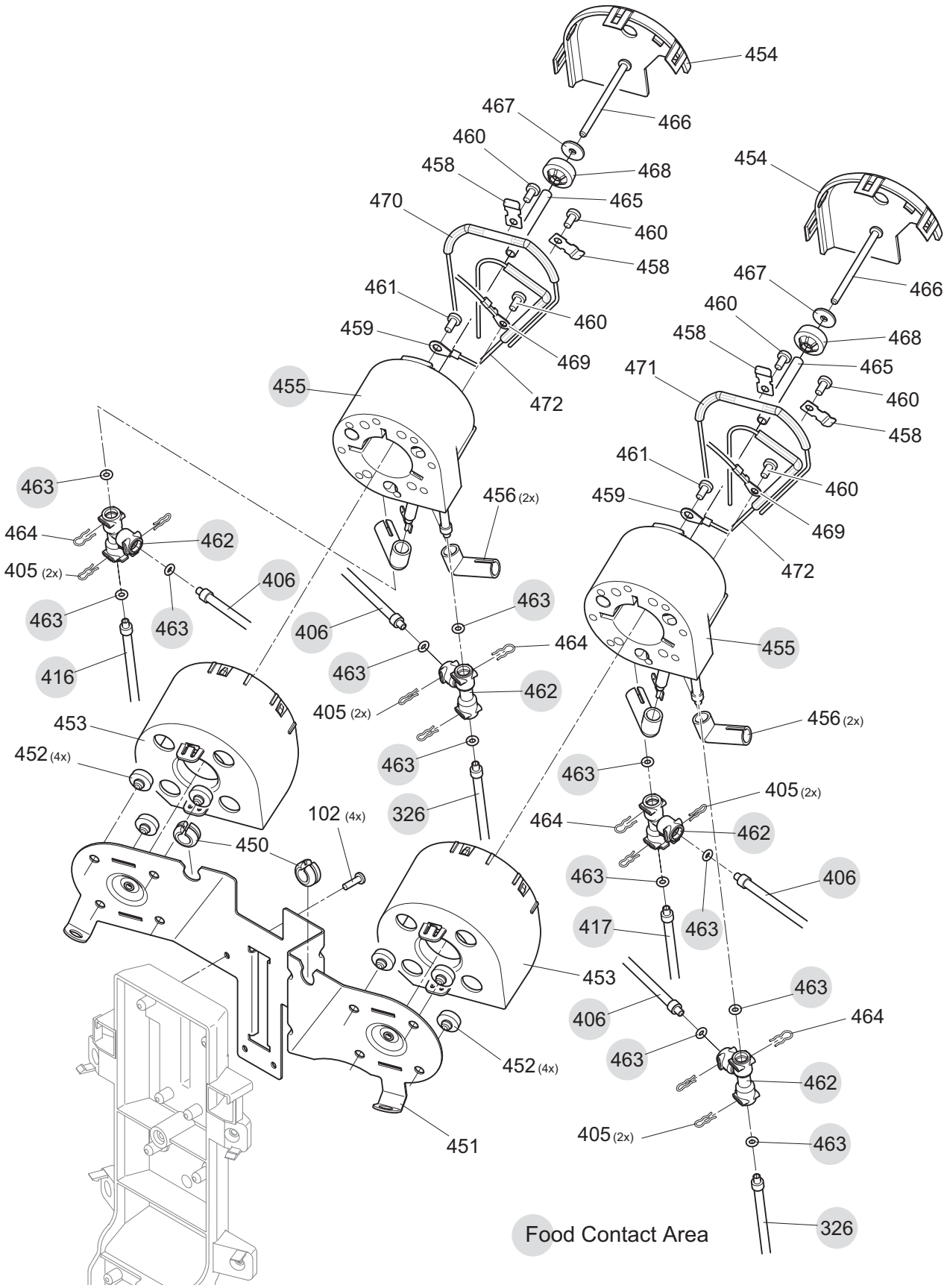
Exploded drawing cont. (CS203 / EF 903)



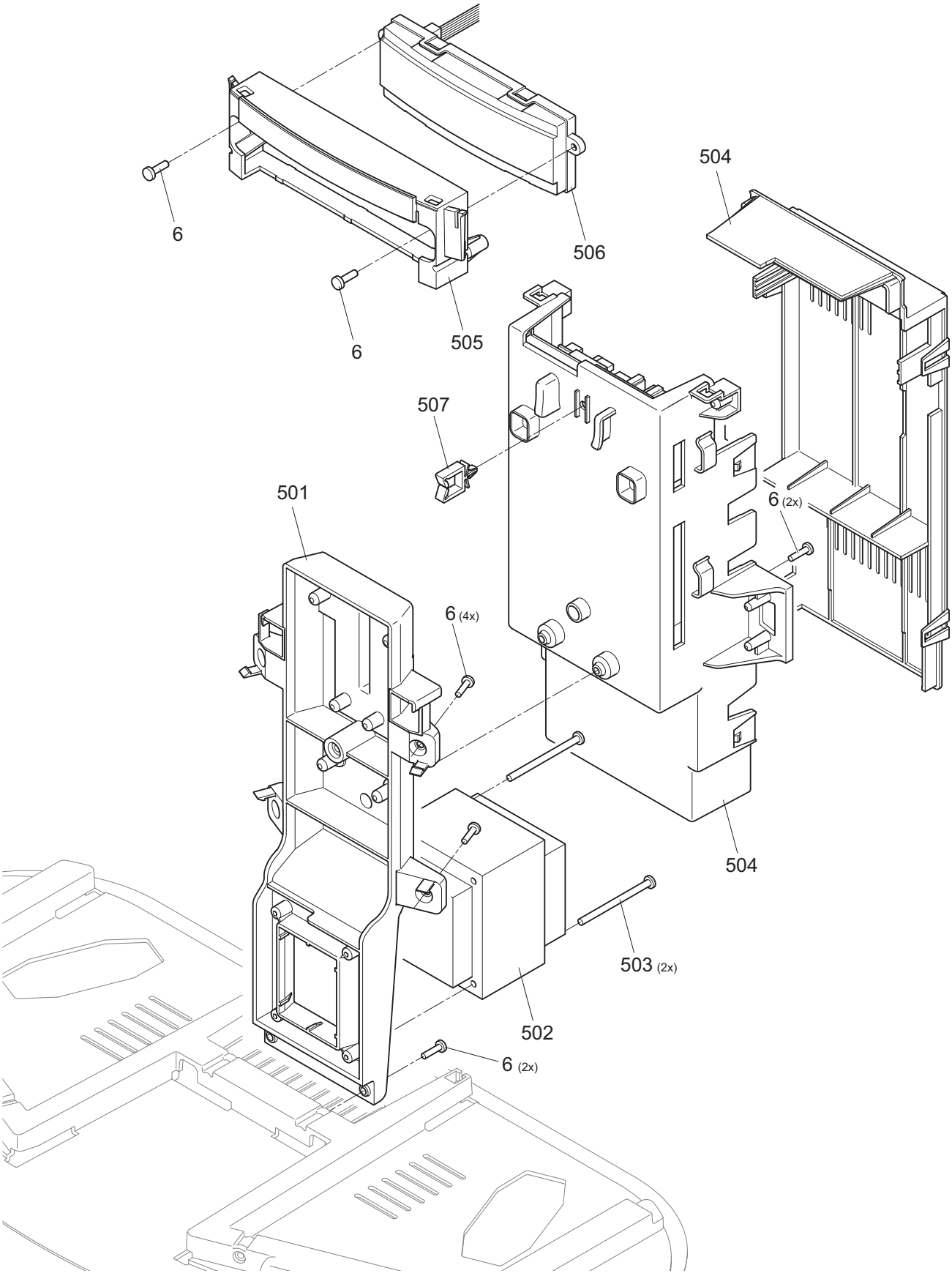
Exploded drawing cont. (CS203 / EF 903)



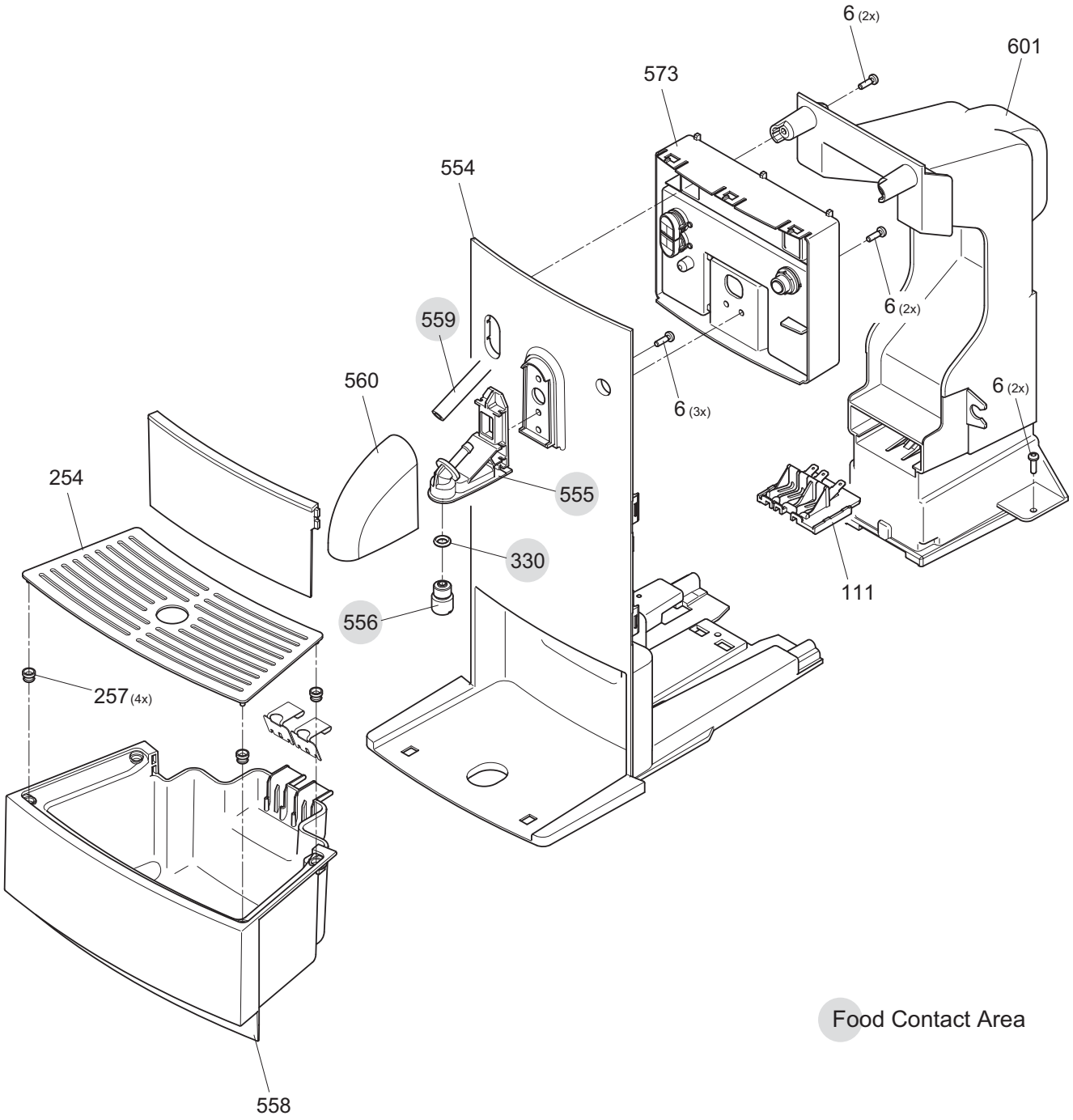
Exploded drawing cont. (CS203 / EF 903)



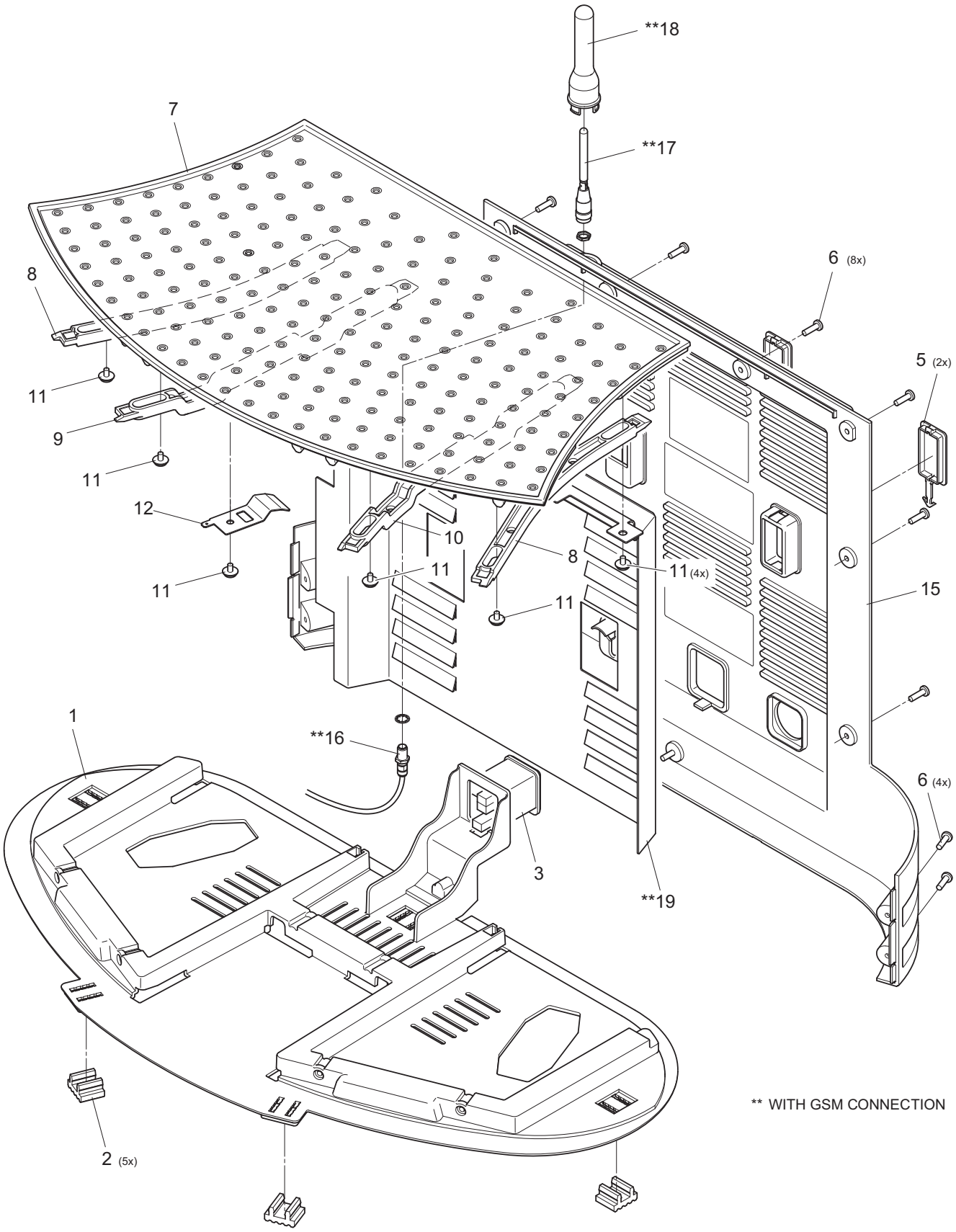
Exploded drawing cont. (CS203 / EF 903)



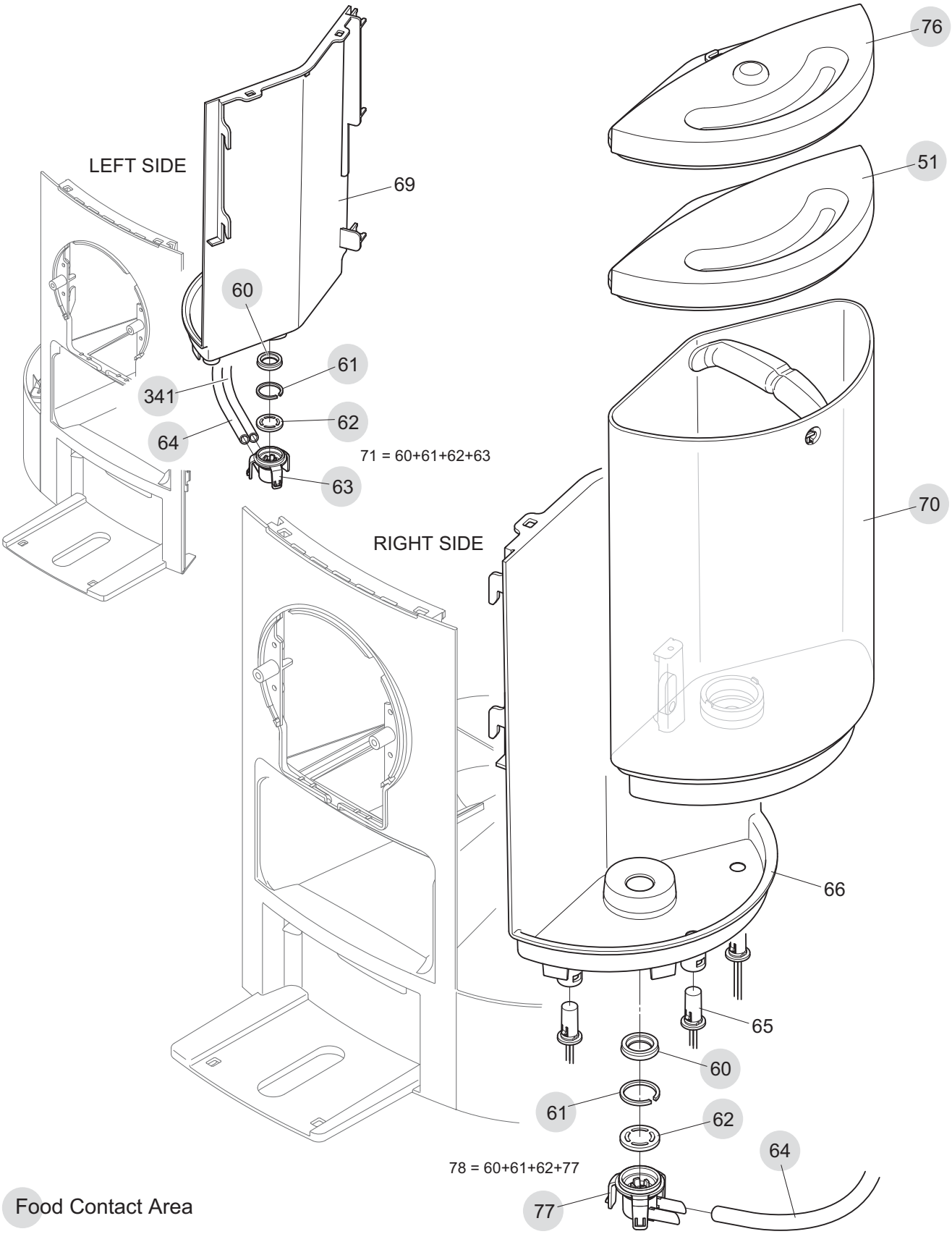
Exploded drawing cont. (CS203 / EF 903)



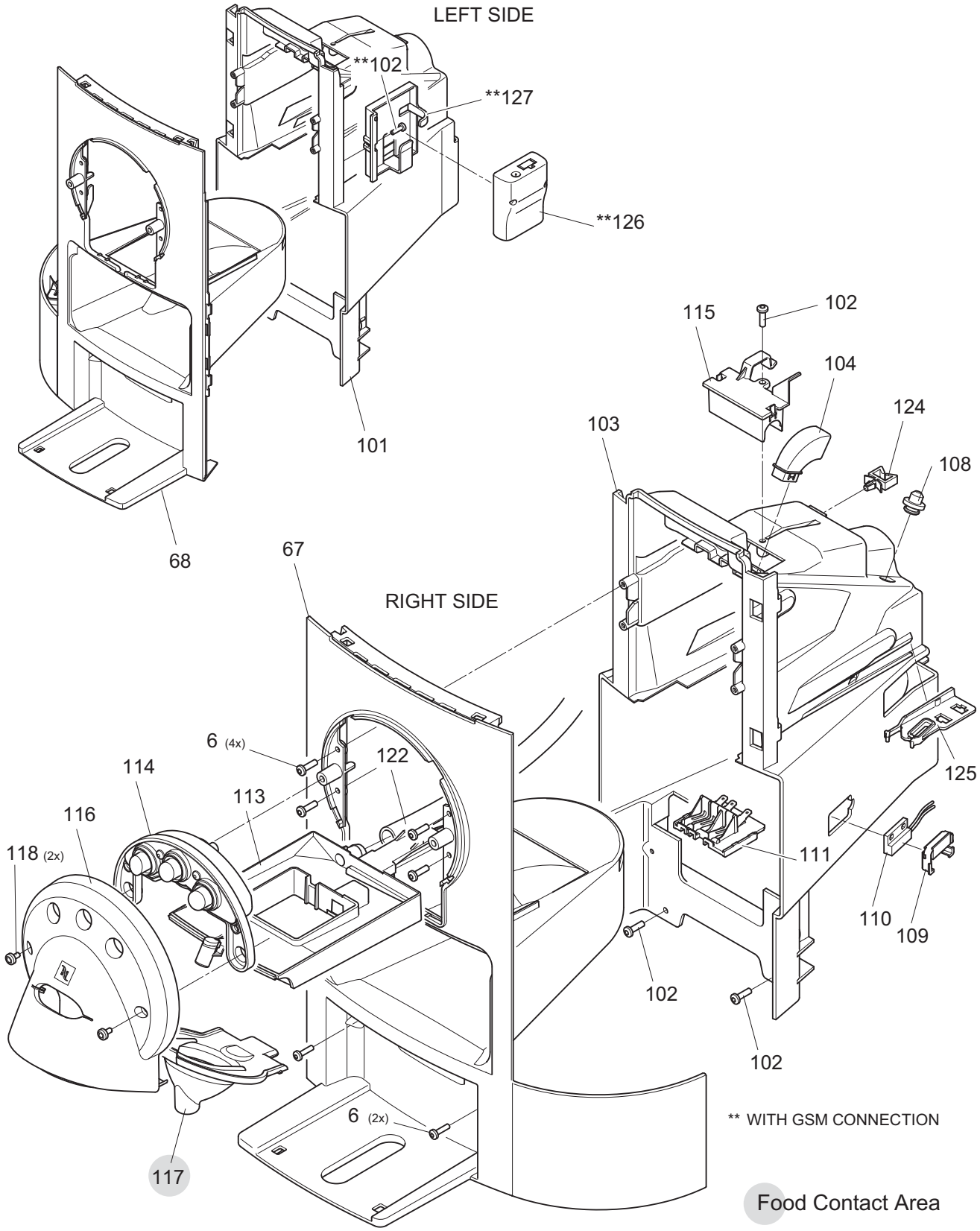
12.3 Exploded drawings of CS223 coffee machine (EF 734)



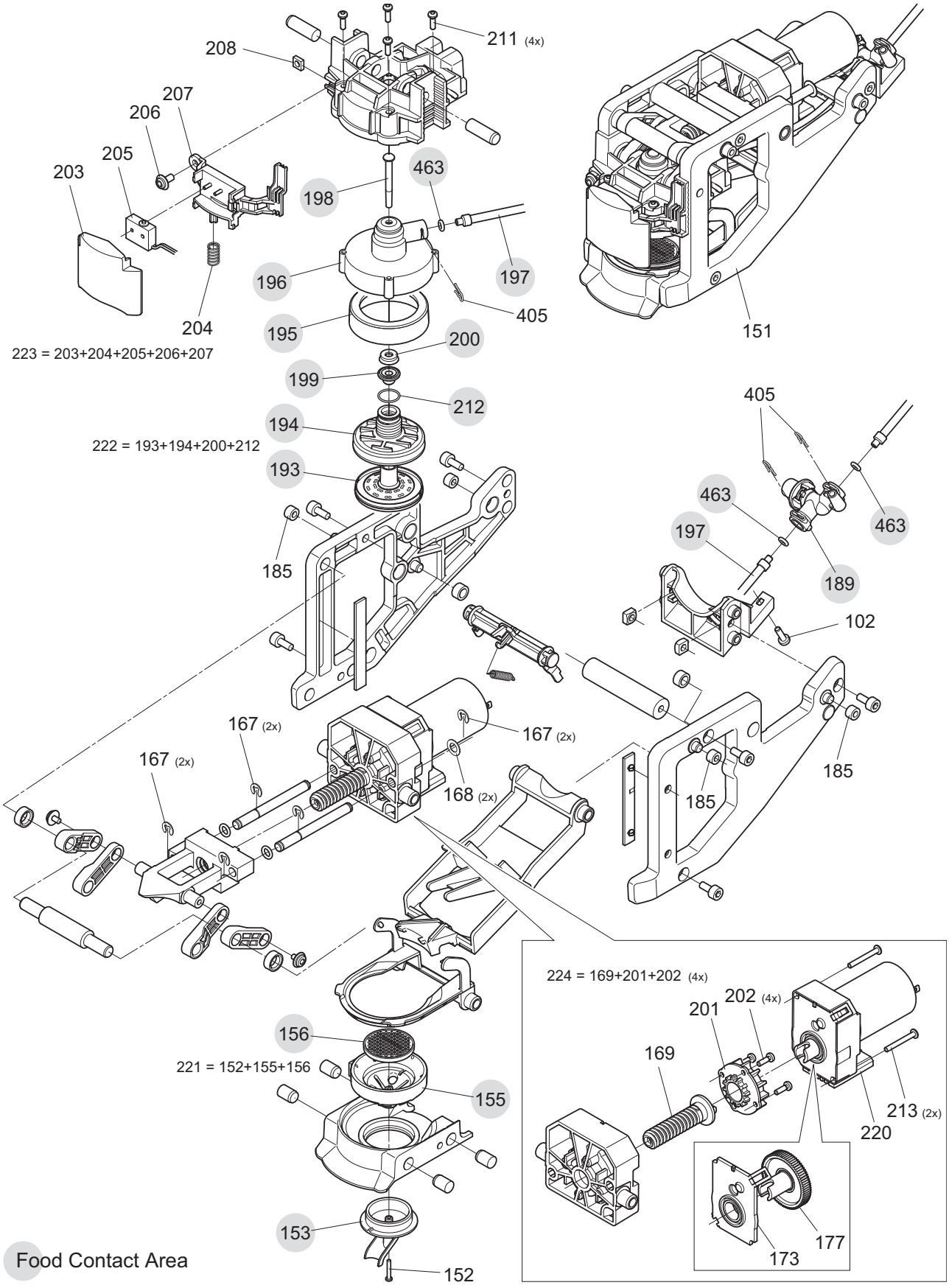
Exploded drawing cont. (CS223 / EF 734)



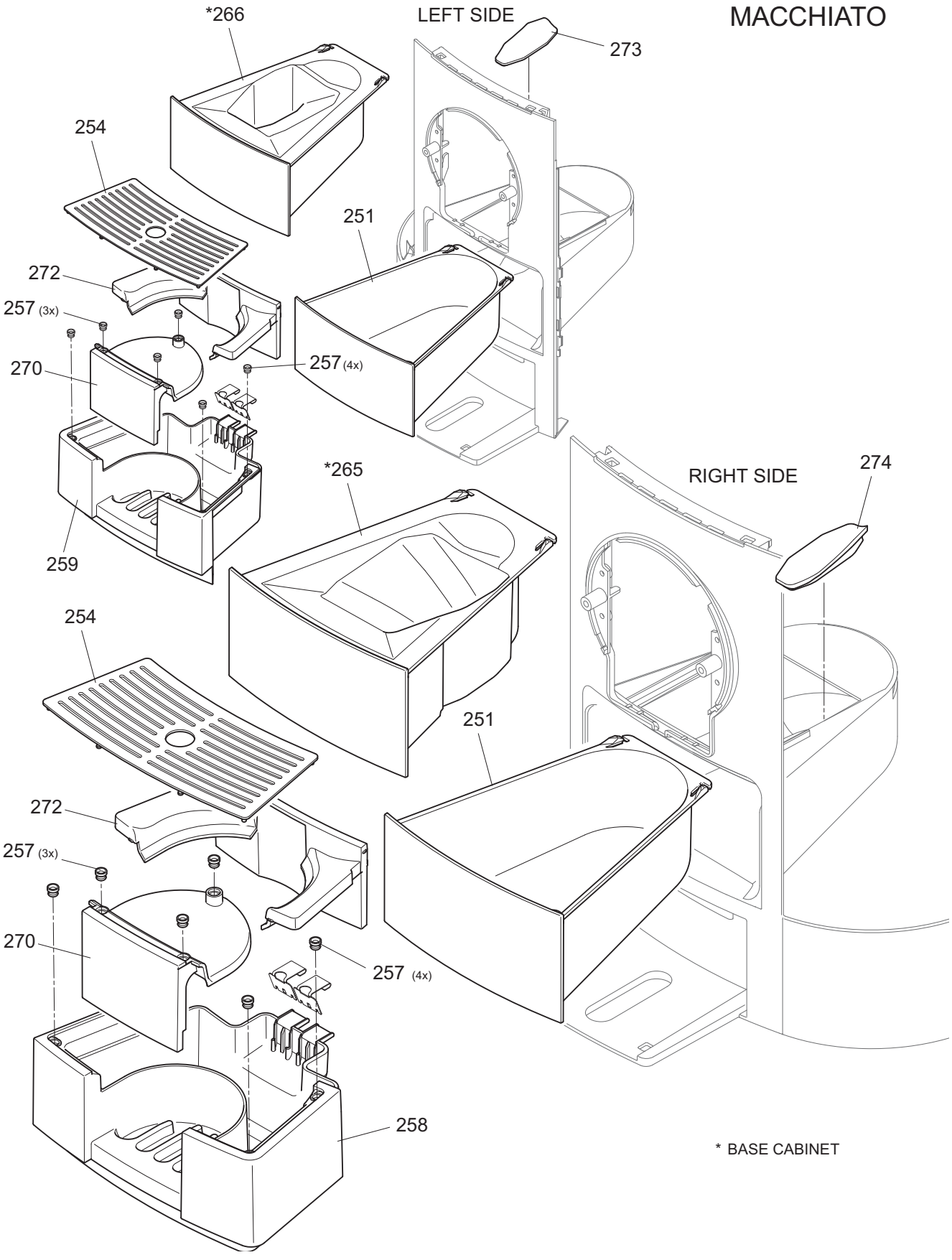
Exploded drawing cont. (CS223 / EF 734)



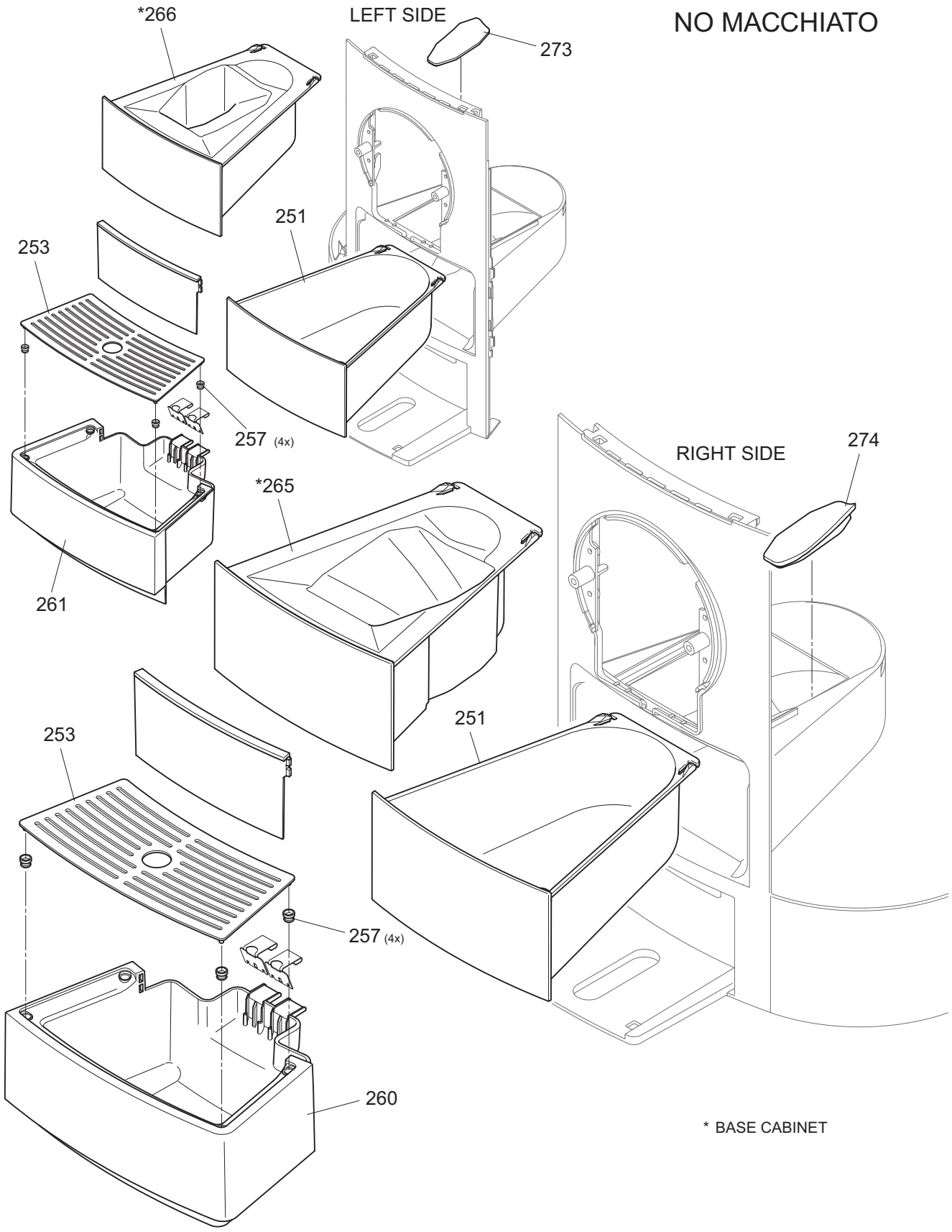
Exploded drawing cont. (CS223 / EF 734)



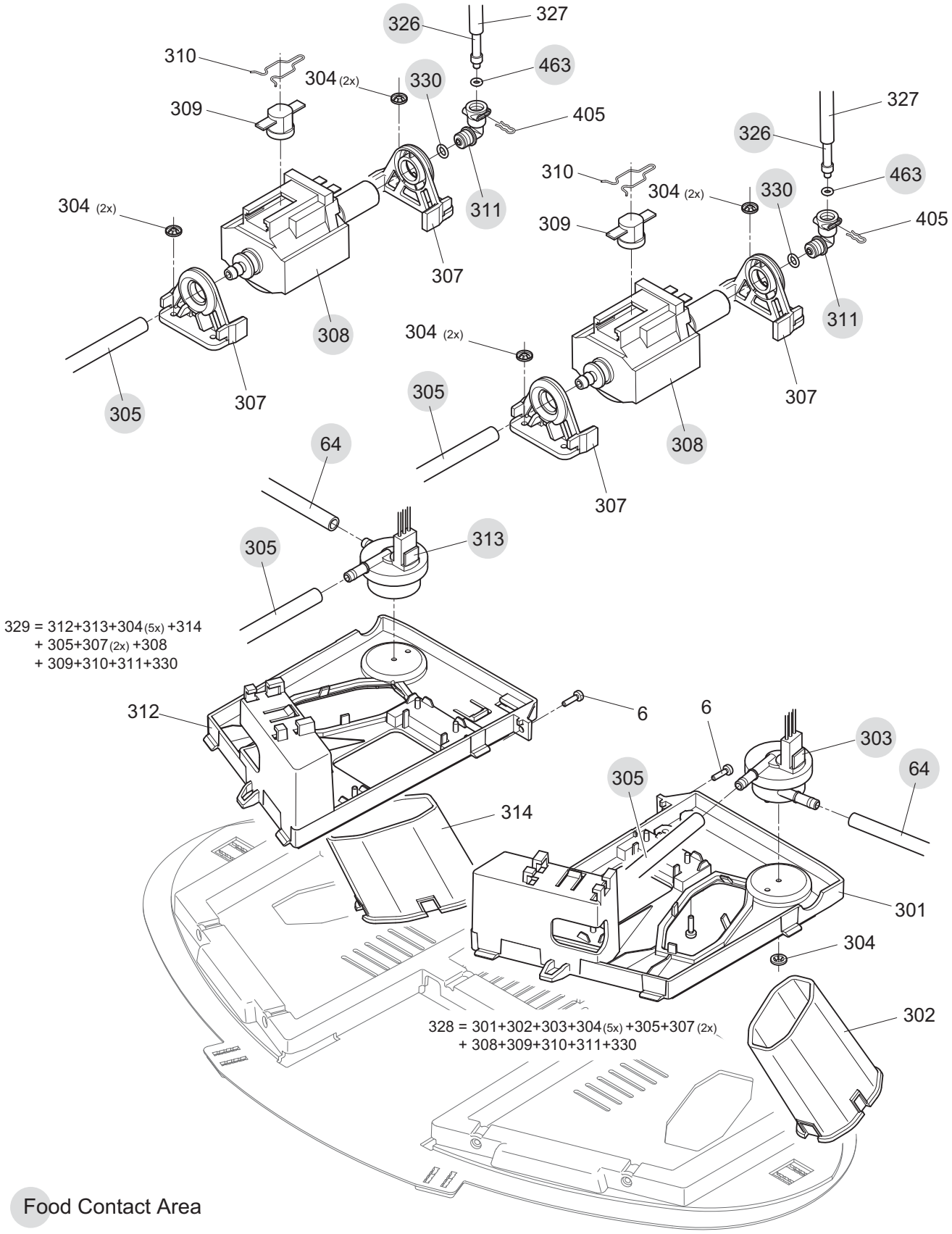
Exploded drawing cont. (CS223 / EF 734)



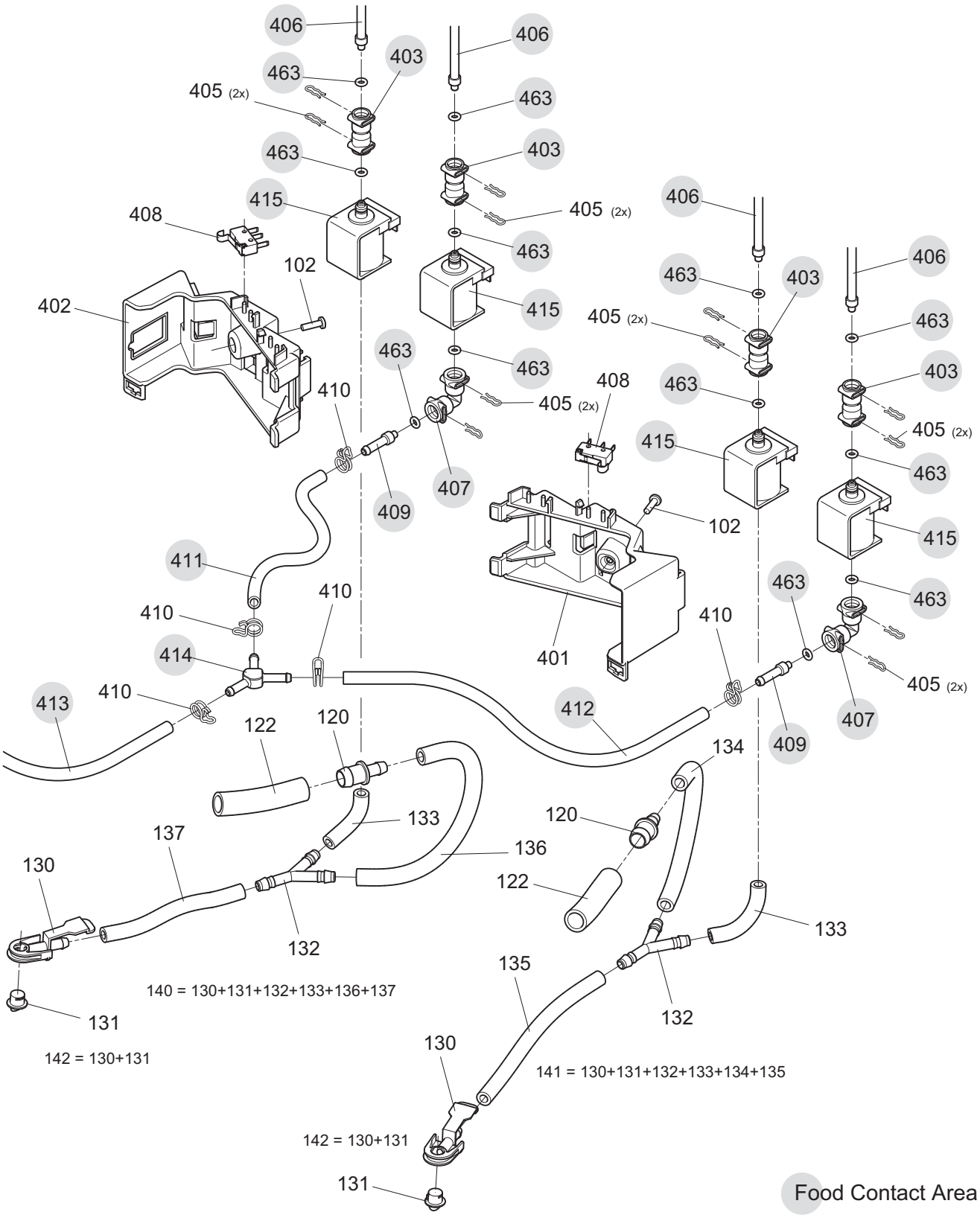
Exploded drawing cont. (CS223 / EF 734)



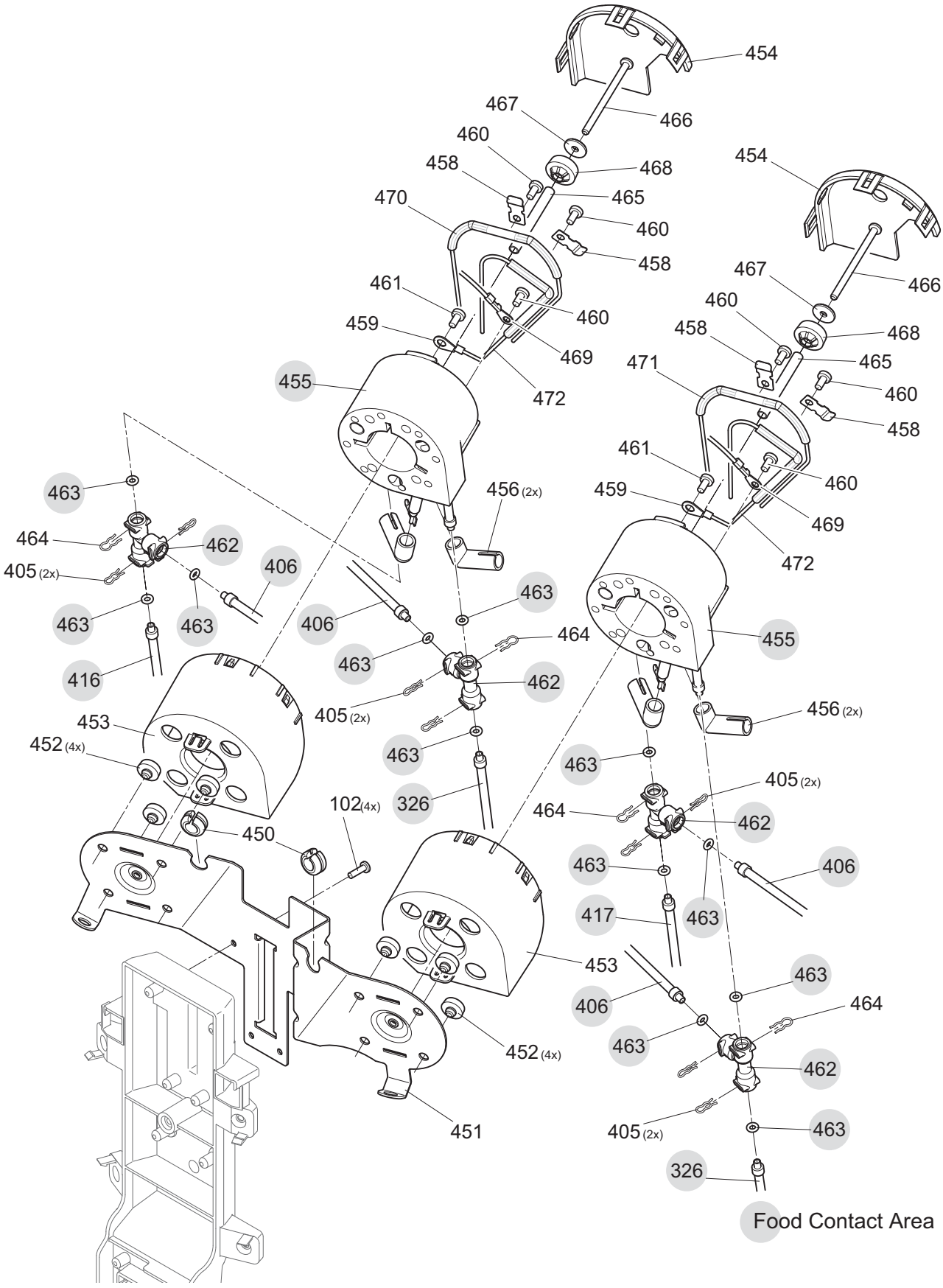
Exploded drawing cont. (CS223 / EF 734)



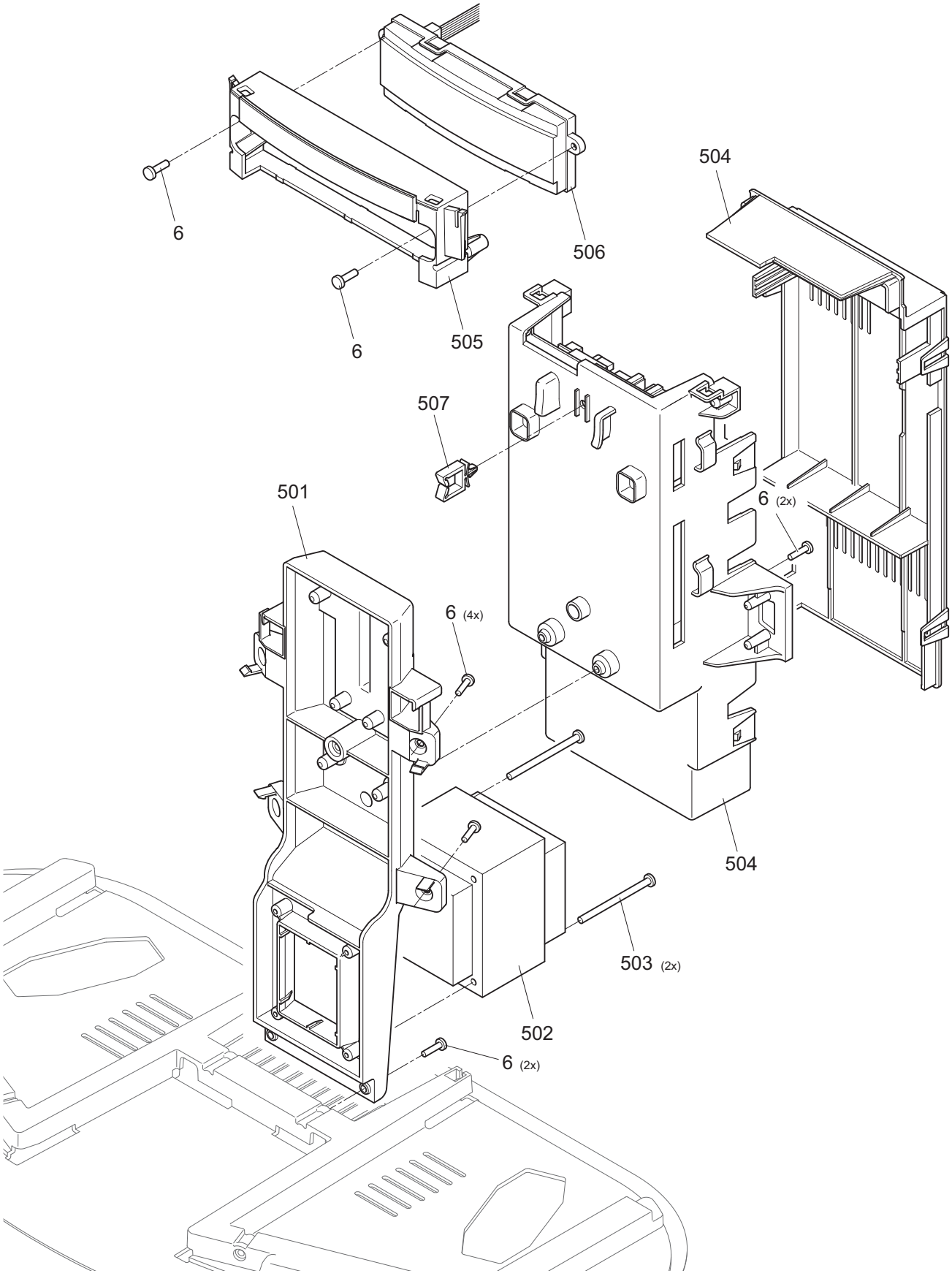
Exploded drawing cont. (CS223 / EF 734)



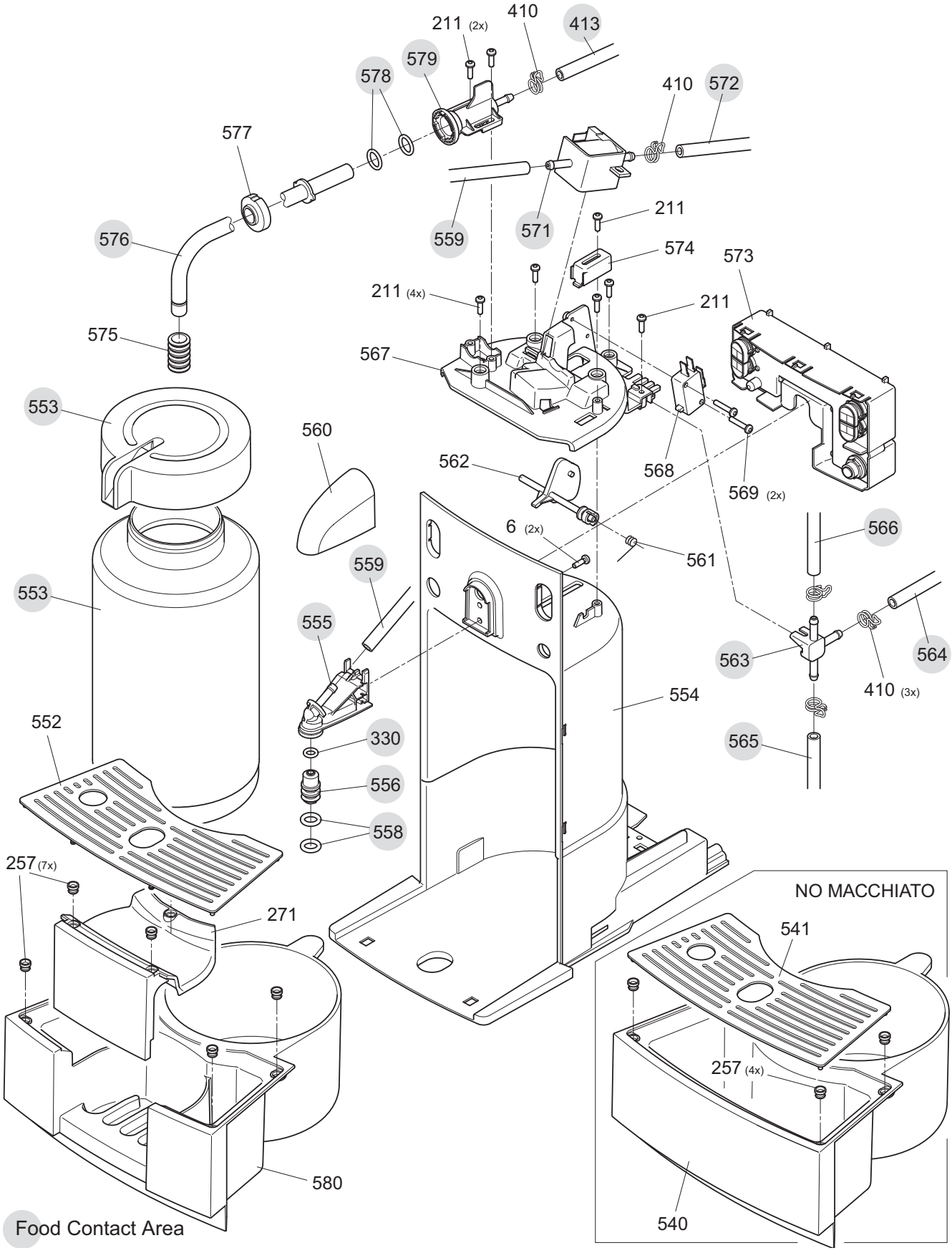
Exploded drawing cont. (CS223 / EF 734)



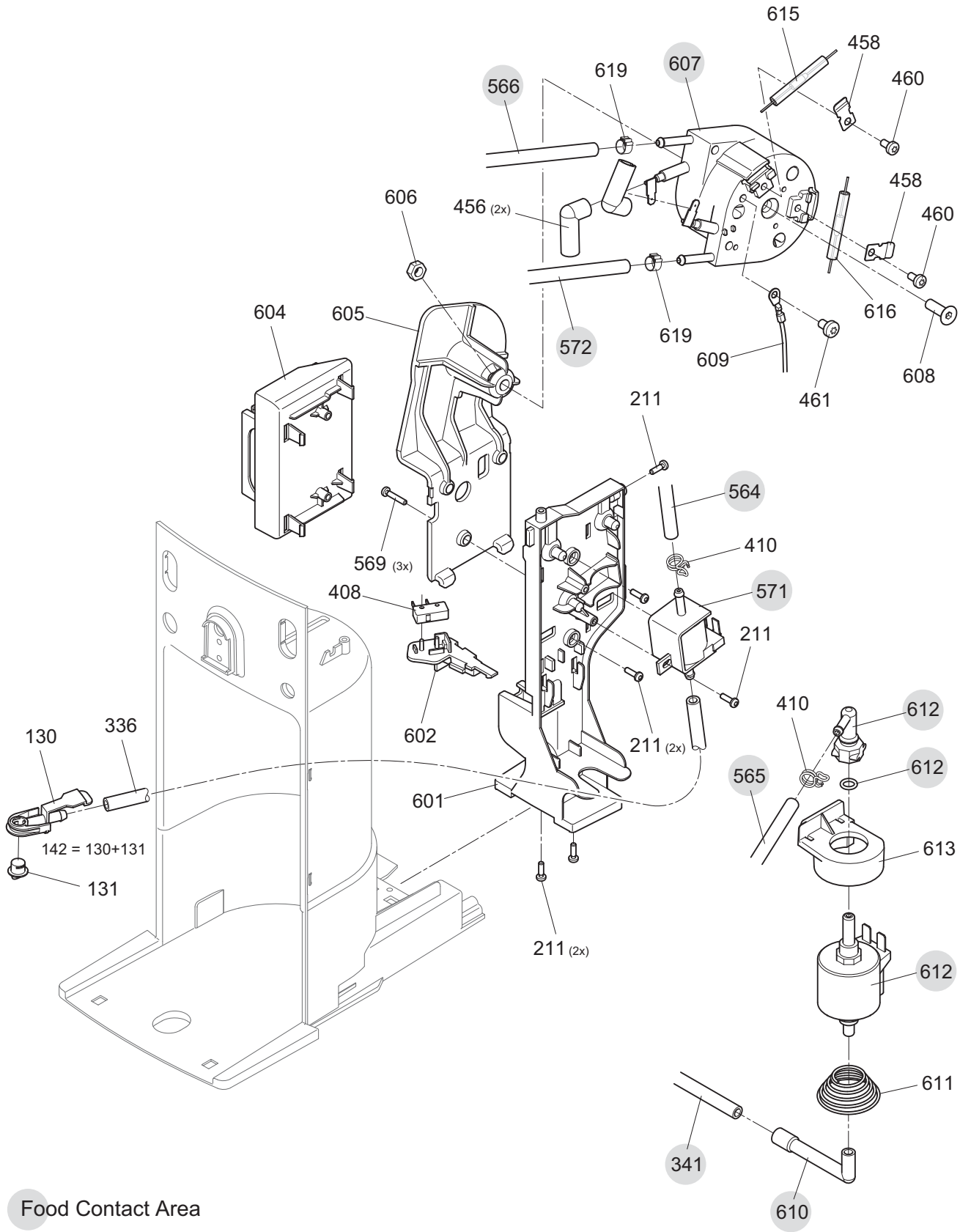
Exploded drawing cont. (CS223 / EF 734)



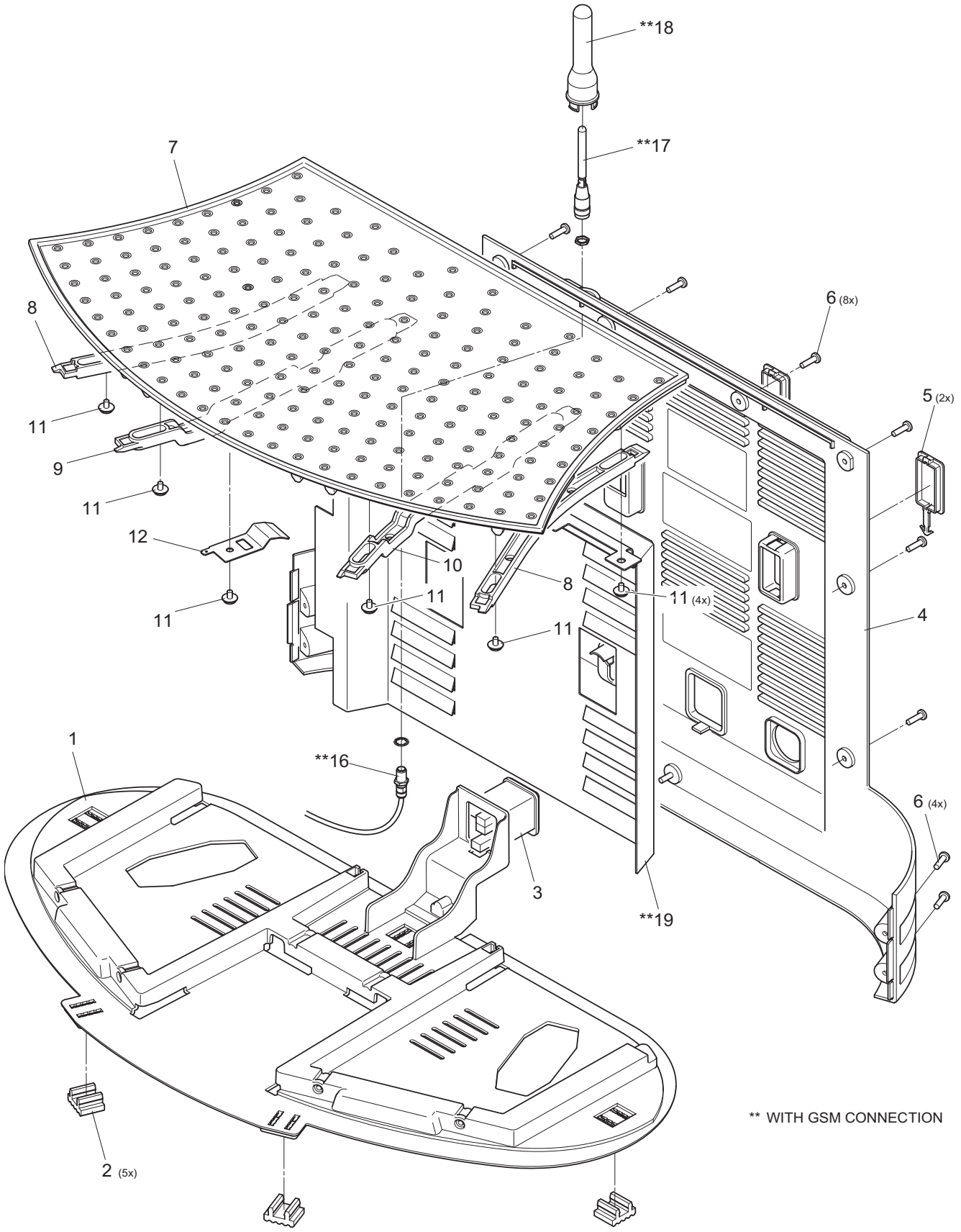
Exploded drawing cont. (CS223 / EF 734)



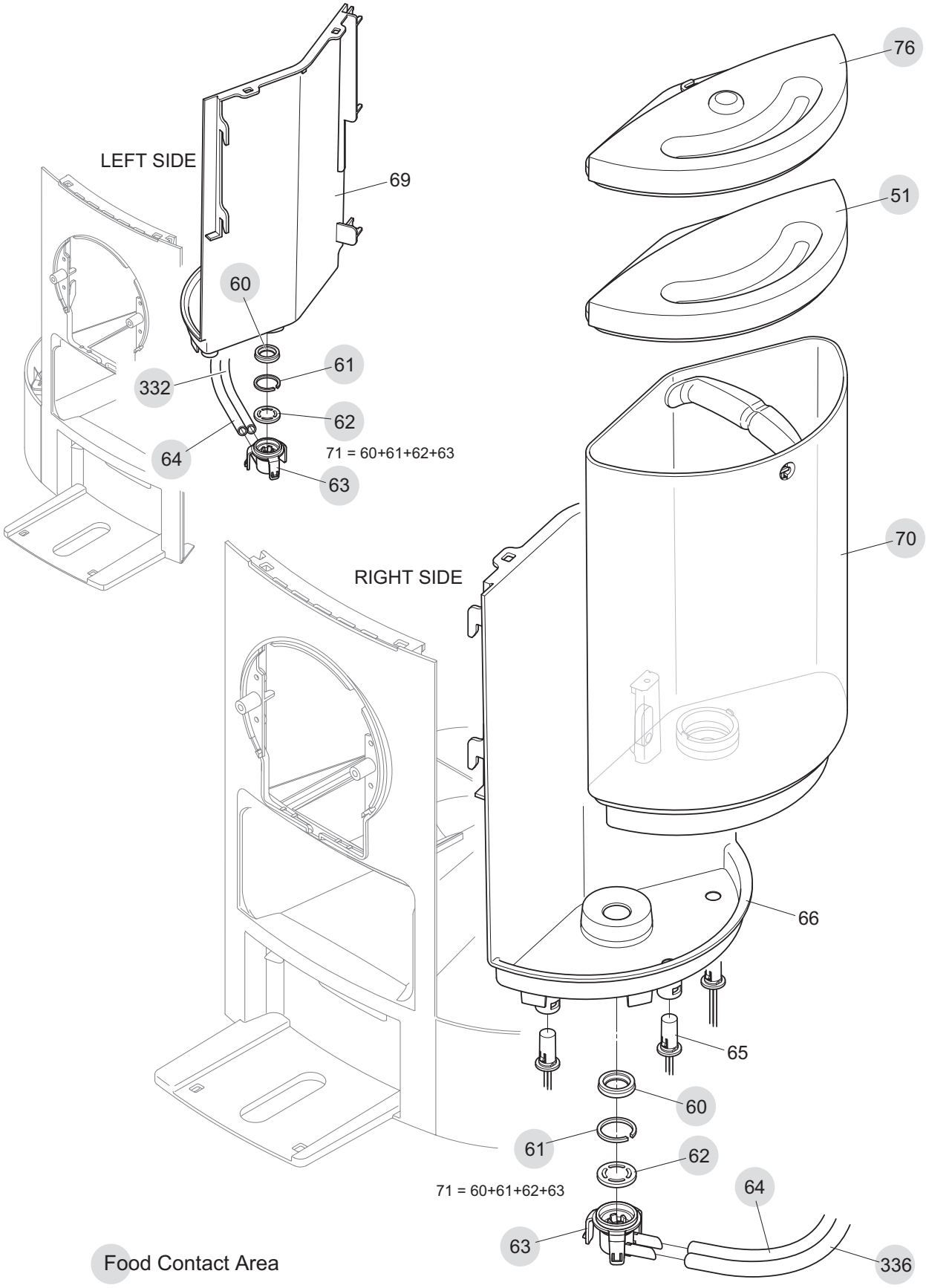
Exploded drawing cont. (CS223 / EF 734)



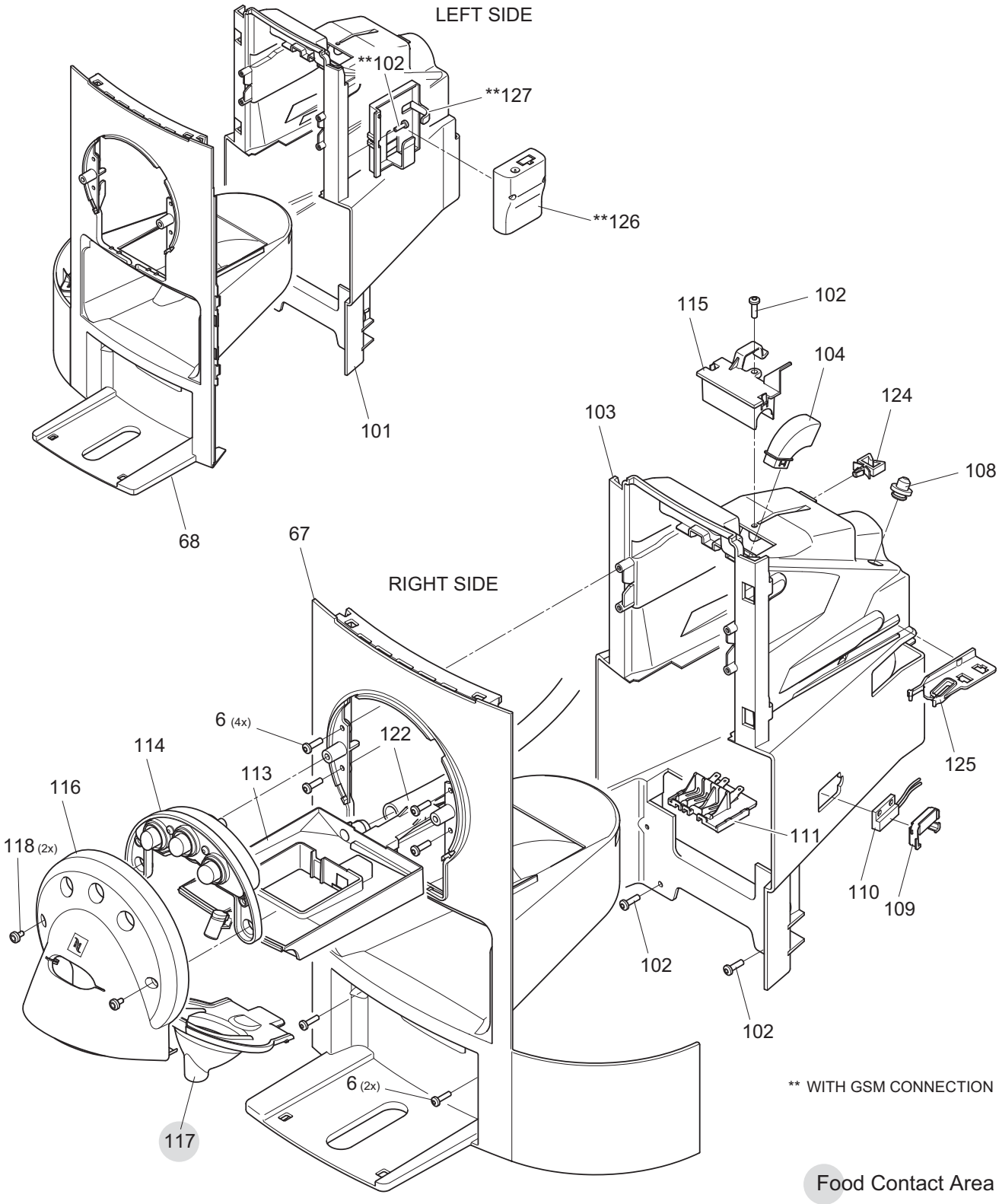
12.4 Exploded drawings of CS223 coffee machine (EF 904)



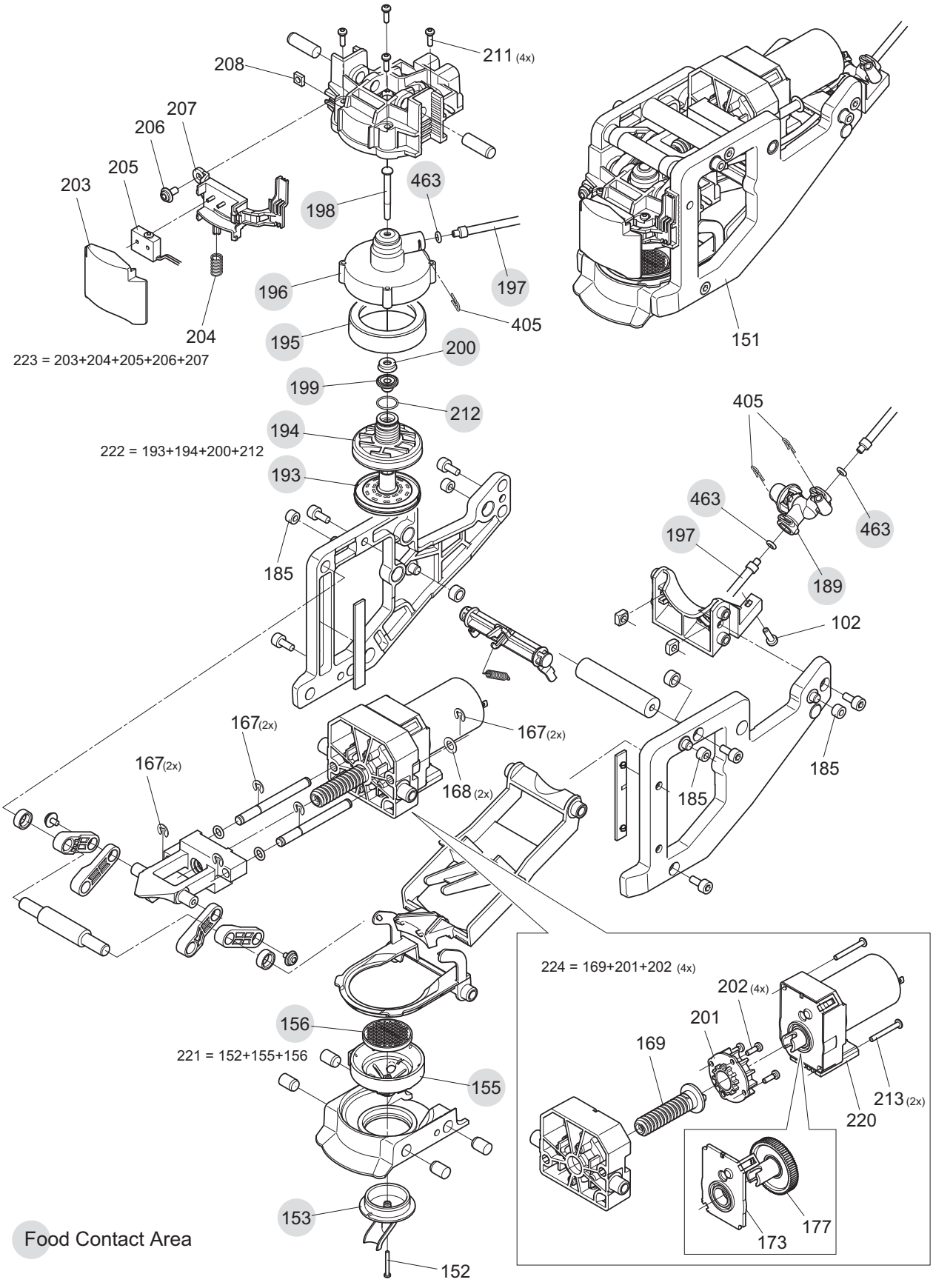
Exploded drawing cont. (CS223 / EF 904)



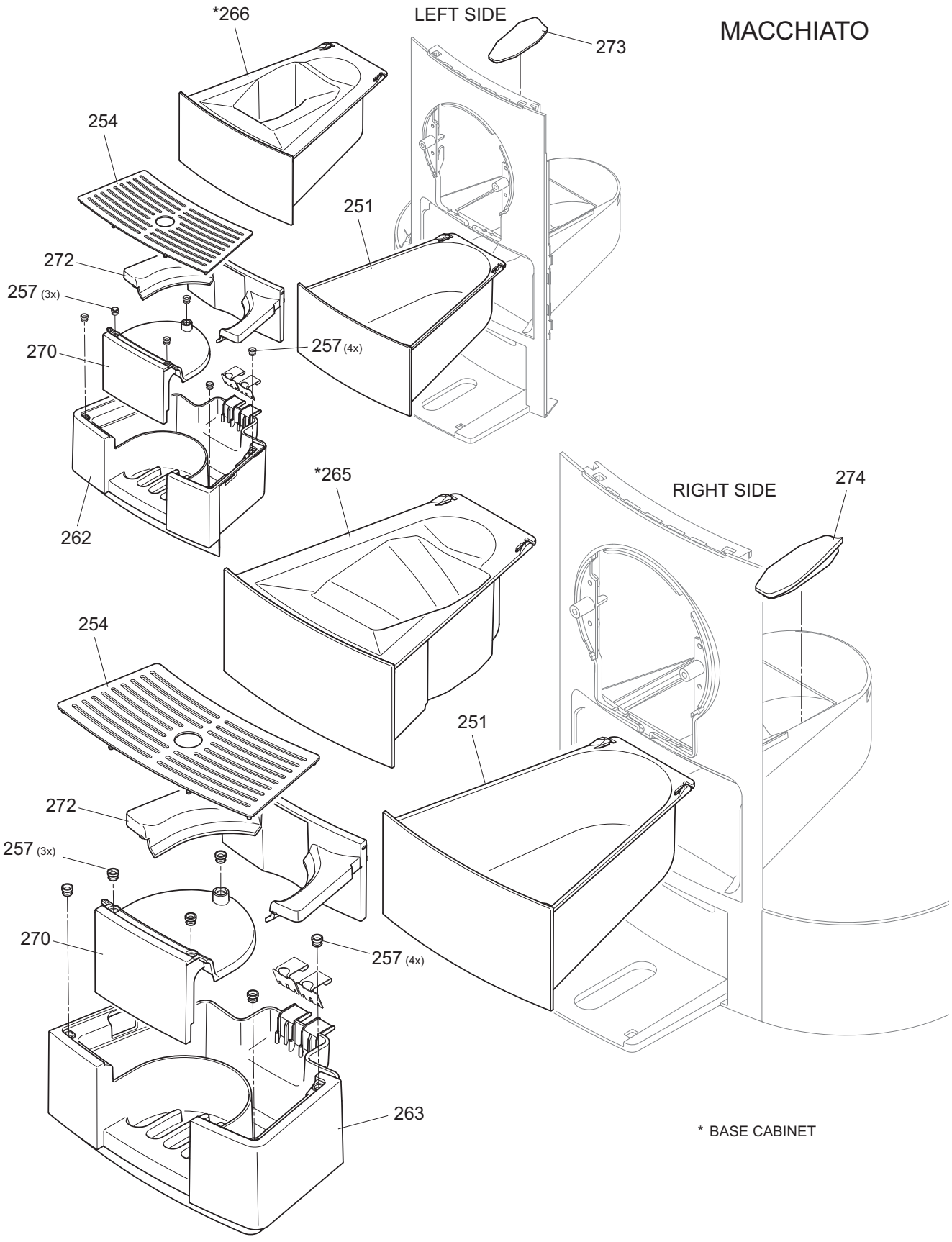
Exploded drawing cont. (CS223 / EF 904)



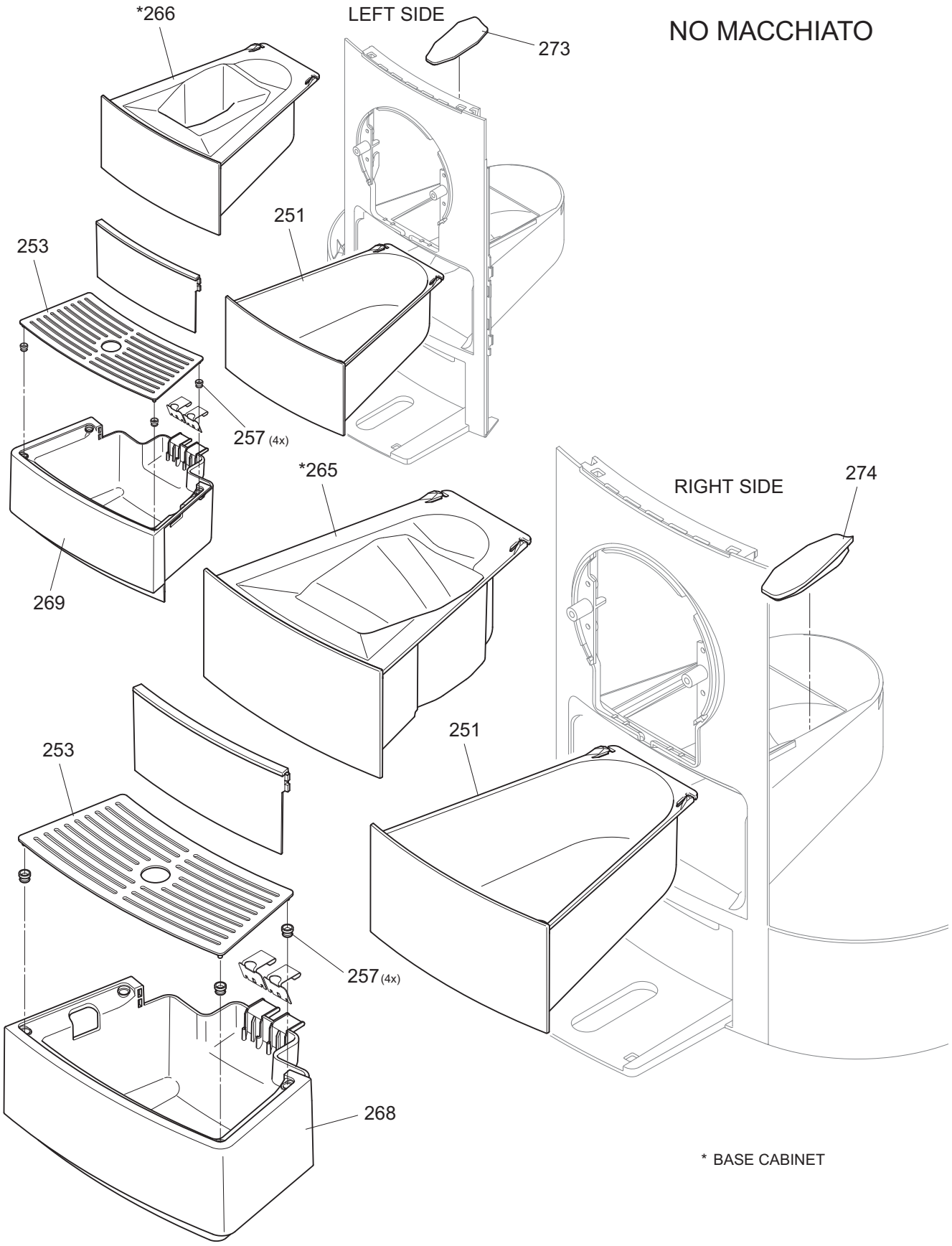
Exploded drawing cont. (CS223 / EF 904)



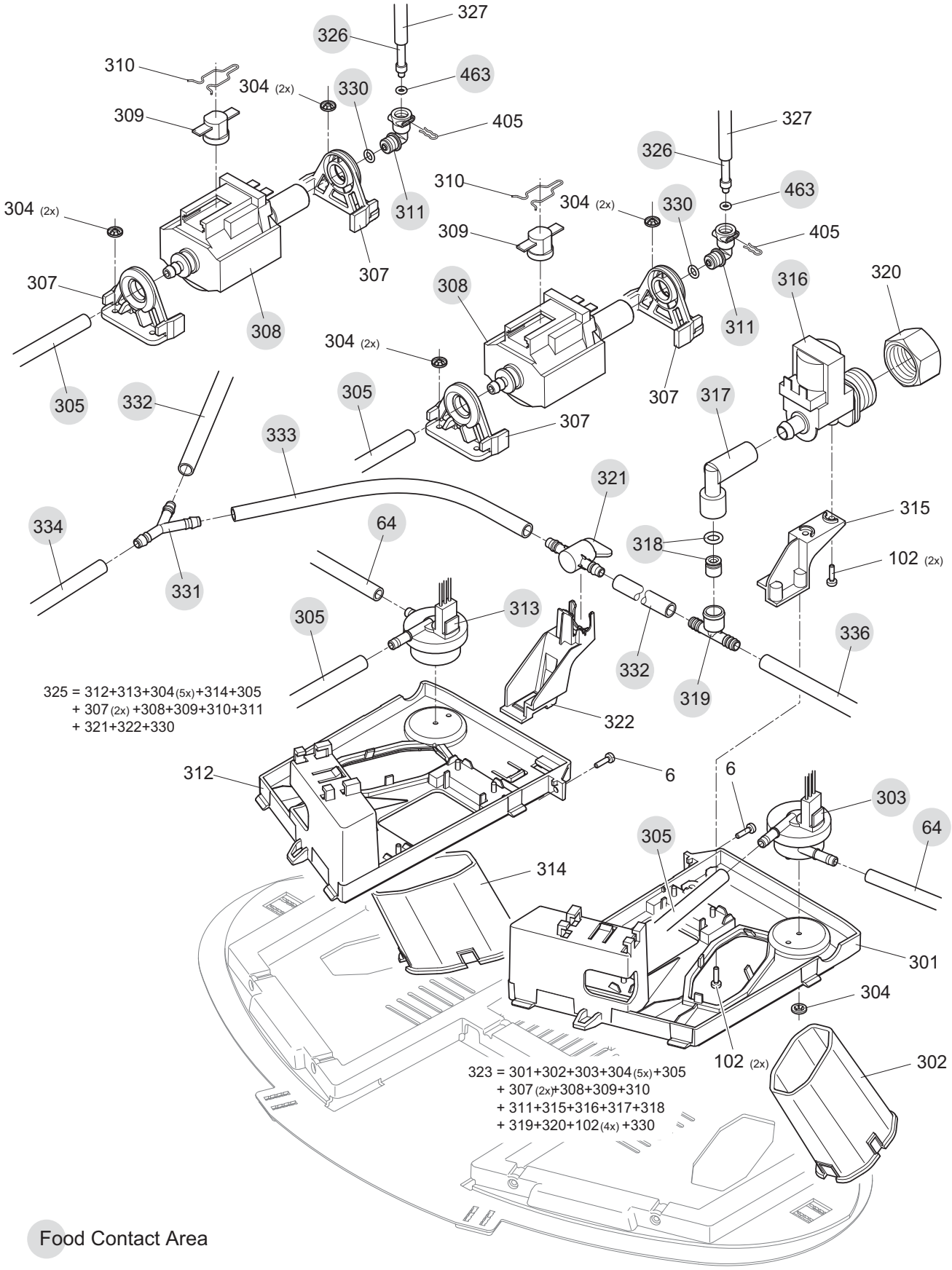
Exploded drawing cont. (CS223 / EF 904)



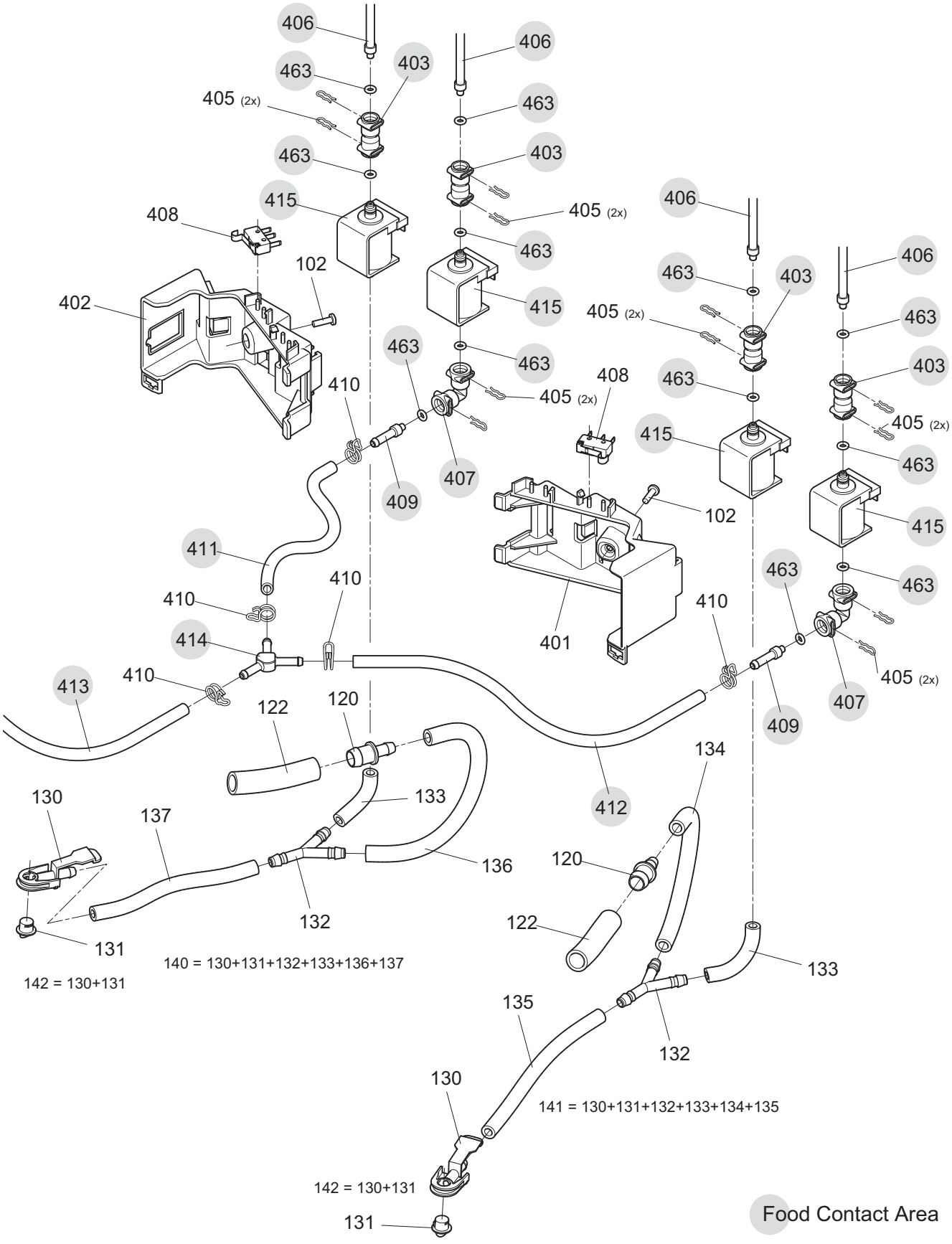
Exploded drawing cont. (CS223 / EF 904)



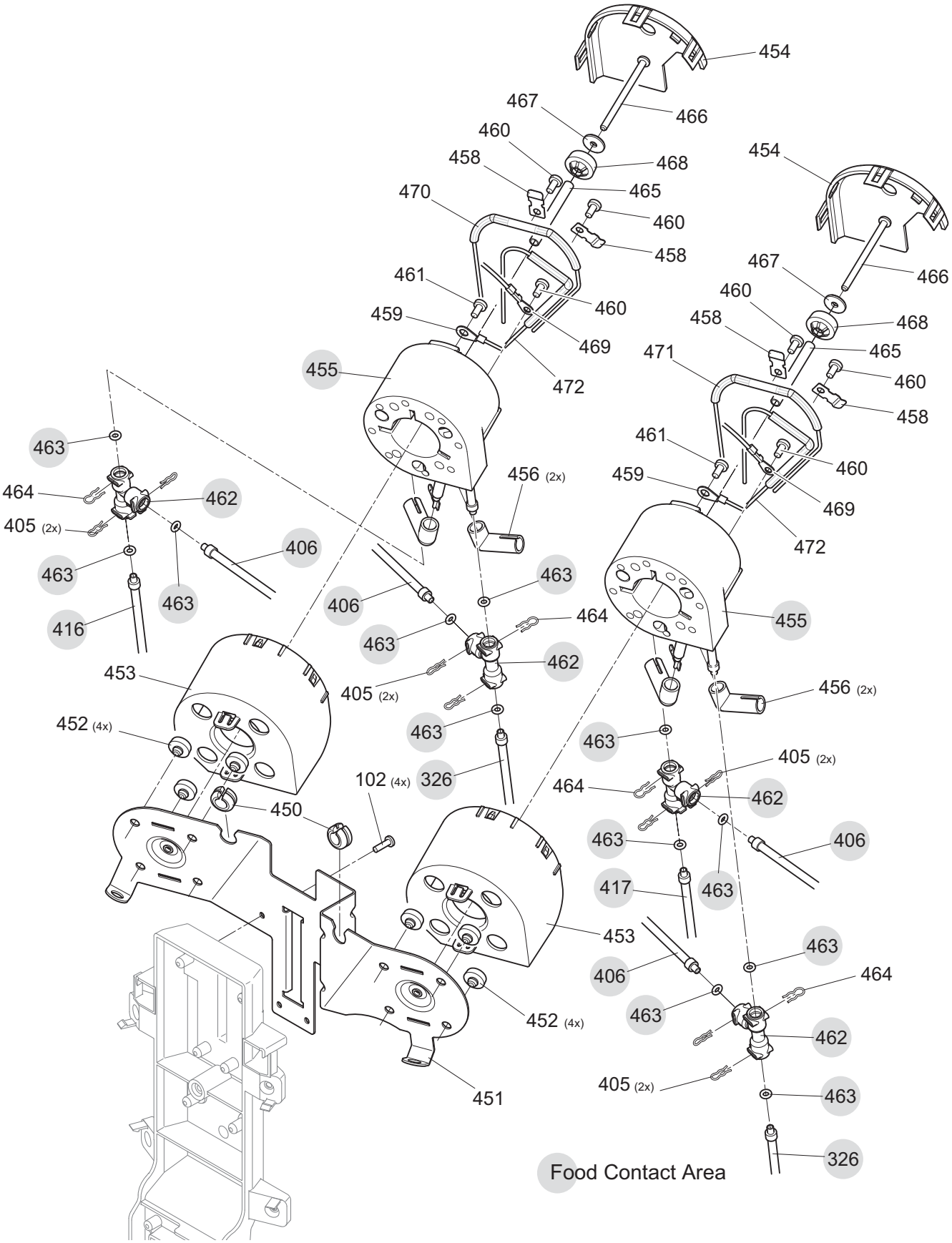
Exploded drawing cont. (CS223 / EF 904)



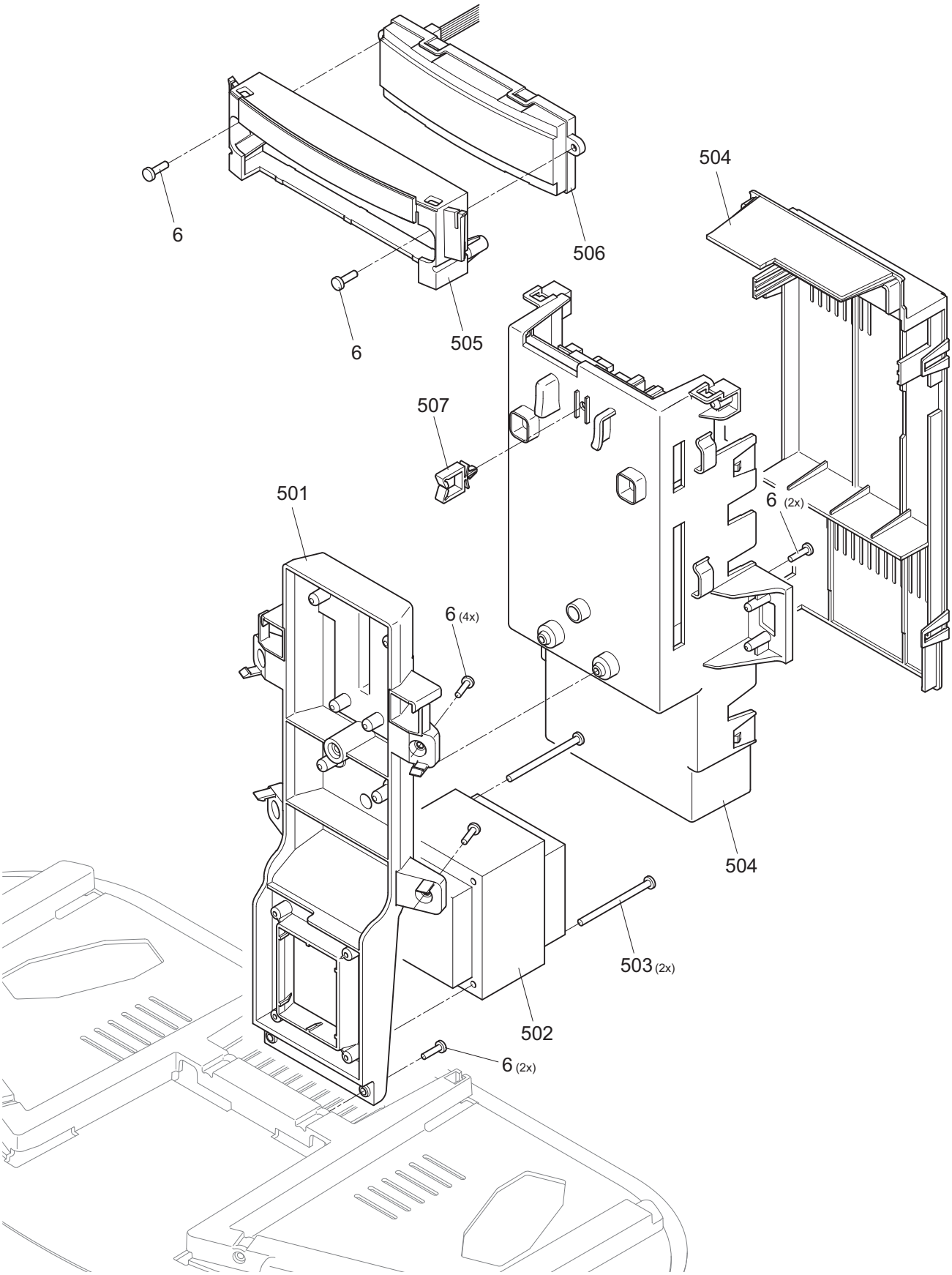
Exploded drawing cont. (CS223 / EF 904)



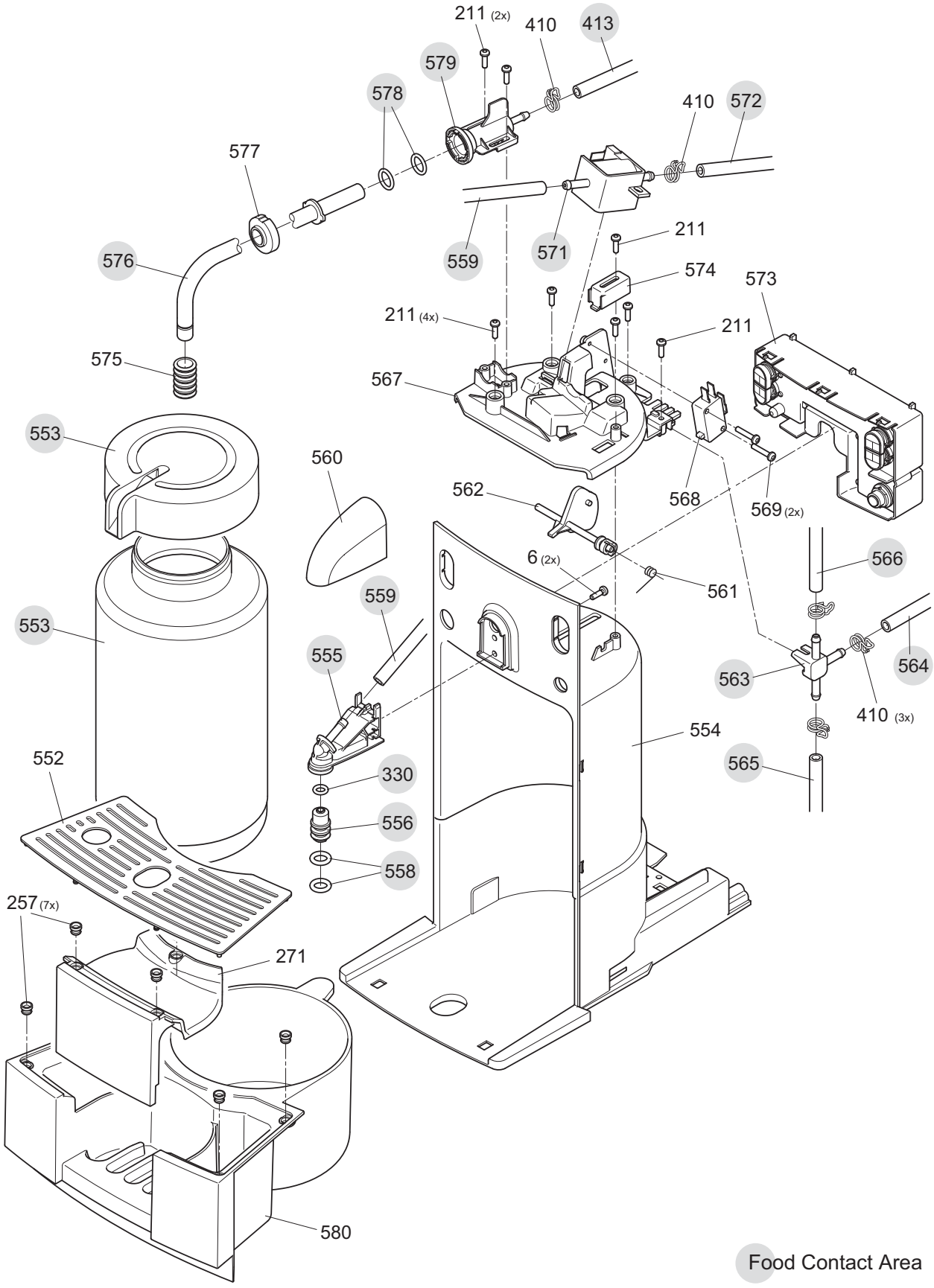
Exploded drawing cont. (CS223 / EF 904)



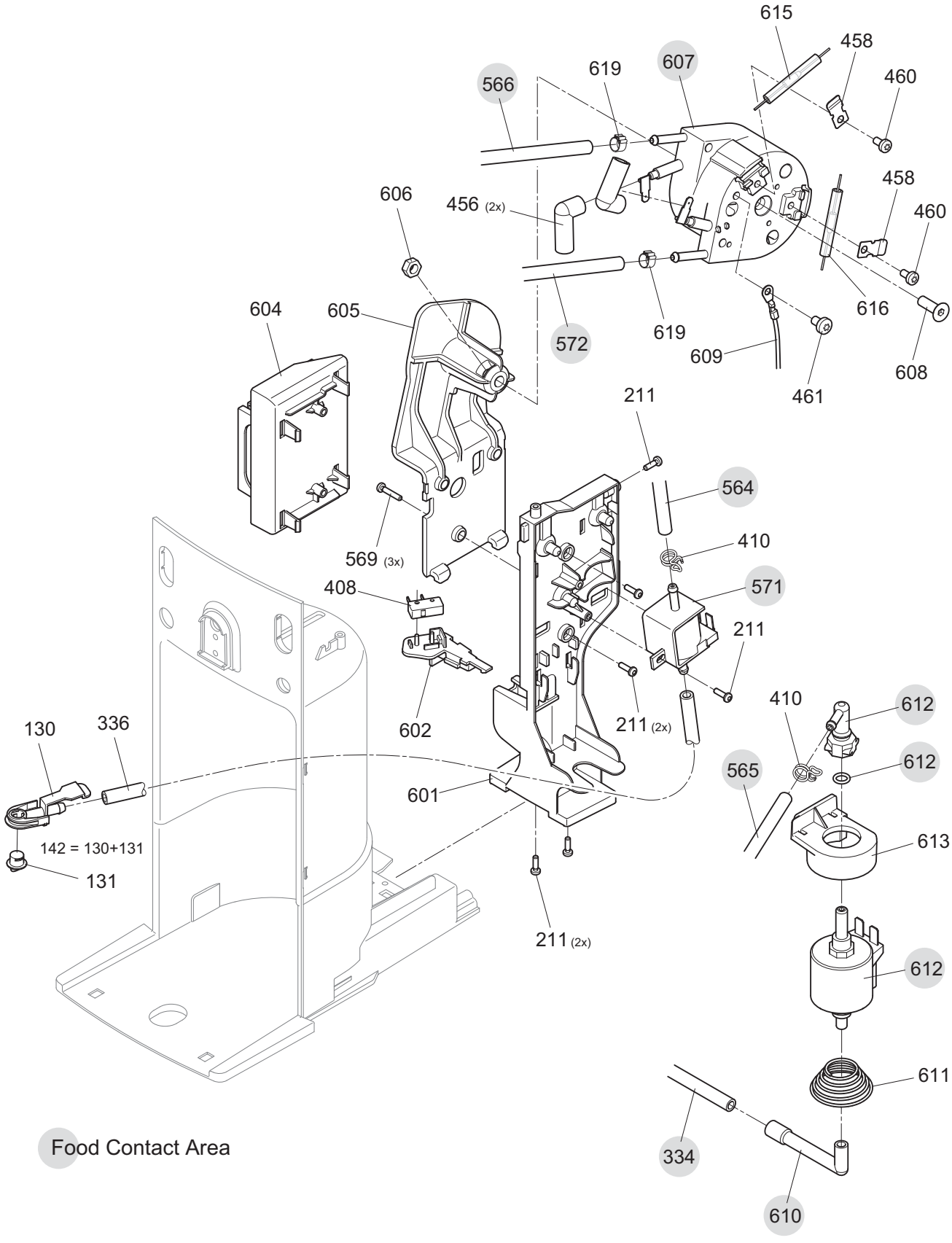
Exploded drawing cont. (CS223 / EF 904)



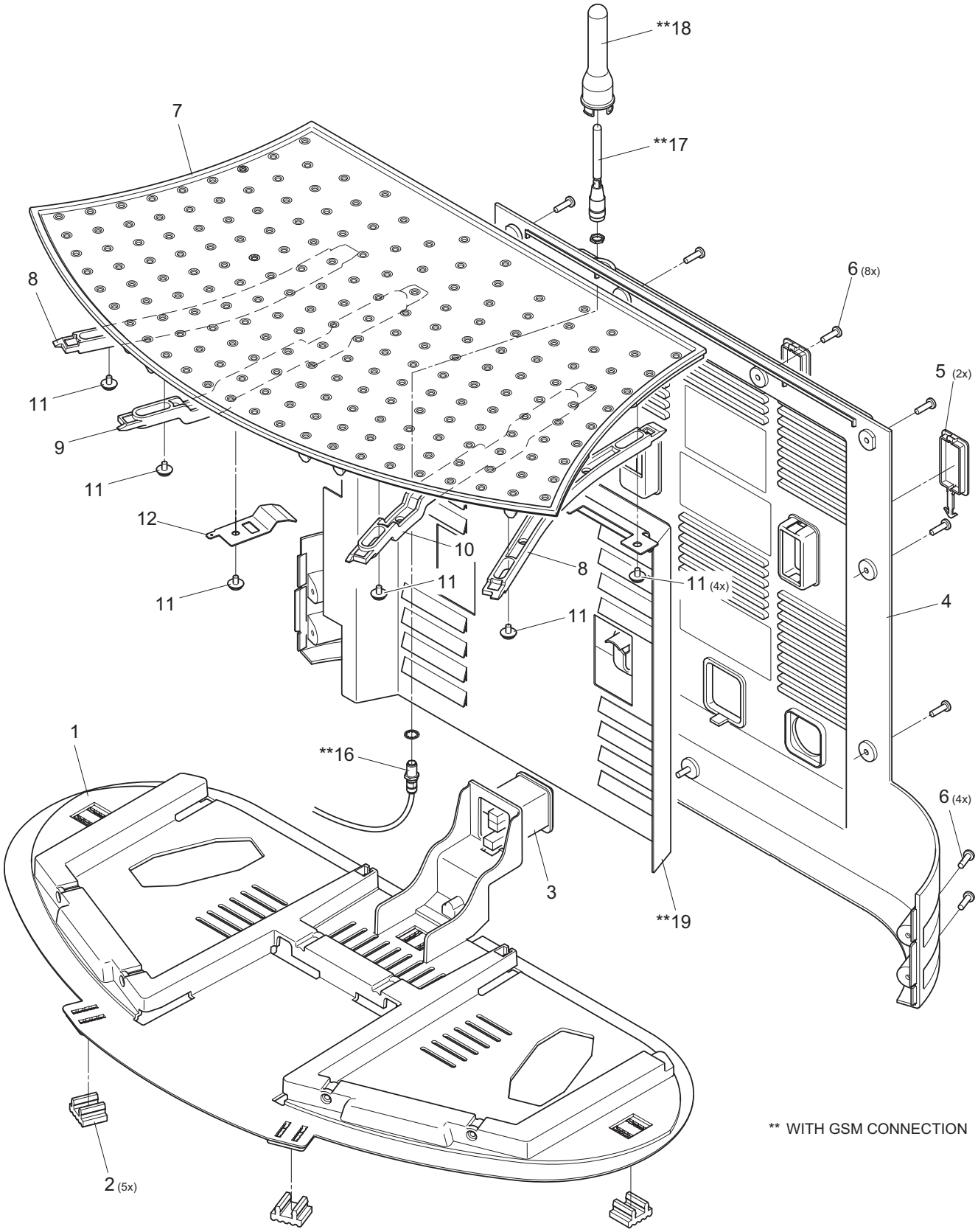
Exploded drawing cont. (CS223 / EF 904)



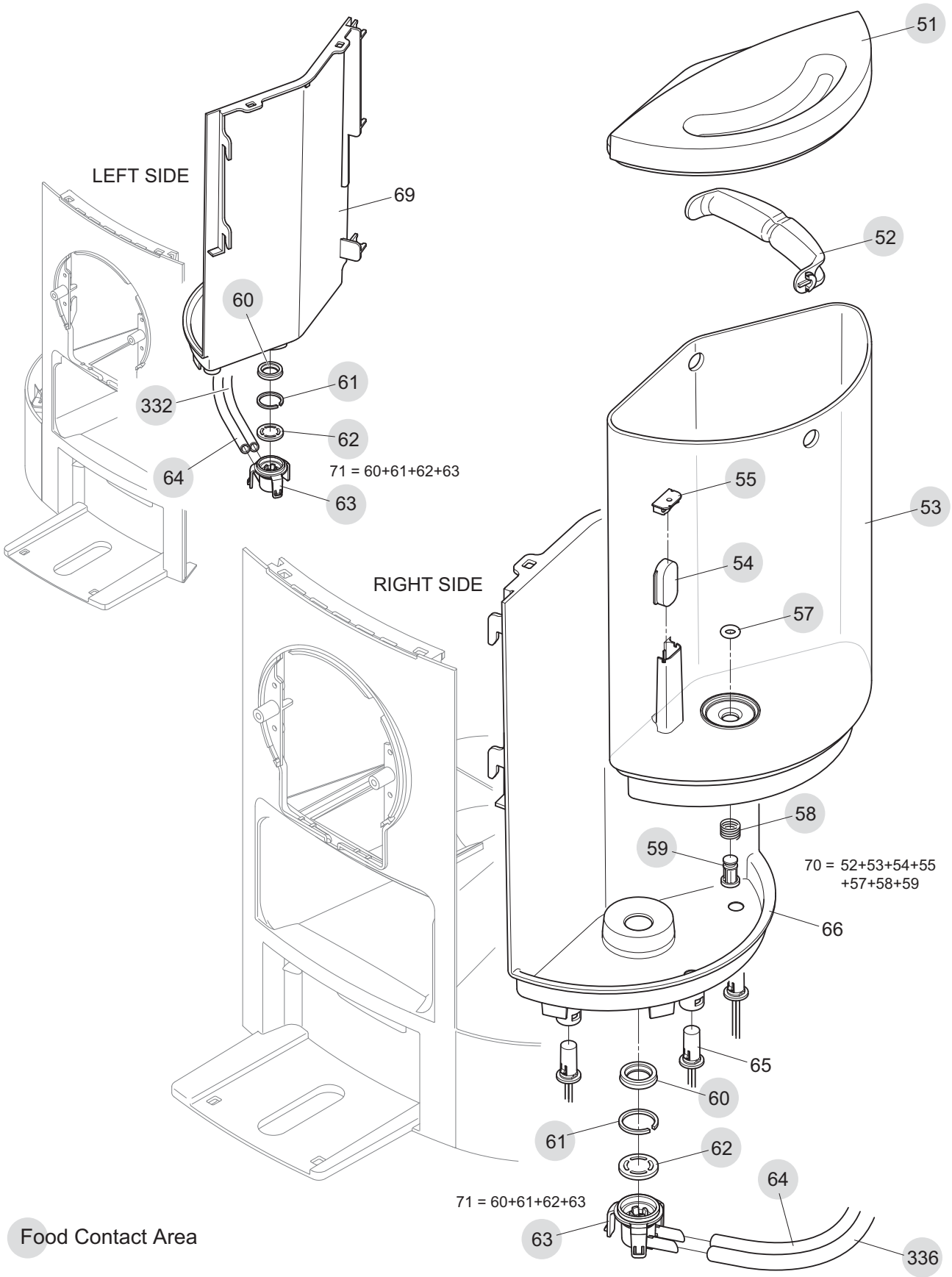
Exploded drawing cont. (CS223 / EF 904)



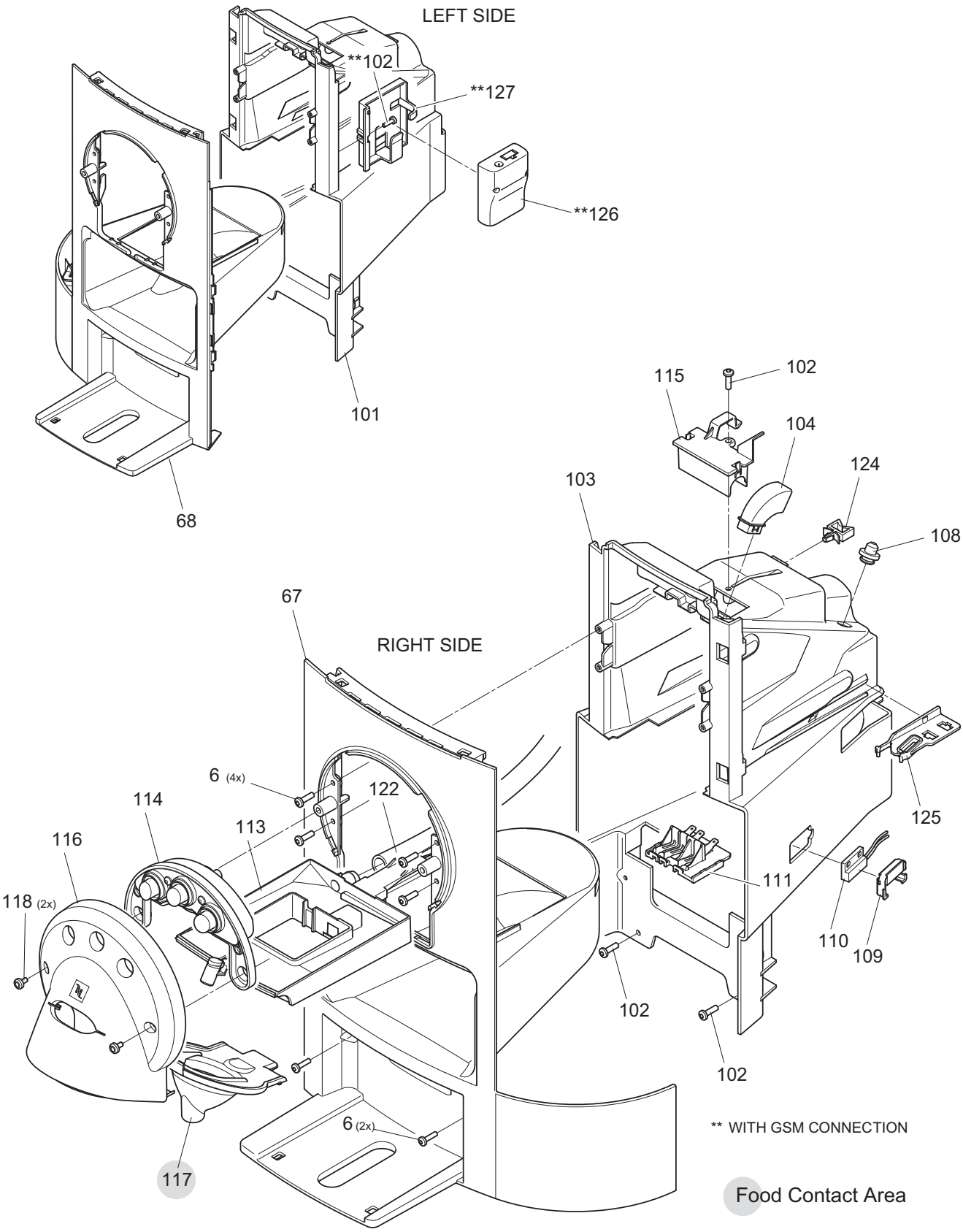
12.5 Exploded drawings of CS224 coffee machine (EF 727)



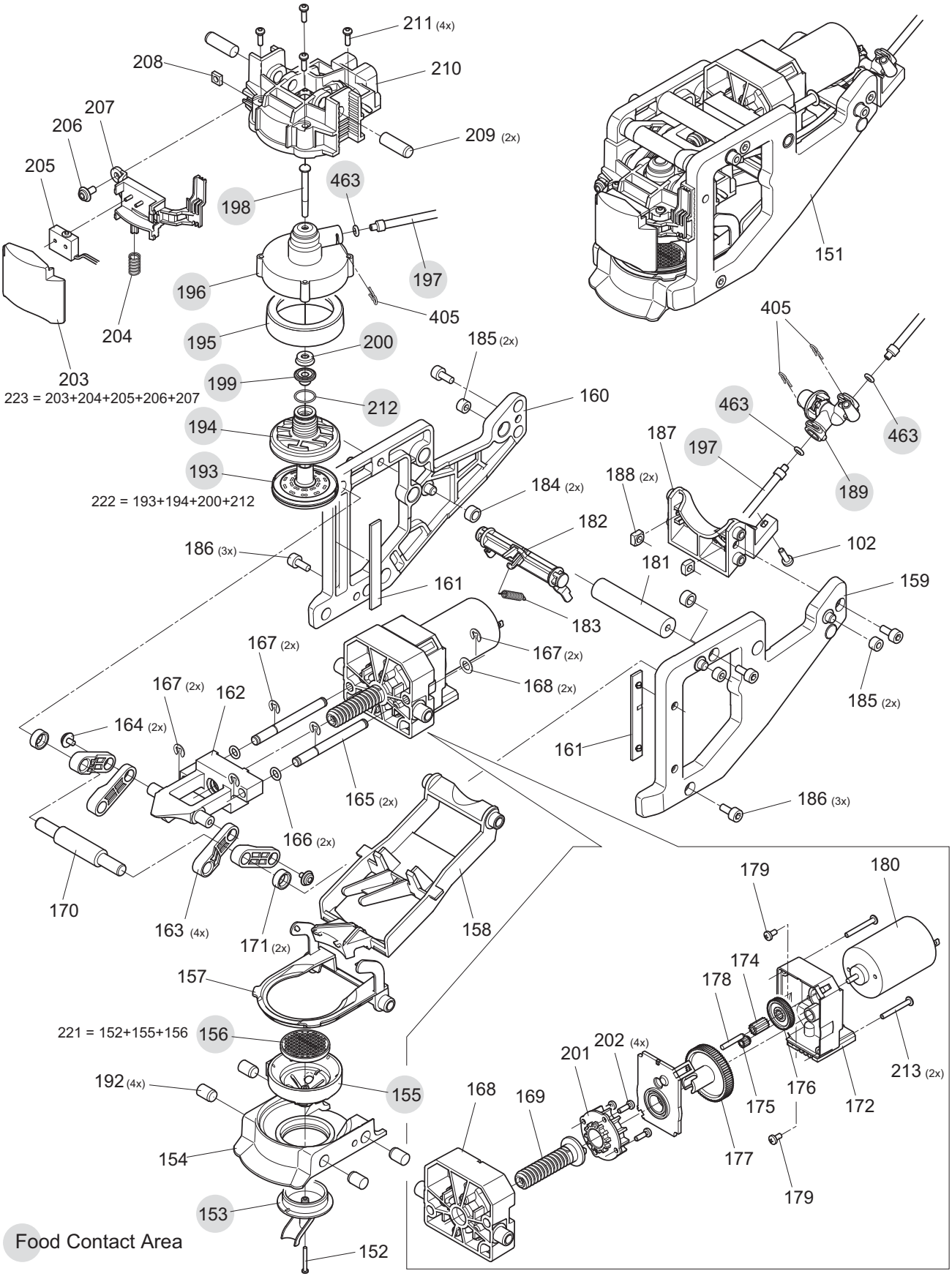
Exploded drawing cont. (CS224 / EF 727)



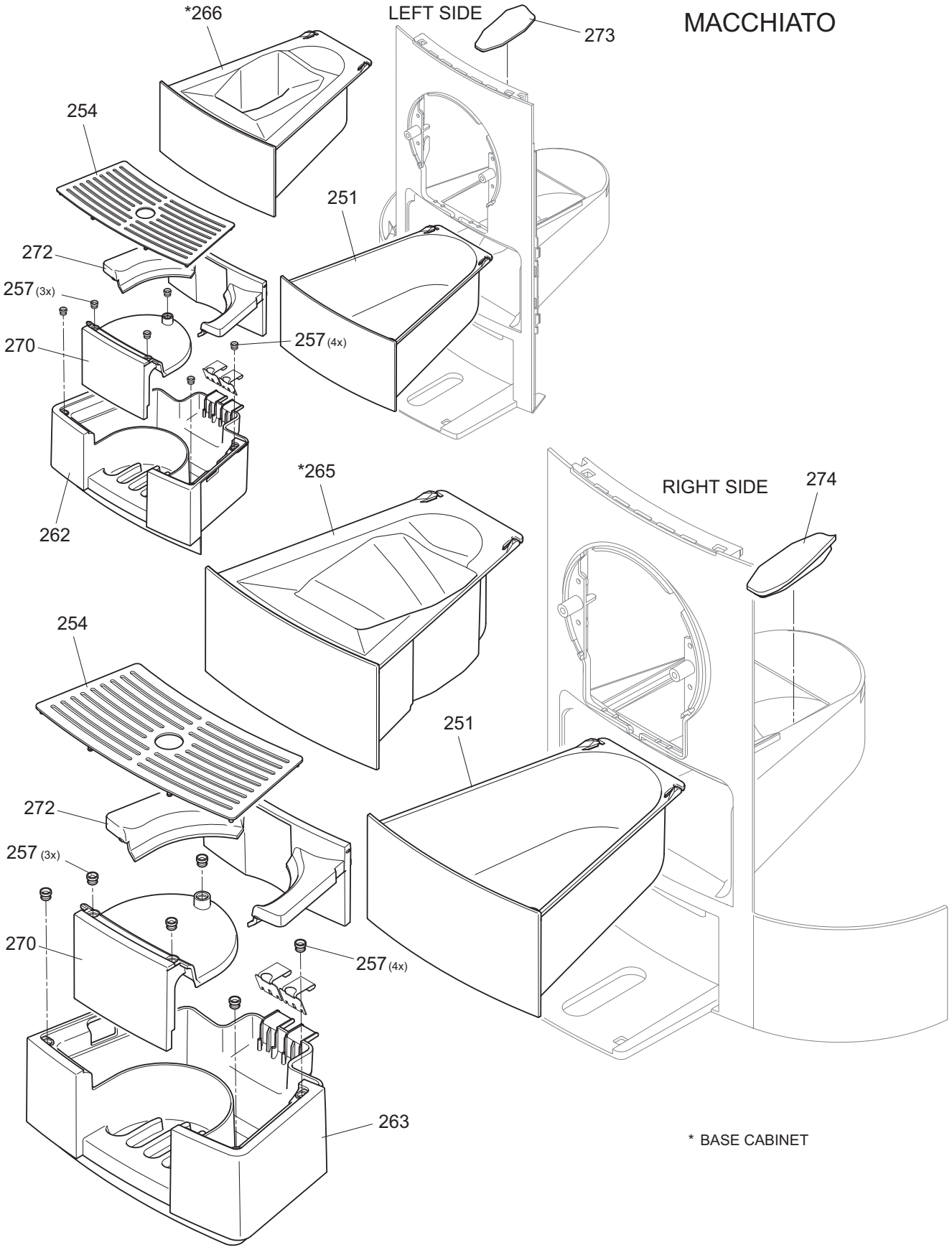
Exploded drawing cont. (CS224 / EF 727)



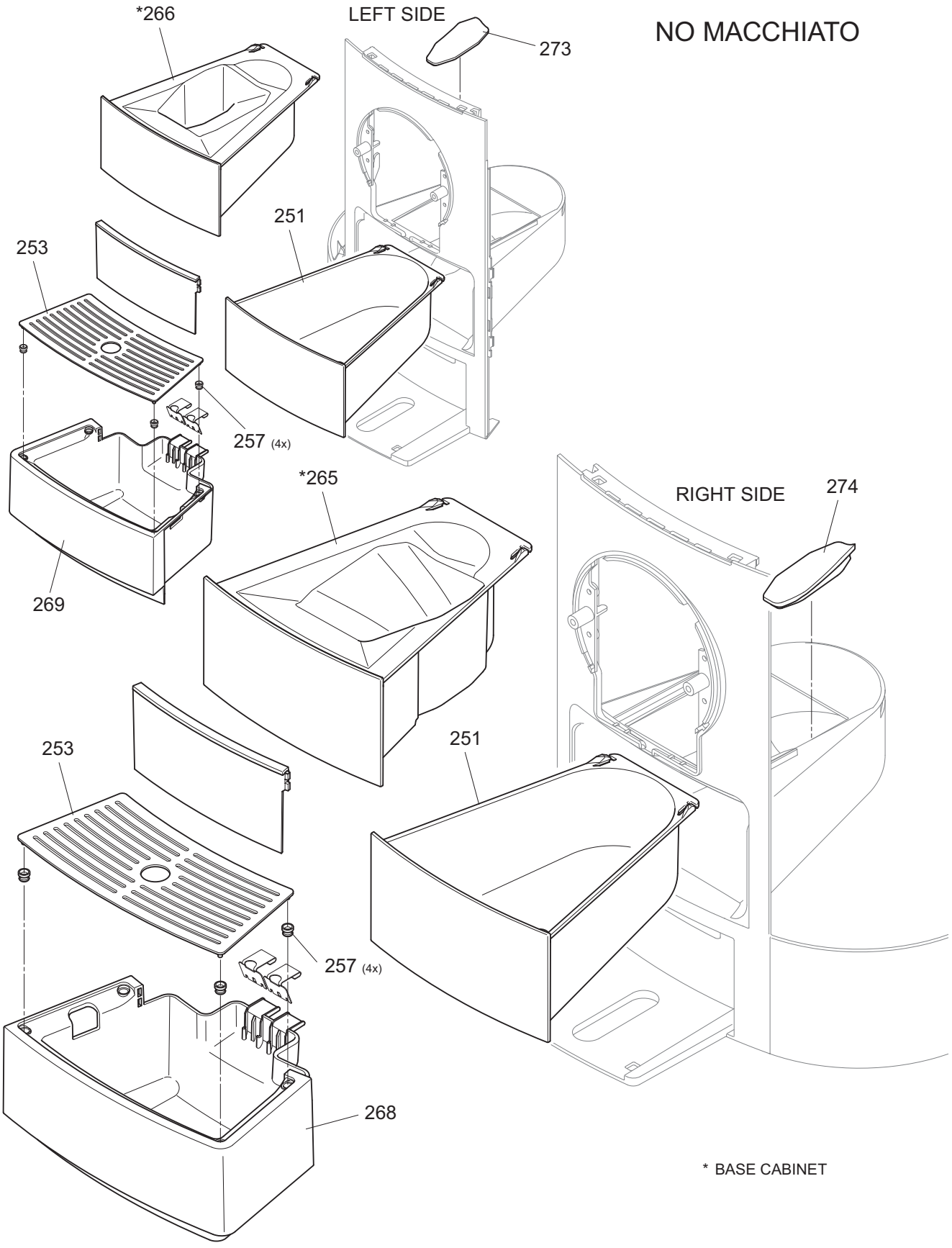
Exploded drawing cont. (CS224 / EF 727)



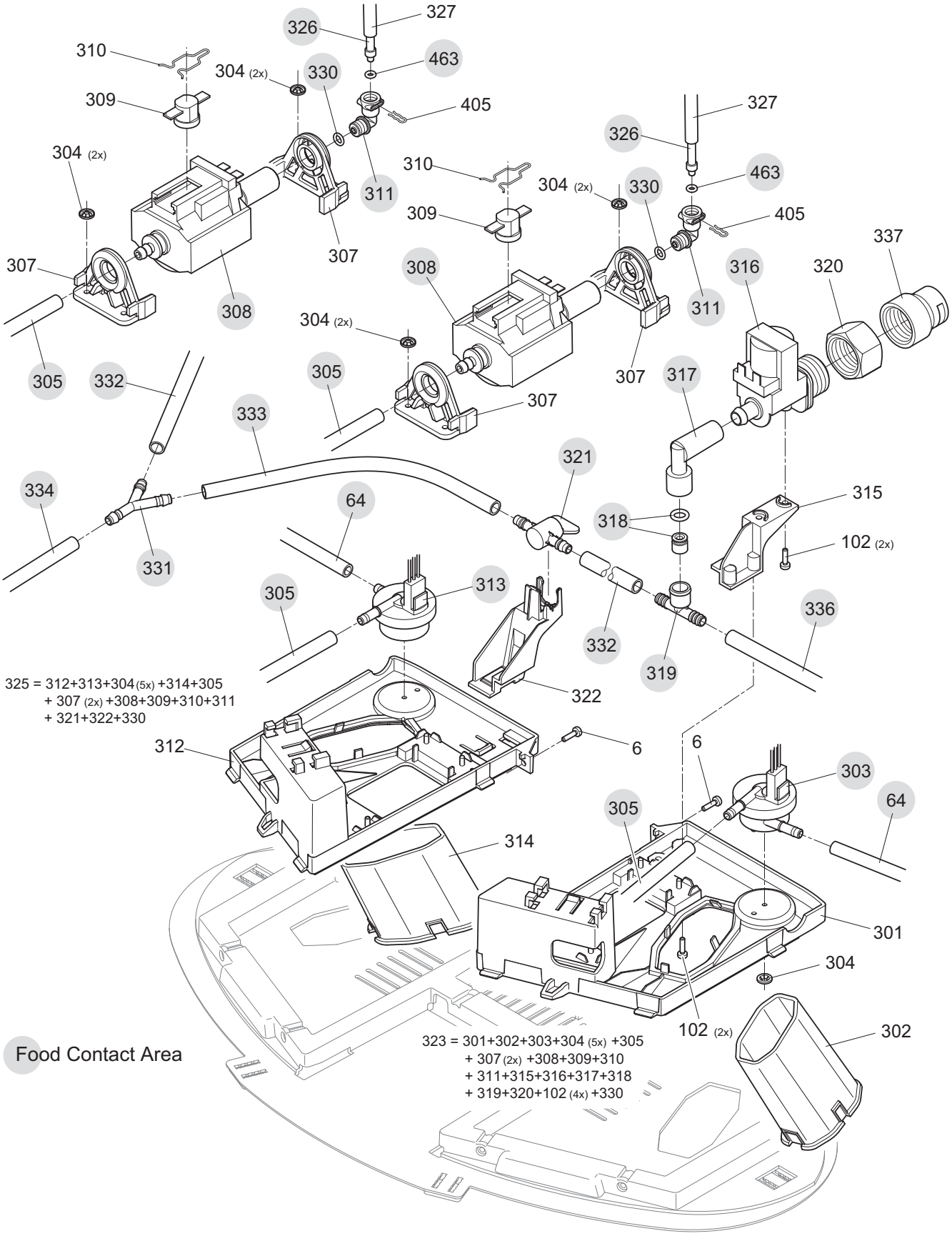
Exploded drawing cont. (CS224 / EF 727)



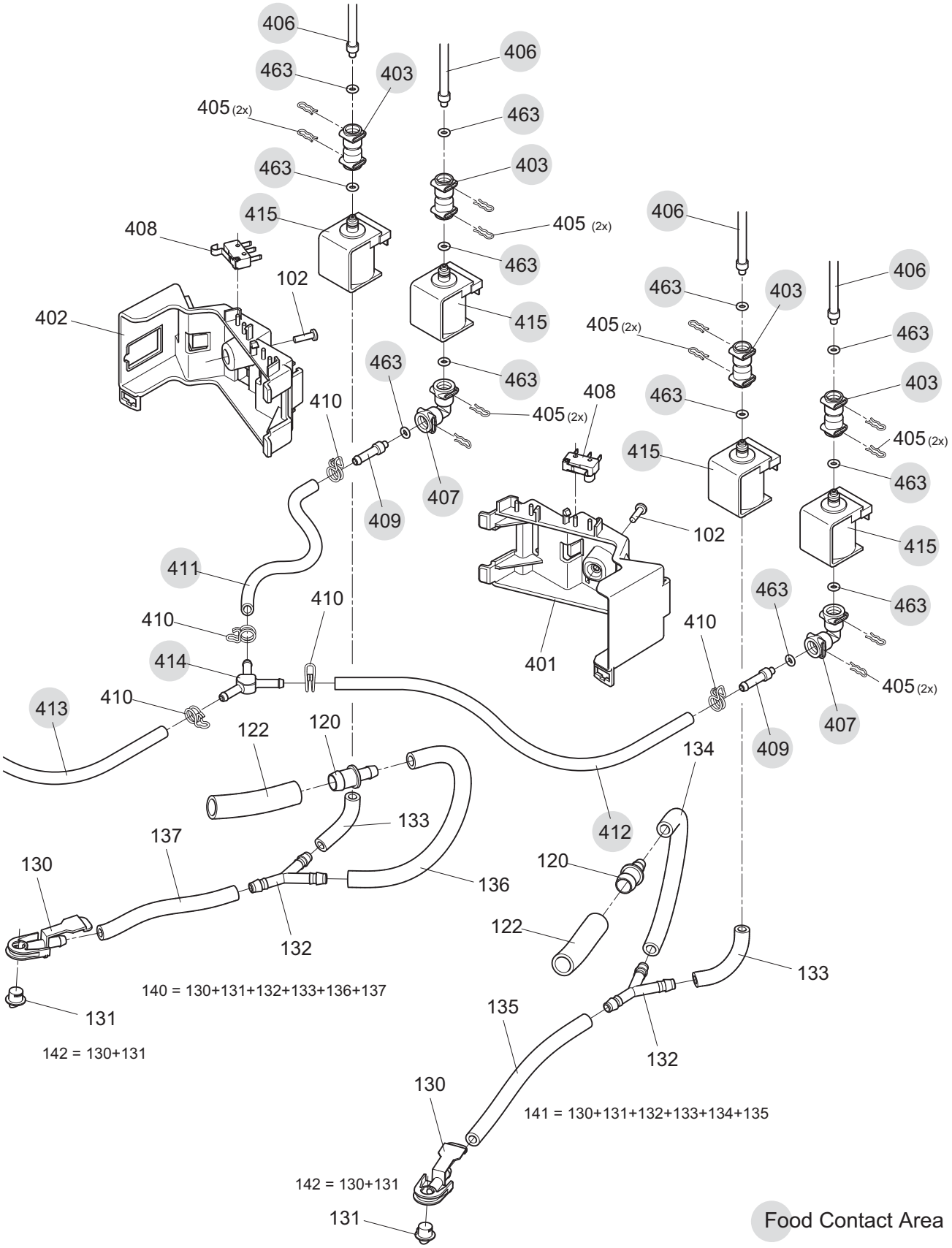
Exploded drawing cont. (CS224 / EF 727)



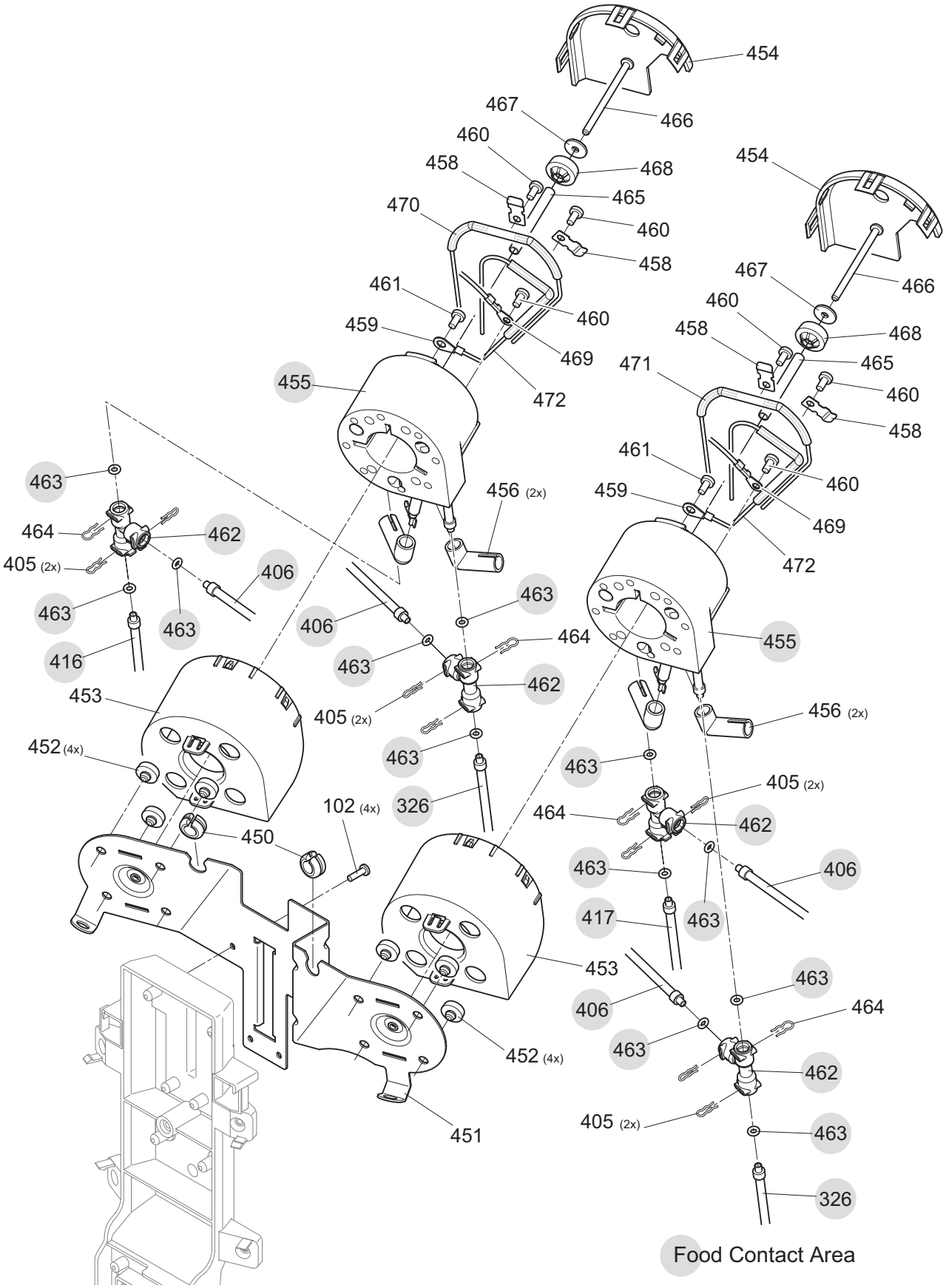
Exploded drawing cont. (CS224 / EF 727)



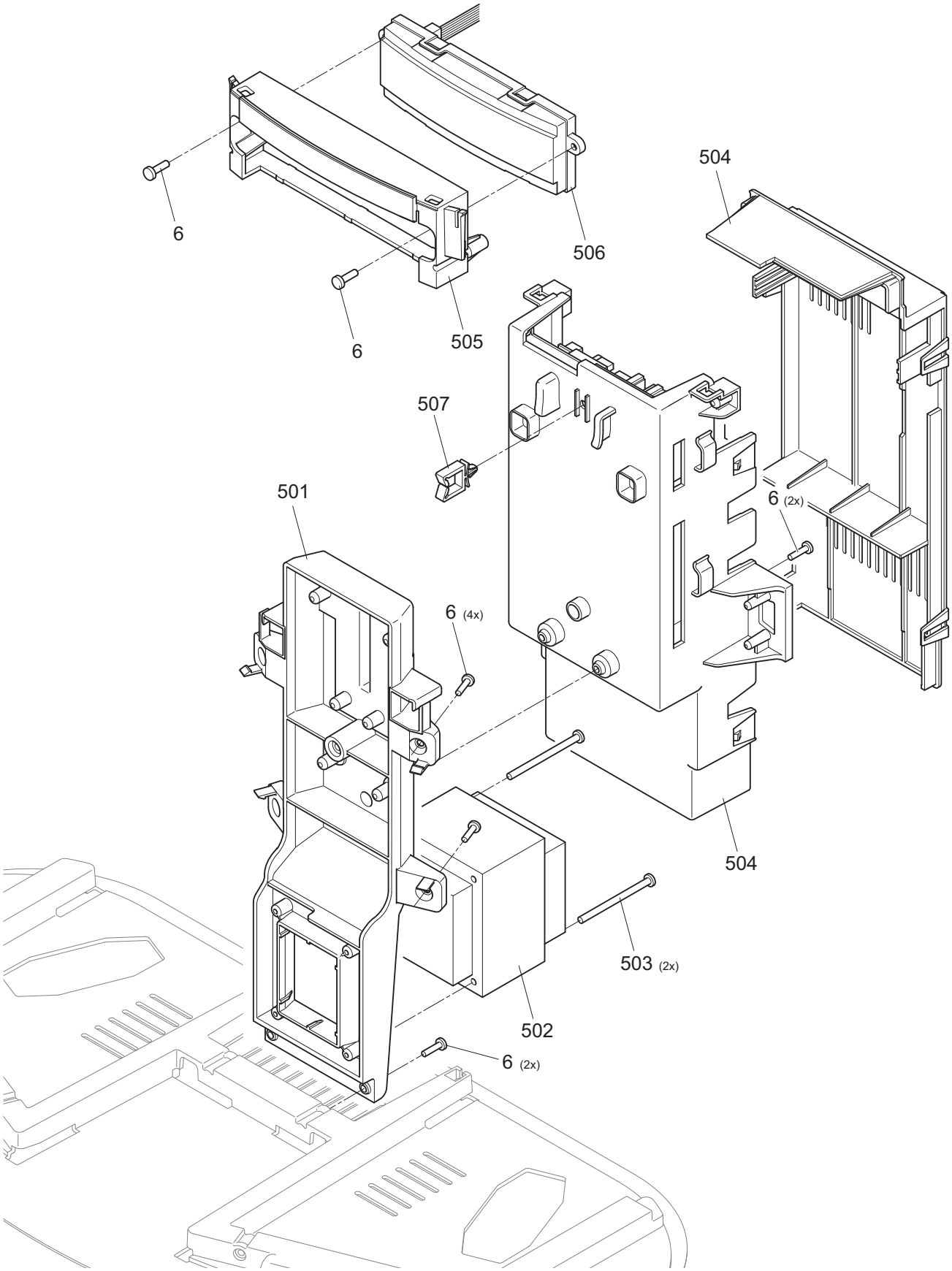
Exploded drawing cont. (CS224 / EF 727)



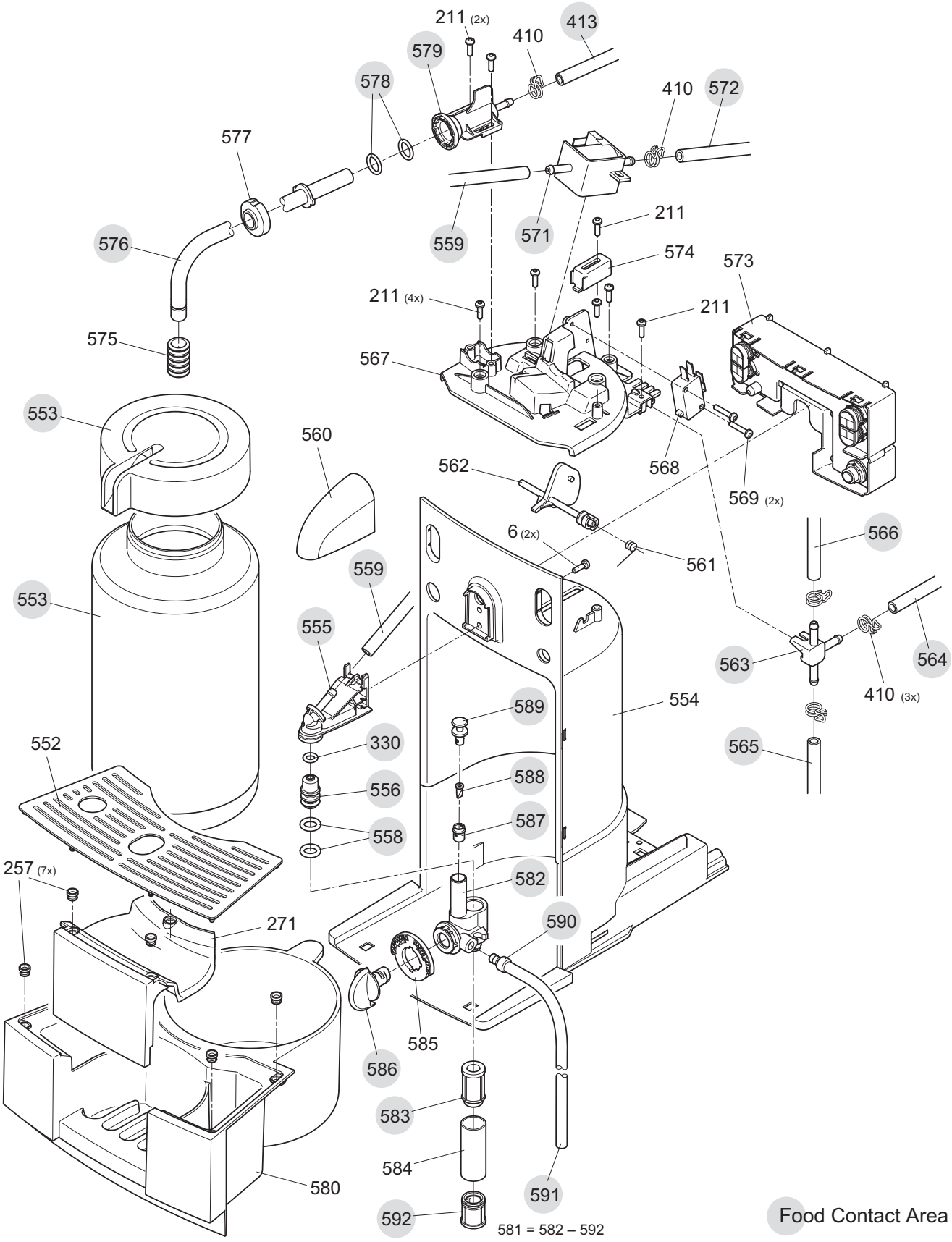
Exploded drawing cont. (CS224 / EF 727)



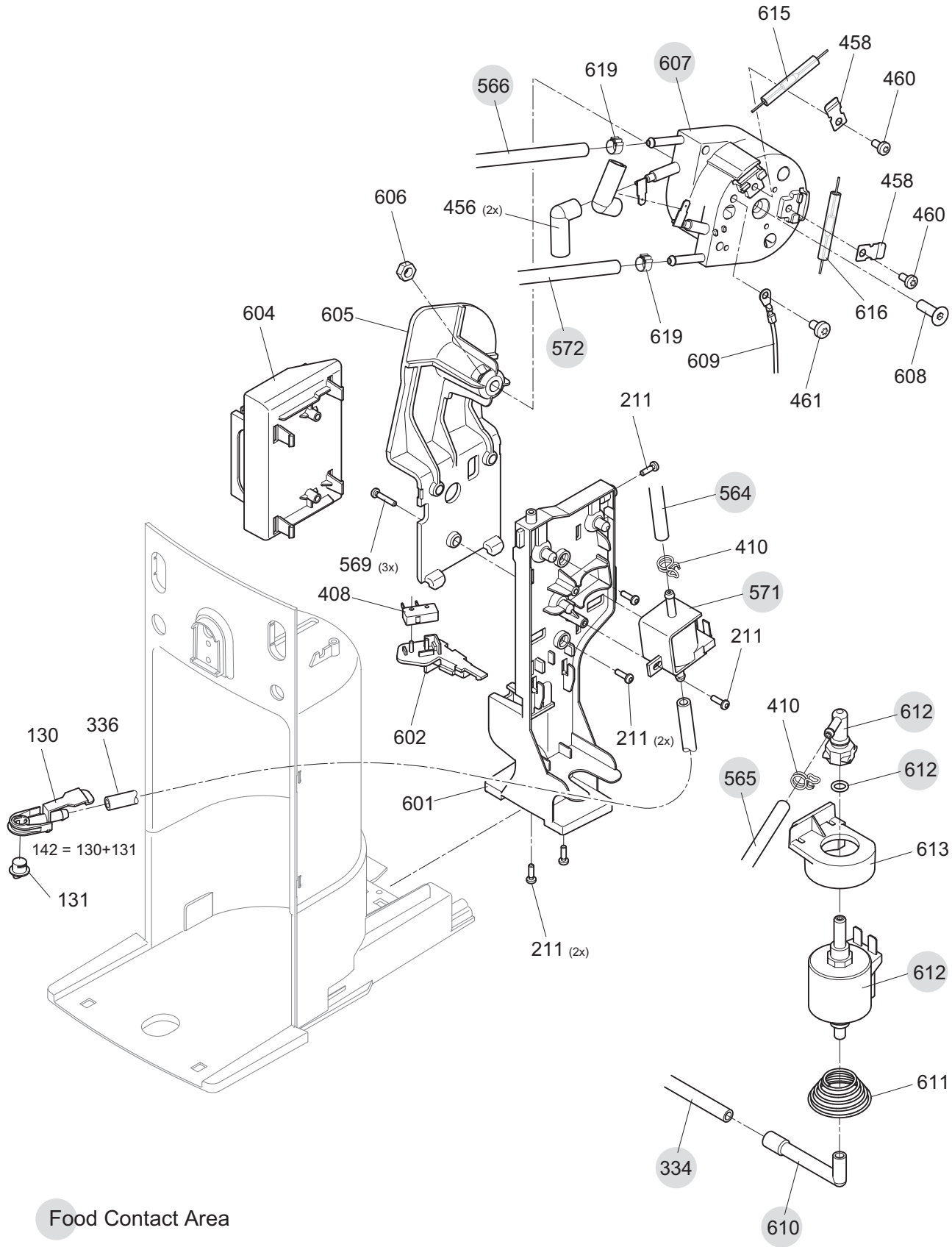
Exploded drawing cont. (CS224 / EF 727)



Exploded drawing cont. (CS224 / EF 727)



Exploded drawing cont. (CS224 / EF 727)



13 SPARE PARTS

i Spare parts lists and exploded drawings are subject to change. Not all available spare parts lists are included in this chapter.

i To obtain the latest version of an exploded drawing or spare parts list, please visit the web shop or contact your official spare parts supplier.

13.1 Spare parts list for CS203 (EF 903)

Pos. no.	Item name	Description
1	Base 702 black V2	
2	Rubber feet 770 transp.	60 Shore L=16mm
3	Plug mount. 70°C	black, type DC11.0001.401
4	Back wall 733 black CH	Water supply connect
5	Cover 702 service socket black	
6	Screw KST/PT 3.0x12 bl galvan	round head Torx-10 CA point
7	Cover 733 black	powder coated
8	Lock 702 cover black, outside	
9	Lock 702 cover black, int left	
10	Lock 702 cover black, int	
11	Screw GF/Tapt. M4,0x 8 bl	galvan round head Torx-20 CA point
12	Clip 758 PTC	warming plate
13	Heater PTC 83/112A/40/35/50-I	stranded wires red/blue
14	Insul. element 702 black cup shelf	
15	Multiple connect	2xFZ4.8x0,8Msbl 381745.60 2x45° screw d=3.0mm
16	GSM-Antenna cable CAB.212	FME-F straight jack/SMA-F BK straight 385mm/RG-174
17	GSM-Antenna TG.09.0113	Penta-band Cellular Hinged SMA Male Monopole
18	Cover 733 antenna	black
19	Metal sheet 733 shielding	zinced
51	Cover 702 water tank	black
60	Internal divided sleeve 004	red, 70 Shore, 22,00/14,00x5,00mm
61	Safety ring 770 Inox	
62	Sieve 770 stainless	
63	Valve lifter 420 neutral V4	Water tank, 2 outlets, conditioned
64	Hose silicone 5.0x2.0x120mm	transp., 70 Shore
65	LED 733 tank lighting	
66	Support 702 water tank right	black V2
67	Front faceplate 702 right	print: PRO, nut insert
68	Front faceplate 702 left	print: PRO, nut insert
69	Support 702 water tank left	black V2
70	Water tank 702 cpl EU V3	
71	Valve lifter 702 cpl mount.	
76	Cover 702 water tank cpl	lockable
101	Holder 702 extract unit V4	black, left
102	Screw KST/PT 3.5x12 bl galvan	round head Torx-15
103	Holder 702 extract unit V3	right black
104	Cable duct 702 black V2	
108	Trunnion bearing 773/775 black	driver
109	Support 702 Reed sensor V4	black, water tank
110	Reed sensor 702 cpl	packed

Pos. no.	Item name	Description
111	Spare contact plate 702 cpl	
113	IR Sensor module 733	
114	Control panel 733 cpl	coffee
115	Holder 702 extract unit V3	black
116	Faceplate 702 outlet V2	chrom. pltd
117	Cover 702 outlet V4	black
118	Screw M3x6 bl galvan flat	Head Torx-20
120	Fluid reducer 702 neutral	di 8,5/4,8mm
122	Hose silicone 10.0x2.0x65mm	transp, 70 Shore
124	Cable holder WWS-A	neutral, snap, 12.7x19.6mm
125	Holder 702 plug V2	white
126	GSM-Module SON8SIM	GL6100SM4/SKU:1102160/R7,45/ NSLK02,10
127	Holder 733 radio module	black
140	Set remai. water 702 left cpl	
141	Set remai. water 702 right	cpl
142	Outlet 702 remai. water cpl	mount.
151	Extract unit 733 cpl	
152	Screw KST/PT 2.2x18 Inox	round-head Torx-6 blunt
153	Outlet 702 extract unit V2	black
167	Lock washer D= 4mm	black (DIN 6799)
168	Lock washer 6.2x11.0x0.5mm	blue-galvan
173	Cover 640 transmission casing	neutral, ceramic valve V2
177	Spur gear 702 straight Z75 V2	neutral
185	Hose silicone 4.0x2.0x5mm	neutral, 60 Shore
189	Outlet valve I shape cpl	press 4bar, lock press 1,5bar
195	Seal 758 extract head V2	black, 80 Shore, 2x0.5mm embossed
196	Extract head 702 extract unit	black V3
197	Hose FEP D4.0/2.03x180mm	2 clamp ring
198	Bolt 702 extract unit black	
199	Thrust ring 702 seal	black, extract unit
200	Internal divided sleeve 001	red brown, silicone/2-K, 70 Shore, DA=12.20 x Di=3,60x4,00mm
206	Screw M4x8 bl galvan round head	Torx-20
208	Nut M4 4-face	bl galvan (DIN 562)
211	Screw KST/PT 3.0x10 bl galvan	round head Torx-10 (WN 1452)
212	O-Ring 12.0x1.0mm EPDM	black, 70 Shore
213	Screw KST/PT 3.0x25 bl galvan	round head Torx-10 CA point
220	Driver 733 extract unit	
221	Spare pyramid disc 702 V2	
222	Spare support plate 733	
223	Spare safety lid 702	
224	Set spare spindle 702	extract unit
251	Grounds container 702 black V2	
254	Drip plate 702 Inox	left, right, protect foil
257	Damper 703 drip plate V2	black
262	Drip tray 702 left cpl	water supply
263	Drip tray 702 right cpl	water supply

Pos. no.	Item name	Description
265	Caps funnel 702 right V2	black
266	Caps funnel 702 left V2	black
267	Seal 702 caps channels left	black
268	Seal 702 caps channels right	black
273	Closing 702 left black	
274	Closing 702 right black	
301	Drawer 702 right V3	black
302	Capsule duct 702 right V2	black
303	Flow meter FHKSC 12 R 270°	974-9501/A270, Pull-up, pin 3.0mm, double insulated
304	Lock washer D= 3mm	type Starlock P-6490
305	Hose silicone 5.0x2.0x210mm	transp, 70 Shore
307	Pump holder 680 black 64 sh	D=13.5mm
308	Pump CP.04.116.0/ST/S/P V2	230V/50Hz, light blue
309	Thermostat 115C/13,5A 1NT01L	connectors 2xFZ6.3x0.8 straight
310	Clip thermostat 1NT/01	
311	Fluid connect elbow 90°	neutral,1xF,1xG1/8"outside, cross-piece
312	Drawer 702 left V3	black
313	Flow meter FHKSC 12 R 90°	974-9501/A90, Pull-up, pin 3.0mm, double insulated
314	Capsule duct 702 left V2	black
315	Holder 702 valve 2-way V2	black
316	Magnetic valve 1.007.126-E3-00-E	220V-240V 2-way, closed
317	Elbow 702 silicone transp	water supply connect
318	Cartridge RV-DW 10 DN6	back flow valve
319	Fluid distributor 702 neutral	T shape
320	Cap nut G3/4" GPN 800	black
321	Faucet straight cpl	neutral, connect 5mm
322	Holder 702 faucet V2	black, line
323	Spare drawer 702 right V2	cpl mounted
325	Spare-drawer 702 left V2	cpl mounted
326	Hose FEP D4.0/2.03x200mm	2 clamp ring
327	Hose EPDM D=10x15mm	grey, length 170mm (rubber foam)
330	O-Ring 5.28x1.78mm EPDM	black, 70 Shore
332	Hose silicone 5.0x2.00x140mm	transp, 70 Shore
333	Hose silicone 5.0x2.00x240mm	transp, 70 Shore
336	Hose silicone 5.0x2.00x230mm	transp, 70 Shore
401	Valve holder 702 right V2	black
402	Valve holder 702 left black V2	
403	Fluid connect I shape short V2	anthrac. 2xF, crosspiece
405	Clip D=4mm L=14mm Inox	
406	Hose FEP D4.0/2.03x120mm	2 clamp ring
407	Fluid connect elbow 90° short	anthrac., 2xF
408	Micro switch XCG55V-81-LZ187	lever
409	Fluid connect I shape	black, 1xmale, 1xconnect hose, stop
410	Spring clip d=7.7x1,3mm V2	silicone hose
411	Hose silicone/reinforced di 4.2mm	da 8.2/60mm, PES reinforced

Pos. no.	Item name	Description
412	Hose silicone/reinforced di 4.2mm	da 8.2/195mm, PES reinforced
414	Nipple 705 Y part black	
415	Magnetic valve DEV122-2055	240V, 2 side connect
416	Hose FEP D4.0/2.03x150mm	2 clamp ring
417	Hose FEP D4.0/2.03x100mm	2 clamp ring
451	Holder 702 thermoblock 2003 V2	zinc plat
452	Insulation 737 holder	neutral, 40 Shore
453	Cover 702 thermoblock neutral	
454	Cover 702 thermoblock neutral	
455	Thermoblock 2003/L 230V/1080W V2	welded nipple, FZ4.8x0.8
456	Insul.sleeve elbow	black, connect FH6.3
458	Clip TCO TB2001	0,5mm
459	Sensor 770 thermoblock cpl V2	L=170mm
460	Screw GF/Tapt. M4.0x8 bl	galvan round head/spring ring, Torx-20
461	Screw GF/Tapt. M5.0x8 Geomet	round head/spring ring, Torx-25 greased
462	Fluid connect T shape short V3	anthrac. 3xF, crosspiece
463	O-Ring 3.40x1.90 silicone/2-K	red, 70 Shore 2-comp silicone V2
464	Clip D=5mm browned	inox
465	Spacer sleeve 737 blue zinc	plat, Di=4.5/Da=6.0/L=52mm
466	Screw GF/Tapt. M4.0x60 bl	galvan round head Torx-20 m/shaft greased
467	Lock washer 4.3x14.0x1.6mm	blue-galvan. M4
468	Insulation ring 737 silicone	neutral, 40 Shore
469	Mult. strd wire 733 EU yellow	green 130/300/330/350
470	TCO strd wire 733 EU 167C	(1xE5) white 100/370
471	TCO strd wire 733 EU 167C	(1xE5) blue 100/470
472	TCO strd wire 733 EU 167C	(1xE5) grey 160/310
501	Holder 702 transformer V3	black
502	Transformer 733 cpl	
503	Screw KST/PT 3.5x50 bl galvan	round head Torx-15 (WN 1452)
504	Control box 733 cpl	
505	Cover 705 front panel	print: Gemini CS200 PRO, grey
506	Display 733 cpl	
507	Cable holder WS-A	neutral, snap, 9.7x18.0mm
554	Front faceplate 705 water V4	black
555	Outlet 705 water black	
556	Nozzle body 705 water	
558	Spare drip tray 705 cpl	
559	Hose silicone/reinforced di 4.2mm	da 8.2/340mm, PES reinforced
560	Cover 705 outlet chrom. pltd	
573	Control panel 733 cpl	hot water
601	Holder 705 black V2	
900	Stranded wire EU grey 140mm 0.75	2xFHL6.3-Ni/1xIT6.3b
905	Connector 733, 3x	drip tray, coffee Z02
910	Connector 733, 4x	Neslink module Y13

Pos. no.	Item name	Description
915	Connector 733, 3x	drip tray, center X13
920	Connector 733, 4x	caps contain Y16
925	Strd wire EU black 170mm 0.75	1xFHL4.8-Ni/1xIT4.8b/1xFHL6.3-Ni/1xIT6.3b
930	Strd wire EU blue 170mm 0.75	1xFHL4.8-Ni/1xFHL6.3-Ni/1xIT6.3b
935	Connector 733, 10x	sensor, left X2
940	Connector 733, 10x	sensor, right X1
945	Connector 733, 3x	drip tray, hot water Z03
950	Mult. strd wire 733 EU red	black 500/500
970	Connector 733, 4x	valves, pump Y1/Y2
975	Mult. strd wire 733 EU blue	grey 350/270
976	Connector 733, 9x	coffee buttons, left X10
977	Connector 733, 9x	coffee buttons, right X8
978	Mounting tool 702 alu	
978	Spare cover 702 water tank	packed
979	By pack set 733 *Nespresso*	CS203,Quick Start, clip plastic bag
981	Picture carton 733 *Nespresso*	CS203 695x480x465mm,clamped,PRO
982	Polystyr.705 holder accessory	
982	Polystyr.702 3-part.V2	
982	Cardboard handle 702	reinforced
990	Instr. manual 733 *Nespresso* CS203	33-languages
990	Instr.manual 733 *Nespresso* CS203	33-languages Quick Start
990	Instr. manual 733 *Nespresso*	CS203/CS223, 33-languages safety-instruction, PRO EU
990	Instr. manual 733 *Nespresso*	CS203/CS223, 33-languages water connect
990	Supplement 733 *Nespresso*	declaration of energy using products directive, EuP,A5
990	Supplement 733 *Nespresso*	declaration of energy using products directive, MRL,A5
990	Name plate 903 *Nespresso* CS203	230V/50Hz/2300W black/chrome, FW, Neslink EU V2
990	Sticker 903 *Nespresso* CS203	FW, Neslink EU V2
990	Sticker 727 *Nespresso* CS224	Warning sticker
990	Sticker 733 *Nespresso* CS203	IEC,FW

13.2 Spare parts list for CS223 (EF 904)

Pos. no.	Item name	Description
1	Base 702 black V2	
2	Rubber feet 770 transp	60 Shore L=16mm
3	Plug mount. 70°C	black, type DC11.0001.401
4	Back wall 733 black CH	Water supply connect
5	Cover 702 service socket black	
6	Screw KST/PT 3.0x12 bl galvan	round head Torx-10 CA point
7	Cover 733 black	powder coated
8	Lock 702 cover black, outside	
9	Lock 702 cover black, int left	
10	Lock 702 cover black, int	
11	Screw GF/Tapt. M4.0x8 bl	galvan round head Torx-20 CA point
12	Clip 758 PTC V2	warming plate
16	GSM-Antenna cable CAB.212	FME-F straight jack/SMA-F BK straight 385mm/RG-174
17	GSM-Antenna TG.09.0113	Penta-band Cellular Hinged SMA Male Monopole
18	Cover 733 antenna	black
19	Metal sheet 733 shielding	zinced
51	Cover 702 water tank	black
60	Internal divided sleeve 004	red, 70 Shore, 22.0/14.0x5.0mm
61	Safety ring 770 Inox	
62	Sieve 770 stainless	
63	Valve lifter 420 neutral V4	water tank, 2 outlets, conditioned
64	Hose silicone 5.0x2.0x120mm	transp, 70 Shore
65	LED 733 tank lighting	
66	Support 702 water tank right	black V2
67	Front faceplate 702 right	print: PRO, nut insert
68	Front faceplate 702 left	print: PRO, nut insert
69	Support 702 water tank left	black V2
70	Water tank 702 cpl EU V3	
71	Valve lifter 702 cpl mount.	
76	Cover 702 water tank cpl	lockable
101	Holder 702 extract unit V4	black, left
102	Screw KST/PT 3.5x12 bl galvan	round head Torx-15
103	Holder 702 extract unit V3	right black
104	Cable duct 702 black V2	
108	Trunnion bearing 773/775 black	driver
109	Support 702 Reed sensor V4	black, water tank
110	Reed sensor 702 cpl	packed
111	Spare contact plate 702 cpl	
113	IR Sensor module 733	
114	Control panel 733 cpl	coffee
115	Holder 702 extract unit V3	black
116	Faceplate 702 outlet V2	chrom. pltd
117	Cover 702 outlet V4	black

Pos. no.	Item name	Description
118	Screw M3x6 bl galvan flat	Head Torx-20
120	Fluid reducer 702 neutral	di 8.5/4.8mm
122	Hose silicone 10.0x2.0x65mm	transp, 70 Shore
124	Cable holder WWS-A	neutral, snap, 12.7x19.6mm
125	Holder 702 plug V2	white
126	GSM-Module SON8SIM	GL6100SM4/SKU:1102160/R7,45/ NSLK02,10
127	Holder 733 radio module	black
140	Set remai. water 702 left cpl	
141	Set remai. water 702 right	cpl
142	Outlet 702 remai. water cpl	mount.
151	Extract unit 733 cpl	
152	Screw KST/PT 2.2x18 Inox	round-head Torx-6 blunt
153	Outlet 702 extract unit V2	black
167	Lock washer D=4mm	black (DIN 6799)
168	Lock washer 6.2x11.0x0.5mm	blue-galvan
173	Cover 640 transmission casing	neutral, ceramic valve V2
177	Spur gear 702 straight Z75 V2	neutral
185	Hose silicone 4.0x2.0x5mm	neutral, 60 Shore
189	Outlet valve I shape cpl	press 4bar, lock press 1,5bar
195	Seal 758 extract head V2	black, 80 Shore, 2x0,5mm embossed
196	Extract head 702 extract unit	black V3
197	Hose FEP D4.0/2.03x180mm	2 clamp ring
198	Bolt 702 extract unit black	
199	Thrust ring 702 seal	black, extract unit
200	Internal divided sleeve 001	red brown, silicone/2-K, 70 Shore, DA=12.20xDi=3.60x4.0mm
208	Nut M4 4-face	bl galvan (DIN 562)
211	Screw KST/PT 3,0x10 bl galvan	round head Torx-10 (WN 1452)
212	O-Ring 12.0x1.0mm EPDM	black, 70 Shore
213	Screw KST/PT 3.0x25 bl galvan	round head Torx-10 CA point
220	Driver 733 extract unit	
221	Spare pyramid disc 702 V2	
222	Spare support plate 733	
223	Spare safety lid 702	
224	Set spare spindle 702	extract unit
251	Grounds contain. 702 black V2	
254	Drip plate 702 Inox	macchiato, protect foil
257	Damper 703 drip plate V2	black
262	Drip tray 702 black cpl	left, macchiato, milled
263	Drip tray 702 black cpl	right, macchiato, milled
265	Caps funnel 702 right V2	black
266	Caps funnel 702 left V2	black
268	Drip tray 702 right cpl	water supply
269	Drip tray 702 left cpl	water supply
270	Cover 702 cup black V2	Macchiato
271	Cover 702 cup V2	black, Capp macchiato
272	Antisplash 702 Macchiato V2	black

Pos. no.	Item name	Description
273	Seal 702 caps channels left	black
273	Closing 702 left black	
274	Seal 702 caps channels right	black
274	Closing 702 right black	
301	Drawer 702 right V3	black
302	Capsule duct 702 right V2	black
303	Flow meter FHKSC 12 R 270°	974-9501/A270, Pull-up, pin 3,0mm, double insulated
304	Lock washer D= 3mm	type Starlock P-6490
305	Hose silicone 5.0x2.0x210mm	transp, 70 Shore
307	Pump holder 680 black 64 sh	D=13.5mm
308	Pump CP.04.116.0/ST/S/P V2	230V/50Hz, light blue
309	Thermostat 115C/13.5A 1NT01L	connect 2xFZ6.3x0.8 straight
310	Clip thermostat 1NT/01	
311	Fluid connect elbow 90°	neutral, 1xF, 1xG1/8" outside, cross-piece
312	Drawer 702 left V3	black
313	Flow meter FHKSC 12 R 90°	974-9501/A90, Pull-up, pin 3,0mm, double insulated
314	Capsule duct 702 left V2	black
315	Holder 702 valve 2-way V2	black
316	Magnetic valve 1.007.126-E3-00-E	220V-240V, 2-way, closed
317	Elbow 702 silicone transp	water supply connect
318	Cartridge RV-DW 10 DN6	back flow valve
319	Fluid distributor 702 neutral	T shape
320	Cap nut G3/4" GPN 800	black
321	Faucet straight cpl	neutral, connect 5mm
322	Holder 702 faucet V2	black, line
323	Spare drawer 702 right V2	cpl mounted
325	Spare-drawer 702 left V2	cpl mounted
326	Hose FEP D4.0/2.03x200mm	2 clamp ring
327	Hose EPDM D=10x15mm	grey, length 170mm (rubber foam)
330	O-Ring 5.28x1.78mm EPDM	black, 70 Shore
331	Fluid distributor Y shape	7.5 mm neutral
332	Hose silicone 5.0x2.0x140mm	transp, 70 Shore
333	Hose silicone 5.0x2.0x160mm	transp, 70 Shore
334	Hose silicone 5.0x2.0x250mm	transp, 70 Shore
336	Hose silicone 5.0x2.0x230mm	transp, 70 Shore
401	Valve holder 702 right V2	black
402	Valve holder 702 left black V2	
403	Fluid connect I shape short V2	anthrac. 2xF, crosspiece
405	Clip D=4mm L=14mm Inox	
406	Hose FEP D4.0/2.03x120mm	2 clamp ring
407	Fluid connect elbow 90° short	anthrac., 2xF
408	Micro switch XCG55V-81-LZ187	lever
409	Fluid connect I shape	black, 1xmale, 1xconnect hose, stop
410	Spring clip d=7.7x1.3mm V2	silicone hose
411	Hose silicone/reinforced di 4.2mm	da 8.2/60mm, PES reinforced

Pos. no.	Item name	Description
412	Hose silicone/reinforced di 4.2mm	da 8.2/195mm,PES reinforced
413	Hose silicone/reinforced di 4.2mm	da 8.2/285mm,PES reinforced
414	Nipple 705 Y part black	
415	Magnetic valve DEV122-2055	240V, 2 side connect
415	Magnetic valve DEV122-2055	240V, 2 side connect
416	Hose FEP D4.0/2.03x150mm	2 clamp ring
417	Hose FEP D4.0/2.03x100mm	2 clamp ring
451	Holder 702 thermoblock 2003 V2	zinc plat
452	Insulation 737 holder	neutral, 40 Shore
453	Cover 702 thermoblock neutral	
454	Cover 702 thermoblock neutral	
455	Thermoblock 2003/L 230V/1080W V2	welded nipple, FZ4.8x0.8
456	Insul. sleeve elbow	black, connect FH6.3
458	Clip TCO TB2001	0.5 mm
459	Sensor 770 thermoblock cpl V2	L=170mm
460	Screw GF/Tapt.M4.0x 8 bl	galvan round head/spring ring, Torx-20
461	Screw GF/Tapt.M5.0x 8 Geomet	round head/spring ring, Torx-25 greased
462	Fluid connect T shape short V3	anthrac. 3xF, crosspiece
463	O-Ring 3.40x1.90mm silicone/2-K	red, 70 Shore 2-comp silicone V2
464	Clip D=5mm browned	inox
465	Spacer sleeve 737 blue zinc	plat, Di=4.5/Da=6.0/L=52mm
466	Screw GF/Tapt.M4.0x60 bl	galvan round head Torx-20 m/shaft greased
467	Lock washer 4.3x14.0x1.6mm	blue-galvan.M4
468	Insulation ring 737 silicone	neutral, 40 Shore
469	Mult. strd wire 734 EU yellow	green 130/300/330/340/350
470	TCO strd wire 733 EU 167C	(1xE5) white 100/370
471	TCO strd wire 733 EU 167C	(1xE5) blue 100/470
472	TCO strd wire 733 EU 167C	(1xE5) grey 160/310
501	Holder 702 transformer V3	black
502	Transformer 733 cpl	
503	Screw KST/PT 3.5x50 bl galvan	round head Torx-15 (WN 1452)
504	Control box 733 cpl	
505	Cover 734 front panel	print: Gemini 220, grey
506	Display 733 cpl	
507	Cable holder WS-A	neutral, snap, 9.7x18.0mm
540	Spare drip tray 702 cpl	Capp
552	Drip plate 702 Inox	Capp macchiato, protect foil
553	Milk tank 704 cpl V2	
554	Front panel 702 Capp black V4	
555	Outlet 702 Cappuccino black	
556	Spare nozzle body 702 cpl	Capp
558	O-Ring 8.0x2.62 silicone/2-K	red brown, 70 Shore 2-comp silicone
559	Hose silicone/reinforced di 4.2mm	da 8.2/65mm, PES reinforced
560	Cover 702 lug chrom. pltd	Cappuccino

Pos. no.	Item name	Description
561	Helical spring 702 Inox	D=0.5mm
562	Cam 702 switching V2	black, Cappuccino
563	Fluid distributor 702 black	elbow
564	Hose silicone/reinforced di 4.2mm	da 8.2/90mm, PES reinforced
565	Hose silicone/reinforced di 4.2mm	da 8.2/120mm, PES reinforced
566	Hose silicone/reinforced di 4.2mm	da 8.2/160mm, PES reinforced
567	Plate 702 hood Cappuccino V2	black
569	Screw KST/PT 3.0x16 bl galvan	round head Torx-10 CA point
571	Magnetic valve DEV122-2055	240V, 2 side connect
572	Hose silicone/reinforced di 4.2mm	da 8.2/45mm, PES reinforced
573	Control panel 734 cpl	steam
574	Holder 702 left black V2	
575	Handle 705 finger protect	black, hot water
576	Tube 702 hot water	inox electro polished
577	Faceplate 702 ring black, hot	water
578	O-Ring 10.0x2.0mm EPDM	black, 70 Shore
579	Support 702 water tube hot	black
580	Drip tray 702 black cpl	Cappuccino macchiato
601	Holder 702 black, Cappuccino V2	
602	Holder 702 switch Capp	black V2
604	Holder 647 grinding grade	black
605	Holder 702 thermoblock 2003	Cappuccino
606	Nut M6 6-face	bl galvan
607	Thermoblock 2003/N 230V/1080W V4	nipple, FZ4.8x0.8
608	Screw M6x16 bl galvan. ctk	head Torx-30
609	Sensor 640 thermoblock cpl V2	L=200mm
610	Molded tube 770 silicone 70 Shore	neutral
611	Press. spring con. 1.6mm	D 17.0/38.0 L=21.0mm n= 4.5
612	Pump MPP.1.01.023.0 230V	50Hz, blue, thermostat
613	Pump holder 702 black 70 sh	Capp
615	TCO strd wire 702 EU 192C	(1xE5) grey 90/310
616	TCO strd wire 734 EU 192C	(1xE5) brown 100/200
619	Hose clamp 8,0- 9,0mm	Cobra 7.5/7 W4
900	Strd wire EU grey 140mm 0.75	2xFHL6.3-Ni/1xIT6.3b
905	Connector 733 3x	drip tray, coffee Z02
910	Connector 733 4x	Neslink module Y13
915	Connector 733 3x	drip tray, center X13
920	Connector 733 4x	caps container Y16
925	Strd wire EU black 170mm 0.75	1xFHL4.8-Ni/1xIT4.8b/1xFHL6.3-Ni/ 1xIT6.3b
930	Strd wire EU blue 170mm 0.75	1xFHL4.8-Ni/1xFHL6.3-Ni/1xIT6.3b
935	Connector 733, 10x	sensor, left X2
940	Connector 733, 10x	sensor, right X1
946	Connector 733, 4x	valves, pump, cappu Z1
947	Connector 733, 3x	drip tray, cappu Z04
948	Mult.strd wire 733 EU blue	black 320/320
949	Connector 733, 2x	NTC, cappu X16

Pos. no.	Item name	Description
951	Connector 733, 7x	signal strd wire, cappu X17
970	Connector 733, 4x	valves, pump Y1/Y2
975	Mult. strd wire 733 EU blue	grey 350/270
976	Connector 733, 9x	coffee buttons, left X10
977	Connector 733, 9x	coffee buttons, right X8
978	Mounting tool 702 alu	
978	Spare cover 702 water tank	packed
979	By pack set 734 *Nespresso*	CS223,Quick Start, clip plastic bag
981	Picture carton 734 *Nespresso*	CS223 695x480x465mm,clamped,PRO
982	Polystyr.702 3-part.V2	
982	Cardboard handle 702	reinforced
984	Sticker 727 *Nespresso* CS224	Warning sticker
984	Sticker 733 *Nespresso* CS203	IEC,FW
984	Sticker 904 *Nespresso* CS223	FW, Neslink EU V2
990	Instr. manual 734 *Nespresso* CS223	33-languages
990	Instr. manual 734 *Nespresso* CS223	33-languages Quick Start
990	Instr. manual 733 *Nespresso*	CS203/CS223, 33-languages safety-instruction, PRO EU
990	Instr. manual 733 *Nespresso*	CS203/CS223, 33-languages water connect
990	Supplement 733 *Nespresso*	declaration of energy using products directive, EuP, A5
990	Supplement 733 *Nespresso*	declaration of energy using products directive, MRL,A5
990	Name plate 903 *Nespresso* CS203	230V/50Hz/2300W black/chrome, FW, Neslink EU V2
990	Sticker 903 *Nespresso* CS203	FW, Neslink EU V2
999	Name plate 904 *Nespresso* CS223	230V/50Hz/2300W black/chrome, FW, Neslink EU V2

13.3 Spare parts list for CS224 (EF 727)

Pos. no.	Item name	Description
1	Base 702 black US V2	
2	Rubber feet 770 transp	60 Shore L=16mm
3	Plug mount.70°C	black, type DC11.0001.401
4	Back wall 733 black US	Water supply connect
5	Cover 702 service socket black	
6	Screw KST/PT 3.0x10 bl galvan	round head Phil-1, form H
6	Screw KST/PT 3.0x12 bl galvan	round head Torx-10 CA point
7	Cover 733 black	powder coated
8	Lock 702 cover black, outside	
9	Lock 702 cover black, int left	
10	Lock 702 cover black, int	
11	Screw GF/Tapt. M4.0x8 bl	galvan round head Torx-20 CA point
12	Clip 758 PTC	warming plate
16	GSM-Antenna cable CAB.212	FME-F straight jack/SMA-F BK straight 385mm/RG-174
17	GSM-Antenna TG.09.0113	Penta-band Cellular Hinged SMA Male Monopole
18	Cover 733 antenna	black
19	Metal sheet 733 shielding	zinced
51	Cover 702 water tank	black
54	Floater 778 water tank cpl	
55	Floater stop 702 silicone transp	water tank
60	Internal divided sleeve 004	red, 70 Shore, 22.0/14.0x5.0mm
61	Safety ring 770 Inox	
62	Sieve 770 stainless	
63	Valve lifter 420 neutral V4	water tank, 2 outlets, conditioned
64	Hose silicone 5.0x2.0x120mm	transp, 70 Shore
65	LED 733 tank lighting	
66	Support 702 water tank US V2	black, right
67	Front faceplate 702 right US	print: PRO, nut insert
68	Front faceplate 702 left US	print: PRO, nut insert
69	Support 702 water tank US V2	black, left
70	Water tank 702 cpl US V2	
71	Valve lifter 702 cpl mount.	
76	Cover 702 water tank cpl	lockable
101	Holder 702 extract unit US V3	black, left
102	Screw KST/PT 3.5x12 bl galvan	round head Torx-15
103	Holder 702 extract unit US V2	right black
104	Cable duct 702 black V2	
108	Trunnion bearing 773/775 black	driver
109	Support 702 Reed sensor V4	black, water tank
110	Reed sensor 702 cpl	packed
111	Spare contact plate 702 cpl	
113	IR Sensor module 733	
114	Control panel 733 cpl	coffee

Pos. no.	Item name	Description
115	Holder 702 extract unit V3	black
116	Faceplate 702 outlet V2	chrom. pltd
117	Cover 702 outlet V2	black
118	Screw M3x6 bl galvan round head	Phil-1, form H (ISO 7045)
120	Fluid reducer 702 neutral	di 8.5/4.8mm
122	Hose silicone 10.0x2.0x65mm	transp, 70 Shore
124	Cable holder WWS-A	neutral, snap, 12.7x19.6mm
125	Holder 702 plug V2	white
126	GSM-Module SON8SIM	GL6100SM4/SKU:1102160/R7,45/ NSLK02,10
140	Set remai. water 702 left cpl	
141	Set remai. water 702 right	cpl
142	Outlet 702 remai. water cpl	mount.
151	Extract unit 733 cpl	
152	Screw KST/PT 2,2x18 Inox	round-head Torx-6 blunt
153	Outlet 702 extract unit V2	black
167	Lock washer D=4mm	black (DIN 6799)
168	Lock washer 6.2x11.0x0.5mm	blue-galvan
173	Cover 640 transmission casing	neutral, ceramic valve V2
177	Spur gear 702 straight Z75 V2	neutral
185	Hose silicone 4.0x2.0x5mm	neutral, 60 Shore
189	Outlet valve I shape cpl	press 4bar, lock press 1,5bar
195	Seal 758 extract head V2	black, 80 Shore, 2x0.5mm embossed
196	Extract head 702 extract unit	black V3
197	Hose FEP D4.0/2.03x180mm	2 clamp ring
198	Bolt 702 extract unit black	
199	Thrust ring 702 seal	black, extract unit
200	Internal divided sleeve 001	red brown, silicone/2-K, 70 Shore, DA=12.20xDi=3.60x4.0mm
208	Nut M4 4-face	bl galvan (DIN 562)
211	Screw KST/PT 3.0x10 bl galvan	round head Torx-10 (WN 1452)
212	O-Ring 12.0x1.0mm EPDM	black, 70 Shore
213	Screw KST/PT 3.0x25 bl galvan	round head Torx-10 CA point
220	Driver 733 extract unit	
221	Spare pyramid disc 702 V2	
222	Spare support plate 702/705 V2	
223	Spare safety lid 702	
224	Set spare spindle 702	extract unit
251	Grounds container 702 black V2	
253	Drip plate 702 Inox	left, right, protect foil
254	Drip plate 702 Inox	macchiato, protect foil
257	Damper 703 drip plate V2	black
262	Drip tray 702 black cpl	left, macchiato, milled
263	Drip tray 702 black cpl	right, macchiato, milled
265	Caps funnel 702 right V2	black
266	Caps funnel 702 left V2	black
268	Drip tray 702 right cpl	water supply
269	Drip tray 702 left cpl	water supply

Pos. no.	Item name	Description
270	Cover 702 cup black V2	Macchiato
271	Cover 702 cup V2	black, Capp macchiato
272	Antisplash 702 Macchiato V3	black
273	Closing 702 left black	
274	Closing 702 right black	
301	Drawer 702 right V3	black
302	Capsule duct 702 right V2	black
303	Flow meter FHKSC 12 R 270°	974-9501/A270, Pull-up, pin 3.0mm, double insulated
304	Lock washer D=3mm	type Starlock P-6490
305	Hose silicone 5.0x2.0x210mm	transp, 70 Shore
307	Pump holder 680 black 64 sh	D=13.5mm
308	Pump CP.04.130.0/S/P+CP04/SP	230-240V/50/60Hz, light blue
309	Thermostat 115C/13,5A 1NT01L	connect 2xFZ6.3x0.8 straight
310	Clip thermostat 1NT/01	
311	Fluid connect elbow 90°	neutral, 1xF, 1xG1/8" outside, cross-piece
312	Drawer 702 left V3	black
313	Flow meter FHKSC 12 R 90°	974-9501/A90, Pull-up, pin 3.0mm, double insulated
314	Capsule duct 702 left V2	black
315	Holder 702 valve 2-way V2	black
316	Magnetic valve 1.007.126-E3-00-E	220V-240V 2-way, closed US
317	Elbow 702 silicone transp	water supply connect
318	Cartridge RV-DW 10 DN6	back flow valve
319	Fluid distributor 702 neutral	T shape
320	Cap nut G3/4" GPN 800	black
321	Faucet straight cpl	neutral, connect 5mm
322	Holder 702 faucet V2	black, line
323	Spare drawer 702 right V2	cpl mounted
325	Spare-drawer 702 left V2	cpl mounted
326	Hose FEP D4.0/2.03x200mm	2 clamp ring
327	Hose EPDM D=10x15mm	grey, length 170mm (rubber foam)
330	O-Ring 5.28x1.78mm EPDM	black, 70 Shore
331	Fluid distributor Y shape	7.5mm neutral
332	Hose silicone 5.0x2.0x140mm	transp, 70 Shore
333	Hose silicone 5.0x2.0x160mm	transp, 70 Shore
334	Hose silicone 5.0x2.0x250mm	transp, 70 Shore
336	Hose silicone 5.0x2.0x230mm	transp, 70 Shore
337	Fast coupling DS-NC2382	3/4" BSP thread, hose connect 10mm
401	Valve holder 702 right V2	black
402	Valve holder 702 left black V2	
403	Fluid connect I shape short V2	anthrac. 2xF, crosspiece
405	Clip D=4mm L=14mm Inox	
406	Hose FEP D4.0/2.03x120mm	2 clamp ring
407	Fluid connect elbow 90° short	anthrac., 2xF
408	Micro switch XCG55V-81-LZ187	lever
409	Fluid connect I shape	black, 1xmale, 1xconnect hose, stop

Pos. no.	Item name	Description
410	Spring clip d=7,7x1,3mm V2	silicone hose
411	Hose silicone/reinforced di 4.2mm	da 8.2/60mm, PES reinforced
412	Hose silicone/reinforced di 4.2mm	da 8.2/195mm, PES reinforced
413	Hose silicone/reinforced di 4.2mm	da 8.2/285mm, PES reinforced
414	Nipple 705 Y part black	
415	Magnetic valve DEV122-2055	240V, 2 side connect
416	Hose FEP D4.0/2.03x150mm	2 clamp ring
417	Hose FEP D4.0/2.03x100mm	2 clamp ring
451	Holder 702 thermoblock 2003 V2	zinc plat
452	Insulation 737 holder	neutral, 40 Shore
453	Cover 702 thermoblock neutral	
454	Cover 702 thermoblock neutral	
455	Thermoblock 2003/L 230V/1080W V2	welded nipple, FZ4.8x0.8
456	Insul. sleeve elbow	black, connect FH6.3
458	Clip TCO TB2001	0.5mm
459	Sensor 770 thermoblock cpl V2	L=170mm
460	Screw GF/Tapt. M4.0x 8 bl	galvan round head/spring ring, Torx-20
461	Screw GF/Tapt. M5.0x 8 Geomet	round head/spring ring, Torx-25 greased
462	Fluid connect T shape short V3	anthrac. 3xF, crosspiece
463	O-Ring 3.40x1.90mm silicone/2-K	red, 70 Shore 2-comp silicone V2
464	Clip D=5mm browned	inox
465	Spacer sleeve 737 blue zinc	plat, Di=4.5/Da=6.0/L=52mm
466	Screw GF/Tapt. M4.0x60 bl	galvan round head Torx-20 m/shaft greased
467	Lock washer 4.3x14.0x1,6	blue-galvan. M4
468	Insulation ring 737 silicone	neutral, 40 Shore
469	Mult. strd wire 734 UL yellow	green 130/300/330/340/350
470	TCO strd wire 733 UL 167C	(1xE5) blue 100/470
471	TCO strd wire 733 UL 167C	(1xE5) white 100/370
472	TCO strd wire 733 UL 167C	(1xE5) grey 160/310
501	Holder 702 transformer V3	black
502	Transformer 733 cpl	
503	Screw KST/PT 3.5x50 bl galvan	round head Torx-15 (WN 1452)
504	Control box 733 cpl	
505	Cover 727 front panel	print: Gemini 221, grey
506	Display 733 cpl	
507	Cable holder WS-A	neutral, snap, 9.7x18.0mm
540	Spare drip tray 702 cpl	Capp
541	Drip plate 702 Inox	Capp macchiato, protect foil
552	Drip plate 702 Inox	Capp macchiato, protect foil
553	Milk tank 704 cpl V2	
554	Front panel 702 Capp US V3	black
555	Outlet 702 Cappuccino black	
556	Spare nozzle body 702 cpl	Capp
559	Hose silicone/reinforced di 4.2mm	da 8.2/65mm, PES reinforced

Pos. no.	Item name	Description
560	Cover 702 lug chrom. pltd	Cappuccino
561	Helical spring 702 Inox	D=0.5mm
562	Cam 702 switching V2	black, Cappuccino
563	Fluid distributor 702 black	elbow
564	Hose silicone/reinforced di 4.2mm	da 8.2/90mm, PES reinforced
565	Hose silicone/reinforced di 4.2mm	da 8.2/120mm, PES reinforced
566	Hose silicone/reinforced di 4.2mm	da 8.2/160mm, PES reinforced
567	Plate 702 hood Cappuccino V2	black
568	Micro switch D41R-QGAC V3	0.1A/250V/4.8x0.8 100k
569	Screw KST/PT 3.0x16 bl galvan	round head Torx-10 CA point
571	Magnetic valve DEV122-2055	240V, 2 side connect
572	Hose silicone/reinforced di 4.2mm	da 8.2/45mm, PES reinforced
573	Control panel 734 cpl	steam
574	Holder 702 left black V2	
575	Handle 705 finger protect	black, hot water
576	Tube 702 hot water	inox electro polished
577	Faceplate 702 ring black, hot	water
578	O-Ring 10.0x2.0 EPDM	black, 70 Shore
579	Support 702 water tube hot	black
580	Drip tray 702 black cpl	Cappuccino macchiato
581	Autocappuccino BCS US	by pack
601	Holder 702 black, Cappuccino V2	
602	Holder 702 switch Capp	black V2
604	Power PCB 734 cpl	steam function
605	Holder 702 thermoblock 2003	Cappuccino
606	Nut M6 6-face	bl galvan
607	Thermoblock 2003/N 230V/1080W V4	nipple, FZ4.8x0.8
608	Screw M6x16 bl galvan. ctk	head Torx-30
609	Sensor 640 thermoblock cpl V2	L=200mm
610	Molded tube 770 silicone 70 Shore	neutral
611	Press.spring con. 1.6mm	D 17.0/38.0 L=21.0mm n= 4.5
612	Pump MPP1 230V/60Hz mont.	blue, thermostat
613	Pump holder 702 black 70 sh	Capp
615	TCO strd wire 702 UL 192C	(1xE5) grey 90/310
616	TCO strd wire 734 UL 192C	(1xE5) brown 100/200
619	Hose clamp 8.0- 9.0mm	Cobra 7,5/7 W4
900	Strd wire UL grey 140mm AWG18	2xFHL6.3-Ni/1xIT6.3b
905	Connector 733, 3x	drip tray, coffee Z02
910	Connector 733, 4x	Neslink module Y13
915	Connector 733, 3x	drip tray, center X13
920	Connector 733, 4x	capsule container Y16
925	Strd wire UL black 170mm AWG18	1xFHL4.8-Ni/1xIT4.8b/1xFHL6.3-Ni/ 1xIT6.3b
930	Strd wire UL blue 170mm AWG18	1xFHL4.8-Ni/1xFHL6.3-Ni/IT6.3b
930	Connector 733, 9x	coffee buttons, left X10
931	Connector 733, 9x	coffee buttons, right X8
935	Connector 733, 10x	sensor, left X2

Pos. no.	Item name	Description
940	Connector 733,10x	sensor, right X1
946	Connector 733, 4x	valves, pump, cappu Z1
947	Connector 733, 3x	drip tray, cappu Z04
949	Connector 733, 2x	NTC, cappu X16
965	Connector 733, 7x	signal strd wire, cappu X17
970	Connector 733, 4x	valves, pump Y1/Y2
978	Mounting tool 702 alu	
978	Spare cover 702 water tank	packed
978	By pack set 727 *Nespresso*	CS224, Quick Start, clip plastic bag
979	Cleaning brush 702 Nylon	cylindric L=210mm/brush d4x50mm
979	Safety ring 3/8" PIC1812R	red, fast coupling
979	Line cord US KK3000	SJTOW-3xAWG16/KK10000
981	Picture carton 727 *Nespresso*	CS224 695x480x465mm, clamped, PRO
982	Polystyr. 702 3-part. V2	
982	Cardboard handle 702	reinforced
984	Sticker 727 *Nespresso* CS224 US	FW, Neslink
984	Sticker 727 *Nespresso* CS224	Warning sticker
984	Sticker 727 *Nespresso* CS224	Advertisement sticker
990	Instr. manual 727 *Nespresso* CS224	3-languages, NSF PRO
990	Instr. manual 727 *Nespresso* CS224	Quick Start, NSF PRO US
990	Package label 727 *Nespresso*	2/240x80mm FW, Neslink US
990	Instr. manual 727 *Nespresso* CS224	3-languages, NSF, water connect US
992	Supplement 727 *Nespresso* US	WTL-detection
999	Name plate 727 *Nespresso* CS224	240V/60Hz/2300W black/chrome, FW, Neslink US

14 NOTES

Commercial Kitchen Equipment Parts

Find more Nespresso Professional equipment resources at

parthubz.com/equipment/nespresso-professional

Need parts or service?

Call 833-700-8006

support@parthubz.com

parthubz.com