

DESCRIPTION OF THE GENERAL STEAM FUNCTIONALITY IN STEAM OVENS APOLLO**Every Steam program is chaptered in 3 different phases.**

1. Boost phase: The steam generator and the heating elements are activated to reach the needed temperature (duration about 5 minutes).
2. Main phase: The heating elements and the steam generator are switched depending of each program. (duration depends of the program).
3. The Steam phase: The oven will be the steamed and the cavity is controlled dried up. Depending of each function the desteam phase is at the last 10 minutes of each program. (ring eating element is activated and the steam generator is deactivated and the actuator is open).

Description of the 4 Steam programs:

1. Full Steam - Steam generator 100% within the boost phase, 100% bottom heating element (boost until 94°C).
Main phase: steam generator is switched only according the set temperature.
Desteam phase: Actuator opens, steam generator switch off, Ring heating element on 30% - duration 10 minutes.
2. Interval Plus - Steam generator 70%, bottom heating element 100%, ring heating element 30%
Main phase: steam and ring heating element 50 : 50.
Desteam phase: Actuator open, Steam generator off, ring heating element 100% depends on set temperature (duration 3 minutes).
3. Interval - Steam generator 40%, bottom heating element 100%, Ring heating element 60%.
Main phase: Steam generator 10%, Ring heating element 90%.
Desteam phase: Actuator open, Steam generator off, Ring heating element 100% depends on set temperature (duration 10 minutes).
4. Eco Steam - Steam generator 100% depends of the set temperature.
Desteam phase: Actuator open, no steam, duration: 8 minutes.
- The light during the complete program is switched off!!!

Sous vide cooking

- Steam generator 100% depending of set temperature.
- Desteam phase: Actuator open, Steam generator off, Ring heating element 20% depending of set temperature, duration (3 minutes).

Descaling function (old name/version: steam cleaning):

- The descaling function is used only to descale the steam generator. Because of safety issues (danger of scalding) it is reached only a temperature of 50°C.
- Steam generator 100% for 3 minutes, set to the temperature (after 3 minutes) the cavity has about 85°C.
 - Cool down phase: Steam generator off, duration 12 minutes (at the end of the “descaling” function is the water temperature in the cavity and in the steam generator at about 45-50°C, so the customer can easily remove the water from the steam generator).

A cleaning solution maybe for unsatisfied customers can be:

Eco Steam program for 20 minutes in place of the steam cleaning with much water and a fat solver / dish soap. Then the customer can clean the cavity more easy.

Steam Cleaning function (new functionality) – for light soiling

- The steam cleaning function should support the cleaning of the cavity and to soak the soiling, before the customer have to clean the cavity by hand.
 1. Steam generator 100% until the temperature of 85°C is reached.
 2. Steam generator 70% to cool down to 75°C.

3. Cool down phase: Steam generator off, duration 12 minutes (at the end of the “descaling” function is the water temperature in the cavity and in the steam generator at about 50-55°C, so the customer can easily remove the water from the steam generator).

Problem solving:

Steam temperature is not reached, customer unsatisfied:

Possible root cause:

- Customer expect the whole power over the complete duration of the program (see the description of the 3 different steam phases).
- Maybe the customer has selected a wrong program, because of a wrong expectation.
- NTC Sensor has a wrong temperature value - see the resistance values at each temperature and measure it accordingly:

NTC- RESISTANCE-TEMPERATURE-CURVE

R/T-Curve = 8304 / A01

B(25/100) = 4092 K ± 1 %

R at 25°C = 100000 Ω

R_N at 25 °C = 100000 Ω ± 3 %

Temp. [°C]	R Nom [Ω]	R Min [Ω]	R Max [Ω]	ΔR [±%]
0	332396	318083	346710	4.3
5	257689	247287	268092	4.0
10	201272	193670	208874	3.8
15	158336	152753	163920	3.5
20	125418	121299	129537	3.3
25	100000	97000	103000	3.0
30	80239	77610	82868	3.3
35	64776	62511	67040	3.5
40	52598	50648	54548	3.7
45	42950	41270	44631	3.9
50	35262	33812	36712	4.1
55	29100	27847	30353	4.3
60	24136	23051	25220	4.5
65	20114	19174	21054	4.7
70	16841	16024	17658	4.8
75	14164	13453	14875	5.0
80	11963	11343	12584	5.2
85	10147	9604	10690	5.3
90	8641	8165	9117	5.5
95	7387	6969	7805	5.7
100	6338	5970	6706	5.8
105	5458	5133	5783	6.0
110	4717	4430	5004	6.1
115	4090	3835	4345	6.2
120	3558	3332	3785	6.4
125	3105	2903	3307	6.5
130	2718	2538	2898	6.6
135	2386	2225	2547	6.7
140	2101	1957	2245	6.9
145	1855	1725	1984	7.0
150	1642	1525	1759	7.1
155	1457	1352	1562	7.2
160	1297	1202	1392	7.3
165	1157	1071	1243	7.4
170	1034	956.1	1112	7.5
175	926.6	855.8	997.5	7.6
180	832.2	767.8	896.7	7.7
185	749.1	690.3	807.8	7.8
190	675.6	622.0	729.3	7.9

- The resistance of the heating element is not ok, check with the multimeter the resistance values of the different heating elements.
- Klixon at the steam generator is switching too early.
- Door switch is not closed correctly, then the steam generator is off.

!!! A complaint with the steam functionality itself, is usually not a electronic fault !!!

Complaint about too much water consumption:

- Actuator is not closing, too much steam escape through the hole.

Complaint about the beep signal to refill water, even when is water inside:

- NTC Sensor has a wrong resistance value.
- OVC3000 power board defect, resistance value at the PCB faulty.

REVISION:

Revision	Date	Description	Author	Approved by - on
00	12/2012	Document Creation	FV	JL - 01/2013