GW2145 - GW1160 - GW4060 - GW4190 Series

- PROGRAMS TABLE -

GW2145 Series, laboratory glassware washers, 45cm, **without drying system.**	**GW1160** Series, laboratory glassware washers, 60cm, **without drying system.**	**GW4060 Series:** laboratory glassware washers, 60cm, **equipped with forced air drying system.**	**GW4190 series**: laboratory glassware washers, 90cm, **with forced-air drying system and side cabinet** to take detergent cans.

WARNING

This document is an appendix to the appliance's user manual and must be consulted together with the manual for proper, safe use of the device.

It contains up-to-date information concerning the characteristics of the washing programs installed in the appliance. Due to changes made in response to improvements in products, the programs described here may differ from those described in the manual: in this case, only refer to the information provided in this document.

Programs may vary depending on the firmware version installed in the appliance. If in doubt, have Smeg authorised staff check on the appliance that the installed version is the same as the version stated in the table at the back of this document.

ABBREVIATIONS USED IN THE TABLE OF PROGRAMS

Demi: demineralised water, the type of water used in a specific phase of the program.

Cold: cold mains water, the type of water used in a specific phase of the program.

INT: intensive - refers to programs which include particularly intensive washing phases.

N.C.: "NOT CONTROLLED" - refers to the relatively short heating phases during which the heating elements are on but no target temperature value is set.

PET: petroleum – refers to the program developed to wash glassware and items in general used to contain petroleum and its derivates.

PLAST: plastics – refers to the program developed to wash plastics, with target temperatures generally suitable for washing plastic containers and other items for professional use.

TD, **Therm**: thermal disinfection - phase during which the target temperature is kept above a target value for a specified time. The efficacy of the thermal disinfection process is indicated by means of parameter **A0**. In Smeg programs, the target value for a thermal disinfection process is always at least 80°C.

Target T [°C]: Target temperature of the current phase. The temperature inside the tank is kept constant around the specified value for the time shown in the table. The phase during which the temperature is held at the target value is called the **EXTENSION** phase. When no target temperature is indicated or the indication is ("0"), the heating elements are not activated (e.g. during a cold prewash or for cold rinses).

Un: universal – a type of washing program designed to be particularly intensive.

P1, ... P3: the code refers to the activation of the relative peristaltic pump, with dispensing of the liquid detergent associated to it.

P2a: the code refers to dispensing by pump P2 at a rate different from the default rate, used in special cases, as specified in the table.

Each pump has a default dispensing rate set in the factory.

Pump P3 is always optional. The programs which use it are not available if the pump is not installed.

DD: powder dispenser. To use in alternative to P1. If you use the dispenser, the proper dosage should be carried out manually by the user at the beginning of the cycle. (The dispenser is only available in certain models of the GW1160, GW4060, GW4190 series, ref. to the manual for explanations).

PUMP	GW DEFAULT DOSAGE [ml/litre]	DOSAGE FOR SERVICE PROGRAM 16 ONLY [ml/litre]
P1	5	12
DD	3-5 [g/litre]	-
P2	3	12
P2a	4	-
P3	10	12

VARIOUS NOTES:

WATER INTAKE: water intake for each phase is **9 litres (GW1160, GW4060, GW4190) – 5 liters (GW2145)**. For program "16 Service" only, water intake is 6 litres for phases 1 and 2 and 9 litres for the rinse phase 3. Program "16 Service" only comprises 3 phases and is generally used during installation, to prime the detergent intake lines correct and allow use of the device.

PHASE NUMBERING: a record of the parameters for the various cycle phases is maintained in the appliance's memory. The first phase is numbered "PHASE 0", the second "PHASE 1", etc.

CYCLE TIME: the stated time for the complete cycle refers to standard test conditions: intake water pressure 3bar, cold water temperature 25°C, 3/N/PE 7kW three-phase electrical connection, void washing chamber. The Cycle time while excluding the drying step is shown in parentheses [Ex. "89 (50)" means the total time including drying: 89min, without drying: 50min].The single-phase connection performs the activation of a single heating element instead of three, the cycle times are significantly longer.

PARAMETER A0
Parameter A0 is used by product standard UNI EN ISO 15883-1 to assign a numerical value to the thermal disinfection process.
It is calculated mathematically using the formula:

$$A_0 = \sum 10^{\left[(T-80)/z\right]} \times \Delta t$$

z = 10°C - **t** = duration of time interval considered in seconds - **T** = load temperature in °C.

When calculating the parameter, only the time intervals during which the temperature is above 65°C are considered.
For SMEG thermal disinfection programs, the calculation is simplified by only including the "extension" phase, when the temperature is kept constant with reference to the target value set.

PROCESSABLE LOAD: never exceed a total load of 23 kg (GW1160, GW4060, GW4190), 15kg (GW2145) to ensure good washing results.
The items in the load must be positioned correctly, with no overlapping.

DRYING

The drying phase - the final phase of the program, as indicated in the table below – is available only on Smeg GW4060, GW4190 series.
Good drying results, with the preset times and temperatures, are obtained using a load for drying weighing no more than 15kg. The items in the load must be positioned correctly, with absolutely no overlapping.

Laboratory Programs	Prewash / Wash			Wash / Thermal disinfection			Neutralisation			Mains Water Rinse			Demi Rinse			Hot Demi Rinse			Drying		Cycle time [min]		
	H2O Intake	Target T [°C]	Extension [mm]	H2O Intake	Target T [°C]	Extension [mm]	H2O Intake	Target T [°C]	Extension [mm]	H2O Intake	Target T [°C]	Extension [mm]	H2O Intake	Target T [°C]	Extension [mm]	H2O Intake	Target T [°C]	Extension [mm]	Target T [°C]	Extension [mm]	GW4060 (7.0kW)	GW4060 (2.8kW)	GW2145 (3.3kW)
1 Prewash	Cold	0	5																		8	8	7
2 Plast 75°	Cold	0	3	Cold	75	3	Cold	NC	3	Cold	NC	1	Demi	NC	1	Demi	75	1	110	25	89 (50)	138 (99)	48
				P1			P2																
3 Std Glassware				Cold	80	5	Cold	NC	2	Cold	NC	1	Demi	NC	1	Demi	75	1	110	25	82 (43)	135 (96)	45
				P1			P2																
4 Int. Glassware	Cold	NC	3	Cold	90	3	Cold	NC	2	Cold	NC	1	Demi	NC	2	Demi	75	1	110	25	91 (52)	150 (111)	55
	P1			P1			P2																
5 Intensive Agar	Cold	80	3	Cold	93	5	Cold	NC	2	Cold	NC	1	Demi	NC	2	Demi	75	1	110	25	109 (70)	183 (144)	64
	P1 P3			P1 P3			P2																
6 Therm.93°C 3'				Cold	93	3	Cold	NC	2				Demi	NC	2	Demi	75	1	110	25	84 (45)	136 (97)	44
				P1			P2																
7 Therm.93°C 10'				Cold	93	10	Cold	NC	2				Demi	NC	2	Demi	75	1	110	25	88 (49)	141 (102)	53
				P1			P2																
8 T int.93°C 5'	Cold	NC	2	Cold	93	5	Cold	NC	2	Cold	NC	2	Demi	NC	1	Demi	75	1	110	25	94 (55)	150 (111)	54
	P1			P1			P2																
9 T int.93°C 10'	Cold	NC	2	Cold	93	10	Cold	NC	2	Cold	NC	2	Demi	NC	1	Demi	75	1	110	25	102 (63)	159 (119)	56
	P1			P1			P2																
10 Pet Grease (CUSTOM)	Cold	50	2	Cold	93	1	Cold	NC	2	Cold	NC	2	Demi	NC	1	Demi	75	1	110	25	93 (54)	165 (126)	54
	P1 P3			P1 P3			P2																
11 Miner Oil (CUSTOM)	Cold	75	1	Cold	93	10	Cold	NC	2	Cold	NC	2	Demi	NC	1	Demi	75	1	110	25	112 (73)	178 (139)	68
	P1 P3			P1 P3			P2																
12 Petrol (CUSTOM)				Cold	93	5	Cold	NC	2	Cold	NC	2	Demi	NC	2	Demi	75	1	110	25	91 (52)	150 (111)	49
				P1 P3			P2																
13 Diesel (CUSTOM)	Cold	NC	3	Cold	93	1	Cold	NC	2	Cold	NC	2	Demi	NC	2	Demi	75	1	110	25	95 (56)	152 (113)	52
	P1 P3			P1 P3			P2																
14 Un Petrol (CUSTOM)	Cold	93	10	Cold	93	10	Cold	NC	2	Cold	NC	2	Demi	NC	1	Demi	75	1	110	25	124 (85)	204 (165)	81
	P1 P3			P1 P3			P2																
15 Auto Disinfection (CUSTOM)	Cold	93	1																		19	52	22
	P2a																						
16 Service	Cold	0	0	Cold	0	0										Demi	0	0.5			10	24	8
	P1 P3			P2																			

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CUSTOM PROGRAMS

Programs 10, 11, 12, 13, 14 and 15 can be modified to meet specific washing requirements.

Modifications can be made using the Smeg TRACELOG software (not part of the standard package) or **by Smeg authorised engineers on request**.

For details of how to purchase the software and minimum installation requirements, contact your local dealer or mail Smeg directly at instruments@smeg.it .

If parameters are modified from the default settings, a record should be kept of the various phases and the new program settings.

⚠️ **Warning**: *when creating a custom program, do not include more than two thermal disinfection phases at 93°C for 10min.*

CUSTOM PROGRAM RECORD TEMPLATE

Program		1. Prewash / Wash (cold)			2. Wash			3. Neutralisation			4. Mains Water Rinse			5. Demi Rinse			6. Hot Demi Rinse			7. Drying		A0	Cycle time (except drying)
ID.	Name	H2O Intake	Temp. [°C]	duration [min]	H2O Intake	Temp. [°C]	duration [min]	H2O Intake	Temp. [°C]	duration [min]	H2O Intake	Temp. [°C]	duration [min]	H2O Intake	Temp. [°C]	duration [min]	H2O Intake	Temp. [°C]	duration [min]	Temp. [°C]	duration [min]		

19 592 0295 02	GW1160, GW4060, GW4190: 2.0.0.33 Date 23/09/2013 (Program set cod. 16 812 0000 00) GW2145: 5.2.0.37 Date 02/02/2015 (Program set cod. 16 812 0009 00)	29/10/2015
Ed.	**Main Firmware Version**	**Date**