primus

MECHANICAL TIMER

PROGRAMMING MANUAL
PUB DATE: 09/02
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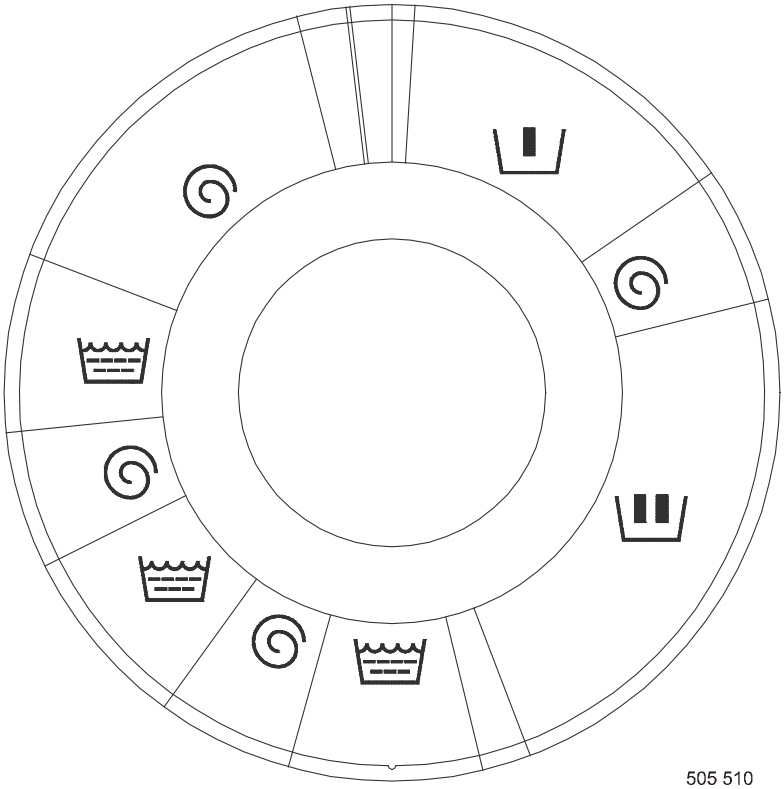
INDUSTRIAL WASHER- EXTRACTORS
WITH MECHANICAL TIMER



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2. WARNINGS AND SYMBOLS

2.1. WARNINGS

The manufacturer reserves the right at all times to change the specifications contained in this manual without prior notice.

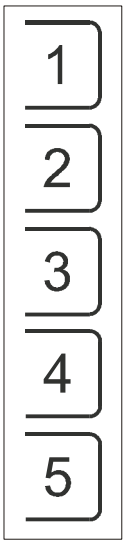
All information given here should be considered as general information, since it is impossible to give all specific details of the machine.

This programming instruction manual is the original English version. For other than English versions, the two versions together therefore constitute the whole manual. In case you do not have this version, ask your dealer for a copy.

⚠ CAUTION - IMPORTANT NOTE !!!
READ THIS MANUAL CAREFULLY BEFORE USING THIS MACHINE. UNQUALIFIED INTERVENTION TO MECHANICAL TIMER AND THE MACHINE MAY CAUSE SERIOUS BODILY INJURY AS WELL AS DAMAGE TO THE PART AND TO THE WASHING MACHINE ITSELF.

⚠ DANGER !!!
OPERATIONS THAT REQUIRE THE MACHINE TO BE OPENED MUST BE CARRIED OUT BY QUALIFIED PERSONNEL WHO TAKE ALL THE NECESSARY MEASURES TO ENSURE EVERYBODY'S SAFETY.
AT THE END OF THESE OPERATIONS, THE MACHINE MUST BE RESTORED TO ITS ORIGINAL STATE.

2.2. BUTTON LABELS



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White: 45°C prewash, 90°C main wash

Coloured: 45°C prewash, 60°C main wash

Delicates: 45° C prewash, 45°C main wash

Nylon: 30°C main wash

Woollens: 30°C main wash

3. BASIC DESCRIPTION OF CONTROLS

❑ THE BASIC VERSION CONTROL OFFERS:

– 5 programs
– easy operation with push buttons
– Indicator shows the current step of the wash cycle
– change of program time by qualified technician

❑ THE ENLARGED VERSION CONTROL OFFERS:

– a wide range of washing technologies operated by additional function push buttons, i.e. to shorten or to extend program time, or skip some steps
– standard wash program's contain economic and normal water level

❑ THE COIN VERSION:

– programmable program prices and coin values
– the price of the selected cycle and information about inserted coins on LED display

4. MECHANICAL TIMER

4.1. VERSION OF PROGRAM TIME

To a certain extend you can adapt the time of your wash programs. You can choose the following times (without heating and water inlet):

MAIN WASH AT:

– 15 min 30 s (16 min 30s)
– 11 min 30 s (12 min)
– 9 min 30 s
– 7 min 30 (8 min)

EXTRACTION AT:

– 5 min. 30 s
– 9 min. 30 s

DISTRIBUTION AT:

– 30 s
– 1 min 30 s

REVERSING AT:

– 30 s
– 2 min

4.2. INSTRUCTION

⚠ WARNING !
ALWAYS FOLLOW SAFETY INSTRUCTIONS! DO NOT BYPASS ANY SAFETY DEVICES OR THEIR PARTS. ANY INTERFERENCE TO THE MACHINE FUNCTIONS AND CONSTRUCTION ARE PROHIBITED!
DO NOT OPERATE THE MACHINE WITH BROKEN / MISSING PARTS OR OPENED COVERS!
BEFORE THIS WORK DISCONNECT THE MACHINE POWER INLET!
WHEN THE MAIN SWITCH IS OFF THE INLET TERMINALS OF THE MACHINE MAIN SWITCH ARE STILL UNDER CURRENT!
THAT IS THE WAY TO AVOID INJURIES.

In order to do this, qualified technician musts modify certain electrical connections on the timer. On the electrical drawing delivered with machine he will find the timer contacts, which must be connected.

THE ELECTRICAL CONNECTION BETWEEN P3-9 AND P3-11 CAN NEVER BE DISCONNECTED !

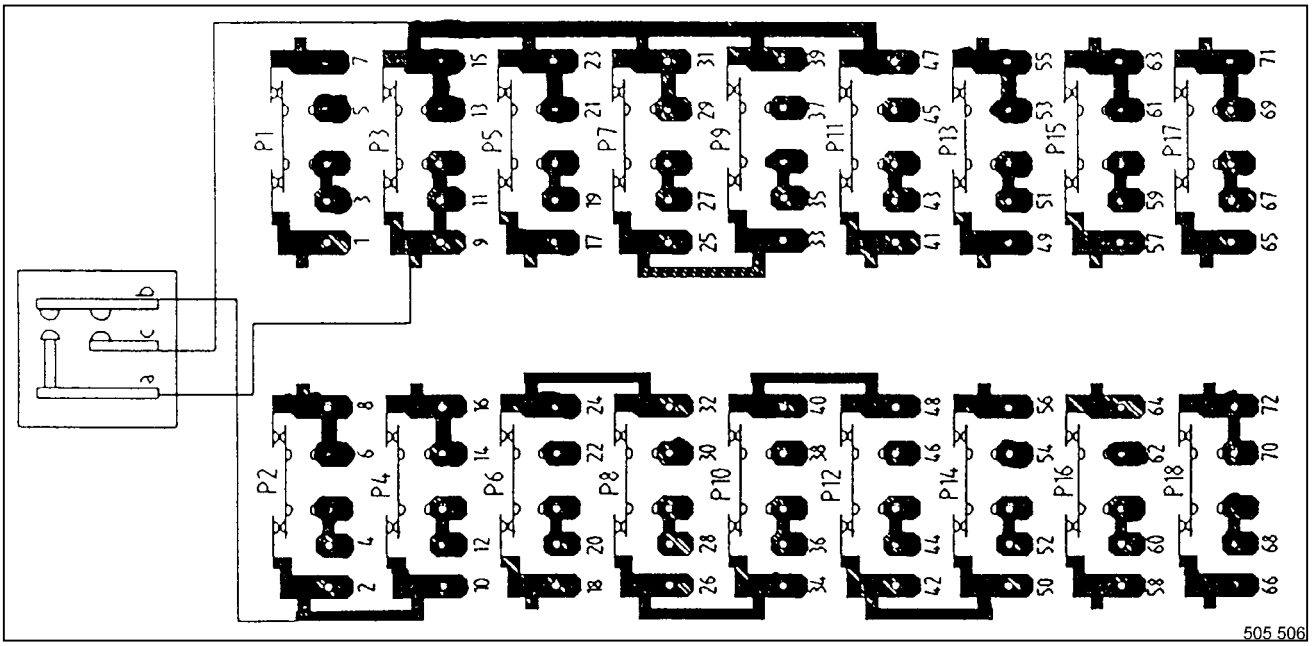


Fig.4.2. An example of connection 9-11, 25-33

4.3. WASHING PROGRAMS

❑ MAIN WASH: 8 MINUTES

	PROGRAM 1	PROGRAM 2	PROGRAM 3	PROGRAM 4	PROGRAM 5
	WHITE	**COLOURED**	**DELICATES**	**NYLON**	**WOOLLENS**
WATER INLET	COLD+HOT	COLD+HOT	COLD+HOT	--	--
PREWASH	4'	4'	4'	--	--
DRAIN					
EXTRACTION	1' 30"	1' 30"	1' 30"	--	--
WATER INLET	HOT	COLD+HOT	COLD+HOT	2/3 COLD+ 1/3 HOT	COLD / GENTLE ACTION
WASH	**7' 30"**	**7' 30"**	**7' 30"**	**8'**	**8'**
DRAIN	30"	30"	30"	30"	30"
WATER INLET	COLD	COLD	COLD	COLD	COLD
RINSE 1	2'	2'	2'	2'	2'
DRAIN					
EXTRACTION	1' 30"	1' 30"	1' 30"	30"	30"
WATER INLET	COLD	COLD	COLD	COLD	COLD
RINSE 2	2'	2'	2'	2'	2'
DRAIN	1' 30"	1' 30"	1' 30"	30"	30"
EXTRACTION					
WATER INLETS SOFTENER	COLD	COLD	COLD	COLD	COLD
RINSE 3	2' 30"	2' 30"	2' 30"	2' 30"	2' 30"
DRAIN					
EXTRACTION	5' 30"	5' 30"	5' 30"	2'	2'
DISTRIBUTION	30"	30"	30"	30"	30"
REVERSING	30"	30"	30"	30"	30"
TOTAL CYCLE TIME (*)	29' 30"	29' 30"	29' 30"	19'	19'

The connection of the timer contacts 9 - 11, 25 - 33, 27 - 17.

(*) For boiler fed wash machines:
to the mentioned 'total cycle time' you must add the time of the water fill.

For wash machines with electrical or with steam heating:
to the mentioned 'total cycle time' you must add the time of the water fill and the heating of the water.

❑ MAIN WASH: 11,5 - 12 MINUTES

	PROGRAM 1	PROGRAM 2	PROGRAM 3	PROGRAM 4	PROGRAM 5
	WHITE	**COLOURED**	**DELICATES**	**NYLON**	**WOOLLENS**
WATER INLET	COLD+HOT	COLD+HOT	COLD+HOT	--	--
PREWASH	4'	4'	4'	--	--
DRAIN					
EXTRACTION	1' 30"	1' 30"	1' 30"	--	--
WATER INLET	HOT	COLD+HOT	COLD+HOT	2/3 COLD+ 1/3 HOT	COLD / GENTLE ACTION
WASH	**11' 30"**	**11' 30"**	**11' 30"**	**12'**	**12'**
DRAIN	30"	30"	30"	30"	30"
WATER INLET	COLD	COLD	COLD	COLD	COLD
RINSE 1	2'	2'	2'	2'	2'
DRAIN					
EXTRACTION	1' 30"	1' 30"	1' 30"	30"	30"
WATER INLET	COLD	COLD	COLD	COLD	COLD
RINSE 2	2'	2'	2'	2'	2'
DRAIN	1' 30"	1' 30"	1' 30"	30"	30"
EXTRACTION					
WATER INLETS SOFTENER	COLD	COLD	COLD	COLD	COLD
RINSE 3	2' 30"	2' 30"	2' 30"	2' 30"	2' 30"
DRAIN					
EXTRACTION	5' 30"	5' 30"	5' 30"	2'	2'
DISTRIBUTION	30"	30"	30"	30"	30"
REVERSING	30"	30"	30"	30"	30"
TOTAL CYCLE TIME (*)	33' 30"	33' 30"	33' 30"	23'	23'

The connection of the timer contacts 9 - 11, 25 - 33, 19 - 17.

(*) For boiler fed wash machines:
to the mentioned 'total cycle time' you must add the time of the water fill.

For wash machines with electrical or with steam heating:
to the mentioned 'total cycle time' you must add the time of the water fill and the heating of the water.

❑ MAIN WASH: 15,5 - 16,5 MINUTES

	PROGRAM 1	PROGRAM 2	PROGRAM 3	PROGRAM 4	PROGRAM 5
	WHITE	**COLOURED**	**DELICATES**	**NYLON**	**WOOLLENS**
WATER INLET	COLD+HOT	COLD+HOT	COLD+HOT	--	--
PREWASH	6'	6'	6'	--	--
DRAIN					
EXTRACTION	1' 30"	1' 30"	1' 30"	--	--
WATER INLET	HOT	COLD+HOT	COLD+HOT	2/3 COLD+ 1/3 HOT	COLD / GENTLE ACTION
WASH	**15' 30"**	**15' 30"**	**15' 30"**	**16' 30"**	**16' 30"**
DRAIN	30"	30"	30"	30"	30"
WATER INLET	COLD	COLD	COLD	COLD	COLD
RINSE 1	2'	2'	2'	2'	2'
DRAIN					
EXTRACTION	1' 30"	1' 30"	1' 30"	30"	30"
WATER INLET	COLD	COLD	COLD	COLD	COLD
RINSE 2	2'	2'	2'	2'	2'
DRAIN	1' 30"	1' 30"	1' 30"	30"	30"
EXTRACTION					
WATER INLETS SOFTENER	COLD	COLD	COLD	COLD	COLD
RINSE 3	2' 30"	2' 30"	2' 30"	2' 30"	2' 30"
DRAIN					
EXTRACTION	9' 30"	9' 30"	9' 30"	3' 30"	3' 30"
DISTRIBUTION	30"	30"	30"	30"	30"
REVERSING	30"	30"	30"	30"	30"
TOTAL CYCLE TIME (*)	43' 30"	43' 30"	43' 30"	29'	29'

The connection of the timer contacts 9 - 11, 25 - 33.

(*) For boiler fed wash machines:
to the mentioned 'total cycle time' you must add the time of the water fill.

For wash machines with electrical or with steam heating:
to the mentioned 'total cycle time' you must add the time of the water fill and the heating of the water.

❑ MAIN WASH: 8 MINUTES

VALID ONLY FOR MACHINE WITH ADDITIONAL 10 FUNCTION BUTTONS

Only valid if "short program for washing" is selected (see user's manual - key H)

	PROGRAM 1	PROGRAM 2	PROGRAM 3	PROGRAM 4	PROGRAM 5
	WHITE	**COLOURED**	**DELICATES**	**NYLON**	**WOOLLENS**
WATER INLET	--	--	--	--	--
PREWASH	--	--	--	--	--
DRAIN					
EXTRACTION	--	--	--	--	--
WATER INLET	HOT	COLD+HOT	COLD+HOT	2/3 COLD+ 1/3 HOT	COLD / GENTLE ACTION
WASH	**8'**	**8'**	**8'**	**7' 30"**	**7' 30"**
DRAIN	--	--	--	--	--
WATER INLET	--	--	--	--	--
RINSE 1	--	--	--	--	--
DRAIN					
EXTRACTION	--	--	--	--	--
WATER INLET	--	--	--	--	--
RINSE 2	--	--	--	--	--
DRAIN					
EXTRACTION	--	--	--	--	--
WATER INLETS SOFTENER					
RINSE 3	--	--	--	--	--
DRAIN					
EXTRACTION	5' 30"	5' 30"	5' 30"	2'	2'
DISTRIBUTION	30"	30"	30"	30"	30"
REVERSING	30"	30"	30"	30"	30"
TOTAL CYCLE TIME (*)	14' 30"	14' 30"	14' 30"	10' 30"	10' 30"

The connection of the timer contacts 9 - 11, 25 - 33, 27 - 17.

(*) For boiler fed wash machines:
to the mentioned 'total cycle time' you must add the time of the water fill.

For wash machines with electrical or with steam heating:
to the mentioned 'total cycle time' you must add the time of the water fill and the heating of the water.

5. MACHINE WITH COIN COUNTER

With a coin counter you can determine the number of coins, needed to start the machine.

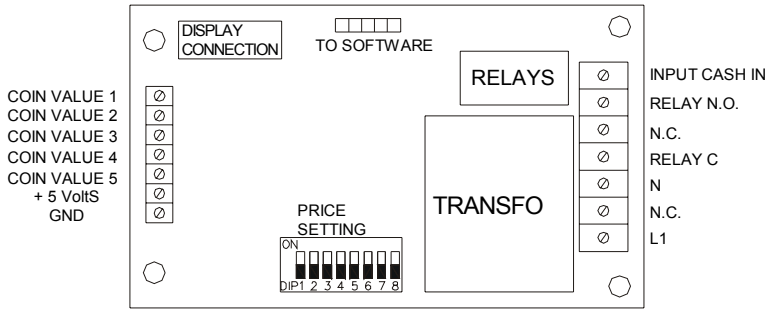
5.1. COIN COUNTER

The price to start the machine is shown on the LED display. When inserting a coin, the value of this coin is reduced from the value shown on the LED display.
When enough coins are inserted, the value reaches 0. The stepper will give a signal to start the machine.
The machine will start after pushing the start button on the machine control. The coin counter will reset automatically after some time or after disconnection of the power supply.

❑ INSTALLATION

1. Fix the box securely in vertical position by four bolts on a dry place without possibility of wet contact.
2. Connect the coin switches to the board (fig.5.1., COIN VALUE 1,2, …, +5 Volts, GND) (See chapter "Connection of coin switches").
3. Set the DIP switches PRICE SETTING for stepper and timer and TIME SETTING for timer (See chapter "Stepper (washing machines").
4. Connect the RELAY NO and REALY C to the machine circuit for activating a start command.
5. Connect **230V AC power supply** to the board to L1 and N.

STEPPER EST200



TIMER T200

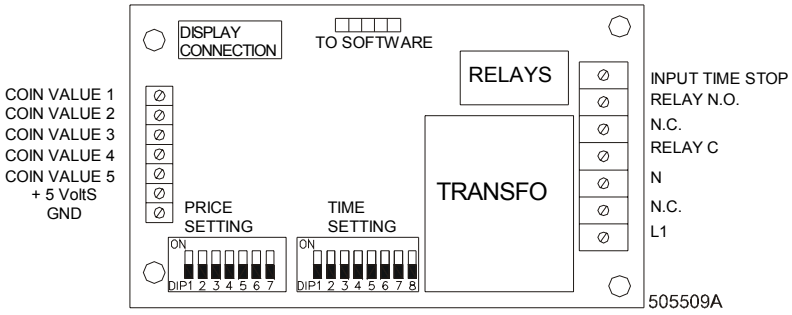


Fig.5.1. Coin counter with LED display, code PRI347006060

❑ CONNECTION OF COIN SWITCHES

The stepper EST200 or timer T200 is an electronic stepper or timer for one price with five inputs and one output. The properties of the stepper or timer can be configured by means of windows software on a PC. The operating parameters are stored in an EEPROM. Upon delivery, the stepper or timer is completely programmed according to the configuration specified by the customer.

The coin inputs are chatter proof. Coins or token that have a hole are identified reliably. Input signals with a pulse width of more than 100 ms are not credited.
There are five coin inputs available and have *standard* the following coin values (see Fig.5.1.):

COIN VALUE	Value of switch (Units)
1	010
2	020
3	025
4	050
5	100

It is also possible to show a decimal point on the 3 digit LED display. There is foreseen a jumper on the display to show the decimal point with 3 possible positions :

– If the jumper is placed in the middle, no decimal point is shown. (Ex. 999)
– Placing the jumper on the left or the right of the pin connector, there will be shown a decimal point next to the second or third display. (Ex. 99.9 or 9.99)

COIN SELECTION: 0,5 EURO AND 1 EURO

The decimal is placed as follow : „4.00“, what means 100 units for 1 Euro.
The same logic shows „0,50“ Euro is 50 units and „1,00“ Euro is 100 units.
The coin switches has to be connected to coin value 4 (50 Units) and coin value 5 (100 Units).

COIN SELECTION : 0,20 EURO AND 0,50 EURO

The decimal point is placed as follow : „4.00“. So „0,20“ Euro is 20 units and „0,50“ Euro is 50 units.
Connect the coin switches to coin value 2 (20) and coin value 4 (50).

❑ STEPPER (WASHING MACHINES)

Each switch of the PRICE SETTING (See fig. 5.1.)has a certain value, as mentioned in the following table:

Number of switch	Value number
1	1
2	2
3	4
4	8
5	16
6	32
7	64
8	128

A value is selected by switching the switch to the "ON" position.
The price is the product of the *PRICE SETTING(1-255)* and a *predetermined programmable value 5* !
The price lays between 5 and 1275 (1x5 ÷ 255x5).(1 and 255 are price settings, 5 is standard).

❑ EXAMPLE

PRICE FOR ONE WASH: 4 EURO

We keep in mind that we have three digits on the display, and we will display the amount 4 Euro like “4.00”.
So we count for one unit on the display = “0.01” Euro.
For the decimal point we have to place the jumper on the display(software independent) next to third LED.

The price is determined by the DIP switch PRICE SETTING multiplied by a value 5.
We calculate the PRICE SETTING we have to set :
400 units (4 Euro) / 5 = **80**

We have to set the DIP switch PRICE SETTING on 80 :
0*1(DIP 1)+**0***2(DIP 2)+**0***4(DIP 3)+**0***8(DIP 4)+**1***16(DIP 5)+**0***32(DIP 6)+**1***64(DIP 7)+**0***128(DIP 8) = **80**
As we can see the DIP switches 5 and 7 of the PRICE SETTING must be placed on “1” or “ON”.
The other DIP switches must be placed on “0” or “OFF”.

PRICE FOR ONE WASH: 5 EURO

Predetermined programmable value = 5
Price setting is 5.00 or 500/5 = 100
The number 100 can be composed as follows:
0*1(DIP 1)+**0***2(DIP 2)+**1***4(DIP 3)+**0***8(DIP 4)+**0***16(DIP 5)+**1***32(DIP 6)+**1***64(DIP 7)+**0***128(DIP 8) = **100**
Place the following DIP switches of the PRICE SETTING on “1” or “ON” : DIP 3, DIP 6, DIP 7.
The other DIP switches are placed on OFF.

❑ NOTES:

IMPORTANT !

MACHINE TYPE:	
PROGRAMMER: -MECHNICAL TIMER	
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: