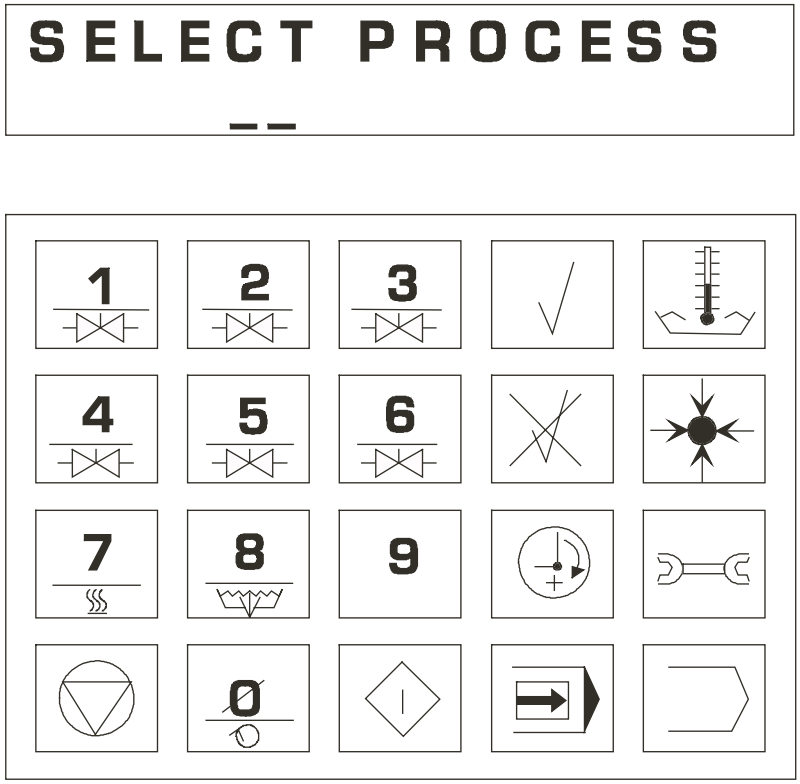
MKII-A

PROGRAMMING MANUAL
PUBLICATION DATE: 04/99
503 838

ELECTRONIC PROGRAMMER FOR WASHING MACHINES R 6/7/10/16/22/35, F 6/7/10/16/22/33/40/55, FS 6/7/10/16/22/33/40/55, X 22/35/43, XF 22/35/43 AND MB 26/33/44/66



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2. WARNINGS AND SYMBOLS

⚠ **WARNING !**
BEFORE OPERATING A MACHINE CONTROLLED BY AN ELECTRONIC PROGRAMMER, READ CAREFULLY THIS MANUAL. INCORRECT USE CAN RESULT IN SERIOUS INJURIES OR DAMAGING MACHINE CONTROLS. IGNORING OF THIS MANUAL INSTRUCTIONS CAN CAUSE AN INCORRECT MACHINE FUNCTIONS, WHICH CAN RESULT IN INJURIES OF PEOPLE OR MACHINE AND/OR LINEN DAMAGES.

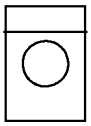
– This manual version is a original English version. Without the original version these instructions are not complete. Before installation, operating and maintenance of the machine, read complete instructions thoroughly which means these: „Programming Manual", „User's manual" and „Installation and maintenance manual". Follow these instructions and keep them handy for later use.
– A machine must be installed by following the „Installation and maintenance manual". Before a first machine start it must be initialized and tested by a qualified worker.When operating the machine, follow the machine „Operating manual".
– The electric service line must not be affected by industrial procedures. A nominal voltage, if loaded or not must work in the range ±10% with a maximum permanent frequency deviation of 1% or a short-time one at 2% of a given frequency. Connecting or starting the machine at an incorrect voltage can damage the programmer.
– The machine must not be exposed to high humidity or extreme high and low temperatures.
– Do not tamper with the controls.

INSTRUCTIONS IN THIS MANUAL DO NOT COVER ALL DANGEROUS SITUATIONS.
IT IS UP TO A USER TO HANDLE THE MACHINE CAREFULLY.

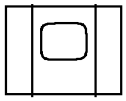
The manufacturer has the right to change specifications in this manual without a prior notice. All here stated information are only informative and must be considered as general. There is not possible to present all specific data of the device.

ON EACH ELECTRONIC BOARD THERE IS A STICKER ON THE MICROPROCESSOR WITH A VERSION SPECIFICATION AND A SOFTWARE DATE, A MACHINE SERIAL NUMBER, CODE NUMBER, PRI OR KEYBOARD NUMBER. THESE DATA MUST BE STATED IN ALL CORRESPONDENCE OR TELEPHONE CALLS WITH A SUPPLIER (SEE CHAPTER 9).
FOR A PROGRAMMING OF A REPLACED FREQUENCY INVERTOR, THERE EXISTS AN INDIVIDUAL MANUAL FOR USING OF A COPYING PARAMETER UNIT.

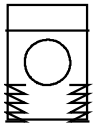
INFORMATION MARKED BY THIS SYMBOL ARE VALID ONLY FOR MACHINES WITH FREQUENCY CONTROL



VALID FOR RIGID MACHINES 6KG/18LBS, 7KG/18LBS, 10KG/25LBS, 16KG/35LBS, 22KG/50LBS, 35KG/80LBS

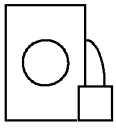


VALID FOR HYGIENIC MACHINES 26KG/60LBS, 33KG/70LBS, 44KG/100LBS, 66KG/150LBS

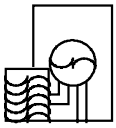


VALID FOR SOFT- MOUNT MACHINES 7KG/18LBS, 10KG/25LBS, 16KG/35LBS, 22KG/50LBS, 33KG/70LBS, 40KG/90LBS, 55KG/125LBS

VALID FOR NON-CABINET MACHINES 22KG/50LBS, 35KG/75LBS, 43KG/95LBS



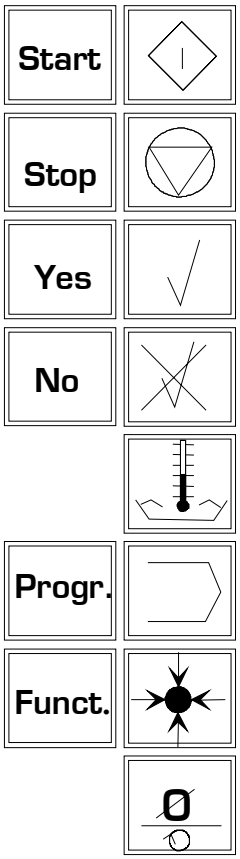
VALID FOR MACHINES WITH EXTERNAL DOSING PUMPS OF LIQUID DETERGENTS

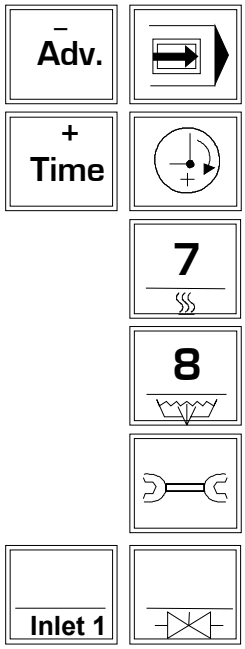


VALID FOR MACHINES WITH RECYCLED DRAINAGE

2.1. SYMBOLS ON THE MACHINE

DESCRIPTION OF PUSH BUTTONS ARE USED IN THIS MANUAL. THE KEY FUNCTIONS PROVIDED SYMBOLS ARE IDENTICAL AND FULLY CORRESPOND TO KEY FUNCTIONS WITH A DESCRIPTION.





* valid for setting of „MANUAL OVERRIDE?" to „YES"

** inlets „ INLET 1 - 6" are valid for soft mounted machines 6-22 kg (15-50 LB) with top hoppers and for machines of rigid line

3. PROGRAMMER DESCRIPTION

3.1. GENERALLY

An electronic programmer is a control system for industrial wash machines, and has following advantages:

– 20 in detail programmable programmes (including 8 pre-programmed ones)
– setting and observation of water level and temperature; an alphanumerical display allows continuous monitoring of the programme; the display shows the programme number, the step number, the remaining programme time without times for filling, heating and the name of a given step.
– an total program overview
– a program can be manually shortened, extended, stopped or a pause is entered
– controlling the external pumps of liquid detergents.
– the display indicates error news of the machine condition
– in the case of uneven distributed linen in a wash machine, the program distributes the linen several times before indicating an error news.
– monitoring the number of finished wash cycles and the number of times an error has occurred.
– machines using hot water automatically regulate the water inlet to always reach the right temperature

IT IS POSSIBL E TO CHANGE THE R.P.M. DURING WASH, PREWASH AND RINSE STEPS ON MACHINES EQUIPPED WITH DRIVE, CONTROLLED BY A FREQUENCY INVERTOR.

The electronic programmer was designed for many types of washers also with spinning. For that reason each programmer must be set according the machine type in which it will be installed. This modification is called an „initialization". A number of important parameters of the washing machine are preset during initialization.

⚠ **WARNING !**
THE INITIALIZATION MAY BE PERFORMED ONLY BY QUALIFIED PERSONNEL. AN INCORRECT INITIALIZATION MAY CAUSE SERIOUS INJURIES AND SERIOUS DAMAGE TO THE MACHINE!

3.2. TECHNICAL DATA

Voltage: *110, 220 or 240 V A.C. (according customer's requirement), 50/60 Hz*

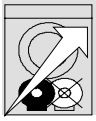
Board diameters*:* *325 x 133 x 55 mm*

Protective relay: *1 relay (RL 20), which switches off all outlets of the control system in the case of*

Output: *19 relay outputs with a switching capacity up to 240 V A.C.,2 A*

Input: *8 optically insulated inputs, 12 D.C.*

Analog inputs*:* *2 analog inputs - one for a temperature sensor, the second one for a pressure sensor of water level measuring.*



MACHINES WITH A FREQUENCY CONTROL:
THE SERIAL PORT IS EQUIPPED FOR THE FREQUENCY INVERTOR CONTROLLING.

Microprocessor*:* *NEC D78CP18CW*

Memory: *1 k byte static RAM and 32 k byte PROM to D 78 CP18 CW*

Display: *LCD with 32 symbols, LED illuminated background; the height of symbols 8,5 mm*

Languages: *Display messages can be performed in four different languages: English, French, German and Dutch - according customer's order.*

Software *contains pre-set wash programmes, all texts from programming and operation modes in four languages; works in 3 modes:*

1. **INITIALIZATION MODE** - only for qualified workers! (details in paragraph 8.6.)
   Programmer switch SW 1 is switched to 0-9 for a given machine, the programmer must be initialized for a given machine type only once (details in chapter 4.)
2. **PROGRAMMING MODE**
   After initialization, a program pre-selection, composition or change of washing can be realized (details in chapter 5.).
3. **OPERATION MODE**
   After initialization, the machine can be used.

4. MACHINE INITIALIZATION

This electronic managing system has been specially constructed for a wide range of wash machines also with spinnig. For that reason it must be individually set up with important parameters for various machine types. This setting we call „initialization". Basic machine adjusting is made in a factory. Initialization of your machine is defined in chapter 9.

⚠ **WARNING !**
ONLY A QUALIFIED WORKER CAN CHANGE THE INITIALIZATION. AN INCORRECT INITIALIZATION CAN CAUSE INJURIES AND A SERIOUS MACHINE DAMAGE.
AFTER INSTALLATION, A MACHINE INITIALIZATION INCLUDING A SET-UP OF A „ZERO" LEVEL MUST BE PROCEEDED BEFORE THE MACHINE OPERATION.
AFTER THE MAIN BOARD IS CHANGED, THE "SW1" SWITCH MUST BE SET CORRECTLY (SEE ARTICLE 8.6.) AND THE MACHINE MUST BE INITIALIZED AGAIN.

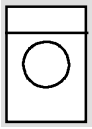
4.1. MACHINE TYPE AND PRE-PROGRAMMED PROGRAMMES

The programmer software contains 8 standard pre-programmed wash programmes, which are stored in the memory by the manufacturer. Service technicians can generate these programmes again only when the board is changed or for a changed programmes renewal. To set correct values for these programmers, enter an appropriate machine type. The display shows „**SELECT PROCESS - -**". If you enter the code 52, the programmer will indicate:

ENTER MACHINE -

(enter type of the machine)

Please enter an exact type of machine immediately



RIGID MACHINES OF CAPACITIES 6-35 KG

1 for machines of capacity 6, 7, 10 kg
2 for machines of capacity 16, 22, 30, 35 kg

SOFT MOUNTED MACHINES OF CAPACITIE S 6-55 KG

3 for machines of capacity 6, 7, 10 kg
4 for machines of capacity 16, 22 kg
5 for machines of capacity 33-40 kg
6 for machines of capacity 55 kg

SOFT - MOUNT MACHINES WITH A FREQUENCY CONTROL

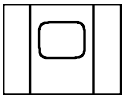
1 for machines of capacity 6, 7, 10 kg
2 for machines of capacity 16 kg
3 for machines of capacity 22 kg - a model with top 3 chamber hoppers
4 for machines of capacity 22 kg - a model with front 5 chamber hoppers
5 for machines of capacity 33 kg
6 for machines of capacity 40 kg
7 for machines of capacity 55 kg

NON - CABINET MACHINES OF CAPACITY 22-43 KG

1 for machines of capacity 22 kg
2 for machines of capacity 35 kg
3 for machines of capacity 43 kg

NON-CABINET MACHINES WITH A FREQUENCY CONTROL

1 for machines of capacity 22 kg
2 for machines of capacity 35 kg
3 for machines of capacity 43 kg



HYGIENIC MACHINES OF CAPACITIES 26-6 6 KG

1 for machines of capacities 26 kg
2 for machines of capacities 33 kg
3 for machines of capacities 44 kg
4 for machines of capacities 66 kg

After entering the correct machine type, adequate standard pre-programmed wash programmes will be stored to EEPROM memories in approx. 2 minutes.

4.2. INITIALIZATION PROCEDURE

The machine can be initialized only in an initialization mode.
For entering to the initialization mode you must - when the indication is:

SELECT PROCESS _ _	(select process - -)

to enter the code 62. For better understanding of the following text, refer to the developmental diagram in fig. 4.2.

⚠ **WARNING !**
IF YOU ANSWER MISTAKENLY A QUESTION, YOU HAVE TO START THE INITIALIZATION PROCEDURE AGAIN. INITIALIZATION PROCEDURE CAN NOT BE INTERRUPTED, ALL QUESTIONS MUST BE ANSWERED.

If you request a different initialization, do it by the following way. If you are in an initialization mode, the display will read:

1=ENG 2=FRENCH 3=GERM 4=DUTCH	(language selection)

Enter (by the software version):
1 English
2 French
3 German
4 Dutch

The display will ask:

SERVICE XXXX CHANGE?	(to change the service interval?)

The number represents a number of wash cycles the machine completes before the display will call on „**SERVICE DUE**". To change this number, press „YES" and enter a new one. If the number is correct, pres „NO".

The counter of wash cycles (which must be proceeded before a preventive service inspection), can be changed by pressing „YES" upon the question „**SERVICE XXXX, CHANGE?**".Then you can enter another number according to a number of wash cycles, followed by the „**SERVICE DUE**" message.

To zero out all cycle counters see chapter 5.15.

ON MACHINES WITH A FREQUENCY CONTROL, THERE ARE NOT QUESTIONS „WASH TIME CHANGE?", "NORMAL ON XX S, CHANGE?", „NORMAL ON - - S", „NORMAL OFF XX S, CHANGE?", "NORMAL OFF - - S", „GENTLE ON XX S, CHANGE?", „GENTLE ON - - S", „GENTLE OFF XX S, CHANGE?", „GENTLE OFF - - S". CONTINUE BY SETTING OF „ZERO" LEVEL. TIMES OF A REVERSION ARE PROGRAMMED IN INDIVIDUAL PROGRAMME STEPS IN THE PROGRAMMING MODE.

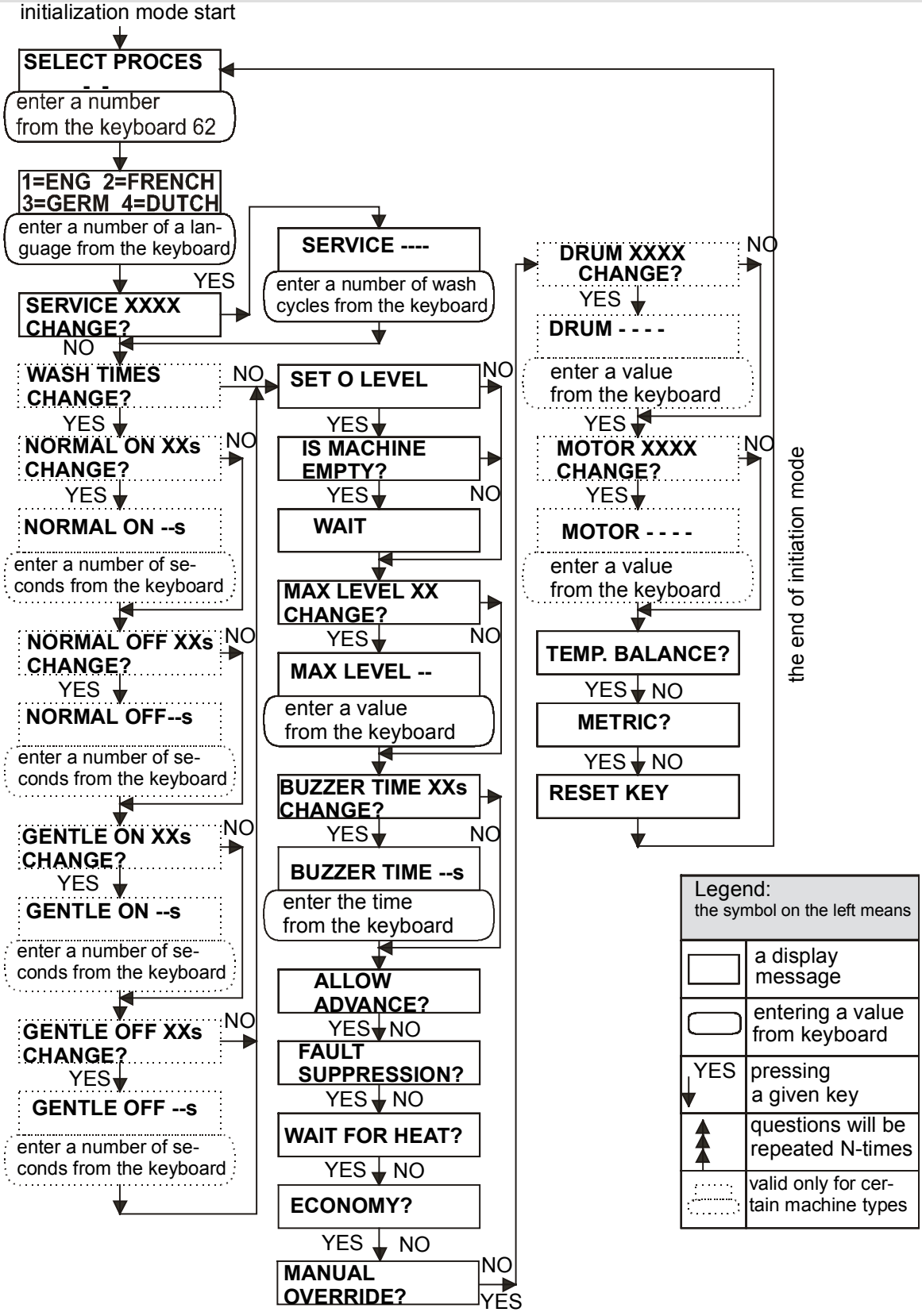


Fig. 4.2 Diagram of initialization mode

The display will then show:

WASH TIMES CHANGE?	**(to change the wash time?)**

If necessary, you can change the operating time of the motor reversion by pressing „YES". If you do not wish to make a change, press „NO" and continue from „**SET O LEVEL**". If you have pressed „YES", the display will read:

NORMAL ON XX s CHANGE?	**(to change the normal reversion time?)**

That is the number of seconds that the motor runs at normal reversion. If you wish to keep the given value, press „NO". If you want to change the given value, pres „YES" and the display will read:

NORMAL ON - - s	**(normal reversion time in sec.)**

and you can enter a new value.

You will follow the same procedure at next questions:

NORMAL OFF XX s CHANGE?	**(to change the normal turning off time?)**

(i.e. number of seconds, when the motor does not run (turned off) at normal reversion).

GENTLE ON XX s CHANGE?	**(to change the gentle reversion time?)**

(i.e. number of seconds the motor runs at gentle reversion).

GENTLE OFF XX s CHANGE?	**(to change the gentle turning off time?)**

(i.e. number of seconds the motor does not run (turned off) at gentle reversion).

At normal reversion the following times are selected:

NORMAL ON 12 s
NORMAL OFF 3 s

At gentle reversion the following times are selected:

GENTLE ON 3 s
GENTLE OFF 12 s

The display will now appeal:

SET O LEVEL	**("O" water level calibration)**

By pressing „YES" you can re-calibrate a „0" water level. Otherwise press „NO" and continue from „**MAX LEVEL XX?**" You can calibrate the „0" water level, only if there is no water in the drum. The electronic control system therefore asks: „**IS THE MACHINE EMPTY?**" If it is, press „YES". For a few seconds the display will read „WAIT". If the machine is not empty you must answer „NO" to the question „**IS THE MACHINE EMPTY?**" In this case, the „0" water level is not re-calibrated.

MAX LEVEL XX CHANGE?	**(maximum level change?)**

The number indicates the maximum relative water level can be programmed, without overflowing from the machine. If you want to change this value, press „YES" and enter a new value. If not, simply press „NO" and continue from „**BUZZER TIME XX SEC CHANGE?**". The maximal relative water level varies according to the type of machine (see the table). Values in this table are informative only.

TYPE	RIGID MOUNTED					
CAPACITY KG	6	7	10	16	22	35
CAPACITY LB	15	18	25	35	50	80
MAX. LEVEL FOR INITIALIZATION	52			60		70

SOFT - MOUNT			
6	7	10	16
15	18	25	35
57			62

TYPE	NON-CABINET			HYGIENIC				SOFT-MOUNT			
CAPACITY KG	22	35	43	26	33	44	66	22	33	40	55
CAPACITY LB	50	75	95	60	70	100	150	50	75	90	125
MAX. LEVEL FOR INITIALIZATION	70	75		80		85		70	80		

Tab. 4.2.A Maximal levels

If you need to rinse badly soiled laundry continuously, you can initialize the maximum water level higher than the overflow. This way the water will continuously run into the machine. The water rinses the badly soiled laundry and the excessive water exits the machine by the overflow.

BUZZER TIME XX s CHANGE? (buzzer time change?)

The set standard time is 5 seconds. If you wish to change the buzzer time at the end of the washing cycle, press „YES" and enter a new value. If you do not want to change the time, press „NO" and continue from:

ALLOW ADVANCE? (possibility of cycle acceleration?)

If you press „YES", you can use the „SHORTEN" key to accelerate the washing program in its process. If you press „NO", the functions „SHORTEN" will not be able to use.

FAULT SUPPRESSION? (fault suppression?)

This function has an effect only in the case of „**FILL FAIL**" or „**HEAT FAIL**". If you press „YES", the fault will not be reported during the process. If you press „NO", the fault will be reported during the process. The delay of „**HEAT FAIL**" report is set to 20 minutes and 5 minutes is set for „**FILL FAIL**". The way of the delay time setting before a fault report is described in chapter 5.15.

WAIT FOR HEAT? (wait for heat?)

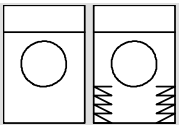
If you want the process pause until the programmed temperatures have been reached, press „YES" (the time of the pause is not included in the programmed time), otherwise press „NO".

ECONOMY? (economic levels)

If you press „YES“ you can select choice „economy“ before start up of washing cycle.
If you press „NO“ you can not select economic functions of washing cycles.

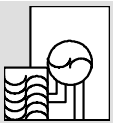
MANUAL OVERRIDE? (manual override?)

If you press „YES", a manual intervention is possible during the washing mode. You may then press the keys „Inlet 1" to „Inlet 3" to supply extra water (chapter 2.1.).



FOR SOFT -MOUNT MACHINES WITH CAPACITIES 6-22 KG AND WITH TOP HOPPERS, AND ALSO SERIES OF RIGID MACHINES, YOU CAN PRESS THE KEYS „INLET 1“ TO „INLET 6“ FOR FILLING EXTRA WATER.

Or press the „DRAIN" key to drain the water from the machine.



ON MACHINES WITH A RECYCLED DRAINAGE, THE VALVE NO.1 WILL DRAIN.

By pressing the „EXTEND" key, you can prolong or shorten (by pressing „SHORTEN"), a processing step of the washing program (except the steps „EXTRACT" and „SPRAY RINSE").
If you enter „NO" to a question of a manual intervention, then in the step processing it is possible only to press the „STOP" key.

ON MACHINES WITH A FREQUENCY CONTROL, IT IS NOW NECESSARY TO ENTER THE DIMENSIONS OF THE MACHINE BELT PULLEYS (VALUES BY TABLE 4.2.B).

DRUM XXXX CHANGE? **(the drum pulley dimension)**

Enter the drum belt pulley dimensions (in mm) according to the following table:

MOTOR XXXX CHANGE? **(the motor pulley dimension)**

Enter the motor pulley of your machine (in mm) according to the following table:

TYPE	SOFT-MOUNT							
CAPACITY KG	6	7	10	16	22	33	40	55
CAPACITY LB	15	18	25	35	50	75	90	125
drum pulley „DRUM - - - -"	0376			0280	0433		0546	
motor pulley „MOTOR - - - -"	0064			0054	0060	0060	0095	0095

TYPE	NON-CABINET		
CAPACITY KG	22	35	43
CAPACITY LB	50	75	95
drum pulley „DRUM - - - -"	0446		
motor pulley „MOTOR - - - -"	0070		

HYGIENIC			
26	33	44	66
60	70	100	150
0460			
0085			

Tab. 4.2.B

⚠ **WARNING !**
ALSO FOR MACHINES THAT ARE NOT INITIALIZED IN METRIC, THE DIMENSIONS OF PULLEYS MUST BE ENTERED IN MM.

TEMP. BALANCE? **(temperature balance?)**

If you answer „YES", the water filling will be subjected to the programmed temperature and inlets (that you have chosen), in a given step that a minimum temperature difference will be achieved between the washing bath, required and incoming water temperatures.

⚠ **WARNING !**
IF YOU (WHEN PROGRAMMING) ENTER A TEMPERATURE OF 60°C OR HIGHER, AND ONLY COLD WATER INLETS WILL BE SELECTED, THERE WILL BE NO WATER FILLING.

If you answer „NO" there will be no water temperature balancing, the water will flow in from all water inlets, that you have selected. There will be no consideration taken to the programmed temperature and water inlets temperature you have selected. In the case, that a washing bath temperature will be higher by 15°C then a programmed temperature, there will be error report „**TOO HOT, CHECK HEATING**".
Then the display will read:

METRIC? **(metric?)**

If you select „YES", the temperature values will be entered and indicated in °C. If you select the „NO" key, the values will be in °F.

The end of initialization mode.

5. PROGRAMMING

5.1. PROGRAMMING MODE

⚠ **WARNING !**
THE MACHINE PROGRAMMER MUST BE INITIALIZED BEFORE PUTTING IN OPERATION, AFTER INSTALLATION !
PROGRAMMING MAY BE DONE BY QUALIFIED PERSONNEL ONLY.
THERE IS POSSIBLE TO COMPOSE OR CHANGE A PROGRAMME ONLY IN THE PROGRAMMING MODE.

This section explains how to create a new programme, how to change it, copy or erase. Each programme consists of a series of steps, which are to be programmed, entered or removed in an existing programme. Step by step you can select a number of functions offered in the programming mode at the same order such as prewash, wash, rinse, extract, drain, etc. These functions can not proceed simultaneously in one step ,but gradually according a process of your request. For instance if you have selected a prewash, you cannot select an extract in the same step.
Programming is easy. The programming mode offers various functions and you just answer „YES" or „NO" to the questions that appear on the display. In a step there is sometimes necessary to enter certain values, which are different from a given step (for instance water inlets, temperature or water level, possibly time).
Basis information of a wash programme for a machine of soft-mount series 6 - 22 kg with top hoppers may look like this:

PART OF WASH PROGRAMME	**NO. AND NAME OF WASH PROGRAMME STEP**		**WATER INLETS, HOPPERS**	**TEMPERA-TURE (°C)**	**WATER LEVEL**	**R.P.M.**	**TIME (min)**
Prewash	1	Prewash	2, 3	40	Low	Wash, normal	4
Extract	02	Extract	-	-	Drain	Low extract	0,5
Wash	03	Wash	3, 4	90	Low	Wash normal	9
Drain	04	Drain	-	-	Drain	Wash normal	0,5
1. Rinse	05	Rinse	2, 5, 6	-	High	Wash normal	1,5
Extract	06	Extract	-	-	Drain	Low extract	0,5
2. Rinse	07	Rinse	2, 5, 6	-	High	Wash normal	1,5
Rinse	08	Extract	-	-	Drain	Low extract	0,5
3. Rinse	09	Final rinse	1	-	High	Wash normal	2
Final extract	10	Extract	-	-	Drain	High extract	4,5

WATER INLETS : **1** - cold hard + hopper C, **2** - cold soft + hopper A , **3** - hot, **4** - hot + hopper B, **5** - cold soft + hopper B, **6** - cold soft

5.2. A NEW PROGRAM

To enter to the programming mode, you must:

At the appeal:

SELECT PROCESS _ _	**(select process - -)**

enter the code 89. If you are in the programming mode, the display will read:

PR – –	**(program no. - -)**

For better understanding of a following text, refer to the progress diagram in fig. 5.2. At each step you have to finish the complete series of questions!
Enter - from the keyboard - the process number which you wish to program from 01 - 20. Standard pre-programmed programmes have numbers 01 - 08. The data on the display will change to:

ANSWER YES OR NO TO QUESTIONS	**(answer yes or no to questions)**

If you want to answer yes to following questions, pres the „YES" key, if you want to answer no, pres the „NO" key. The display will read:

EDIT?	**(edit?)**

If you wish to change the existing programme or to add a step to it, press „YES" key and go to the chapter 5.12. If you want to create a new programme, pres the „NO" key. The display will read the question:

NEW PROGRAM?	**(new program?)**

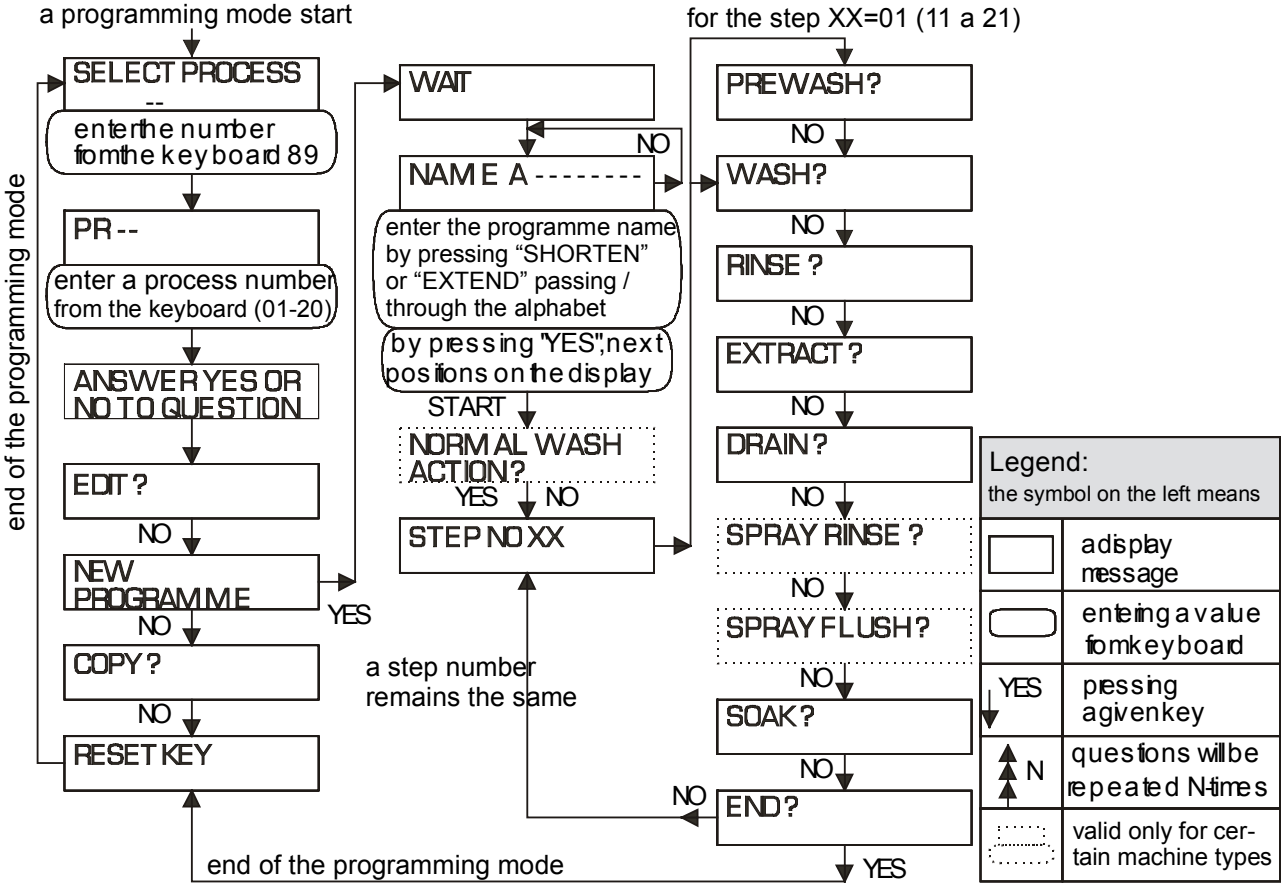


Fig. 5.2 The diagram part of the programming mode for a new programme with offered cycles

Enter - from the keyboard - the number of process you want to remove from 01-20. The standard pre-programmed programmes have numbers 01 - 08.

⚠ WARNING !
IF YOU PRESS „YES" TO THE QUESTION „NEW PROGRAM?", WHEN ENTERING THE SAME NUMBER OF THE NEW PROGRAMME, THE ALREADY PROGRAMMED PROGRAMME WITH THE SAME NUMBER WILL BE ERASED!

IF YOU PRES „NO", THE DISPLAY ASKS: „COPY?"; (IF YOU WISH TO COPY THE PROGRAMME, USE THE CHAPTER „5.13. COPYING A PROGRAMME"); IF YOU WANT TO FINISH THE PROGRAMMING MODE PRESS „NO" FOR A SECOND TIME.

If you press „YES", the display will read „**WAIT**" for a few seconds, followed by:

NAME A - - - - - - - -	**(name:)**

You can now enter a name of the washing programme you want. To enter a name, use the following keys:

„Extend" calls the alphabet from A to Z,
„SHORTEN" calls the alphabet from Z to A,
YES" moves the cursor to the next position,
„NO" if you have made a mistake, you can enter the name again by pressing this key,
„START" when the full name has been entered, press this key to continue the procedure.

The display will read:

NORMAL WASH ACTION?"	**(normal wash action?)**

THIS QUESTION DOES NOT EXIST AT MACHINES WITH A FREQUENCY CONTROLLED DRIVE. REVERSION TIMES ARE PROGRAMMED PARTICULARLY FOR EACH ENTERED STEP.

If you press „YES", a normal way washing will proceed in entire process. After pressing „NO", you will get gentle wash action. The display will read:

STEP NO 01	**(step No.01)**

This means that now you can program the first step of the wash cycle. To program the function shown on the display, press "YES", otherwise press „NO". The display will gradually show all the questions given below. The number of questions will depend on a given answer, too. For instance, if you select „**PREWASH?**", another function like „**EXTRACT?**" will not be offered. Sometimes numbers have to be entered (for example temperature, level, etc.). If in a certain step you have given a wrong answer, you can always reprogram that step. To do this, proceed as follows:

Go through the questions until you reach the question „**NEXT STEP?**". Answer „NO", and you will bee asked „**END?**". Answer „NO" again and reprogram the step.

A procedures of individual wash cycles programming in the sequence that the software offers, are stated in following chapters.

5.3. PREWASH

After entering the programming mode according to the chapter 5.2., the display - after „**STEP NO 01**" - will read:

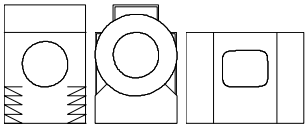
PREWASH? **(prewash?)**

It will be shown only at the step No.1 (11 and 21). If you have pressed the „NO" key, continue from „**WASH?**". By pressing the „YES" key, you have selected a prewash and the display will show:

INLETS - - - **(water inlets)**

According to your machine type:

SOFT-MOUNT TYPE MACHINES 22-55 KG (F RONT HOPPERS), HYGIENIC AND NON-CABINET MACHINES

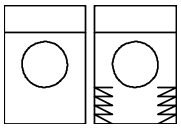


Choose up to three water inlets:

1 for cold hard water
2 for cold soft water
3 for warm water

SOFT-MOUNT MACHINES 6-22 KG (TOP HO PPERS) RIGID MACHINES

Choose up to four water inlets and hoppers A, B, or C for washing soaps:



1 for cold hard water, hopper C
2 for cold soft water, hopper A
3 for warm water (DIRECT)
4 for warm water, hopper B
5 for cold soft water, hopper B
6 for cold soft water (DIRECT)

After selection, press „YES" key and display will read:

TEMPERATURE - - C **(water temperature ˚C:)**

(maximally 99°C) or if it is set (during initiation) „**METRIC?**" to „NO" for entering the temperature in °F, (temperatures bellow 100°F you must enter with a „ZERO" in front - 086°F):

TEMPERATURE - -F **(water temperature ˚F:)**

Enter the required temperature, then the display will show:

– – C/MIN **(heating speed:)**

possibly „-----F / MIN". Now program the heating speed. The speed can be controlled by entering of a max. temperature increasing per minute in °C (°F). For normal processes, where the maximum heating speed is requested, enter the number 99. When using „**VERIFY?**", „YES" or „**EDIT?**" the function is indicated on the display by the information „**RATE XX ˚C / min**" (°F/ min).

STATIC FILL **(static fill)**

During each prewash step, wash and rinse, there is - during programming - a selection of a static fill available. In case of such selection, the motor is prevented from its start before the water level reaches the requested point. Use it for fine textiles which could be damaged during the movement without water.

LEVEL – – **(water level:)**

Enter the required water level. In principle any level can be programmed, but we suggest two of them:
– a low level for economic prewash or wash
– a high level for washing of delicate materials or prewashing

Values of low and high levels in this table are recommended. The levels vary according to the type of machines in the following table 5.3.

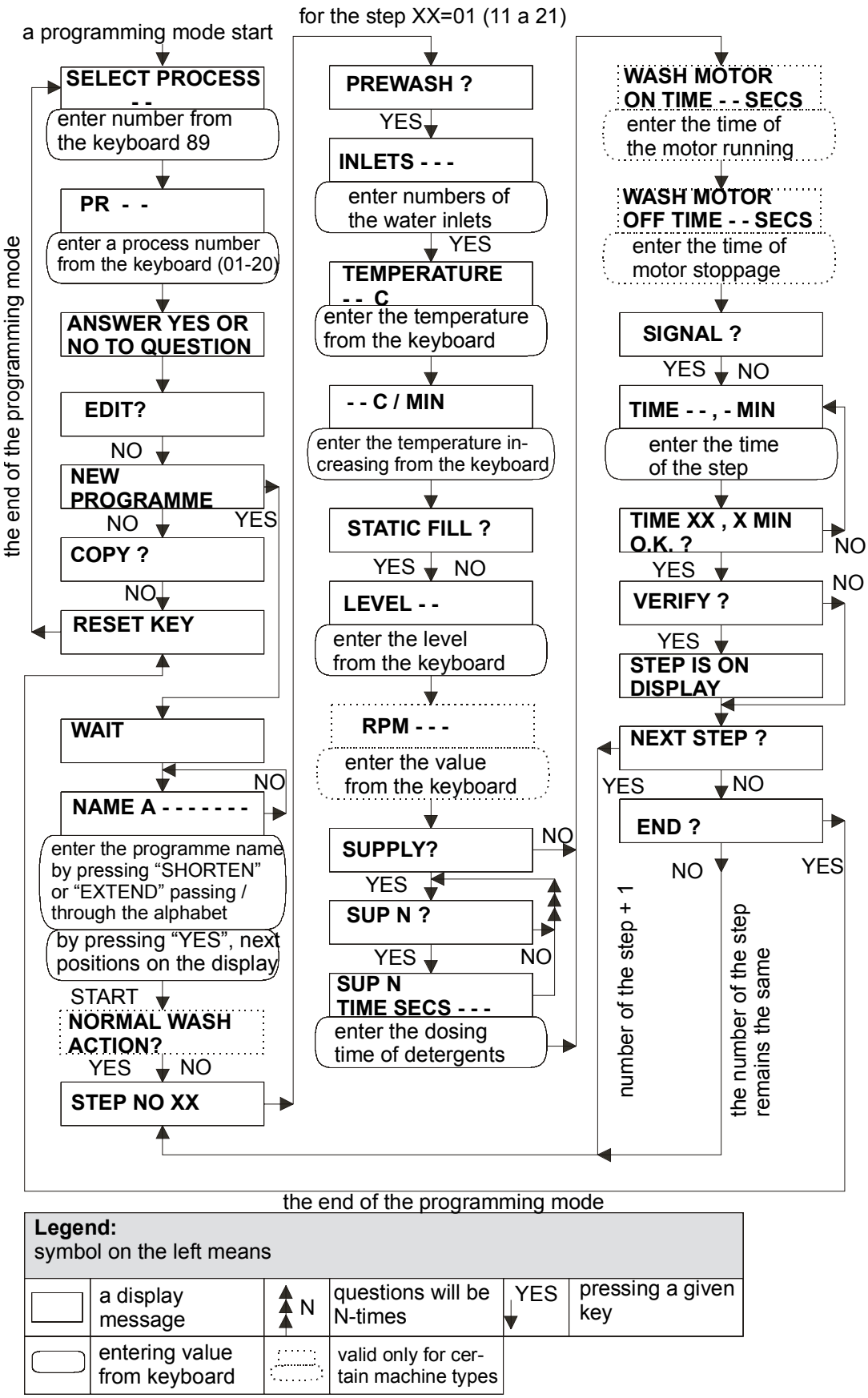


Fig. 5.3 The diagram part of the programming mode for a new programme and a PREWASH step

TYPE	RIGID MOUNTED					
CAPACITY KG	6	7	10	16	22	35
CAPACITY LB	15	18	25	35	50	80
SAFETY LEVEL *		15		20		
LOW LEVEL	25			35		
HIGH LEVEL	32			40		
MAX. LEVEL FOR INITIALIZATION	52			60		70

SOFT-MOUNT			
6	7	10	16
15	18	25	35
	20		
30			35
37			42
57			62

TYPE	NON-CABINET			HYGIENIC				SOFT-MOUNT			
CAPACITY KG	22	35	43	26	33	44	66	22	33	40	55
CAPACITY LB	50	75	95	60	70	100	150	50	75	90	125
SAFETY LEVEL*	17			20		20		20	30		
PREWASH	43	44		65		58		43	65		
MAX. LEVEL FOR INITIALIZATION	70	75		80		85		70	80		

* Min. level for heating

Tab. 5.3.A Recommended levels

⚠ **WARNING !**
IF YOU ENTERED A WRONG WATER LEVEL, YOU MUST REPROGRAM THE STEP.
IF YOU WARM UP WATER IN THE WASHER, AN ADEQUATE LEVEL MUST BE PROGRAMMED, OTHERWISE THE WATER MAY EVAPORATE. THEREBY THE MACHINE CAN BE SERIOUSLY DAMAGED.
NOTE: IT IS NOT POSSIBLE TO PROGRAM A HIGHER LEVEL, THAN THE MAXIMUM SET IN INITIALIZATION MODE (TABLE 4.2. A)!

The display will read:

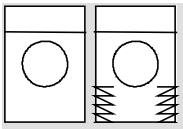
R.P.M. - - - - **(r.p.m.)**

If the machine has a frequency control, you must enter the drum R.P.M. values. The ranged of programmed r.p.m. for washing is 7 - 50 r.p.m. The recommended values for particular machines are in the following table:

TYPE	NON CABINET			HYGIENIC				SOFT-MOUNT				
CAPACITY KG	22	35	43	26	33	44	66	6-16	22	33	40	55
CAPACITY LB	50	75	95	60	70	100	150	15-35	50	75	90	125
PREWASH AND WASH	0041	0039	0039	0042		0038		0045	0042	0040		

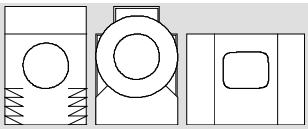
Tab. 5.3.B Values of recommended r.p.m.

SUPPLY? **(supply of washing soaps?)**



ON SOFT-MOUNT MACHINES 6 - 22 KG, WITH TOP HOPPERS AND RIGID MOUNTED MACHINES, THE WASHING SOAPS WERE DOSED IN FUNCTIONS „INLET 1?" TO "INLET 6?'.

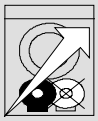
If you do not wish to use the function of soap dosing, press „NO" and you will get to questions of reversion setting like „**SIGNAL?**", from where you will continue.



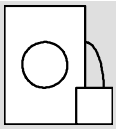
For soft-mount (22 - 55 kg, front hoppers) hygienic and non-cabinet machines, enter „YES", that you can (by entering „**SUPPLY 1?**" to „**SUPPLY 5?**" for flushing the hoppers 1 - 5) ensure a dosing of soaps possibly „**SUPPLY 6?**" to „**SUPPLY 8?**" for dosing of liquid soaps by external pumps-if any connected.

SUPPLY 1? (supply 1?)

Select by pressing „YES" or „NO" maximum three inlets from all offered, inlets, according the machine type.



ON MACHINES WITH A FREQUENCY CONTROLLED DRIVE, YOU CAN SELECT ONLY 2 INLETS.



If you want to use liquid soap pumps, press „YES" to select pump No.1, (according to what inlets your pumps are connected to).

MACHINES SOFT-MOUNT, 6-22 KG CAPACITY, (TOP- HOPPERS) 2 - MOTORS:
you can use "**SUPPLY 1?**" to "**SUPPLY 3?**"

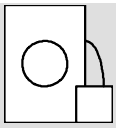
MACHINES SOFT-MOUNT, 6-22 KG CAPACITY (TOP HOPPERS) WITH A FREQUENCY CONTROLLED DRIVE:
You can use „**SUPPLY 1?**" to „**SUPPLY 7?**", which will be activated in the operating mode at the beginning of filling, after a certain level has been reached.

MACHINES RIGID MOUNTED 6-35 KG CAPACITY:
You can use „**SUPPLY 1?**" to „**SUPPLY 5?**" which will be activated in the operating mode at the beginning of filling, after a certain level has been reached.

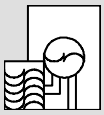
MACHINES SOFT-MOUNT 22-55 KG CAPACITY (FRONT HOPPERS), NON-CABINET AND HYGIENIC:
You can use „**SUPPLY 6?**" to „**SUPPLY 8?**" (the standard is „**SUPPLY 1?**" to „**SUPPLY 5?**" used for hoppers), which will be activated in the operating mode after reaching the programmed level.

SUPPLY 1 TIME SECS – – (time - - sec for supply 1 run)

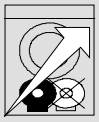
Now you can enter a number of seconds for the hopper flushing (in preprogrammed programmes it is 20-30 sec, max. 99 sec). Continue the same way at No. 2 to „N" (N = max. number of soap hoppers available for a given step).



For the pumps you can now enter a number of seconds for the pump dosing (max. 99 sec) in a given step. The same way you can continue at the others „**SUPPLY N?**" that are available. The time varies according to a pump and soaps you use.



If the machine has a recycling drain, the „**SUPPLY 8?**" is not programmable.



WASH MOTOR ON TIME - - SECS (wash motor ON - - sec)

If the machine has a frequency control, you can now enter the required time value of the drum rotation during washing (reversion). You can select the reversion time from 1 to 99 sec. Usual times are stated in the table 5.3.C.

WASH MOTOR OFF TIME - - SECS (wash motor OFF - - sec)

If the machine has a frequency control, you can now enter the requested time value of the drum stoppage during washing (reversion). The pause time you can select from 1 to 99 sec. Usual times are stated in the table 5.3.C.

MOTOR RUN	"ON"	"OFF"
"NORMAL WASH ACTION?"- "YES"	12	03
"NORMAL WASH ACTION?"-"NO" (GENTLE WASH ACTION)	03	12

Tab. 5.3.C

SIGNAL?	**(signal?)**

By selecting this function in a particular step, a signal will sound at the beginning of that step and a pause will be automatically inserted. The time stops running and the display will read „**PAUSE**". This can be used if you wish to add soap manually during the process. In the programme itself, the operator must then press „START" to continue the process, the signal stops and the time starts running again. When all the above questions have been answered, the display will read:

TIME - -,- MIN	**(time - -,- min)**

Now enter the required time for the step. The maximum time that can be set is 99,5 min. The tenths can be entered only by 0 or 5. If the programmed process exceeds 100 minutes, the display will state the time in full minutes up to a maximum 290 min. The programmed time does not include water heating, water inlet or distribution the linen. The total time of a step will therefore be, for instance: water inlet time + water heating time + the time programmed by you!

After programming the time, the display will ask:

TIME XX.X MIN OK?	**(time XX.X min, OK?)**

If the programmed time is correct, press „YES". If you programmed a wrong time, press „NO". If you press „YES", the display will read:

VERIFY?	**(verify?)**

If you press „NO", continue from „**NEXT STEP?**" If you press „YES?", the display will show all programmed functions for this step gradually. This enables you to check all programmed functions again. When the checking has finished, the display changes to:

NEXT STEP?	**(next step?)**

If you wish to correct this step, press „NO" and after the next question „**END?**" press „NO" again. Then you can program this entire step again. If you press „YES", the display will show (for a few seconds) a number of the next step, and you can start to program the step from the question „**WASH?**" By this way, several steps can be created which together make up a washing process.

TO FINISH THE PROGRAMMING, YOU CAN PRESS „YES" ON THE QUESTION „END?" (SEE CHAPTER 5.11.)

5.4. WASH

In the programming mode according to the 5.2., after proceeding programmed steps and with an approval of „**NEXT STEP?**", the display (by the fig. 5.4), will read:

WASH?	(wash?)

Entered quantities can be programmed similarly to the prewashing.

⚠ **WARNING !**
IF THE „TEMP BALANCE?" IN THE INITIALIZATION IS SET TO „YES", AND THE PROGRAMMED TEMPERATURE IS 60°C (140°F) OR HIGHER, AND WATER INLETS ARE SELECTED ONLY WITH COLD WATER, THE WATER FILLING WILL NOT HAPPEN.

At the beginning (fig. 5.4), only this function will be added:

COOLDOWN?	(cooldown?)

If you wish to program cooling down, proceed as follows:

Always firstly program the step „**PREWASH?**" (or "**WASH?**", where the question „**COOLDOWN?**" must be answered „NO"). Continue from „**TEMPERATURE- - C**" and enter a wash temperature etc. Then program the step „**WASH?**" again, where the „**COOLDOWN?**" must be answered „YES". Continue from „**TEMPERATURE- - C**" and enter a cool-down temperature etc. The programmer will ensure, that the programmed cool-down temperature and the level will be reached.

For „**LEVEL - -**" enter a requested relative water level. Two levels are recommended a low level for normal wash and a high one for washing a delicate laundry. The level values in the table 5.4. are recommended and they vary according a machine type.

TYPE	RIGID MOUNTED						SOFT- MOUNT			
CAPACITY KG	6	7	10	16	22	35	6	7	10	16
CAPACITY LB	15	18	25	35	50	80	15	18	25	35
SAFETY LEVEL *		15		20				20		
LOW LEVEL	25			35			30			35
MAX. LEVEL FOR INITIALIZATION	52			60		70	57			62

TYPE	NON-CABINET			HYGIENIC				SOFT-MOUNT			
CAPACITY KG	22	35	43	26	33	44	66	22	33	40	55
CAPACITY LB	50	75	95	60	70	100	150	50	75	90	125
SAFETY LEVEL*	17			20		20		20	30		
WASH	35	37		52		51		35	52		
MAX. LEVEL FOR INITIALIZATION	70	75		80		85		70	80		

* a minimum level for heating Tab. 5.4 Recomended wash levels

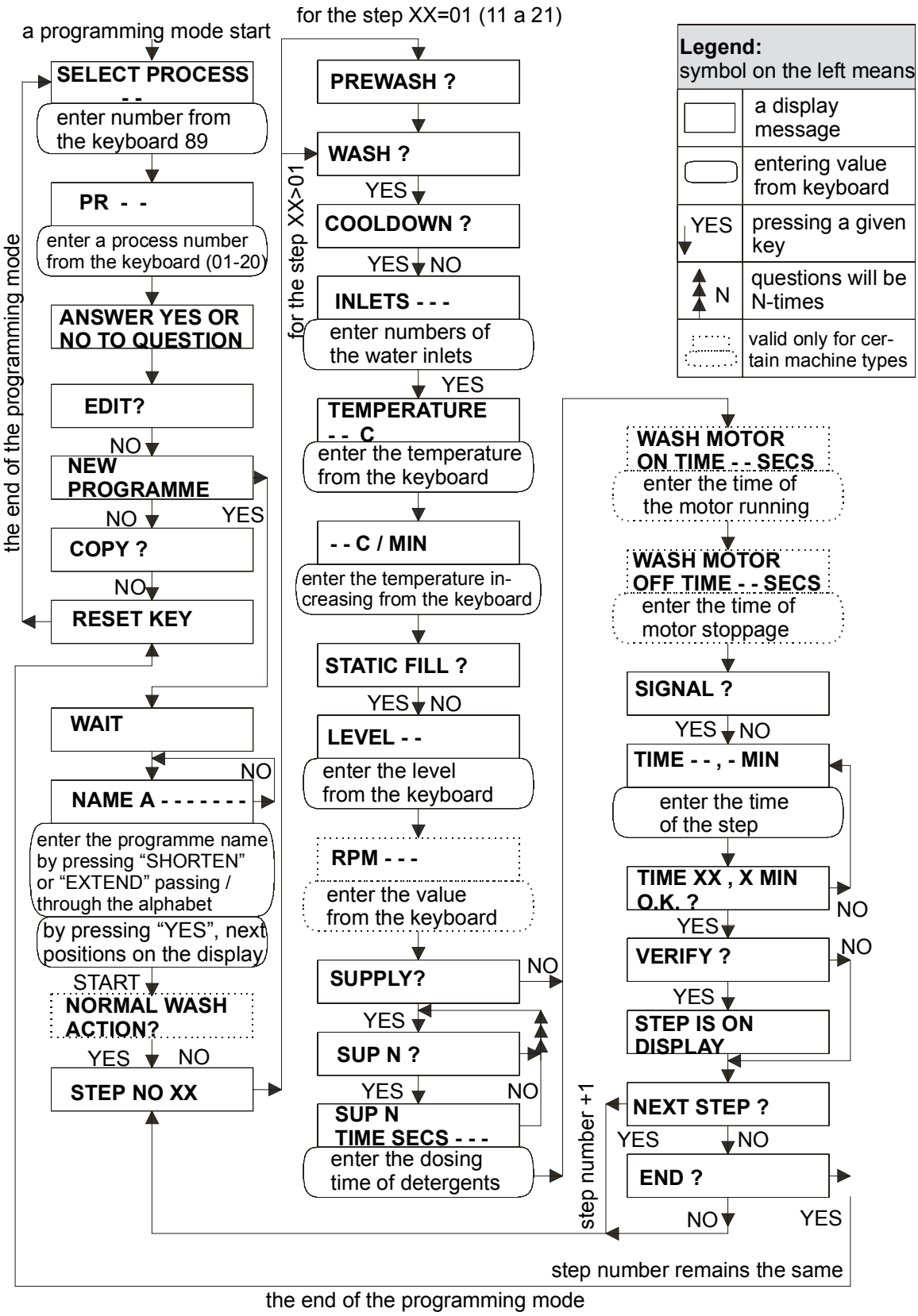


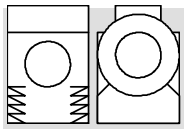
Fig. 5.4 The diagram part of the programming mode for a new program and a wash step

5.5. RINSE

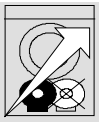
In the programming mode according to the chapter 5.2., after preceding programmed steps and with an approval of „**NEXT STEP?**", and wash function refusal, the display will read (by the fig. 5.5):

RINSE?	(rinse?)

Entered quantities can be programmed similarly to the prewash. There is no entering of a temperature, temperature increasing and it is not possible to select a warm water filling. In this step you can program three supplies „**SUPPLY N?**"



FOR - 2 - MOTOR, SOFT-MOUNT MACHINES 22-55 KG CAPACITY (FRONT HOPPERS) AND NON-CABINET MACHINES, YOU CAN CHOOSE UP TO FOUR INLETS FOR RINSING "SUPPLY N?".



ON MACHINES WITH A FREQUENCY CONTROLLED DRIVE (SOFT-MOUNT) 6-22 KG CAPACITY (TOP HOPPERS), THE DISPLAY WILL SHOW:

FINAL RINSE?	(final rinse?)

If a rinsing, programmed by you, is the last one, answer „YES".

For the „**LEVEL - -**", enter a required relative water level. Actually you can program any level; the suitable for rinsing is the high one. High level values are recommended and they vary according the machine type in the following table:

TYPE	RIGID MOUNTED						SOFT - MOUNT			
CAPACITY KG	6	7	10	16	22	35	6	7	10	16
CAPACITY LB	15	18	25	35	50	80	15	18	25	35
SAFETY LEVEL *		15		20				20		
HIGH LEVEL	32			40			37			42
MAX LEVEL FOR INITIALIZATION	52			60		75	57			62

TYPE	NON - CABINET			HYGIENIC				SOFT - MOUNT			
CAPACITY KG	22	35	43	26	33	44	66	22	33	40	55
CAPACITY LB	50	75	95	60	70	100	150	50	75	90	125
SAFETY LEVEL *	17			20		20		20	30		
RINSE	48	48		71		64		48	71		
MAX. LEVEL FOR INITIALIZATION	70	75		80		85		70	80		

Tab. 5.5 Recommended levels for rinsing

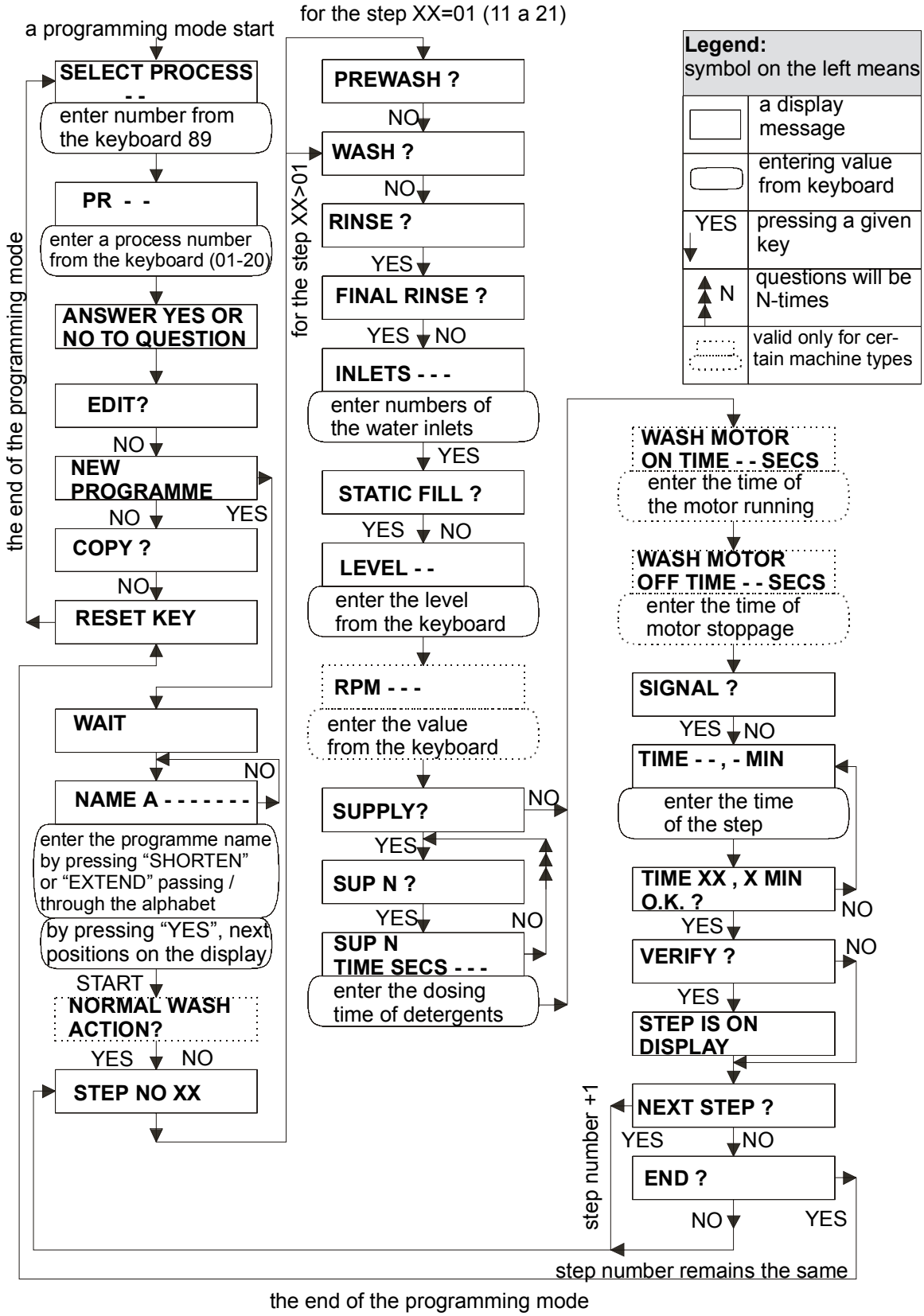


Fig. 5.5 The diagram part of the programming mode for a new programme and a rinse step

5.6. EXTRACT

In the programming mode according to the chapter 5.2., after preceding programmed steps with an approval of „**NEXT STEP?**", and the wash and rinse functions refusal, the display will read (by the fig. 5.6):

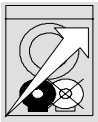
EXTRACT? **(extract?)**

You do not have to program the drain step „**DRAIN?**" before the extract step „**EXTRACT?**", or a high r.p.m. spin „**HIGH SPIN?**". These functions contain a water draining command.

When you choose a low r.p.m. spinning.

– the drum will rotate at normal washing revolutions.
– the washer will automatically drain off and linen will distribute.
– the washer will extract at low r.p.m. during the pre-selected time.

The total time of low r.p.m. extracting = the time of washing r.p.m. + time for draining and distributing + the time you have programmed XX.X min.
or the following according to a machine type:



If you answer „YES" to the "**EXTRACT?**", on machines with a frequency invertor the display will ask:

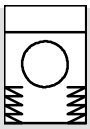
R.P.M.- - - - **(r.p.m.)**

Now you must choose an extracting r.p.m. You can program only values from 0 to 150, and in the range 300 to the maximum selective value according to a machine type. Critical r.p.m. 150 - 300 you cannot select. Pre-selected values in pre programmed processes and maximal selective values are stated in the table 5.6.
- the washer will automatically drain off and distribute the linen
- the washer will automatically extract with a gradually speed increasing for the remaining number of minutes.

The total time of the high r.p.m. spinning = time for drain and distributing + remaining programmed time XX.X min.

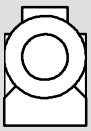
TYPE	NON-CABINET			HYGIENIC				SOFT - MOUNT				
CAPACITY KG	22	35	43	26	33	44	66	6-16	22	33	40	55
CAPACITY LB	50	75	95	60	70	100	150	15-35	50	75	90	125
MAX. SELCTIVE	0729	0699	0624	0959		0914		0999	0859	0829		
PRESELECTED	0730	0700	0625	0960		0915		1 000	0860	0830		

Tab. 5.6 r.p.m. of spinning



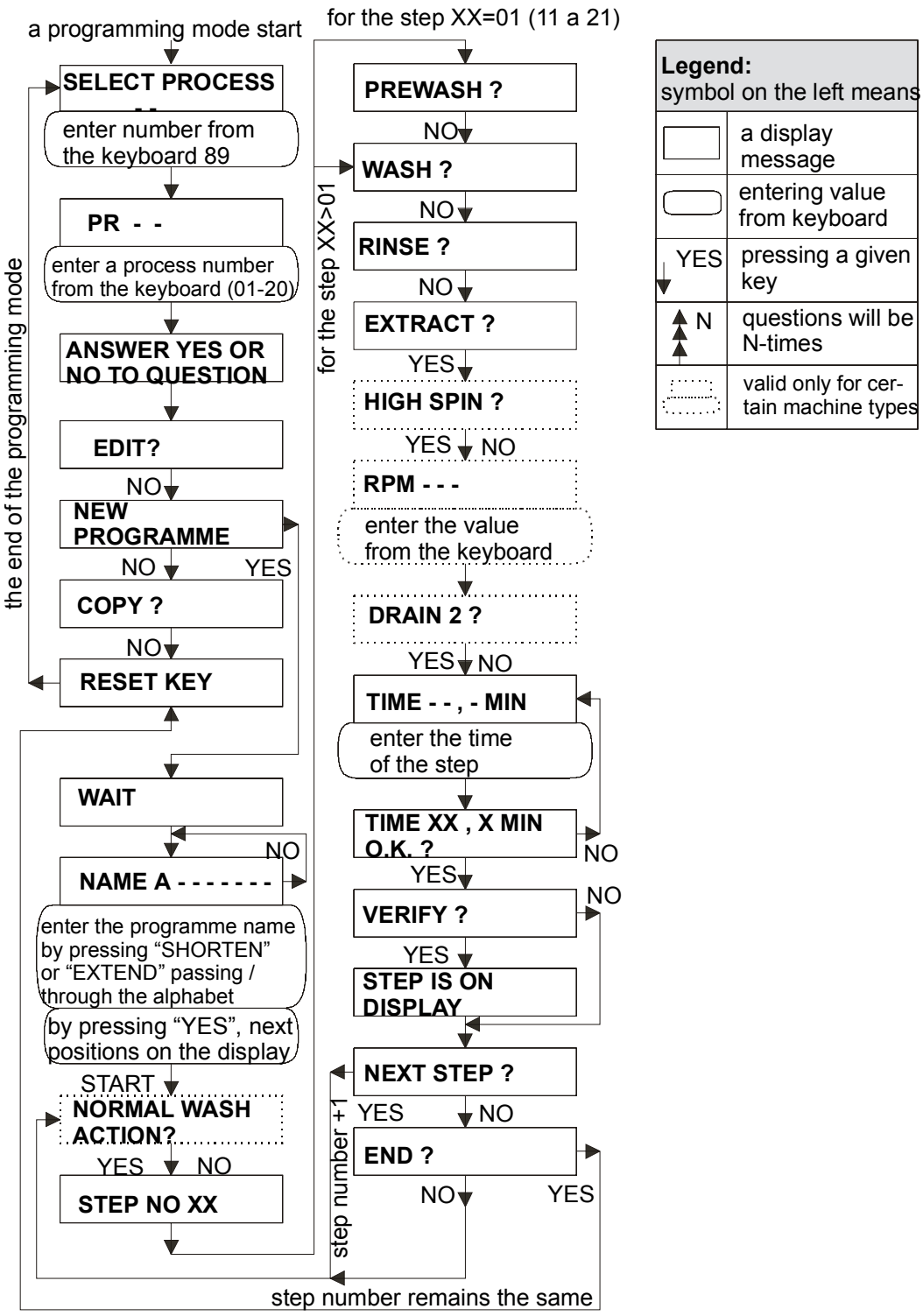
If the machine has a two - motor drive:

HIGH SPIN? **(high spin?)**



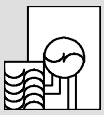
If you answer „NO", there will be a low r.p.m. spinning.
If you answer „NO" to „**HIGH SPIN?**", continue from „**TIME-,-MIN**".
If you answer „YES to „**HIGH SPIN?**", you will choose a high r.p.m. spinning and in that case:
- the washer will rotate shortly with normal washing r.p.m.
- the washer will automatically drain off and distribute the linen
- the washer will automatically extract with low r.p.m. for 1 minute
- the washer will extract with high r.p.m. for the remaining number of minutes.

The total time of the high r.p.m. spining = time of the washing r.p.m. + time for draining and distributing + 1 minute of low r.p.m. extracting + the remaining programmed time XX.X min.
WE RECOMMEND NO PROGRAMMING OF A DRAIN STEP BEFORE EXTRACTING TO ALLOW THE CORRECT LINEN DISTRIBUTION.
DO NOT PROGRAM TIMES BELOW 1,5 MIN., OTHERWISE THE LINEN WILL BE NOT PROPERLY EXTRACTED.
IF YOU HAVE PROGRAMMED THE „HIGH SPIN?" FUNCTION, WATER WILL BE DRAIN OFF AT THE TIME THE WASHER DISTRIBUTES THE LINEN IN THE DRUM. THEREFORE YOU DO NOT HAVE TO PROGRAM HE DRAIN STEP BEFORE EXTRACTING.
If you answer „YES" to „**HIGH SPIN?**", continue from „**TIME - ,- MIN**".



the end of the programming mode

Fig. 5.6 The diagram part of the programming mode for a new programme and an extract step



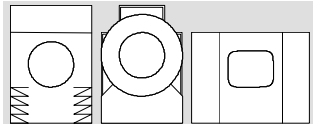
DRAIN 2? **(recycled drain?)**

If the machine has a recycling drain, you can - by pressing „YES"- program draining "**DRAIN 2?**".

TIME - -,- MIN **(time - -,- min)**

IT IS NOT RECOMMENDED TO PROGRAM THE EXTRACTING TIME LONGER THAN 10 MINUTES BECAUSE:

– after a certain time, no water drains off of laundry
– too long extracting wears out the laundry
– too long extracting shortens a washer service life



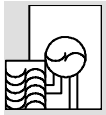
FOR SOFT-MOUNT WASHERS 22-55 KG CAPACITY (FRONT HOPPERS), HYGIENIC AND NON-CABINET MACHINES, YOU CAN SELECT THE EXTRACTING TIME MAXIMUM 15 MINUTES.

The following functions are the same as at the prewash ("**TIME XX.X MIN, OK?**", "**VERIFY?**" and "**NEXT STEP?**").

5.7. DRAIN

In the programming mode according the chapter 5.2., after preceding programmed steps with an approval of „**NEXT STEP?**", and the functions from wash to extract refusal, the display will read (according the fig. 5.7):

DRAIN? **(water drain?)**



DRAIN 2? **(recycled drain?)**

Now you can choose, which valve will drain water off. If the machine has a recycled drain, you can choose the valve 2 for draining by pressing „YES".

By selection of this function, you can program the drain valve opening. You must program a sufficient time (minimum 1,0 minute), to drain off the drum completely.

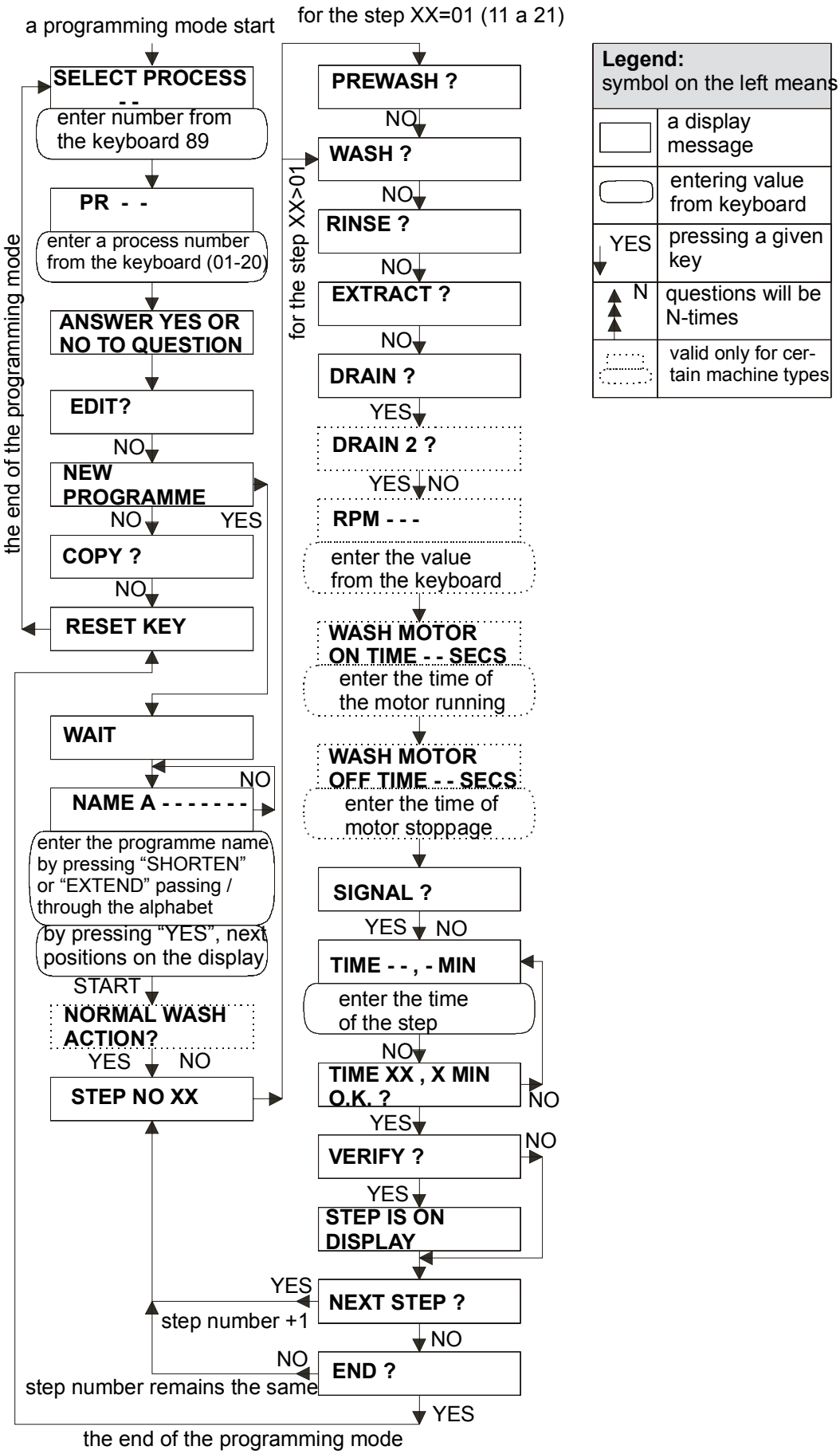
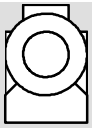


Fig. 5.7 The diagram part of the programming mode for a new programme and a drain step

5.8. SPRAY RINSE



In the programming mode according to the chapter 5.2., after proceeding programmed steps, with an approval of „**NEXT STEP?**", and wash to drain functions refusal, the display (by the fig. 5.8) will read:

SPRAY RINSE?	(spray at low r.p.m.)

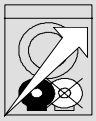
If you choose this function, laundry will be sprayed during a low r.p.m. extracting.
DURING SPRAYING, THE DRAIN VALVE IS OPENED.

SPRAY 1	(hot spray)

After this function selection, the hot water valve will be opened during spraying „**SPRAY RINSE?**"

SPRAY 2	(cold spray)

After this function selection, the cold water valve will be opened during spraying „**SPRAY RINSE?**"
THIS WAY YOU CAN, DURING SPRAYING, ACTIVATE ONE OR BOTH INLET VALVES.

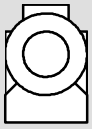


R.P.M. - -	(r.p.m.)

If the machine has a frequency control, you must enter the drum r.p.m. values. It is possible to program only values from 0 to 150, and in the range 300 up to maximum selective value according to machine types. It is not possible to select critical r.p.m. 150 - 300. Pre-selected values in eight pre-programmed processes, and maximum selective values are stated in table 4.8.

TYPE	NON-CABINET		
CAPACITY KG	22	35	43
CAPACITY LB	50	75	95
MAX. SELECTIVE	0729	0699	0624
PRESELECTED	0365	0365	0365

Tab. 5.8



TIME - -,- MIN	(time - -,- min)

Now it is possible to enter a required time for a given step. The maximum setting time of the step is 15 min.
The following functions are the same as the prewash ("**TIME XX.X MIN, OK?**", "**VERIFY?**" and "**NEXT STEP?**").

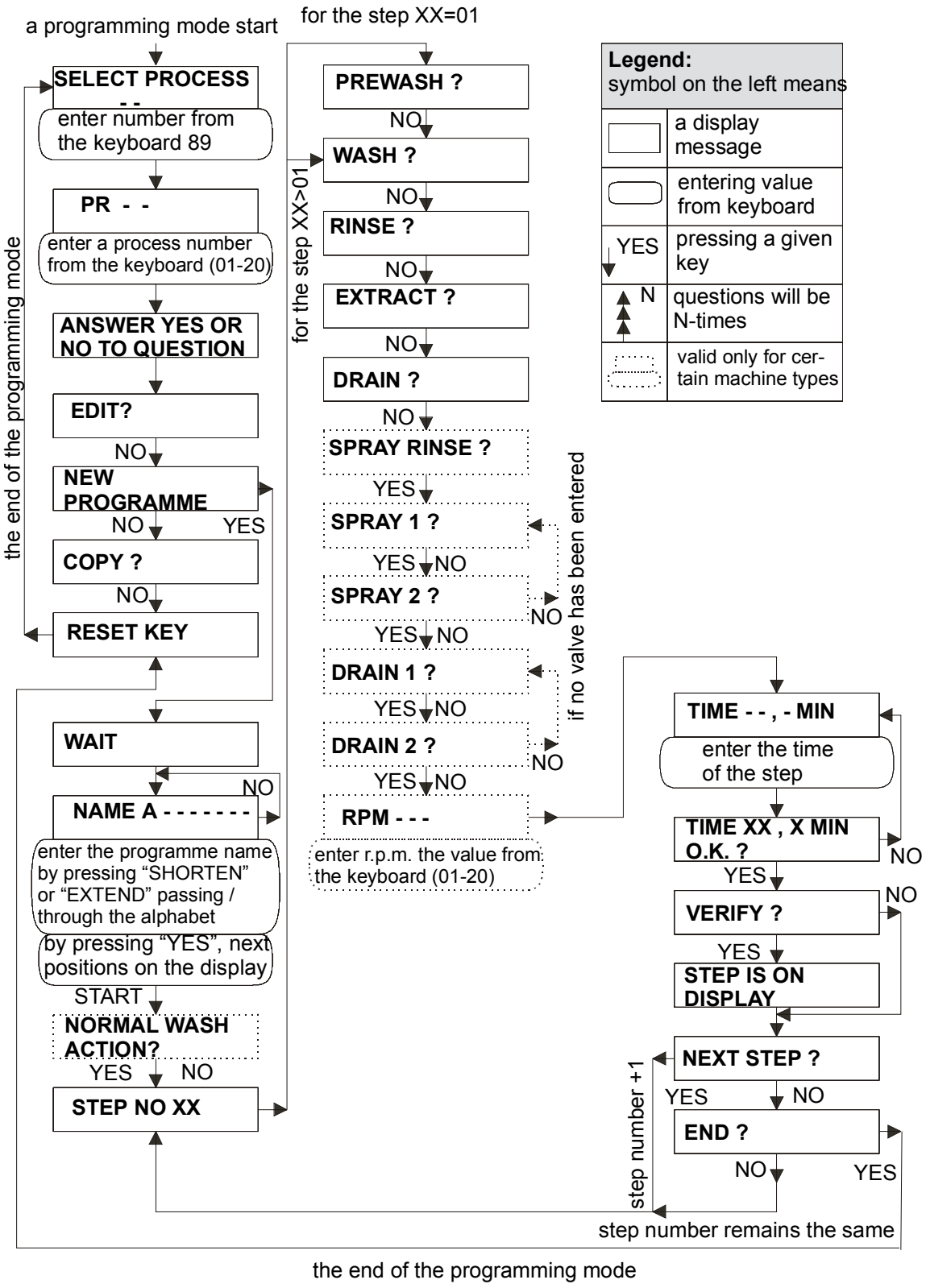


Fig. 5.8 The diagram part of the programming mode for a new programme and a SPRAY RINSE

5.9. SPRAY FLUSH

In the programming mode according to the chapter 5.2., after proceeding programmed steps, with an approval of „**NEXT STEP?**" and wash to drain functions refusal, the display (see fig. 5.9) will show:

SPRAY FLUSH?	**(spray during distribution?)**

When you select this function, the linen will be sprayed during its distribution in the drum at distribution r.p.m. During spraying, the drain valve is opened.

SPRAY 1	**(hot spray)**

After a selection of this function,, the inlet hot water valve is opened during spraying "**SPRAY RINSE?**" or "**SPRAY FLUSH?**".

SPRAY 2	**(cold spray)**

After a selection of this function, the inlet cold water valve is opened during spraying „**SPRAY RINSE?**" or „**SPRAY FLUSH?**"
THIS WAY YOU CAN ACTIVATE ONE OR BOTH INLET VALVES DURING SPRAYING (WHETHER DURING EXTRACTION OR DISTRIBUTION).

TIME - -,- MIN	**(time - -,- min)**

Now you can enter the time, required for a given step. The maximum adjustable time of a step is 15 minutes.
The following functions are the same as at prewash ("**TIME XX.X MIN, OK?**", "**VERIFY?**" and "**NEXT STEP?**").

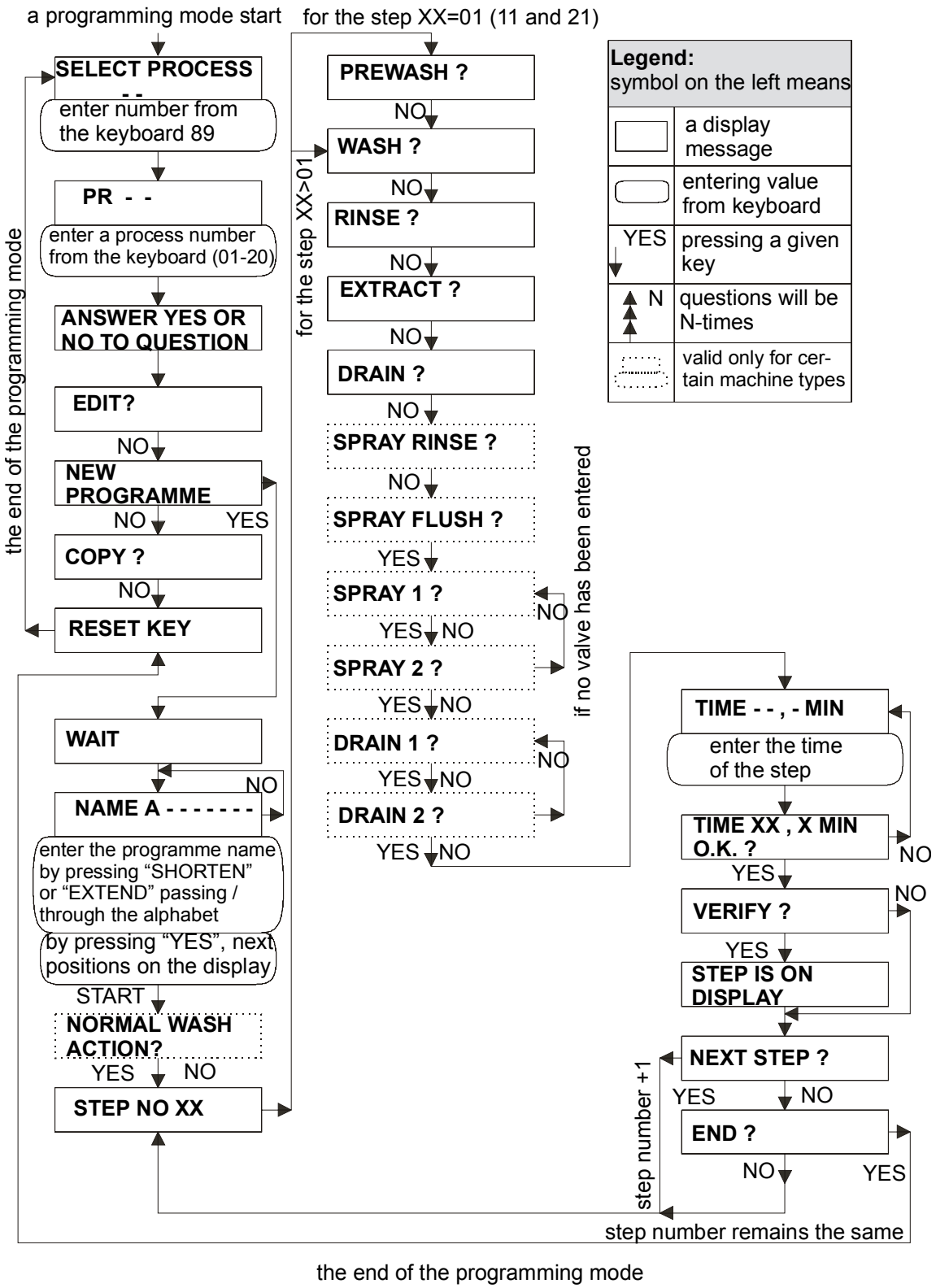


Fig. 5.9 The diagram part of the programming mode for a new programme and a SPRAY FLUSH step

5.10. SOAK

In the programming mode according to chapter 5.2., after proceeding programmed steps, with an approval of „**NEXT STEP?**", and the wash to drain (spray during distribution) function refusal, the display (by fig. 5.10) will show:

SOAK?	(soak)

In this function you can not choose cooling "**COOLDOWN?**", inlets "**SUPPLY N?**", and therefore if required, they must be programmed before this step. Enter values for "**INLETS?**", "**TEMPERATURE - - °C**", "**- - °C/MIN**" and "**STATIC FILL?**".

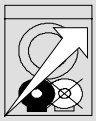
Enter a required relative water level. Actually there is possible to program any level (high, for delicate materials). Value of low high levels in this table, are recommended. Water levels vary according a machine type - see the following table:

TYPE	RIGID MOUNTED					
CAPACITY KG	6	7	10	16	22	35
CAPACITY LB	15	18	25	35	50	80
SAFETY LEVEL *	15			20		
LOW LEVEL	25			35		
HIGH LEVEL	32			40		
MAX. LEVEL FOR INITIALIZATION	52			60		70

SOFT - MOUNT			
6	7	10	16
15	18	25	35
	20		
30			35
37			42
57			62

TYPE	NON - CABINET			HYGIENIC				SOFT MOUNT			
CAPACITY KG	22	35	43	26	33	44	66	22	33	40	55
CAPACITY LB	50	75	95	60	70	100	150	50	75	90	125
SAFETY LEVEL *	17			20		20		20	30		
PREWASH	43	44		65		58		43	65		
WASH	35	37		52		51		35	52		
RINSE	48	48		71		64		48	71		
MAX. LEVEL FOR INITIALIZATION	70	75		80		85		70	80		

Tab. 5.10.A



R.P.M. - -	(r.p.m.)

If the machine has a frequency control, you have to enter values of the drum r.p.m. The range of programmed r.p.m. is 7 - 50. Recommended values are stated in the following table:

TYPE	NON - CABINET			HYGIENIC				SOFT - MOUNT				
CAPACITY KG	22	35	43	26	33	44	66	6-16	22	33	40	55
CAPACITY LB	50	75	95	60	70	100	150	15-35	50	75	90	125
SOAKING	0041	0039	0039	0042		0038		0045	0042	0040		

Tab. 5.10.B

The soaking function allows to program a long step with a special reversion possibility, which is to be programmed for a motor run pause in minutes:

WASH MOTOR OFF TIME - - MINS	(wash motor OFF - - min)

and for a motor run in seconds:

WASH MOTOR ON TIME - - SECS	(wash motor ON - - sec)

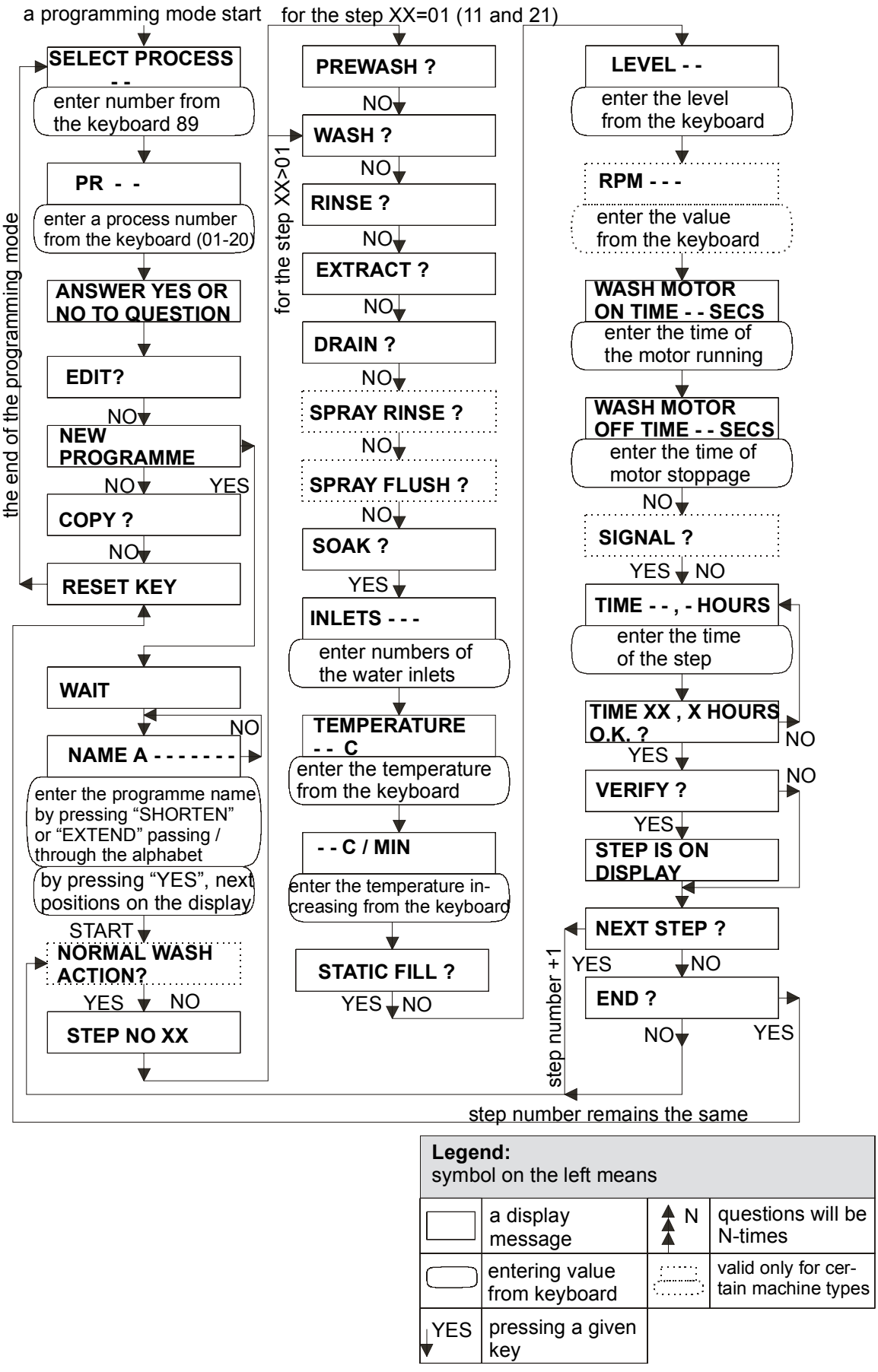
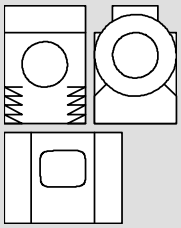


Fig. 5.10 The diagram part of the programming mode for a new programme and a soak step



FOR 2-MOTOR MACHINES OF SOFT-MOUNT AND NON-CABINET SERIES WITH 22-55 KG CAPACITIES (FRONT HOPPERS), YOU CAN SELECT:

SIGNAL? **(signal?)**

When this function is selected, an acoustic signal in a certain step will sound at the beginning of a given step and a pause will follow automatically. The time will stop. This can be useful, for example when you wish to add soaking detergents manually, during the process.

If all above stated questions were answered, the display will show:

TIME - -,- HOURS **(time - -,- hours)**

A length of this step is programmable in hours, with a maximum time of 24,9 hours.

The following functions are the same as at prewash ("**TIME XX.X HOURS, OK?**", "**VERIFY?**" and "**NEXT STEP?**").

5.11. COMPLETION OF PROGRAMMING

At the end of the last step programming (fig. 5.11), the display will ask:

NEXT STEP?	**(next step?)**

press „NO". The display will read:

END?	**(end?)**

If you wish to finish the programming, press „YES" and the display will call "**RESET KEY**".

Because of safety reasons, there are always 2 minutes added to a programmed time, to make sure the door can not be opened immediately after the end of a washing cycle, when the drum still rotates.

The programmer itself will return to the operation mode. The display will then show: "**SELECT PROCESS - -** ".

The programming has finished.

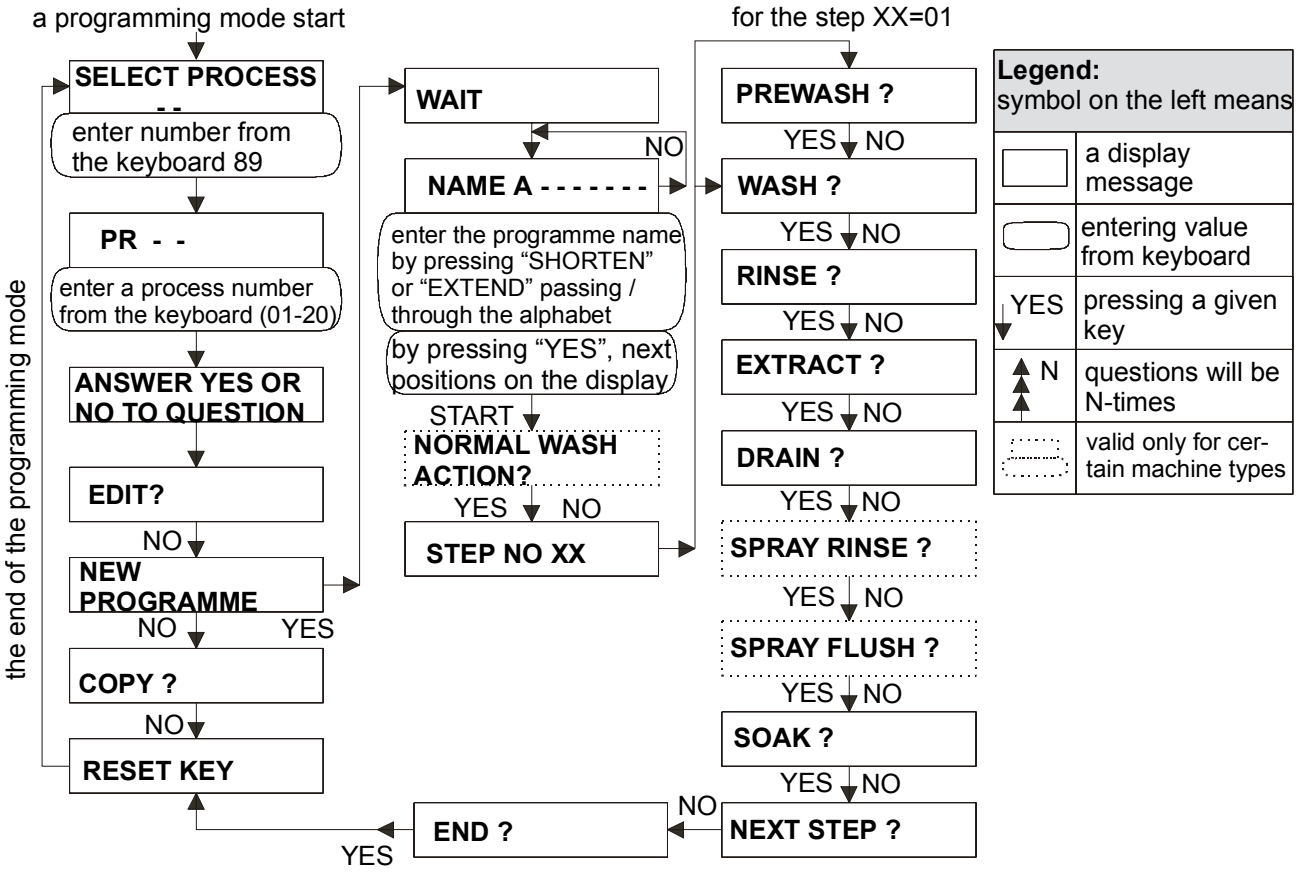


Fig. 5.11 The diagram part of the programming mode for a completion of programming

5.12. CHANGES IN EXISTING PROGRAMME

In already existing programme, you can change or add one or several steps (fig. 5.12). Proceed as follows:

You must - when the display reads:

SELECT PROCESS **_ _**	**(select process:)**

enter the code 89. If you are in programming mode, the display will read:

PR – –	**(programme number:)**

Enter a programme number in which you want to change or add one or several steps. To gain an access to programming functions, press „START" key. The display will call:

ANSWER YES OR NO TO QUESTIONS	**(answer yes or no to questions)**

The display will ask:

EDIT?	**(edit programme?)**

IF YOU DO NOT WISH TO MAKE OTHER CHANGES, PRESS „NO". THE DISPLAY WILL SHOW: „NEW PROGRAMME?". ANSWER „NO" AGAIN. TO THE NEXT QUESTION „COPY?", ANSWER AGAIN „NO", WHICH WILL END THE PROGRAMMING.

But, if you want to change or add one or few steps in the programme, press „YES". The display will read:

ENTER STEP NO.– –	**(step no. - -)**

Enter a step number which is to be changed or added.

ALWAYS ENTER TWO DIGITS ! (1=01)

Programmed instructions of the chosen step will gradually appear on the display.

IF YOU ENTER A STEP NUMBER WHICH IS NOT PROGRAMMED, „NO STEP FOUND" WILL APPEAR ON THE DISPLAY. YOU CAN ENTER A CORRECT STEP NUMBER IMMEDIATELY. AFTER A WHILE THE DISPLAY WILL CHANGE TO „SELECT PROCESS - -".

You can make a step number change as follows:

Answer „NO" to questions „**DELETE STEP?**", „**CHANGE?**", „**INSERT STEP?**" and finally answer „YES" to the question „**EDIT?**". Now you can enter the correct step number. The display will read:

CHANGE?	**(change step?)**

If you press „YES", „**NORMAL WASH ACTION?**" will appear. Choose „YES" or „NO", then „**STEP XX**" appears for a few seconds, followed by questions „**PREWASH?**", „**WASH?"** etc. You can now reprogram this step. After the reprogramming, „**EDIT?**" will appear, from which you will continue. If you answer „NO" to the question „**CHANGE?**", the display will read:

INSERT STEP?	**(insert step?)**

If you wish to add a step to the programme, press "YES". The display will change to „**PREWASH?**" (step 01) or „**WASH?**". You can now add a step by answering the questions. The added step will have the number that you have entered for „**ENTER STEP NO. - -**". The numbers of all following steps will increase by 1. When a step has been added, the display will read: „**EDIT?**", and you can continue from this point. If you answer „NO" to the question „**INSERT STEP?**", continue directly from the point „**DELETE STEP?**"

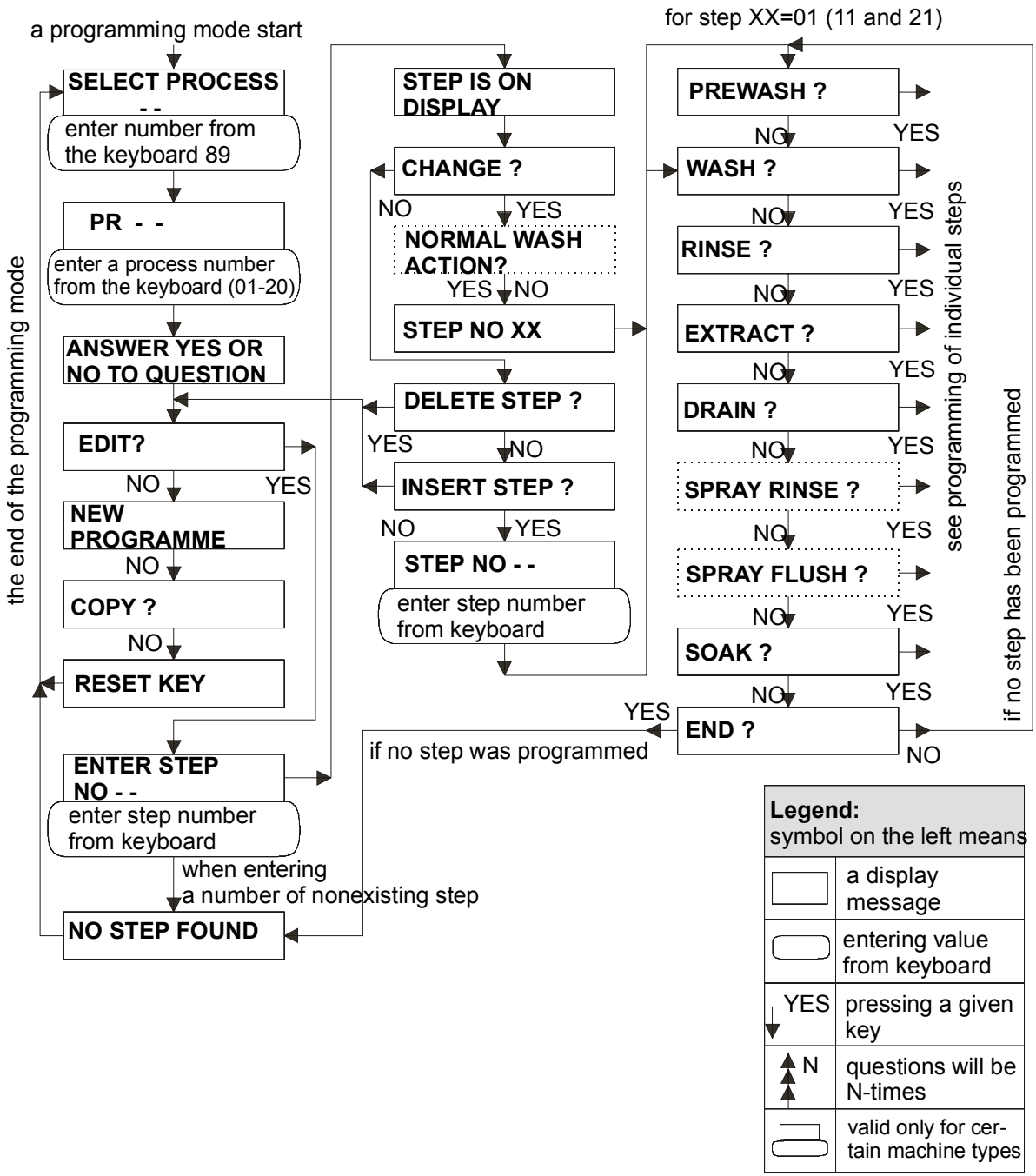


Fig. 5.12 The diagram part of the programming mode for the changes in a wash programme

DELETE STEP (delete step)

If you answer „YES", you can delete the given step from the programme. The following steps will be moved an automatically renumbered. Ending the programming is described in the above stated paragraph "**EDIT?**".

5.13. COPYING A PROGRAMME

An existing programme can be copied as follows (fig. 5.13) :

When the display calls:

SELECT PROCESS **- -**	**(select process:)**

You have to enter the code 89. When you are in the programming mode, the display reads:

PR – –	**(programme number:)**

Enter a programme number (always two digits, for example 01), from which you wish to make a copy. The display will read:

ANSWER YES OR NO TO QUESTIONS	**(answer yes or no to questions)**

The display reads:

EDIT?	**(edit programme?)**

Press the „NO" key, and the display will change to:

NEW PROGRAM?	**(new programme?)**

Press „NO" again, the display will ask:

COPY?	**(copy?**

IF YOU PRESS „NO", YOU WILL LEAVE THE PROGRAMMING MODE.
If you press „YES", the display reads:

COPY TO – –?	**(copy to - -?)**

Now enter a process number (always two digits), in to which you wish to copy the given programme. The display will call:

PLEASE WAIT	**(please wait)**

followed by:

NAME A - - - - - - - - - -	**(name:)**

Now you can enter the name for the copied wash programme. To enter the name you need the following keys.:

„EXTEND" (+time) - calls the alphabet from A to Z,
„SHORTEN" (-Adv) - calls the alphabet from Z to A,
„YES" - moves the cursor to the next position,
„NO" - if you have made a mistake, you can enter the name again by pressing this key,
„START" - when the full name has been entered, press this key to continue in the procedure.

The display now reads:

RESET KEY	**(reset key)**

The copying is now completed.

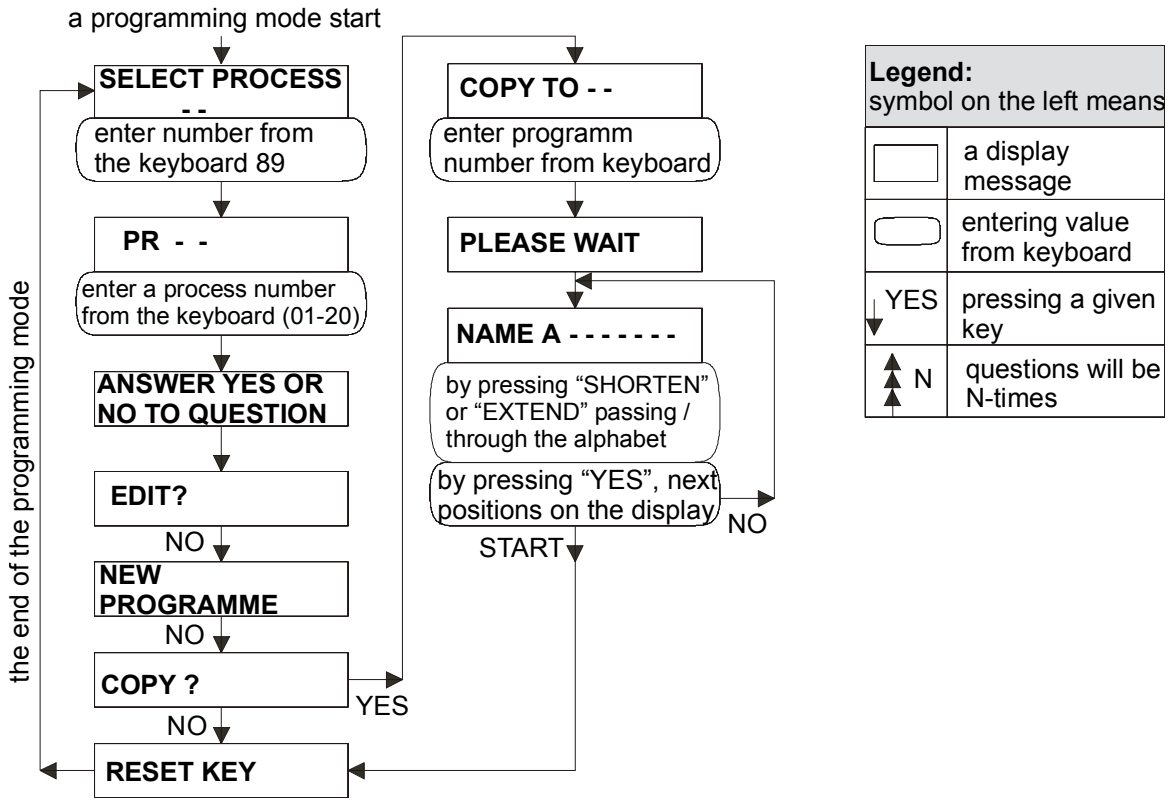


Fig. 5.13 The diagram part of the programming mode for the wash programme copying

5.14. REMOVING A PROGRAMME

When entering the same number of a new programme, the already programmed programme with the same number will be deleted if you press „YES" to the question "**NEW PROGRAM?**".

To better understand the following text, follow the progressive diagram in figure 5.14.

Entering to the programming mode, you must:

When the display calls:

SELECT PROCESS _ _	**(select process - -)**

enter the code 89. If you are in the programming mode, the display will call:

PR – –	**(programme number - -)**

Enter the process number you want to remove from 01 to 20 (always 2 digits), from the keyboard. The standard preprogrammed programmes have numbers 01 - 08.

After the introductory "**ANSWER YES OR NO, TO QUESTIONS**" and the following:

EDIT?	**(edit?)**

enter „NO".

The display will read:

NEW PROGRAM?	**(new programme?)**

IF YOU PRESS „NO", THE DISPLAY ASKS „COPY?" ; IF YOU WANT TO END THE PROGRAMMING MODE, PRESS „NO" FOR A SECOND TIME.

If you press „YES", the display will call „WAIT" for a few seconds followed by a next call:

NAME A - - - - - - - -	**(name:)**

Now by pressing „START", continue in the progress.

Answer all following questions by pressing „NO", until the display asks:

END?	**(end?)**

answer „YES" and the display will read:

RESET KEY	**(reset key)**

The programming has been finished.

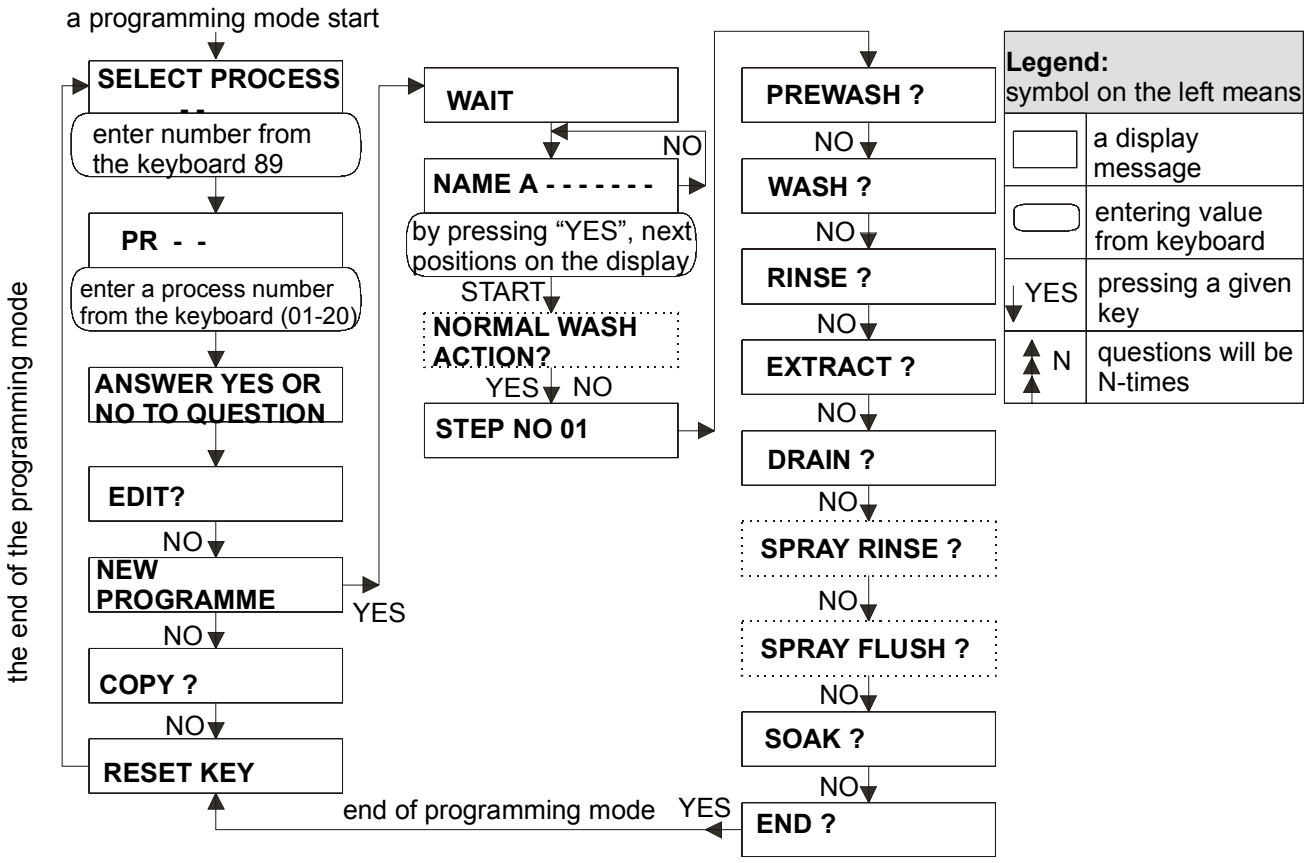
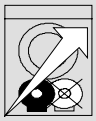


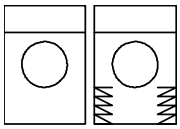
Fig. 5.14. The diagram part of the programming mode for the wash programme removal

5.15. OTHER FUNCTIONS

By entering the code numbers, you can use other functions offered by the programmer.

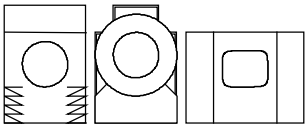
50	*Enables a change of an error report delay „FILL FAIL" in range 1 - 10 minutes, and „HEATING FAIL" in range 5 - 59 min. (for soft - mount machines of 6 - 22 kg capacity with top hoppers, and the rigid mounted series, the range is 1 - 75 min.), if in the initialization for „FAULT SUPPRESSION?", has been selected „NO".*
60	*The display will shortly read a software version number.*
61 	*After this code selection and then a wash programme number selection, on machines with a frequency controlled drive the bottom line of display will show values of the current and the motor frequency. This indication will currently proceed during the entire period of the chosen programme. On a repeating start without the code 61 selection, he values of the current and the frequency will not be displayed.*
74	*To zero out all counters of the machine cycles. This function is feasible only if the call „**SELECT PROCESS** - -" has been displayed. After that, the display will read: „**CYCLES RESET**" and all counters are set to zero.*
92 	*When selecting the code 92, you can - after pressing „YES" - switch on the voltage for the frequency invertor, and to carry on a setting of the frequency invertor by means of a parameter unit. This function will be canceled by a selecting and starting of a wash programme. This code can be used only on machines with a frequency controlled drive.*

5.16. TABLE FOR INDIVIDUAL PROGRAMMES



SOFT - MOUNT TYPES CAPACITY 6- 22 KG (TOP HOPPERS) AND RIGID MOUNTED TYPES

PROGRAMME NUMBER:				PROGRAMME NAME:												
PART OF WASHING PROGRAMME	Soak	Drain	Prewash	Extract	1st Wash	Drain	2nd Wash	Drain	1st Rinse	Extract	2nd Rinse	Extract	3rd Rinse	Extract	Drum stop (cool down)
STEP NAME AND NUMBER OF WASHING PROGRAMME	Soak	Drain	Prewash	Extract	Wash	Drain	Wash	Drain	Rinse	Extract	Rinse	Extract	Final rinse	Extract	End
WATER INLETS, HOPPERS		---		---		---		---		---		---		---	---
TEMPERATURE °C (°F)		---		---		---		---	---	---	---	---	---	---	---
SPEED OF HAET		---		---		---		---	---	---	---	---	---	---	---
STATIC FILLING		---		---		---		---		---		---		---	---
COOL DOWN	---	---	---	---		---		---	---	---	---	---	---	---	---
LEVEL		---		---		---		---		---		---		---	---
R.P.M.															---
"SUPPLY"		---		---		---		---		---		---		---	---
TIME OF RUNNING"SUPPLY"		---		---		---		---		---		---		---	---
MOTOR RUNNING															---
MOTOR STOPPAGE															---
SIGNAL	---			---						---				---	---
DRAIN VALVE (2)	---		---		---		---		---		---		---		---
TIME															2



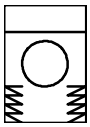
SOFT - MOUNT TYPES CAPACITY 22- 55 KG (FRONT HOPPERS), HYGIENIC AND NON-CABINET TYPES

PROGRAMME NUMBER:				PROGRAMME NAME:														
PART OF WASH PROGRAMME	Soak	Drain	Prewash	Drain	1st Wash	Drain	2nd Wash	Drain	1st Rinse	Extract	2nd Rinse	Spray flush	Extract	3rd Rinse	Spray rinse	Extract	Drum stop (cool down)
STEP NAME AND NUMBER OF WASH PROGRAMME	Soak	Drain	Prewash	Drain	Wash	Drain	Wash	Drain	Rinse	Extract	Rinse	Spray flush	Extract	Final rinse	Spray rinse	Extract	End
WATER INLETS, HOPPERS		---		---		---		---		---		---	---		---	---	---
SPRAY	---	---	---	---	---	---	---	---	---	---	---		---	---		---	---
TEMPERATURE °C (°F)		---		---		---		---	---	---	---	---	---	---	---	---	---
SPEED OF HEAT		---		---		---		---	---	---	---	---	---	---	---	---	---
STATIC FILLING		---		---		---		---		---		---	---		---	---	---
COOL DOWN	---	---	---	---		---		---	---	---	---	---	---	---	---	---	---
LEVEL		---		---		---		---		---		---	---		---	---	---
R.P.M.												---			---		---
"SUPPLY"		---		---		---		---		---		---	---		---	---	---
TIME OF RUNNIG "SUPPLY"		---		---		---		---		---		---	---		---	---	---
TIME OF RUNNIG												---			---		---
MOTOR STOPPAGE												---			---		---
SIGNAL										---		---			---	---	---
DRAIN VALVE	---		---		---		---		---		---			---			---
TIME																	**2**

5.17. LEVEL HEIGHT AND WATER CONSUMPTION

In the following tables you will find details about water height in point according to the programmer's water level sensor, as well as approximate water consumption for 1 load in litres (US gallons) without linen. At low levels the water consumption will partially increase for water volume soaked in linen above the water level. At high levels water consumption will lower for linen volume.

APPROXIMATE VALUES OF WATER CONSU MPTION:



Washer capacity	6 kg	15 lb	7 kg	18 lb	10 kg	25 lb	16 kg	35 lb
Level points	dm^3 (litres)	US gallons	dm^3 (litres)	US gallons	dm^3 (litres)	US gallons	dm^3 (litres)	US gallons
0							0	0
16							8	2,11
19							10	2,64
33							17	4,49
34							54	14,27
35							***56***	***14,80***
36							59	15,59
37							61	16,12
39							63	16,64
41							70	18,49
42							***74***	***19,55***
43							77	20,34
44							79	20,87
45							85	22,46
46							91	24,04
48							95	25,10
50							102	26,95
52							109	28,80
55							120	31,70
57							126	33,29
59							132	34,87
61							137	36,20
62							***143***	***37,78***

Tab. 5.17.A A Soft mount types, capacities 6, 7, 10, 16 kg (15, 18, 25, 35 lb), water level in points and a general water consumption in litres (US gallons) without laundry

Legend:

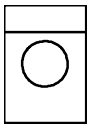
Low level	***0,00***	**High level**	***0,00***	**Level for overflow**	***0,00***

Washer capacity	22 kg	50 lb	33 kg	75 lb	40 kg	90 lb	55 kg	125 lb
Level points	dm^3 (litres)	US gallons	dm^3 (litres)	US gallons	dm^3 (litres)	US gallons	dm^3 (litres)	US gallons
0	0	0,00					0	0,00
16	10	2,64					15	3,96
19	12	3,17					17	4,49
33	21	5,55					30	7,93
34	22	5,81					39	10,30
35	***73***	***19,29***					48	12,68
36	75	19,82					58	15,32
37	80	21,14					67	17,70
39	88	23,25					76	20,08
41	102	26,95					85	22,46
43	107	28,27					95	25,10
44	115	30,38					104	27,48
45	118	31,18					113	29,85
46	125	33,03					122	32,23
48	***138***	***36,46***					131	34,61
50	153	40,42					141	37,25
52	161	42,54					***150***	***39,63***
55	170	44,91					159	42,01
57	182	48,08					165	43,59
59	189	49,93					182	48,08
61	195	51,52					199	52,58
62	221	58,39					202	53,37
63	247	65,26					221	58,39
64	273	72,13					225	59,45
65	299	79,00					231	61,03
66	325	85,87					239	63,14
68	351	92,73					254	67,11
70	***377***	***99,60***					274	72,39
71							***283***	***74,77***
72							292	77,15
74							310	81,90
77							329	86,92
79							347	91,68
80							***356***	***94,06***

Tab. 5.17.B Soft-mount types 22, 33, 40 and 55 kg (50, 75, 90 and 125 lb) capacity, water level in points and a general water consumption in litres (US gallons) without laundry

Legend:

Low level	***0,00***	**High level**	***0,00***	**Level for overflow**	***0,00***



Washer Capacity	6 kg	15 lb	7 kg	18 lb	10 kg	25 lb
Level points	**dm^3 (litres)**	**US gallons**	**dm^3 (litres)**	**US gallons**	**dm^3 (litres)**	**US gallons**
0					0	0
11					5	1,32
18					10	2,64
20					15	3,96
23					20	5,28
25					***25***	***6,61***
27					30	7,93
29					35	9,25
32					***40***	***10,57***
34					45	11,89
36					50	13,21
39					55	14,53
43					60	15,85
46					65	17,17
46					70	18,49
48					75	19,82
50					85	22,46
52					***90***	***23,78***

Tab. 5.17.C Rigid mounted types 6, 7, 10 kg (15, 18, 25 lb) capacity, water level in points and a general water consumption in litres (US gallons) without laundry

Legend:

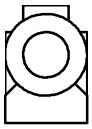
Low level	***0,00***	**High level**	***0,00***	**Level for overflow**	***0,00***

Washer capacity	16 kg	35 lb	22 kg	50 lb	35 kg	80 lb
Level points	dm^3 (litres)	US gallons	dm^3 (litres)	US gallons	dm^3 (litres)	US gallons
0	0	0,00	0	0,00	0	0,00
13	5	1,32	3	0,79	20	5,28
16	8	2,11	5	1,32	25	6,61
18	10	2,64	10	2,64	30	7,93
20	15	3,96	15	3,96	40	10,57
23	20	5,28	20	5,28	50	13,21
27	30	7,93	30	7,93	70	18,49
29	35	9,25	40	10,57	80	21,14
34	40	10,57	50	13,21	100	26,42
35	***45***	***11,89***	***55***	***14,53***	***105***	***27,74***
36	50	13,21	60	15,85	110	29,06
39	55	14,53	70	18,49	120	31,70
40	***60***	***15,85***	***75***	***19,82***	***125***	***33,03***
41	65	17,17	80	21,14	130	34,35
43	70	18,49	85	22,46	140	36,99
46	85	22,46	95	25,10	150	39,63
50	95	25,10	115	30,38	170	44,91
52	100	26,42	120	31,70	180	47,56
55	105	27,74	130	34,35	190	50,20
57	115	30,38	140	36,99	200	52,84
59	120	31,70	150	39,63	210	55,48
60	***117***	***30,91***	***155***	***40,95***	215	56,80
62					220	58,12
64					230	60,77
66					240	63,41
69					250	66,05
70					**255**	**67,37**

Tab. 5.17.D Rigid mounted types 16, 22, 35 kg (35, 50, 80 LB) capacity, water level in points and a general water consumption in litres (US gallons) without laundry

Legend:

Low level	***0,00***	**High level**	***0,00***	**Level for overflow**	***0,00***

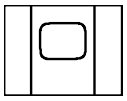


Washer capacity	22 kg	50 lb	35 kg	80 lb	43 kg	95 lb
Level points	**dm^3 (litres)**	**US gallons**	**dm^3 (litres)**	**US gallons**	**dm^3 (litres)**	**US gallons**
0	0	0			0	0
16	10	2,64			10	2,64
23	15	3,96			20	5,28
25	16	4,23			30	7,93
29	20	5,28			40	10,57
32	30	7,93			50	13,21
34	38	10,04			60	15,85
35	***40***	***10,57***			65	17,17
36	41	10,83			70	18,49
37	43	11,36			***74***	***19,55***
39	45	11,89			80	21,14
41	47	12,42			90	23,78
43	50	13,21			100	26,42
46	60	15,85			110	29,06
48	***77***	***20,34***			***120***	***31,7***
50	85	22,46			130	34,35
52	94	24,83			140	36,99
55	98	25,89			160	42,27
57	111	29,33			170	44,91
59	127	33,55			180	47,56
62	135	35,67			200	52,84
64	140	36,99			210	55,48
66	152	40,16			220	58,12
69	161	42,54			230	60,77
70	***166***	***43,86***			240	63,41
71					250	66,05
73					260	68,69
75					***270***	***71,33***

Fig. 5.17.E Non-cabinet types 22, 35 and 43 kg (50, 75 and 95 lb) capacity, water level in points and a general water consumption in litres (US gallons) without laundry

Legend:

Low level	***0,00***	**High level**	***0,00***	**Level for overflow**	***0,00***



Washer capacity	26 kg	60 lb	33 kg	75 lb	44 kg	100 lb	66 kg	145 lb
Level points	dm^3 (litres)	US gallons	dm^3 (litres)	US gallons	dm^3 (litres)	US gallons	dm^3 (litres)	US gallons
0	0	0,00					0	0,00
18	5	1,32					10	2,64
20	6	1,59					20	5,28
25	8	2,11					40	10,57
27	10	2,64					50	13,21
29	15	3,96					70	18,49
32	20	5,28					80	21,14
34	25	6,61					100	26,42
36	30	7,93					110	29,06
39	35	9,25					130	34,35
41	40	10,57					160	42,27
43	50	13,21					170	44,91
46	60	15,85					200	52,84
48	70	18,49					220	58,12
50	80	21,14					240	63,41
51	90	23,78					***245***	***64,73***
52	***100***	***26,42***					250	66,05
55	110	29,06					290	76,62
57	120	31,70					300	79,26
58	125	33,03					310	81,90
59	130	34,35					340	89,83
62	140	36,99					350	92,47
64	150	39,63					***380***	***100,40***
66	170	44,91					400	105,68
69	180	47,56					430	113,61
71	***190***	***50,20***					450	118,89
73	210	55,48					480	126,82
75	220	58,12					510	134,74
78	240	63,41					530	140,03
80	***260***	***68,69***					590	155,88
82							620	163,80
85							***650***	***171,73***

Tab. 5.17.F Hygienic types 26, 33, 44 and 66 kg (60, 75, 100, and 145 lb) capacity, water level in points and a general water consumption in litres (US gallons) without laundry

Legend:

Low level	***0,00***	**High level**	***0,00***	**Level for overflow**	***0,00***

6. PRE-PROGRAMMED PROGRAMMES

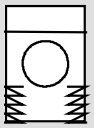
6.1. INTRODUCTION

The programmer software has a number of pre-programmed washing processes. Every one of them can be started by entering a process number from 01 to 08.

Before the first time starting of a washing process, we recommend to read this manual.

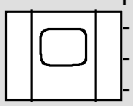
⚠ **WARNING !**
THE PRE-PROGRAMMED PROCESSES ARE GIVEN AS AN EXAMPLE ONLY. THE PROGRAMME CHANGES MAKING ARE RESERVED. FOR A CREATION OF YOUR OWN WASHING PROCESS, CONTACT YOUR SOAP DEALER.

6.2. WASH PROGRAMMES FOR NON-CABINET WASHING MACHINES, HYGIENIC AND SOFT-MOUNT TYPES 22 - 55 KG CAPACITY



PROGRAMME 01: WHITE LINEN HYGIENIC TYPES AND SOFT-MOUNT TYPES 22-55 KG CAPACITY (FRONT HOPPERS)

The programme 01 is designed for white linen washing.
For this process the soap hoppers have to be filled as follows:

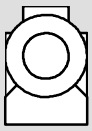


- supply 1: soap for prewash
- supply 2: soap for wash
- supply 3 : fabric softeners

The washing programme is programmed for a normal reversion.

PROCESS NUMBER	STEP NUMBER	NAME OF STEP	PROGRAMMER FUNCTIONS
P01	St01	Prewash	PREWASH TEMPERATURE 30°C (86°F) 99°C/MIN (210°F) LEVEL XX SUPPLY 1: 30 SEC TIME 06.0 MIN
P01	St02	Drain	DRAIN TIME 01.0 MIN
P01	St03	Wash	WASH TEMPERATURE 90°C (194°F) 99°C/MIN (210°F) LEVEL XX SUPPLY 2: 20 SEC TIME 10.0 MIN
P01	St04	Drain	DRAIN TIME 01.0 MIN
P01	St05	1st rinse	RINSE LEVEL XX TIME 02.0 MIN
P01	St06	Extract	EXTRACT TIME 01.0 MIN
P01	St07	2nd rinse	RINSE LEWEL XX TIME 02.0 MIN
P01	St08	Extract	EXTRACT TIME 01.0 MIN
P01	St09	3rd rinse	RINSE LEVEL XX TIME 02.0 MIN
P01	St10	Extract	EXTRACT TIME 01.0 MIN
P01	St11	4th rinse	RINSE LEVEL XX SUPPLY 3: 20 SEC TIME 04.0 MIN
P01	St12	Final extract	EXTRACT HIGH SPIN TIME 08.0 MIN

XX - THIS VALUE DIFFERS IN EVERY WASHING MACHINE TYPE. THE VALUES FOR INDIVIDUAL TYPES ARE LISTED IN CHAPTER NUMBER „4.PROGRAMMING"



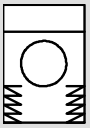
PROGRAMME 01: WHITE LINEN
NON-CABINET MACHINE TYPES

Wash programme 01 is designed for white linen.
For this process the soap hoppers have to be filled as follows:
- supply 1: Soap for prewash
- supply 2: Soap for wash
- supply 3: Fabric softener

This programme is programmed for a normal reversion

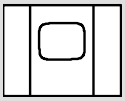
PROCESS NUMBER	STEP NUMBER	NAME OF STEP	PROGRAMMER FUNCTIONS
P01	St01	Prewash	PREWASH TEMPERATURE 30°C (86°F) 99°C/MIN (210°F) LEVEL XX SUPPLY 1: 30 SEC TIME 06.0 MIN
P01	St02	Drain	DRAIN TIME 01.0 MIN
P01	St03	Wash	WASH TEMPERATURE 90°C (194°F) 99°C/MIN (210°F) LEVEL XX SUPPLY 2: 20 SEC TIME 10.0 MIN
P01	St04	Drain	DRAIN TIME 01.0 MIN
P01	St05	1st rinse	RINSE LEVEL XX TIME 02.0 MIN
P01	St06	Spray	SPRAY RINSE SPRAY 1, 2 TIME 01.0 MIN
P01	St07	2nd rinse	RINSE LEVEL XX TIME 02.0 MIN
P01	St08	Spray	SPRAY RINSE SPRAY 1 TIME 01.0 MIN
P01	St09	3rd rinse	RINSE LEVEL XX SUPPLY 3: 20 SEC TIME 04.0 MIN
P01	St10	Final extract	EXTRACT HIGH SPIN TIME 08.0 MIN

XX - THIS VALUE DIFFERS IN EVERY WASHING MACHINE TYPE. THE VALUES FOR INDIVIDUAL TYPES AND STEPS ARE LISTED IN CHAPTER „5. PROGRAMMING".



PROGRAMME 02: COLORED LINEN HYGIENIC AND SOFT-MOUNT MACHINE TYPES 22-55 KG CAPACITY (FRONT HOPPERS)

This programme 02 is for colored linen washing.
For this programme the soap hoppers have to be filled as follows:

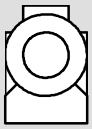


- supply 1: soap for prewash
- supply 2: soap for wash
- supply 3: fabric softener

The programme is programmed for a normal reversion.

PROCESS NUMBER	STEP NUMBER	NAME OF STEP	PROGRAMMER FUNCTIONS
P02	St01	Prewash	PREWASH TEMPERATURE 30°C (86°F) 99°C/MIN (210°F) LEVEL XX SUPPLY 1: 30 SEC TIME 06.0 MIN
P02	St02	Drain	DRAIN TIME 01.0 MIN
P02	St03	Wash	WASH TEMPERATURE 60°C (140°F) 99°C/MIN (210°F) LEVEL XX SUPPLY 2: 20 SEC TIME 10.0 MIN
P02	St04	Drain	DRAIN TIME 01.0 MIN
P02	St05	1st rinse	RINSE LEVEL XX TIME 02.0 MIN
P02	St06	Extract	EXTRACT TIME 01.0 MIN
P02	St07	2nd rinse	RINSE LEVEL XX TIME 02.0 MIN
P02	St08	Extract	EXTRACT TIME 01.0 MIN
P02	St09	3rd rinse	RINSE LEVEL XX TIME 02.0 MIN
P02	St10	Extract	EXTRACT LEVEL XX TIME 01.0 MIN
P02	St11	4th rinse	RINSE LEVEL XX SUPPLY 3: 30 SEC TIME 04.0 MIN
P02	St12	Final extract	EXTRACT HIGH SPIN TIME 08.0 MIN

XX - THIS VALUE DIFFERS IN EVERY MACHINE TYPE. THE VALUES FOR INDIVIDUAL TYPES ARE LISTED IN CHAPTER „5. PROGRAMMING"



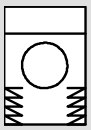
PROGRAMME 02: COLORED LINEN
VALID FOR NON-CABINET MACHINE TYPES

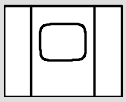
This programme 02 is designed for colored linen
For this process the soap hoppers have to be filled as follows:
- supply 1: soap for prewash
- supply 2: soap for wash
- supply 3: fabric softener

The programme is programmed for a normal reversion.

PROCESS NUMBER	STEP NUMBER	NAME OF STEP	PROGRAMMER FUNCTIONS
P02	St01	Prewash	PREWASH TEMPERATURE 30°C (86°F) 99°C/MIN (210°F) LEVEL XX SUPPLY 1: 30 SEC TIME 06.0 MIN
P02	St02	Drain	DRAIN TIME 01.0 MIN
P02	St03	Wash	WASH TEMPERATURE 60°C(140°F) 99°C/MIN (210°F) LEVEL XX SUPPLY 2: 20 SEC TIME 10.0 MIN
P02	St04	Drain	DRAIN TIME 01.0 MIN
P02	St05	1st rinse	RINSE LEVEL XX TIME 02.0 MIN
P02	St06	Spray	SPRAY RINSE SPRAY 1, 2 TIME 01.0 MIN
P02	St07	2nd rinse	RINSE LEVEL XX TIME 02.0 MIN
P02	St08	Spray	SPRAY RINSE SPRAY 1 TIME 01.0 MIN
P02	St09	3rd rinse	RINSE LEVEL XX SUPPLY 3: 30 SEC TIME 04.0 MIN
P02	St10	Final extract	EXTRACT HIGH SPIN TIME 08.0 MIN

XX - THIS VALUE DIFFERS IN EVERY WASHING MACHINE TYPE. THE VALUES FOR INDIVIDUAL TYPES ARE LISTED IN CHAPTER „5. PROGRAMMING".



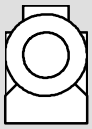


PROGRAMME 03: DELICATE LAUNDRY HYGIENIC AND SOFT-MOUNT TYPES 22-55 KG CAPACITY (FRONT HOPPERS)

This programme 03 is designed for delicate linen washing.
For this programme the soap hoppers have to be filled as follows:
- supply 01 soap for prewash
- supply 02: soap for wash
- supply 03: fabric softener

PROCESS NUMBER	STEP NUMBER	NAME OF STEP	PROGRAMMER FUNCTIONS
P03	St01	Prewash	PREWASH TEMPERATURE 30°C (86°F) 99°C/MIN (210°F) LEVEL XX SUPPLY 1: 30 SEC TIME 06.0 MIN
P03	St02	Drain	DRAIN TIME 01.0 MIN
P03	St03	Wash	WASH TEMPERATURE 45°C(113°F) 99°C/MIN (210°F) LEVEL XX SUPPLY 2: 20 SEC TIME 10.0 MIN
P03	St04	Drain	DRAIN TIME 01.0 MIN
P03	St05	1st rinse	RINSE LEVEL XX TIME 02.0 MIN
P03	St06	Extract	EXTRACT TIME 01.0 MIN
P03	St07	2nd rinse	RINSE LEVEL XX TIME 02.0 MIN
P03	St08	Extract	EXTRACT TIME 01.0 MIN
P03	St09	3rd rinse	RINSE LEVEL XX TIME 02.0 MIN
P03	St10	Extract	EXTRACT TIME 01.0 MIN
P03	St11	4th rinse	RINSE LEVEL XX SUPPLY 3: 20 SEC TIME 04.0 MIN
P03	St12	Final extract	EXTRACT HIGH SPIN TIME 08.0 MIN

XX - THIS VALUE DIFFERS IN EVERY MACHINE TYPE . THE VALUES FOR INDIVIDUAL TYPES ARE LISTED IN CHAPTER „5. PROGRAMMING".

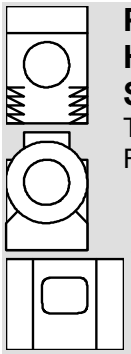


PROGRAMMER 03: DELICATE LAUNDRY
NON-CABINET MACHINE TYPES

This programme 03 is designed for delicate linen washing.
For this process the soap hoppers have to be filled as follows
- supply 01: soap for prewash
- supply 02: soap for wash
- supply 03: fabric softeners

PROCESS NUMBER	STEP NUMBER	NAME OF STEP	PROGRAMMER FUNCTIONS
P03	St01	Prewash	PREWASH TEMPERATURE 30°C (86°F) 99°C/MIN (210°F) LEVEL XX SUPPLY 1: 30 SEC TIME 06.0 MIN
P03	St02	Drain	DRAIN TIME 01.0 MIN
P03	St03	Wash	WASH TEMPERATURE 45°C (113°F) 99°C/MIN (210°F) LEVEL XX SUPPLY 2: 20 SEC TIME 10.0 MIN
P03	St04	Drain	DRAIN TIME 01.0 MIN
P03	St05	1st rinse	RINSE LEVEL XX TIME 02.0 MIN
P03	St06	Spray	SPRAY RINSE SPRAY 1, 2 TIME 01.0 MIN
P03	St07	2nd rinse	RINSE LEVEL XX TIME 02.0 MIN
P03	St08	Spray	SPRAY RINSE SPRAY 1, 2 TIME 01.0 MIN
P03	St09	3rd rinse	RINSE LEVEL XX SUPPLY 3: 20 SEC TIME 04.0 MIN
P03	St10	Final extract	EXTRACT HIGH SPIN TIME 08.0 MIN

XX - THIS VALUE DIFFERS IN EVERY MACHINE TYPE. THE VALUES FOR INDIVIDUAL TYPES ARE LISTED IN CHAPTER „5. PROGRAMMING".



PROGRAMME 04: NYLON HYGIENIC, NON-CABINET AND SOFT-MOUNT MACHINE TYPES 22-55 KG (FRONT HOPPERS)

This programme 04 is designed for nylon washing.
For this programme the soap hoppers have to be filled as follows:
- supply 1: empty
- supply 2: soap for wash
- supply 3: fabric softener

This programme is programmed for a normal reversion

PROCESS NUMBER	STEP NUMBER	NAME OF STEP	PROGRAMMER FUNCTIONS
P04	St01	Wash	WASH TEMPERATURE 45°C (113°F) 99°C/MIN (210°F) LEVEL XX SUPPLY 2: 30 SEC TIME 08.0 MIN
P04	St02	Drain	DRAIN TIME 01.0 MIN
P04	St03	1st rinse	RINSE LEVEL XX TIME 02.0 MIN
P04	St04	Extract	EXTRACT TIME 01.0 MIN
P04	St05	2nd rinse	RINSE LEVEL XX TIME 02.0 MIN
P04	St06	Extract	EXTRACT TIME 01.0 MIN
P04	St07	3rd rinse	RINSE LEVEL XX SUPPLY 3: 20 SEC TIME 04.0 MIN
P04	St08	Final extract	EXTRACT TIME 04.0 MIN

XX - THIS VALUE DIFFERS IN EVERY MACHINE TYPE. THE VALUES FOR INDIVIDUAL TYPES ARE LISTED IN CHAPTER „5. PROGRAMMING".

PROGRAMME 05: WOOLENS HYGIENIC, NON-CABINET AND SOFT-MOUNT TYPES 22-55 KG (FRONT HOPPERS)

Washing process 05 is designed for woolens washing
For this programme the soap hoppers have to be filled as follows:
- supply 1: empty
- supply 2: soap for wash
- supply 3: fabric softener

This programme is programmed for a gentle reversion.

PROCESS NUMBER	STEP NUMBER	NAME OF STEP	PROGRAMMER FUNCTIONS
P05	St01	Wash	WASH TEMPERATURE 30°C (86°F) 99°C/MIN (210°F) LEVEL XX SUPPLY 2: 30 SEC TIME 08.0 MIN
P05	St02	Drain	DRAIN TIME 01.0 MIN
P05	St03	1st rinse	RINSE LEVEL XX TIME 02.0 MIN
P05	St04	Drain	DRAIN TIME 01.0 MIN
P05	St05	2nd rinse	RINSE LEVEL XX TIME 02.0 MIN
P05	St06	Drain	DRAIN TIME 01.0 MIN
P05	St07	3rd rinse	RINSE LEVEL XX SUPPLY 3: 20 SEC TIME 02.0 MIN
P05	St08	Final extract	EXTRACT TIME 02.0 MIN

XX - THIS VALUE DIFFERS IN EVERY MACHINE TYPE. THE VALUES FOR INDIVIDUAL TYPES ARE LISTED IN CHAPTER „4 PROGRAMMING".

PROGRAMME 06: POLYESTER / COTTON HYGIENIC, NON-CABINET AND SOFT-MOUNT MACHINES TYPES 22-55 KG (FRONT HOPPERS)

This programme 06 is designed for polyester/cotton.
For this programme the soap hoppers have to be filled as follows:
- supply 1: soap for prewash
- supply 2: soap for wash
- supply 3: fabric softener

This programmer is programmed for a normal reversion.

PROCESS NUMBER	STEP NUMBER	NAME OF STEP	PROGRAMMER FUNCTIONS
P06	St01	Prewash	PREWASH TEMPERATURE 45°C (113°F) 99°C/MIN (210°F) LEVEL XX SUPPLY 1: 30 SEC TIME 04.0 MIN
P06	St02	Drain	DRAIN TIME 01.0 MIN
P06	St03	Wash	WASH TEMPERATURE 60°C (140°F) 99°C/MIN (210°F) LEVEL XX SUPPLY 2: 20 SEC TIME 08.0 MIN
P06	St04	Cooldown	WASH COOLDOWN TEMPERATURE 45°C (113°F) 99°C/MIN (210°F) LEVEL XX TIME 04.0 MIN
P06	St05	Drain	DRAIN TIME 01.0 MIN
P06	St06	1st rinse	RINSE LEVEL XX TIME 02.0 MIN
P06	St07	Extract	EXTRACT TIME 02.0 MIN
P06	St08	2nd rinse	RINSE LEVEL XX TIME 02.0 MIN
P06	St09	Extract	EXTRACT TIME 02.0 MIN
P06	St10	3rd rinse	RINSE LEVEL XX SUPPLY 3: 20 SEC TIME 03.0 MIN
P06	St11	Final extract	EXTRACT HIGH SPIN TIME 06.0 MIN

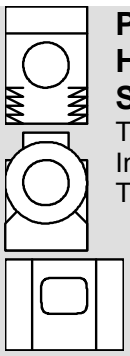
XX - THIS VALUE DIFFERS IN EVERY WASHING MACHINE TYPE. THE VALUES FOR INDIVIDUAL TYPES ARE LISTED IN CHAPTER „5. PROGRAMMING".

PROGRAMME 07: EXTRACT HYGIENIC, NON-CABINET AND SOFT-MOUNT TYPES 22-55 KG CAPACITY (FRONT HOPPERS)

The wash programme 07 is designed for extracting the laundry at low speed.
NO soap hoppers are used in this programme.
This programme is programmed for a normal reversion.

PROCESS NUMBER	STEP NUMBER	NAME OF STEP	PROGRAMMER FUNCTIONS
P07	St01	Rinse	RINSE LEVEL XX TIME 02.0 MIN
P07	St02	Final extract	EXTRACT TIME 08.0 MIN

XX - THIS VALUE DIFFERS IN EVERY MACHINE TYPE. THE VALUES FOR INDIVIDUAL TYPES ARE LISTED IN CHAPTER „5. PROGRAMMING".



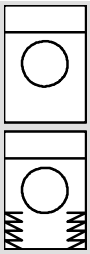
PROGRAMME 08: HIGH SPIN HYGIENIC, NON-CABINET AND SOFT-MOUNT MACHINE TYPES 22-55 KG (FRONT HOPPERS)

This programme 08 is designed for extracting at high speed
In this process no soap hoppers are used.
This programme is programmed for a normal reversion.

PROCESS NUMBER	STEP NUMBER	NAME OF STEP	PROGRAMMER FUNCTIONS
P08	St01	Rinse	RINSE LEVEL XX TIME 02.0 MIN
P08	St02	Final extract	EXTRACT HIGH SPIN TIME 08.0 MIN

XX - THIS VALUE DIFFERS IN EVERY MACHINE TYPE. THE VALUES FOR INDIVIDUAL TYPES AND STEPS ARE LISTED IN CHAPTER „5. PROGRAMMING".

6.3. WASHING PROGRAMMES FOR SOFT- MOUNT TYPES 6-22 KG CAPACITY AND RIGID MOUNTED TYPES 6-35 KG CAPACITY



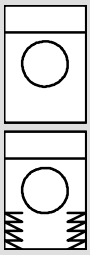
PROGRAMME 01: WHITE LINEN RIGID MOUNTED AND SOFT-MOUNT TYPES 6-22 KG (TOP HOPPERS)

This programme 01 is designed for white linen washing
For this programme the soap hoppers have to be filled as follows:
- supply A: soap for prewash
- supply B: soap for wash
- supply C: fabric softener

This programme is programmed for a normal reversion.

PROCESS NUMBER	STEP NUMBER	NAME OF STEP	PROGRAMMER FUNCTIONS
P01	St01	Prewash	PREWASH TEMPERATURE 40°C (104°F) 99°C/MIN (210°F) LEVEL XX INLETS 2, 3 TIME 04.0 MIN
P01	St02	Extract	EXTRACT TIME 00.5 MIN
P01	St03	Wash	WASH TEMPERATURE 90°C (194°F) 99°C/MIN (210°F) LEVEL XX INLETS 3, 4 TIME 09.0 MIN
P01	St04	Drain	DRAIN TIME 00.5 MIN
P01	St05	1st rinse	RINSE LEVEL XX INLETS 2, 6, 5 TIME 01.5 MIN
P01	St06	Extract	EXTRACT TIME 00.5 MIN
P01	St07	2nd rinse	RINSE LEVEL XX INLETS 2, 6, 5 TIME 01.5 MIN
P01	St08	Extract	EXTRACT TIME 00.5 MIN
P01	St09	3rd rinse	RINSE LEVEL XX INLETS 1 TIME 02.0 MIN
P01	St10	Extract	EXTRACT TIME 04.5 MIN

XX - THIS VALUE DIFFERS IN EVERY MACHINE TYPE. THE VALUES FOR INDIVIDUAL TYPES AND STEPS ARE LISTED IN CHAPTER „5. PROGRAMMING".



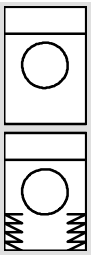
PROGRAMME 02: COLORED LINEN RIGID MOUNTED AND SOFT-MOUNT TYPES 6-22 KG CAPACITY (TOP HOPPERS)

The washing programme 02 is designed for colored linen.
For this programme the soap hoppers have to be filled as follows:
- supply A: soap for prewash
- supply B: soap for wash
- supply C: fabric softener

This programme is programmed for a normal reversion

PROCESS NUMBER	STEP NUMBER	NAME OF STEP	PROGRAMMER FUNCTIONS
P02	St01	Prewash	PREWASH TEMPERATURE 40°C (104°F) 99°C/MIN (210°F) LEVEL XX INLETS 2, 3 TIME 04.0 MIN
P02	St02	Extract	EXTRACT TIME 00.5 MIN
P02	St03	Wash	WASH TEMPERATURE 60°C (140°F) 99°C/MIN (210°F) LEVEL XX INLETS 4, 3, 5 TIME 08.0 MIN
P02	St04	Drain	DRAIN TIME 00.5 MIN
P02	St05	1st rinse	RINSE LEVEL XX INLETS 2, 6, 5 TIME 01.5 MIN
P02	St06	Extract	EXTRACT TIME 00,5 MIN
P02	St07	2nd rinse	RINSE LEVEL XX INLETS 2, 6, 5 TIME 01.5 MIN
P02	St08	Extract	EXTRACT TIME 00.5 MIN
P02	St09	3rd rinse	RINSE LEVEL XX INLETS 1 TIME 02.0 MIN
P02	St10	Extract	EXTRACT TIME 04.5 MIN

XX - THIS VALUE DIFFERS IN EVERY MACHINE TYPE. THE VALUES FOR INDIVIDUAL TYPES AND STEPS ARE LISTED IN CHAPTER „5. PROGRAMMING".



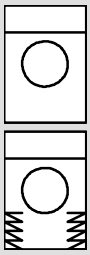
PRROGRAMME 03: DELICATE LINEN RIGID MOUNTED AND SOFT-MOUNT MACHINE TYPES 6-22 KG (TOP HOPPERS)

This washing programme 03 is designed for delicate linen washing.
For this programme the soap hoppers have to be filled as follows:
- supply A: soap for prewash
- supply B: soap for wash
- supply C: fabric softener

This programme is programmed for a normal reversion.

PROCESS NUMBER	STEP NUMBER	NAME OF STEP	PROGRAMMER FUNCTIONS
P03	St01	Prewash	PREWASH TEMPERATURE 40°C (104°F) 99°C/MIN (210°F) LEVEL XX INLETS 2, 3 TIME 04.0 MIN
P03	St02	Extract	EXTRACT TIME 00.5 MIN
P03	St03	Wash	WASH TEMPERATURE 40°C (104°F) 99°C/MIN (210°F) LEVEL XX INLETS 5, 3 TIME 07.0 MIN
P03	St04	Drain	DRAIN TIME 00.5 MIN
P03	St05	1^{st} rinse	RINSE LEVEL XX INLETS 2, 6, 5 TIME 01.5 MIN
P03	St06	Extract	EXTRACT TIME 00,5 MIN
P03	St07	2^{nd} rinse	RINSE LEVEL XX INLETS 2, 6, 5 TIME 01.5 MIN
P03	St08	Extract	EXTRACT TIME 00.5 MIN
P03	St09	3^{rd} rinse	RINSE LEVEL XX INLETS 1 TIME 02.0 MIN
P03	St10	Extract	EXTRACT TIME 04.5 MIN

XX - THIS VALUE DIFFERS IN EVERY MACHINE TYPE. THE VALUES FOR INDIVIDUAL TYPES AND STEPS ARE LISTED IN CHAPTER „5. PROGRAMMING".



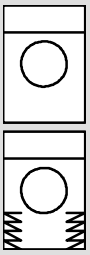
PROGRAMME 04: NYLON RIGID MOUNTED AND SOFT-MOUNT MACHINE TYPES 6-22 KG (TOP HOPPERS)

This washing programme 04 is designed for nylon
For this programme the soap hoppers have to be filled as follows:
- supply A: empty
- supply B: soap for wash
- supply C: fabric softener

This programme is programmed for a normal reversion.

PROCESS NUMBER	STEP NUMBER	NAME OF STEP	PROGRAMMER FUNCTIONS
P04	St01	Wash	WASH TEMPERATURE 30°C (86°F) 99°C/MIN (210°F) LEVEL XX INLETS 6, 5, 3 TIME 07.0 MIN
P04	St02	Drain	DRAIN TIME 00.5 MIN
P04	St03	1st rinse	RINSE LEVEL XX INLETS 2, 6, 5 TIME 01.5 MIN
P04	St04	Drain	DRAIN TIME 00.5 MIN
P04	St05	2nd rinse	RINSE LEVEL XX INLETS 2, 6, 5 TIME 01.5 MIN
P04	St06	Drain	DRAIN TIME 00.5 MIN
P04	St07	3rd rinse	RINSE LEVEL XX INLETS 1 TIME 02.0 MIN
P04	St08	Extract	EXTRACT TIME 02.0 MIN

XX - THIS VALUE DIFFERS IN EVERY MACHINE TYPE. THE VALUES FOR INDIVIDUAL TYPES AND STEPS ARE LISTED IN CHAPTER „5. PROGRAMMING".



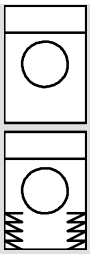
PROGRAMME 05: WOOL RIGID MOUNTED AND SOFT-MOUNT TYPES 6-22 KG (TOP HOPPERS)

Washing programme 05 is designed for washing wool.
For this programme the hoppers have to be filled as follows:
- supply A: empty
- supply B: soap for wash
- supply C: fabric softener

This programme is programmed for a gentle reversion.

PROCESS NUMBER	STEP NUMBER	NAME OF STEP	PROGRAMMER FUNCTIONS
P05	St01	Wash	WASH TEMPERATURE 15°C (59°F) 99°C/MIN (210°F) LEVEL XX INLETS 6, 5 TIME 06.0 MIN
P05	St02	Drain	DRAIN TIME 00.5 MIN
P05	St03	1st rinse	RINSE LEVEL XX INLETS 2, 6, 5 TIME 01.5 MIN
P05	St04	Drain	DRAIN TIME 00,5 MIN
P05	St05	2nd rinse	RINSE LEVEL XX INLETS 2, 6, 5 TIME 01.5 MIN
P05	St06	Drain	DRAIN TIME 00.5 MIN
P05	St07	3rd rinse	RINSE LEVEL XX INLETS 1 TIME 02.0 MIN
P05	St08	Extract	EXTRACT TIME 01.5 MIN

XX - THIS VALUE DIFFERS IN EVERY MACHINE TYPE. THE VALUES FOR INDIVIDUAL TYPES AND STEPS ARE LISTED IN CHAPTER „5. PROGRAMMING".



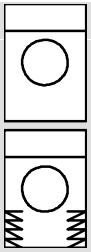
PROGRAMME 06: VERY DIRTY LINEN RIGID MOUNTED AND SOFT-MOUNT MACHINE TYPES 6-22 KG CAPACITY (TOP HOPPERS)

This programme 06 is designed for very dirty linen washing.
For this programme the soap hoppers have to be filled as follows.
- supply A: soap for prewash
- supply B: soap for wash
- supply C: fabric softener

This programme is programmed for a normal reversion.

PROCESS NUMBER	STEP NUMBER	NAME OF STEP	PROGRAMMER FUNCTIONS
P06	St01	1st prewash	PREWASH TEMPERATURE 40°C (104°F) 99°C/MIN (210°F) LEVEL XX INLETS 2, 3 TIME 06.0 MIN
P06	St02	Extract	EXTRACT TIME 00.5 MIN
P06	St03	2nd prewash	PREWASH TEMPERATURE 60°C (140°F) 99°C/MIN (210°F) LEVEL XX INLETS 2, 3 TIME 06.0 MIN
P06	St04	Extract	EXTRACT TIME 00.5 MIN
P06	St05	Wash	WASH TEMPERATURE 60°C (140°F) 99°C/MIN (210°F) LEVEL XX INLETS 3, 4, 5 TIME 06.0 MIN
P06	St06	Drain	DRAIN TIME 00.5 MIN
P06	St07	1st rinse	RINSE LEVEL XX INLETS 2, 6, 5 TIME 01.5 MIN
P06	St08	Extract	EXTRACT TIME 00.5 MIN
P06	St09	2nd rinse	RINSE LEVEL XX INLETS 2, 6, 5 TIME 01.5 MIN
P06	St10	Extract	EXTRACT TIME 00.5 MIN
P06	St11	3rd rinse	RINSE LEVEL XX INLETS 1 TIME 02.0 MIN
P06	St12	Extract	EXTRACT TIME 04.5 MIN

XX - THIS VALUE DIFFERS IN EVERY MACHINE TYPE. THE VALUES FOR INDIVIDUAL TYPES AND STEPS ARE LISTED IN CHAPTER „5. PROGRAMMING".

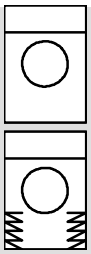


PROGRAMME 07: EXTRACT AT LOW SPEED RIGID MOUNTED AND SOFT-MOUNT MACHINE TYPES 6-22 KG CAPACITY (TOP HOPPERS)

This programme 07 is designed for extracting at low r.p.m.
NO soap hoppers needed for this programme.
This programme is programmed for a normal reversion.

PROCESS NUMBER	STEP NUMBER	NAME OF STEP	PROGRAMMER FUNCTIONS
P07	St01	Rinse	RINSE LEVEL XX INLETS 2, 6, 5 TIME 02.0 MIN
P07	St02	Extract	EXTRACT TIME 08.0 MIN

XX - THIS VALUE DIFFERS IN EVERY MACHINE TYPE. THE VALUES FOR INDIVIDUAL TYPES AND STEPS ARE LISTED IN CHAPTER „5. PROGRAMMING".

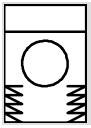


PROGRAMME 08: EXTRACT AT HIGH SPEED RIGID MOUNTED AND SOFT-MOUNT TYPES 6-22 KG (TOP HOPPERS)

The washing process 08 is designed for extracting the linen at high speed.
No soap hoppers needed for this process.
This programme is programmed for a normal reversion.

PROCESS NUMBER	STEP NUMBER	NAME OF STEP	PROGRAMMER FUNCTIONS
P08	St01	Rinse	RINSE LEVEL XX INLETS 2, 6, 5 TIME 02.0 MIN
P08	St02	Extract	EXTRACT HIGH SPIN * TIME 08.0 MIN

XX - THIS VALUE DIFFERS IN EVERY MACHINE TYPE. THE VALUES FOR INDIVIDUAL TYPES AND STEPS ARE LISTED IN CHAPTER „5. PROGRAMMING".



*** "HIGH SPIN" - FUNCTION CAN BE PROGRAMMED ONLY FOR SOFT-MOUNT MACHINES 6-22 KG CAPACITY**

7. TROUBLESHOOTING

7.1. A DISPLAY MESSAGES

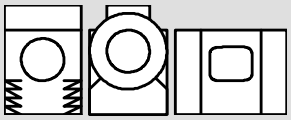
Various messages may appear on the display at the start, during or at the end of a washing cycle.
In the following paragraphs will be described:
– What messages appear on the display (possibly an acoustic signal + 🔔)
– Possible causes of the messages.
– How to solve the problem.

⚠ **WARNING !**
PROFESSIONAL REPAIRS IN ELECTROINSTALLATION CAN BE CARRIED OUT ONLY BY SERVICE ORGANIZATION WITH PERMISSION GIVEN BY PRODUCER / SUPPLIER.

IN CASE OF ANY MAINTENANCE OR REPAIR DISCONNECT THE MACHINE FROM SOURCE OF ENERGY AND WAIT UNTIL THE MACHINE COOLS DOWN OR DRAINS WATER.

PLEASE FOLLOW ALL INSTRUCTIONS IN THE MANUALS, ON THE LABELS AND AS WELL AS VALID BASIC SECURITY LAWS IN ORDER TO PREVENT FROM BURNS AND SCALDS AND INJURIES CAUSED BY ELECTRICITY.

MESSAGE	POSSIBLE CAUSES	TO CHECK	REPAIR ACTION
CLOSE DOOR PRESS START	1.the machine door is open		close the door and press "START" key
	2.defective door lock microswitch, cables or connectors	check the woltage of programmer J 4.6 input. There must be a power voltage if the door lock is all right.	change the door lock microswitch, repair broken wires, change the terminal board.
DOOR FAIL + 🔔	1. the door is not correctly closed or locked	check the door position when closed	correct the door or hinges position
	2. failure in the door electro-installation	the failure will not appear after a short-circuiting the programmer inputs J 2.1-J 2.7	change the door lock microswitch, repair broken wires, change the terminal board
DRAIN FAILURE + 🔔	1.clogged drain	check the drain	clean the drain
	2. blocked drain valve	when the drain valve voltage is disconnected, the valve will not close	clean the drain valve from sediments
	3. broken drain valve	when the drain valve voltage is connected, the valve will not open	replace the drain valve
EEPROM FAIL	1. a temporary memory enter problem	the problem will not appear, when the function is repeated	switching the machine ON and OFF
	2. a permanent memory enter problem	the problem repeats permanently	replace the EEPROM memory; replace the programmer
FILL FAIL + 🔔	1. low water pressure	check the water pressure	increase the water pressure
	2. clogged filters of inlet valves	check the inlet valves filters	clean the filters of the inlet valves
	3. inlet valve is closed	check the inlet valve	open the inlet valves
	4. drain valve is damaged	continuos water draining from the machine	replace the drain valve
	5. in the function with code 50, the time has been set incorrectly		insert a longer time for the **FILL FAIL** function

MESSAGE	POSSIBLE CAUSES	TO CHECK	REPAIR ACTION
HEAT FAIL + 🔔	1. electrical heating conntactor is damaged	contactor does not work	replace the contactor
	2. steam valve is damaged	valve does not open	replace the steam valve
	3. sieve of steam inlet is clogged	steam is not coming to the machine	clean up the sieve
	4. heating elements are damaged	to measure heating elements voltage, does not correspod to heating elements output	replace the heating elements
	5. fuses of heating elements are broken	to measure the fuses	replace the fuses
	6. heating sensor is broken	the sensor does not measure the temperature in entire wash programme	replace the sensor
	7. machine initialization is not correct ; or an information in code 50.		a change of initialization; setting up a longer time in code 50 function
INVERTOR/MOTOR FAULT XXXX + 🔔 	1.a failure XXXX reported by frequency invertor	XXXX see the table of invertor error	XXXX see the table of invertor error
OUT OF BALANCE 	1. incorrect linen distribution	laundry was not distributed in the drum	distribute the laundry
	2. incorect load in the machine		take off or add some linen
	3. machine damaged	broken dampers or machine hinges	replace the dampers, repair the machine
	4. machine is incorrectly fixed to the floor	machine vibrations are to strong	fix the machine to the floor properly
NO PROCESS	selected non-programmed washing cycle and "START" key is pressed		enter a number of a programmed wash cycle and press "START" key
OVERLOAD FAULT + 🔔	1. thermally overloaded motor	check the motor temperature	after cooldown, start the machine
	2. overcurrent ralay is damaged	check the overcurrent relay switching on	replace the broken overcurrent relay
	3. drain valve is damaged	water not drained from machine during extract	repair, or replace the drain valve
PAUSE + 🔔	1. programmed pause	check in which step and whi the pause was entered	press "START" (possibly add soap or fabric softener)
PROCESS COMPLETE PLEASE WAIT	1. before washing cycle completion		after display reads "**SELECT PROCESS**" you can remove laundry from the machine
PROCESS MEMORY EXCEEDED	1. memory contents is exceeded		after pressing "YES" key ,you can complete the programming, but no other step can be programmed. After pressing "NO", programming will be finished.

MESSAGE	POSSIBLE CAUSES	TO CHECK	REPAIR ACTION
SERVICE DUE	1. the number of completed wash cycles reached the preselected value-the ma- chine is due for a service		press "START" key and provide a machine service
TOO HOT + 🔔	1. the temperature sensor recorded a temperature above 50°C at the moment, when the door should be opened	temperature in washing drum is higher than 50°C	wait untill the drum cools down
	2. the temperature sensor is damaged	the sensor does not measure the temperature in the entire wash progr.	replace the temperature sensor
TOO HOT **CHECK HEATING** + 🔔	1. a cold water supply is interrupted	the temperature sensor recorded a temperature 15°C higher than programmed	open the cold water inlet
	2. broken drain valve	check the drain	clean the drainage, replace the drain valve
	3. broken temperature sensor	the sensor does not measure the temperature in entire wash programme	replace the temperature sensor
WATER IN CAGE + 🔔	1. the drain valve is blocked	after drain valve voltage disconnection the valve does not open	clean the drain valve from sediments
	2. the drain valve is damaged		replace the drain valve
	3. drainage is clogged	check the drainage	clean the drainage

Tab. 7.1.A

CODES OF FREQUENCY INVERTOR FAILUR ES

INVERTOR/ MOTOR FAULT:	POSSIBLE CAUSE	TO CHECK	REPAIR ACTION
E.0	no errors		
E.BE (brake tranzistor error) *PCU: Br.Cct. Fault*	1. defective brake tranzistor	is the braking frequency correct ?	decrease the load, reduce the braking frequency
E.Com (communications fault)	1.disconnected or defect communication between invertor and programmer	does the invertor let work?	check connections and wire of communications between invertor and programmer
E.CPU (CPU processor error) *PCU: CPU Fault*	1. defective CPU		replace the invertor
E.FAn (ventilation error -fan)	1. the invertor fan has stopped	strange objects in the fan? connections interrupted ?	remove a strange object, check the connections
E.GF (grounding current too high) *PCU: Ground Fault*	1. fault current goes through grounding (at 400V types only)	check and find out the error cause	repair the error
E.OC1 (overcurrent during acceleration) *PCU: OC During Acc*	1. overcurrent	is acceleration too fast ? is the output circuit grounded or short-circuited ?	increase the acceleration time
E.OC2 (overcurrent during constant speed) *PCU: Stedy Spd Oc*	1. overcurrent	was the load suddenly changed ? is the output circuit grounded or short-circuited ?	eliminate sudden changes of the load

INVERTOR/ MOTOR FAULT:	POSSIBLE CAUSE	TO CHECK	REPAIR ACTION
E.OC3 (overcurent during the deceleration) *PCU: OC During Dec*	1. overcurrent	is deceleration time to short ? is the output circuit grounded or short-circuited ?	increase deceleration time
E.OHt (external thermal relay is closed) *PCU: OH Fault*	1. external thermal relay has reacted	is motor too hot ? is the external thermal relay in use ?	decrease the load, reduce the brake frequency, switch off the external relay detection
E.OLt (current limiting) *PCU: Still Prev STP*	1. the invertor current has reached the limit, longer accelerating time	is the motor overloaded ?	decrease the load
E.Ov1 (overvoltage during acceleration) *PCU: Ov During Acc*	1. overvoltege in the direct circuit	is the acceleration too quick ?	increase the acceleration time
E.Ov2 (overvoltage during constant speed) *PCU: Stedy Spd Ov*	1. overvoltage in the direct circuit	was the load suddenly changed ?	eliminate sudden changes of the load
E.Ov3 (overvoltage during deceleration) *PCU: OV During Dec*	1. overvoltage in the direct circuit	is the deceleration time too short ?	increase the deceleration time
E.PE (memory error) *PCU: Corrupt memory*	1. faulty EEPROM	too many recorded parameters ? is EEPROM worn out ?	replace the invertor
E.PUE (disconection of parameter unit) *PCU: PU Leave Out*	1. the parameter unit connector is disconnected	is the parameter unit disconnected ?	connect the parameter unit properly
E.rEt (maximum number of retry exceeded) *PCU: Retry No.Over*	1. if operation can not be resumed within the number of retry times set, this function stops the inverter output	find and check the error cause	eliminate the error cause
Err (error)	1. error at adjusting	check the metod of control	
	2. the reset signal is switched on	is the connection of reset signal correct ?	switch off the reset signal
	3. PCU unit is incorrectly connected	is the connector properly in ?	insert the connector properly in
	4. high input voltage	is the input voltage correct ?	use a correct input voltage
	5. defective internal circuit		replace the invertor
	6. PCU error		restart the machine
E.tHt (overload) *PCU: Inv.Overload*	1. the thermal relay of the invertor is closed	is the motor overloaded ?	decrease the load
E.tHt (overload) *PCU: Motor Overload*			

Tab. 7.1.B

8. SERVICE INFORMATION

⚠ WARNING !
PROFESSIONAL REPAIRS IN ELECTROINSTALLATION CAN BE CARRIED OUT ONLY BY SERVICE ORGANIZATION WITH PERMISSION GIVEN BY PRODUCER / SUPPLIER.

IN CASE OF ANY MAINTENANCE OR REPAIR DISCONNECT THE MACHINE FROM SOURCE OF ENERGY AND WAIT UNTIL THE MACHINE COOLS DOWN OR DRAINS WATER.

PLEASE FOLLOW ALL INSTRUCTIONS IN THE MANUALS, ON THE LABELS AND AS WELL AS VALID BASIC SECURITY LAWS IN ORDER TO PREVENT FROM BURNS AND SCALDS AND INJURIES CAUSED BY ELECTRICITY

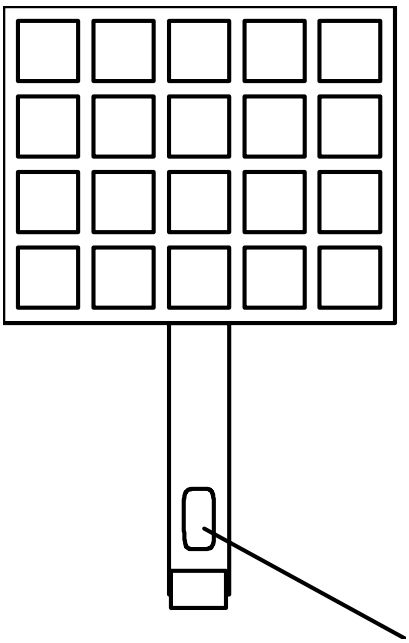
8.1. MAINTENANCE

Remove dirt from the keyboard by a damp cloth after disconnection from the power supply.

⚠ WARNING !
DO NOT USE AGGRESSIVE SOAPS, CAUSTIC CHEMICALS, GASOLINE OR OTHER PETROCHEMICAL SUBSTANCES WHICH CAN DAMAGE THE KEYBOARD.

8.2. INFORMATION FOR SERVICE

⚠ WARNING !
EVERY CIRCUIT BOARD HAS A STICKER PLACED ON THE MICROPROCESSOR, WHICH SPECIFIES THE VERSION AND THE DATE OF THE SOFTWARE. THIS DATA ALONG WITH THE MACHINE SERIAL NO., PRI CODE AND THE KEYBOARD NO. MUST BE GIVEN IN ALL CORRESPONDENCE OR INQUIRIES TO THE MANUFACTURER.



code number of the keyboard

Fig. 8.2

8.3. PROGRAMMER CIRCUIT BOARD

1. Main board
2. Microprocessor (microprocessor software version and date identification- e.g. APL 281 ne, 29.3.93).
3. Machine type switch
4. Board serial number (e.g. SERIAL 00015)
5. Keyboard connector
6. Potentiometer R7

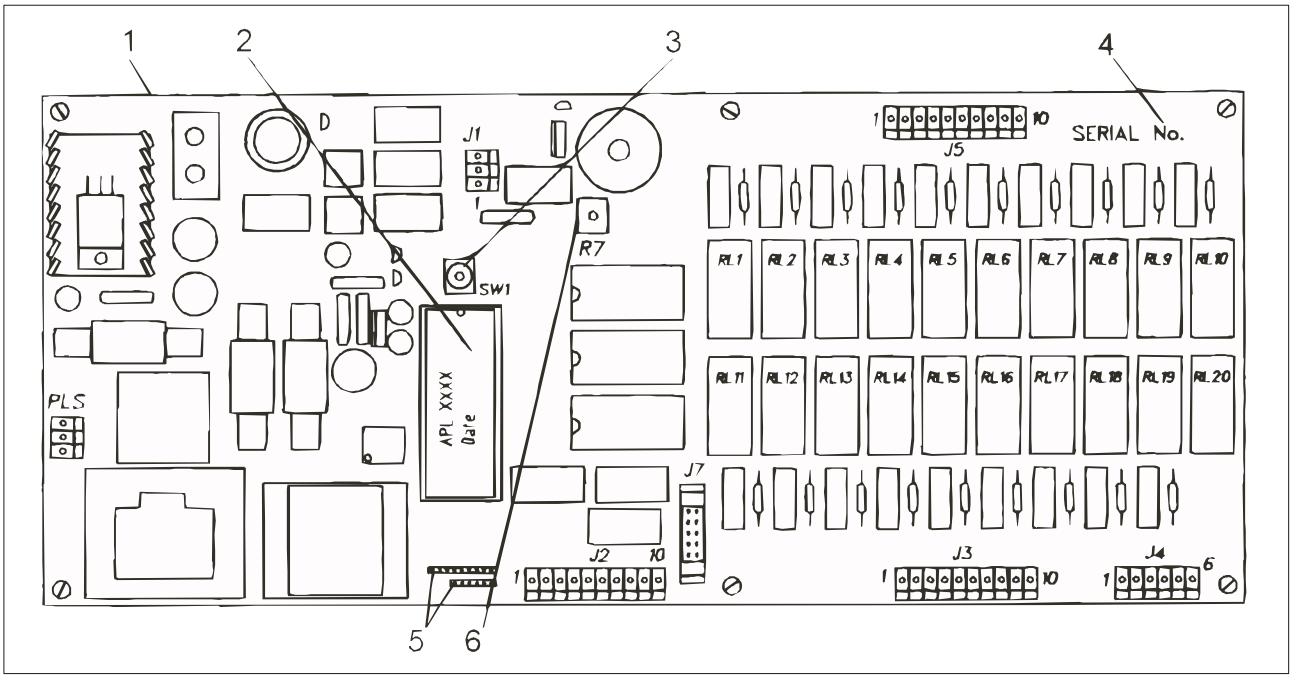


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Fig. 8.3

8.4. EXCHANGING COMPONENTS

REPLACING THE MAIN BOARD

– Disconnect the power supply.
– Remove the connectors (marked „J") from the circuit board pos. 1, (fig. 8.3) and the little hose for a level measuring.
– Remove the board off the plastic holders.
– Set up the SW1 switch (pos. 3), of a new circuit board to the same position as on the old one.
– Place the new circuit board in and fasten it. Make sure that the display does not touch the front stainless steel plate (keep at least 2 mm distance). Otherwise that may cause a display malfunction.
– Reconnect all connectors in the correct manner.

⚠ WARNING !
NOW, THE MACHINE HAS TO BE REINITIALIZED!

– Turn on the power.
– Perform the initialization (see chapter 3).

KEYBOARD REPLACEMENT

– Disconnect the power supply
– Disconnect the keyboard connector fig. 8.3, pos. 5, from the main board pos. 1.
– Remove the front plate.
– Remove the old keyboard from the steel plate and stick the new keyboard onto the plate.
– Connect the new keyboard's connector to the main board.
– Reconnect the power supply.

REPLACING THE MICROPROCESSOR

Microprocessor contains all the possible programming functions of the control system, and the microprocessor can be replace as follows:

– Disconnect the power supply.
– Remove the microprocessor from its „IC" base (fig. 8.3, pos. 2).

⚠ WARNING !
THE MICROPROCESSOR IS SENSITIVE TO ELECTROMAGNETIC FIELDS. CARELESS MANIPULATION OR STRONG ELECTROMAGNETIC FIELDS CAN DAMAGE THE MICROPROCESSOR'S SOFTWARE.
THE NOTCH IN THE „IC" MUST BE ON THE TOP SIDE (FIG. 8.3, POS. 2).
THE MACHINE MUST BE REINITIALIZED!

– Place the new microprocessor with a proper software correctly into the „IC" base.
– Reconnect the power supply.
– Complete the initialization (chapter 3).

8.5. THE DISPLAY ADJUSTMENT

The viewing angle (fig. 8.5) of the display can be adjusted by turning the potentiometer R7 (fig. 8.3, pos. 6), with a small screwdriver.

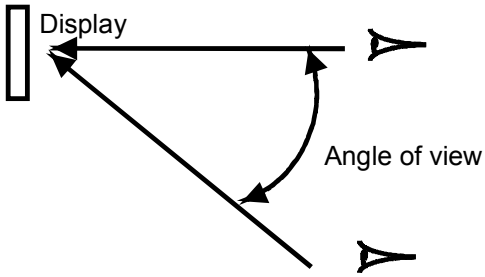
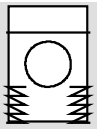


Fig. 8.5

8.6. SETTING OF THE SW1 SWITCH

The numbered rotary SW1 switch (fig. 8.3, pos. 3), on the programmer board can be used to configure the software for different machine types. Check its correct setting on the new board.



SOFT-MOUNT TYPE MACHINES 6-16 KG

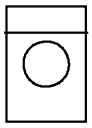
7 for machines with 3 inlet valves
4 for other machines

SOFT-MOUNT TYPE MACHINES 22-55 KG

3 for machines with two door coils, 3 inlet valves
7 for machines with two door coils, 2 inlet valves

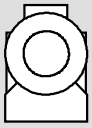
SOFT-MOUNT TYPE MACHINES 6 - 22 KG WITH A FREQUENCY CONTROL (TOP HOPPERS)

4 for soft-mount machines
5 for soft-mount machines with 3 inlet valves



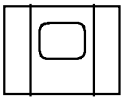
RIGID MOUNTED MACHINES 6 - 35 KG

6 for machines with 3 inlet valves
5 for other machines



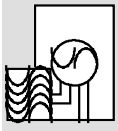
NON -CABINET MACHINES 22 - 43 KG CAPACITY

1 for machines with one door coil, 3 inlet valves
2 for machines with two door coils, 3 inlet valves
6 for machines with two door coils, 2 inlet valves
0 for machines with one door coil, 2 inlet valves



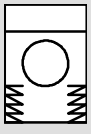
HYGIENIC TYPE MACHINES

3 for machines with two door coils, 3 inlet valves



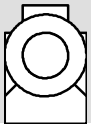
SOFT-MOUNT TYPE MACHINES 22-55 KG CAPACITY

4 for machines with two door coils, 3 inlet values, recycled drain
9 for machines with two door coils, 2 inlet values, recycled drain



NON-CABINET MACHINES 22-43 KG CAPACITY

5 for machines with two door coils, 3 inlet valves, recycled drain
8 for machines with two door coils, 3 inlet valves, recycled drain



8.7. RECONSTRUCTION TO 1 X 110 V POWER SUPPLY

When reconstructing the machine power supply from 220 V to 110 V, it is necessary (in addition) to exchange the relay RL 20 of 220 V, for a relay of 110 V current supply on the programmer board. The four outlets marked 110 V on the bottom left, have to be connected twice by the connecting bridge (fig. 8.7, pos. 1).

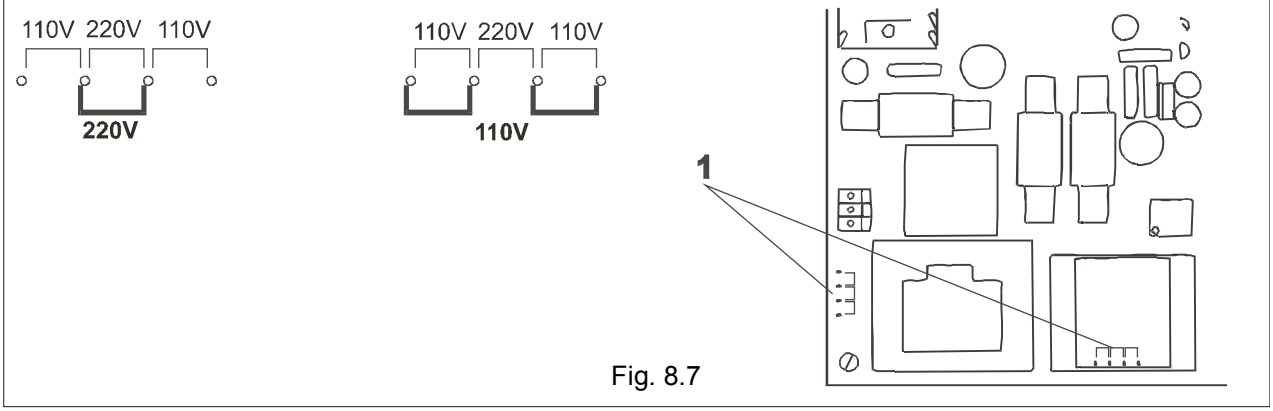


Fig. 8.7

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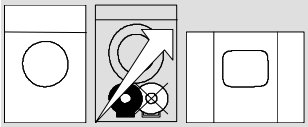
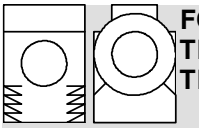
8.8. RECYCLING DRAINAGE

After the machine reconstruction with one drain valve to the two-drain valve version it is necessary to do:

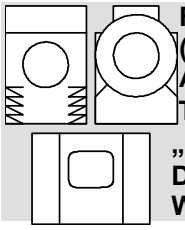


FOR RIGID MOUNTED TYPES AND MACHINES WITH A FREQUENCY CONTROL, CONNECT THE OUTPUTS J 2.1 AND J 2.5 OF THE PROGRAMMER ACCORDING TO THE ELECTRIC DIAGRAM. THEN THE ALL POSITION RECYCLED DRAINING CONTROLLED BY SW1 CHANGE-OVER SWITCH, WILL WORK.

8.9. EXTERNAL PUMPS



FOR TWO-MOTOR VERSION OF NON-CABINET OR SOFT-MOUNT MACHINES, THE RECYCLED DRAINING IN THE SW1 SWITCH POSITIONS 4, 5, 8 AND 9 ON THE PROGRAMMER BOARD, CAN BE REALIZED.



FOR NON-CABINET, HYGIENIC OR SOFT-MOUNT TYPES WITH 22-55 KG CAPACITY (FRONT HOPPERS):
AFTER CONNECTING OF LIQUID DETERGENT PUMPS WITH A CONTROL, CONNECT THE PROGRAMMER OUTLETS J.2.1 AND J.2.4 (INSTEAD OF THE „SUPPLY 1?" TO „SUPPLY 5?" HOPPERS) ACCORDING TO THE ELECTRIC DIAGRAM. THEN THE DELAY AT THE BEGINNING OF „SUPPLY 1?" TO „SUPPLY 5?" FILLING, WHICH WAS USED FOR A PROPER FUNCTION OF THE HOPPERS, WILL BE CANCELED.

8.10. SECURING OF THE ACCESS TO THE START UP AND PROGRAMMING

The owner has the possibility to protect the codes for programming and setup by means of a switch normally placed in the machine. The switch can be ordered by code 100399 and must be connected between input J2.9 and common J2.1 on the timer board. The way of wiring is given on the electrical diagram delivered by the machine.
I case of problems or to less information please contact your dealer or the manufacturer.

8.11. NOTES:

9. SPECIFICATION OF YOUR MACHINE

MACHINE DATA

type :.....
serial number :.....
voltage :.....
phases :.....
frequency :.....
output :.....
water supply : O cold soft O cold hard O hot soft
heating : O electrical ..... kW O hot water O steam

ELECTRONIC DATA

programmer type:
serial number :.....
software version :.....
software date :.....
keyboard :.....
position of SW1 switch :.....

MACHINE INITIALIZATION DATA

FUNCTION	INITIALIZATION FUNCTION	DATA TO BE ENTERED	DATA ENTERED
MACHINE TYPE:	**ENTER MACHINE**	NUMERICAL VALUE	
LANGUAGE VERSION:	**1=ENG 2=FRENCH 3=GERM 4=DUTCH**	NUMERICAL VALUE	
SERVICE TIME:	**SERVICE**	NUMERICAL VALUE	.....
WASHING TIMES:	**WASH TIMES**		
- NORMAL ON	**NORMAL ON**	NUMERICAL VALUE	.....
- NORMAL OFF	**NORMAL OFF**	NUMERICAL VALUE	.....
- GENTLE ON	**GENTLE ON**	NUMERICAL VALUE	.....
- GENTLE OFF	**GENTLE OFF**	NUMERICAL VALUE	.....
SET "0" LEVEL:	**SET 0 LEVEL**	YES OR NO	.....
MAX LEVEL:	**MAX LEVEL**	NUMERICAL VALUE	.....
BUZZER TIME:	**BUZZER TIME**	NUMERICAL VALUE	.....
ALLOW ADVANCE:	**ALLOW ADVANCE**	YES OR NO	.....
FAULT SUPPRESSION:	**FAULT SUPPRESION**	YES OR NO	.....
WAIT FOR HEAT:	**WAIT FOR HEAT**	YES OR NO	.....
ECONOMIC VALUES	**ECONOMY**	YES OR NO	.....
MANUAL OVERRIDE:	**MANUAL OVERRIDE**	YES OR NO	.....
DRUM PULLEY:	**DRUM**	NUMERICAL VALUE	.....
MOTOR PULLEY:	**MOTOR**	NUMERICAL VALUE	.....
TEMP. BALANCE:	**TEMP.BALANCE**	YES OR NO	.....
METRIC:	**METRIC**	YES OR NO	

10. OVERVIEW OF CODES AND MESSAGES

10.1. CODES ENTERED

50	*Selection of fault announcement time "**FILL FAIL**" and "**HEAT FAIL**"*
52	*Standard washing programmes*
60	*Software version*
61	*Current value and motor frequency of frequency controlled machines*
62	*Initialization (see chapter 3.2.)*
74	*Zeroing out of all machine cycle counters*
89	*Programming mode (see chapter 4.1.)*
92	*Setting up of the frequency invertor using a parameter unit, when switching on the frequency invertor current supply on machines with a frequency controlled drive.*

10.2. FAILURE CODES OF FREQUENCY INVERTOR

INVERTOR/MOTOR FAULT XXXX **(a failure of frequency drive)**

E.0	*No errors*
E.BE	*Error of invertor braking transistor*
E.Com	*Defect communication between invertor and programmer*
E.CPU	*CPU error*
E.FAN	*Error of invertor fan*
E.GF	*Fault current in grounding, the invertor switches off (400V types only)*
E.OC1	*Current limit is exceeded during acceleration*
E.OC2	*Current limit is exceeded during constant speed*
E.OC3	*Current limit is exceeded during deceleration*
E.OHT	*External relay is disconnected (the relay was connected to invertor by a customer)*
E.OLT	*Current limitation occurrence during constant speed, motor was stopped*
E.OV1	*Inter-circuit tension limit is exceeded during acceleration*
E.OV2	*Inter-circuit tension limit is exceeded during constant speed*
E.OV3	*Inter-circuit tension limit is exceeded during deceleration*
E.PE	*Memory error, CPU damaged (microprocessor)*
E.PUE	*Parameter unit was disconnected*
E.RET	*Restart did not come*
E.rr	*Setting error; RESET signal is active, incorrect connection of parameter unit and invertor,...*
E.THM	*Electronic thermal relay released (current over 100%, but below 150%, of given current)*
E.THT	*Electronic thermal relay released (current over 150% of given power)*

10.3. DISPLAY MESSAGES

CLOSE DOOR PRESS START	close the door and press „START“ key
DOOR FAIL	door failure
DRAIN FAILURE	drain problems
EEPROM FAIL	EEPROM memory failure
FILL FAIL	water filling failure
HEAT FAIL	heating failure
 INVERTOR/MOTOR FAULT XXXX	a failure of the frequency drive
NO PROCESS	no process has been programmed
OUT OF BALANCE	out of balance
OVERLOAD FAULT	overloading
PAUSE	a pause
PROCESS COMPLETE PLEASE WAIT	a process completed, please wait
PROCESS MEMORY EXCEEDED	the process memory has been exceeded
SERVICE DUE	time for a service
TOO HOT	too hot
TOO HOT CHECK HEATING	too hot, check the heating
WATER IN CAGE	water in the drum

11. INDEX

IMPORTANT !

MACHINE TYPE:	
PROGRAMMER: **ELECTRONIC TIMER** **- MKII-20** **- MKIIA-20**	
INSTALLATION DATE:	
INSTALLATION CARRIED OUT BY:	
SERIAL NUMBER:	

ELECTRICAL DETAILS:
.....VOLT.....PHASE.....HZ

NOTE:

ANY CONTACTS WITH YOUR DEALER REGARDING MACHINE SAFETY, OR SPARE PARTS, MUST INCLUDE THE ABOVE IDENTIFICATION.
MAKE CERTAIN TO KEEP THIS MANUAL IN A SECURE PLACE FOR FUTURE REFERENCE.

DEALER: