TSE 3.6

Complete Manual

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Short introduction

Dear customer,

The TSE 3.6 is designed for the detailed management of food distribution to cattle. It's main features are the capability of adding different weight-fractions of ingredients to a mixture and memorizing different mixing times for each of the ingredients added. Furthermore the complete mixture can be unloaded in different weight-fractions, corresponding to the single cattle-boxes.

Data introduction is readily achieved by programming "per head" rations for each type of cattle, when the system is in the "ration"-mode :

For each type a precise ration is to be compiled which will then be multiplied automatically by the total number of animals during the execution of formulae, to obtain the total weight to be loaded of each ingredient. During the unloading, the total weight will automatically be split into different fractions corresponding to each box programmed.

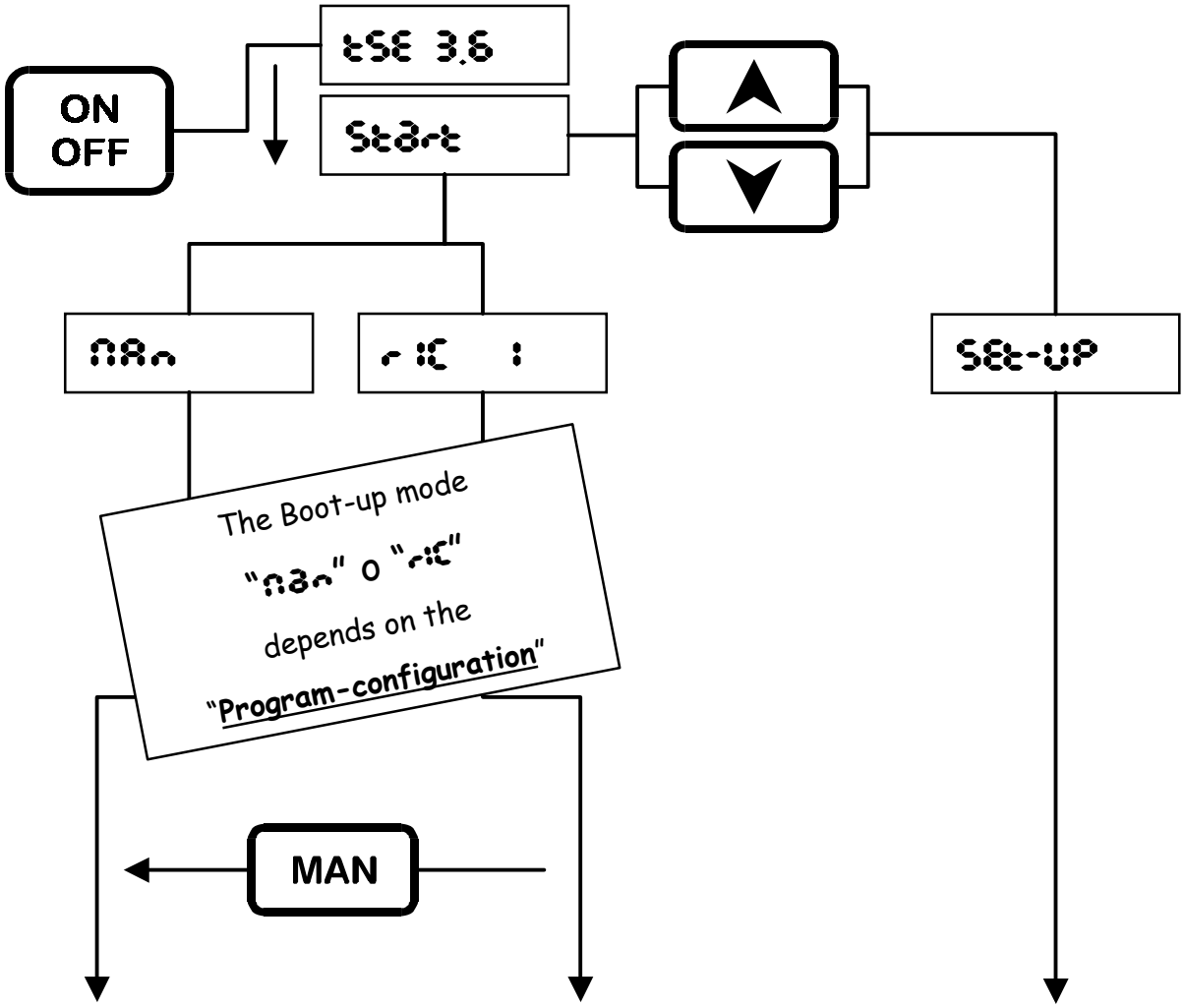
The programming of formulae therefore implies the introduction of two types of data : The number of animals for each box (**Programming of formulae – number of animals**) and the components of each ration (**Programming of formulae – ingredients**).

We designed this manual in a graphic manner, as the argument it regards should be best represented by schemes. For any questions or difficulties in understanding please contact us, we will be happy to help you.

Thank you

How to switch on

- ✓ check the proper connection of all the equipment
- ✓ press [ON/OFF] and wait for the Boot-up messages
- ✓ to get to the configuration utility, interrupt by pressing (▲▼) simultaneously
- ✓ press [MAN] to shift to the "man"-mode
- ✓ Note : the instrument always starts running from where it stopped last time



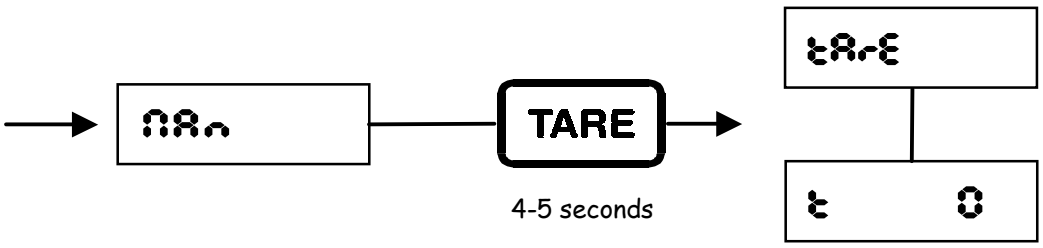
Weighing by hand

Programming and execution of formulae

Configuration and tests

Weighing by hand

✓ follow the procedure "How to switch on" and check to be in the "MAN"-mode
✓ if the program is in the "AUTO" – mode press [MAN]



… start loading …

TARE Resets partial weight if pressed momentarily

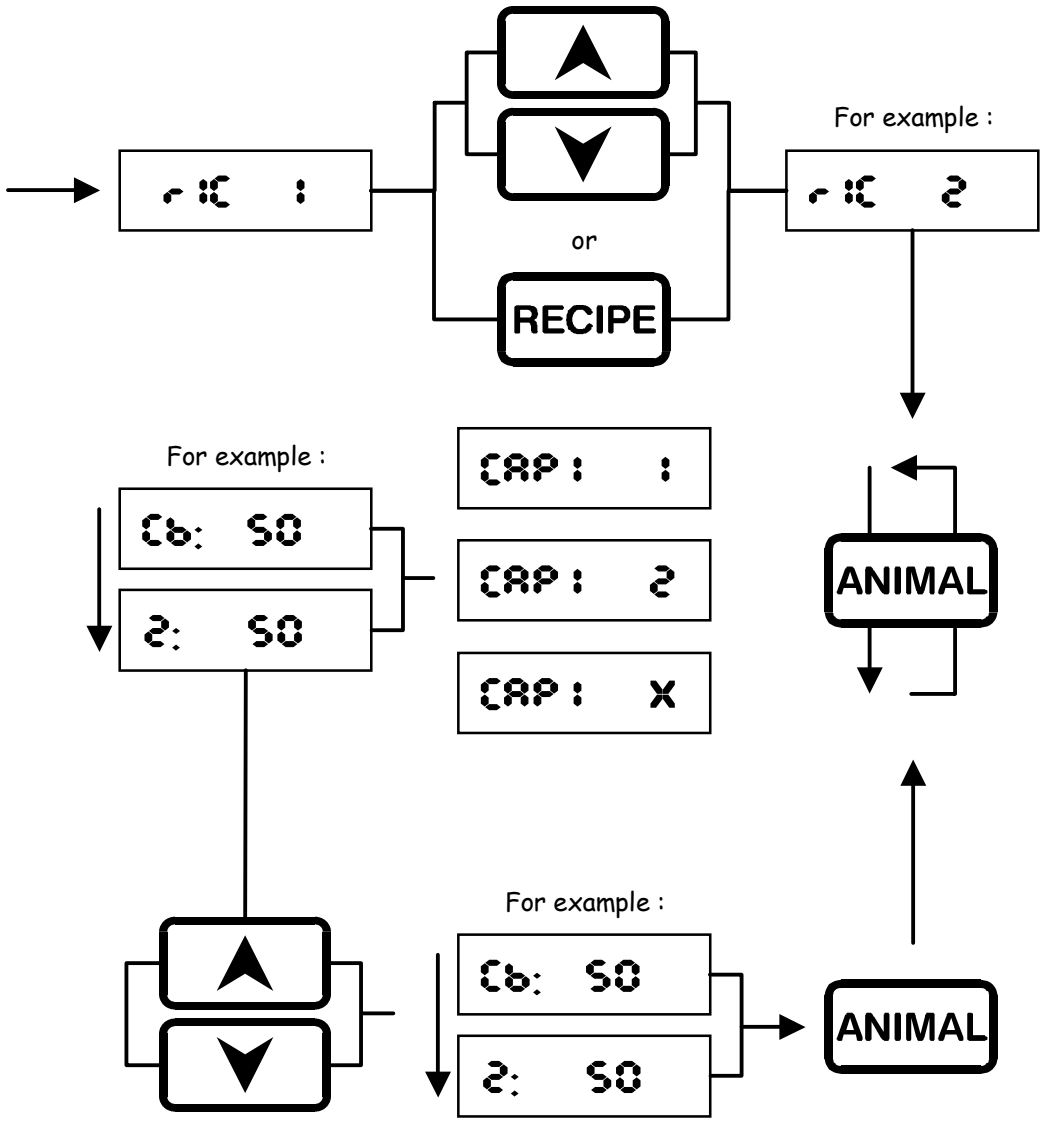
TOT Shows total weight

MEM Prints data Print

START Shifts to "AUTO"-mode

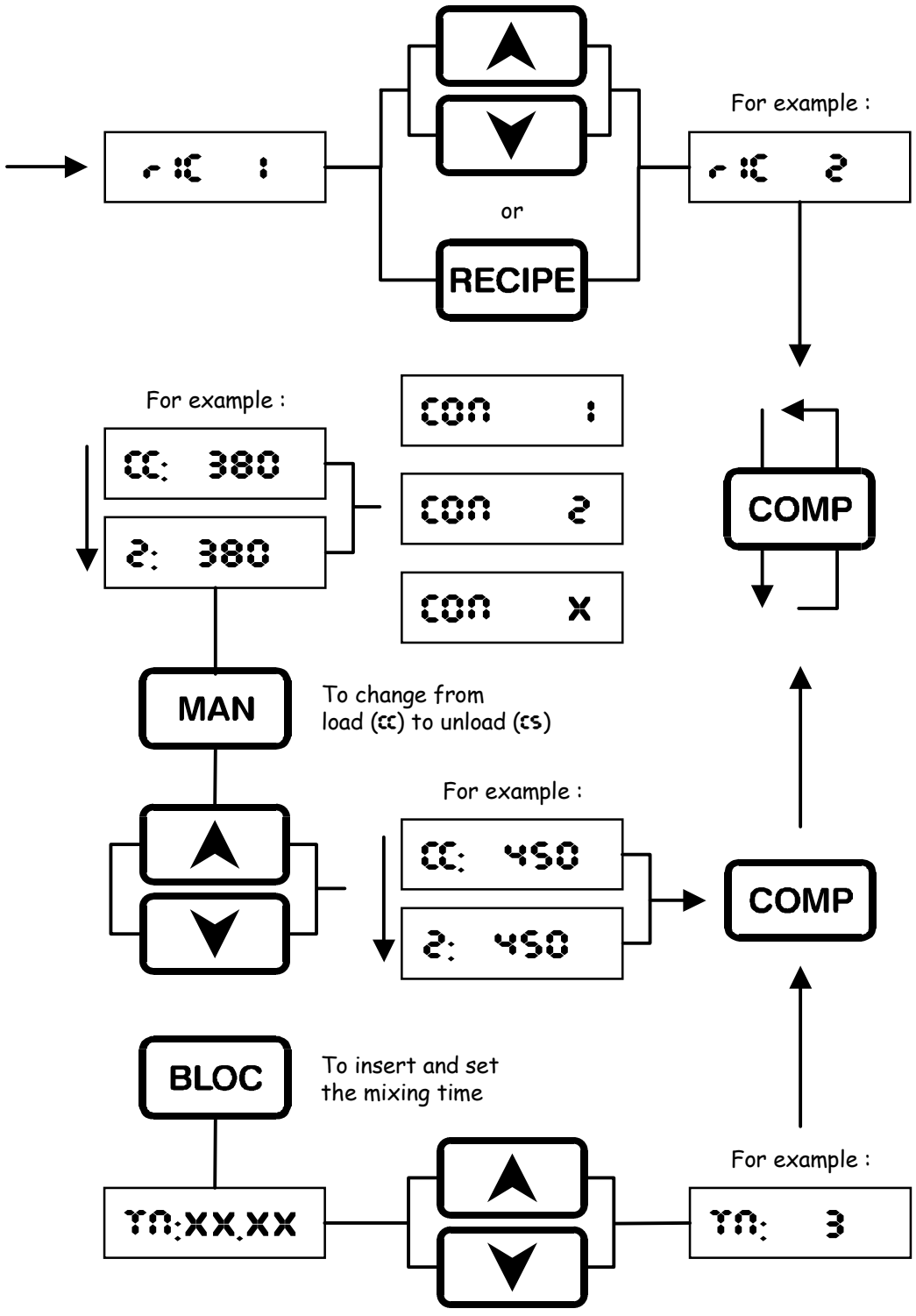
Programming of formulae - animals

- ✓ follow the procedure "How to switch on" and check to be in the "r:C"-mode
- ✓ choose the formulae using (▲▼) or by pressing [RECIPE]
- ✓ to turn back to the "r:C"-mode press [RECIPE]]



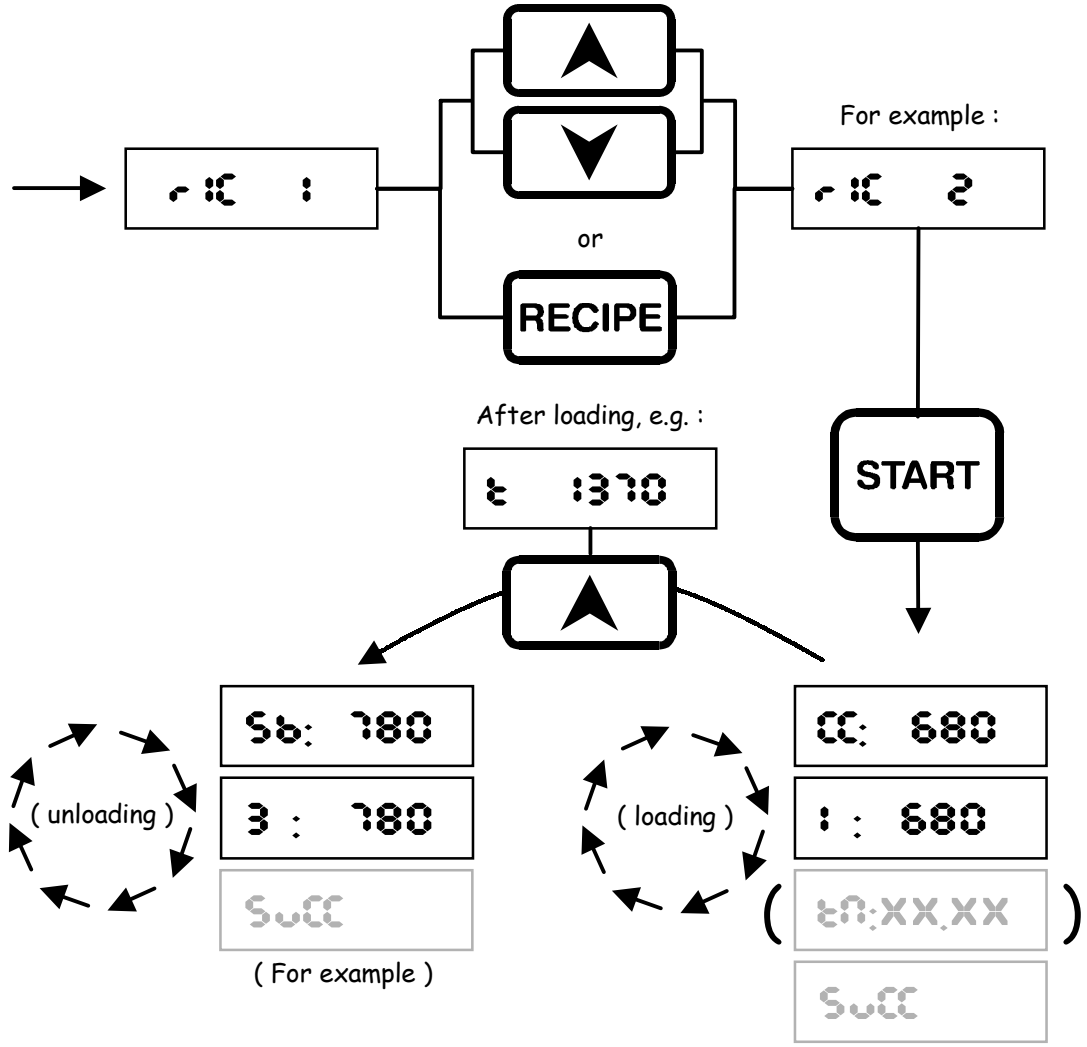
Programming of formulae - ingredients

- ✓ follow the procedure "How to switch on" and check to be in the "rEC"-mode
- ✓ choose the formulae using (▲▼) or by pressing [RECIPE]
- ✓ to turn back to the "rEC"-mode press [RECIPE]



Execution of formulae

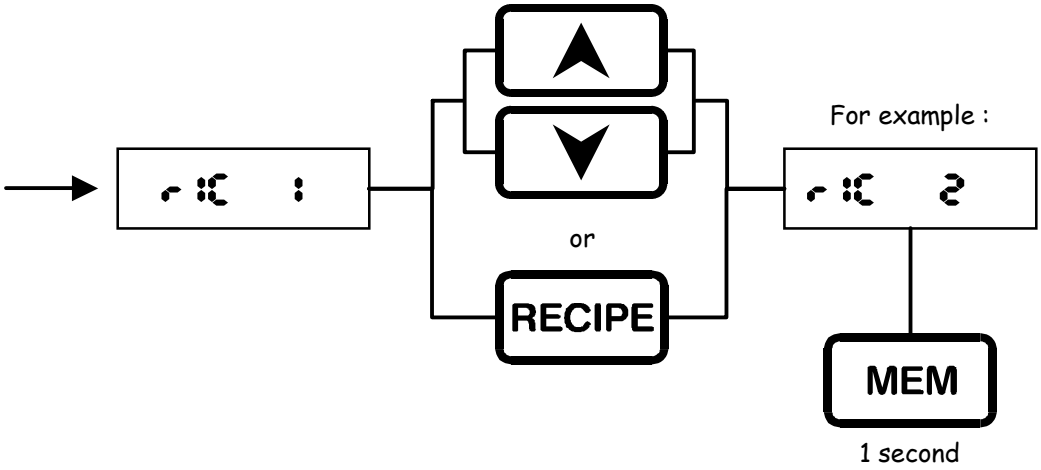
- ✓ follow the procedure "How to switch on" and check to be in the "rEC"-mode
- ✓ choose the formulae using (▲▼) or by pressing [RECIPE]
- ✓ press (▲) to skip to the next ingredient manually
- ✓ after the loading press (▲) to get to the unload-phase (if n° box > 1)



- ✓ load the corresponding ingredient (CC), unload if (SC) or (Sb)
- ❑ Note : the display shows the weight missing to the reference value
- ✓ reaching 85 % of the ingredient's weight : intermittent acoustic signal
- ✓ reaching 100 % of the ingredient's weight : continuous acoustic signal for 3 s
- ✓ While loading : countdown of mixing time, alarm, skip to next ingredient
- ➢ after the loading, the display shows the total weight loaded
- ➢ if more then one box is programmed, (▲) skips to the fractionated unloading phase

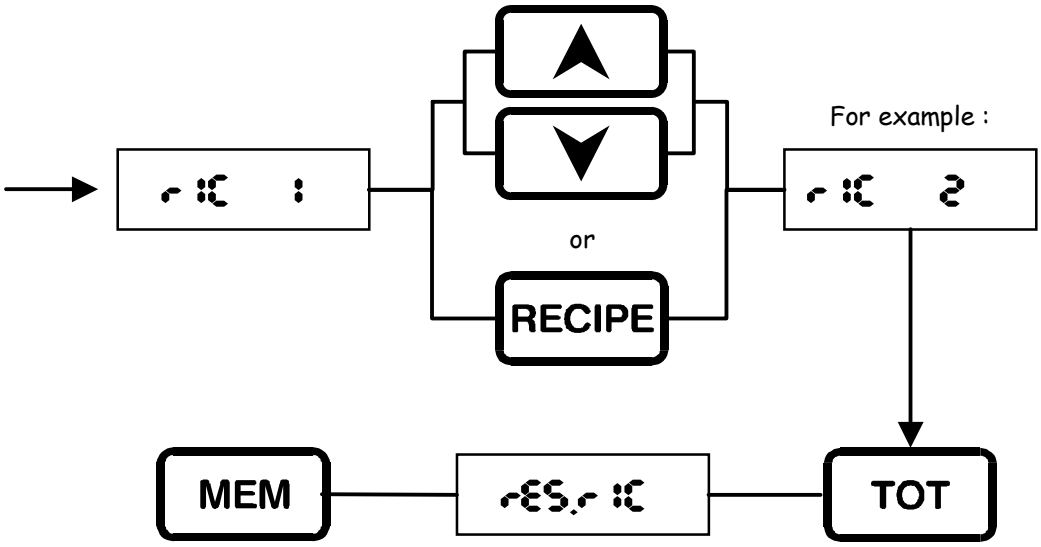
Printing of formulae

- ✓ follow the procedure "How to switch on" and check to be in the "rEC"-mode
- ✓ choose the formulae using (▲▼) or by pressing [RECIPE]
- ✓ check the proper connection of the printer and switch it on
- ✓ press [MEM] for 1 second



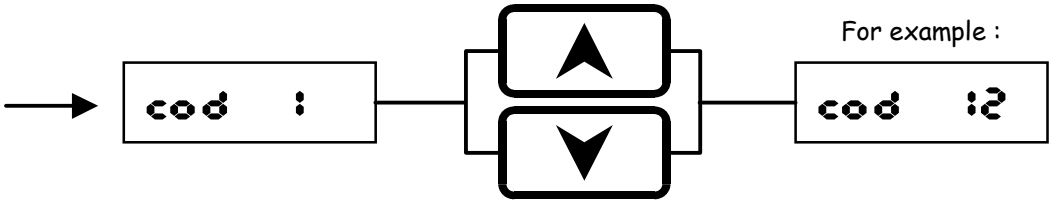
Formula-reset

- ✓ follow the procedure "How to switch on" and check to be in the "rEC"-mode
- ✓ choose the formulae using (▲▼) or by pressing [RECIPE]
- ✓ press [TOT] and confirm with [MEM]

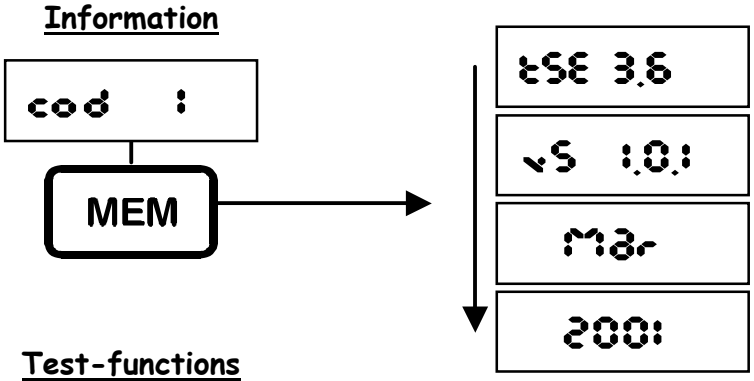


Configuration and tests – 1st part ([Start] to exit)

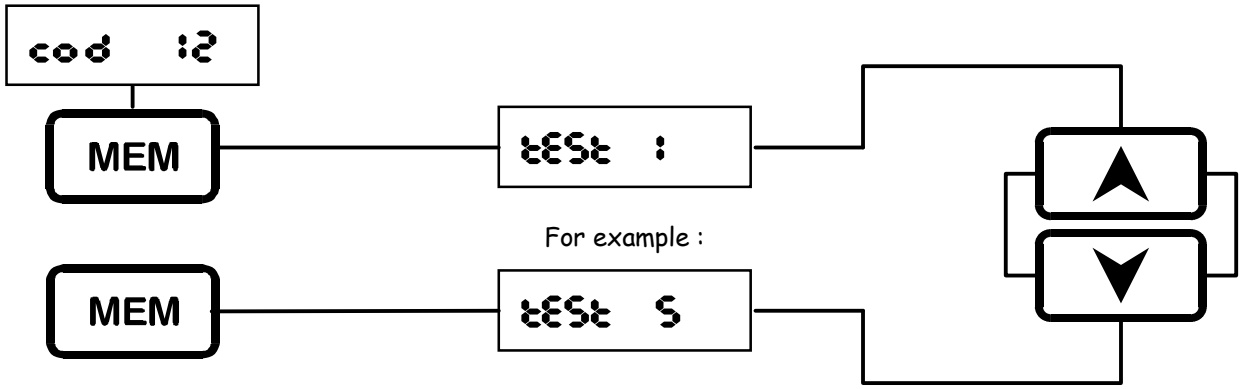
- ✓ follow the procedure "How to switch on" and interrupt pressing (▲▼)
- ✓ choose the desired code with (▲▼) and confirm with [ENTER]
- ✓ The following functions depend on the code selected



Information



Test-functions

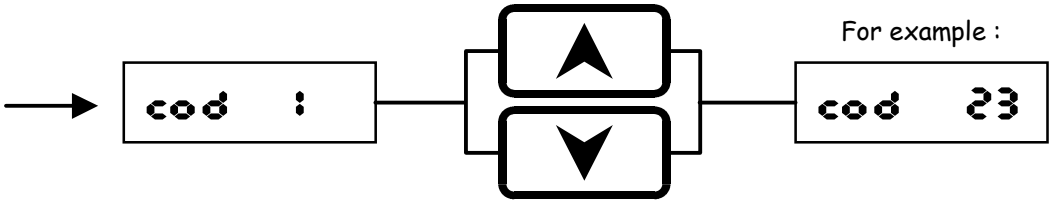


Code number 12 accesses to different testing routines of the item [BLOC] to exit :

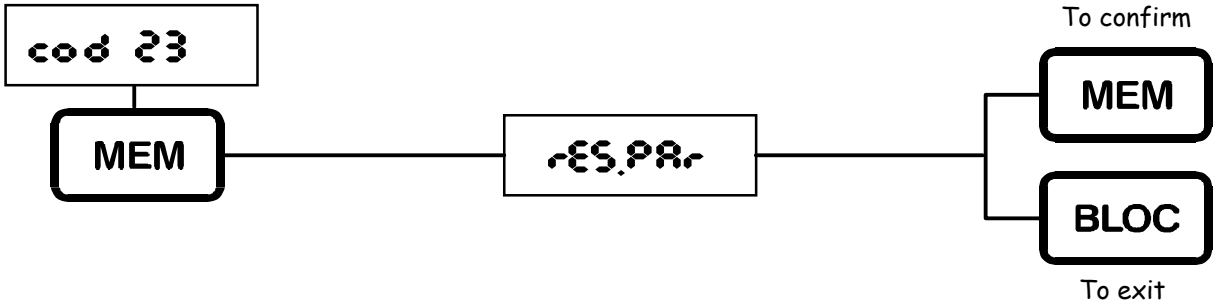
TEST 1 : display-test – starting with a moving 8, any segment is going to be lit once, (▲) to exit
TEST 2 : A/D-converter-test – display shows a number corresponding to the load , (▲) to exit
TEST 3 : keypad-test – pressing each key causes it's specific number to appear, (▲▼) to exit
TEST 4 : memory-test – checking positions 0 through 2047 , (▲) to exit
TEST 5 : battery and alarm-test 0 appears for battery OK, ▼ activates the alarm , (▲) to exit
TEST 6 : printer test; wait the word "FINE", (▲) to exit

Configuration and tests – 2nd part ([Start] to exit)

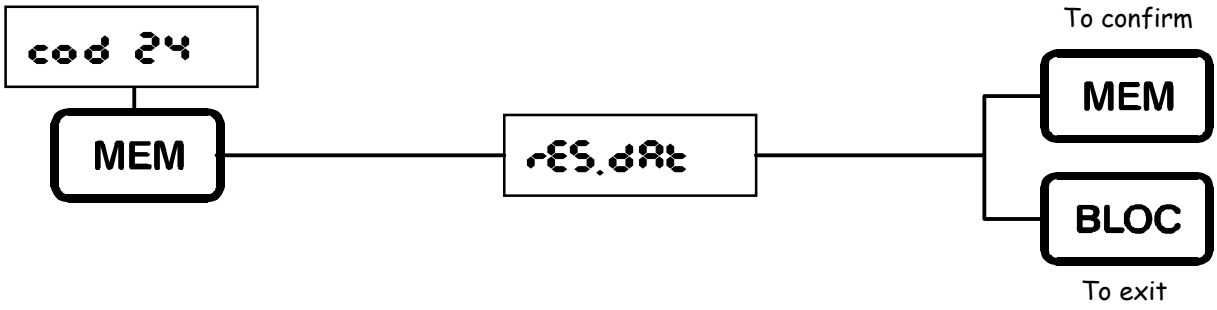
- ✓ follow the procedure "How to switch on" and interrupt pressing (▲▼)
- ✓ choose the desired code with (▲▼) and confirm with [ENTER]
- ✓ The following functions depend on the code selected



Parameter-reset

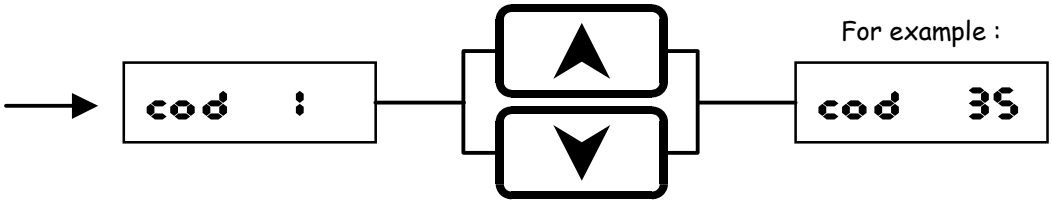


Formulae-reset

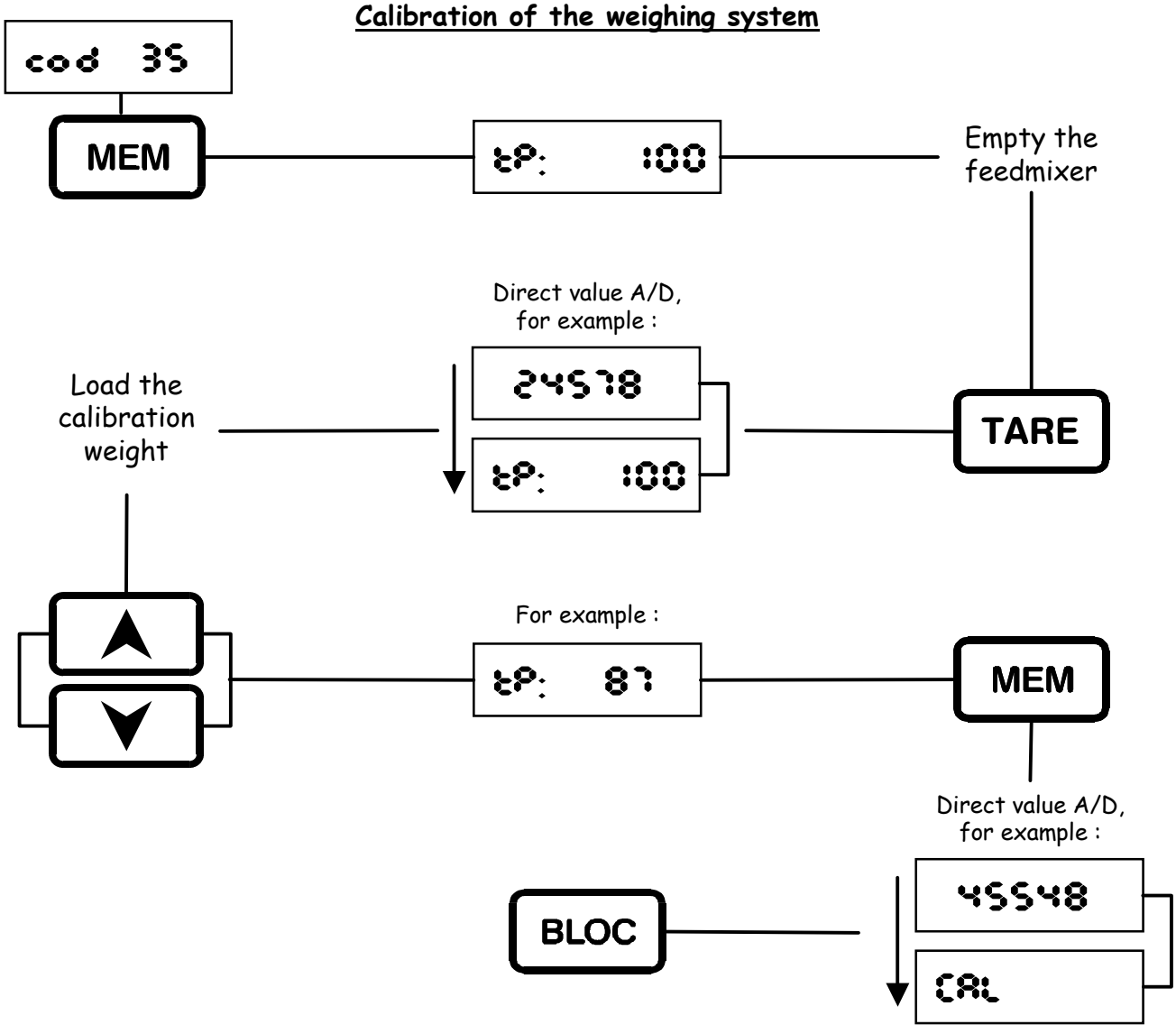


Configuration and tests – 3rd part ([Start] to exit)

- ✓ follow the procedure "How to switch on" and interrupt pressing (▲▼)
- ✓ choose the desired code with (▲▼) and confirm with [ENTER]
- ✓ The following functions depend on the code selected

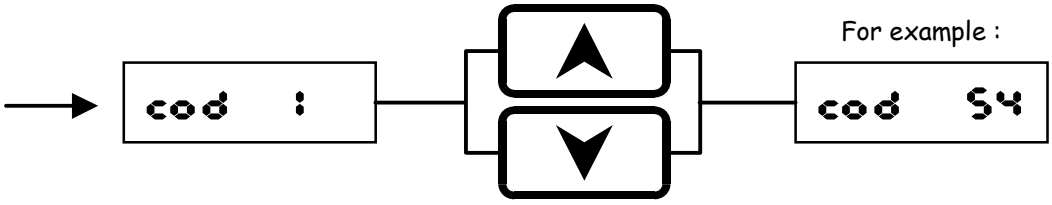


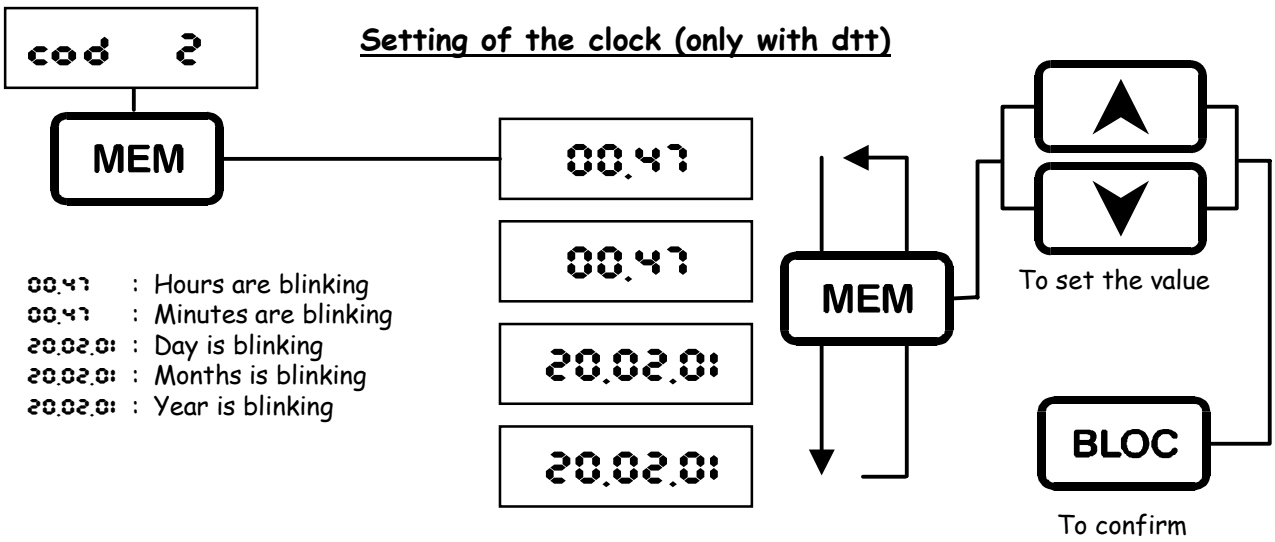
Calibration of the weighing system



Configuration and tests – 4th part ([Start] to exit)

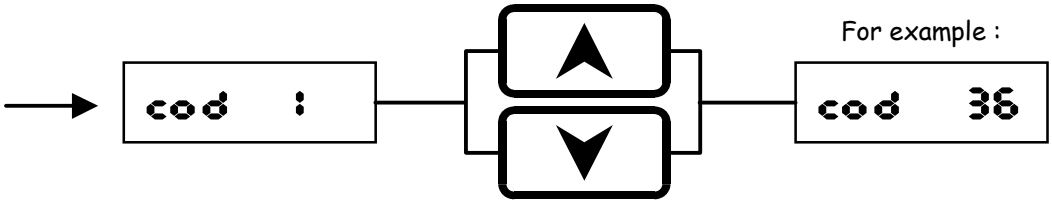
- ✓ follow the procedure "How to switch on" and interrupt pressing (▲▼)
- ✓ choose the desired code with (▲▼) and confirm with [ENTER]
- ✓ The following functions depend on the code selected

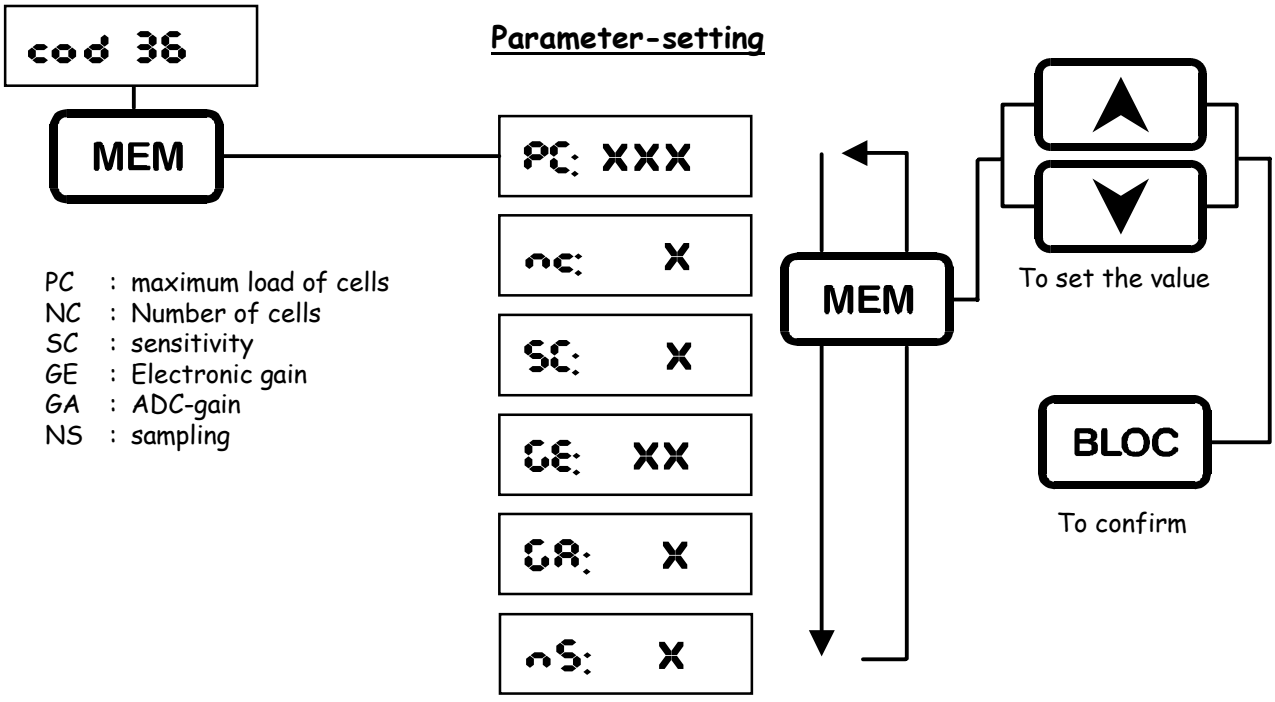




Configuration and tests – 5th part ([Start] to exit)

- ✓ follow the procedure "How to switch on" and interrupt pressing (▲▼)
- ✓ choose the desired code with (▲▼) and confirm with [ENTER]
- ✓ The following functions depend on the code selected

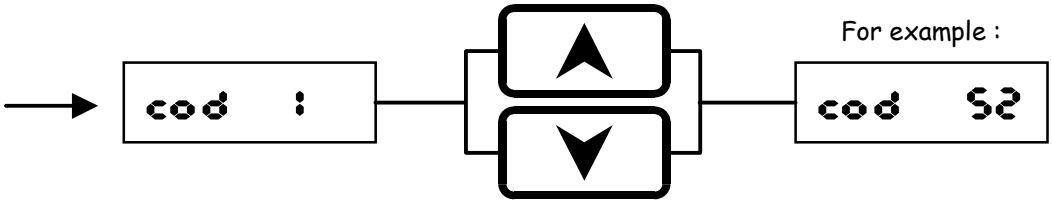




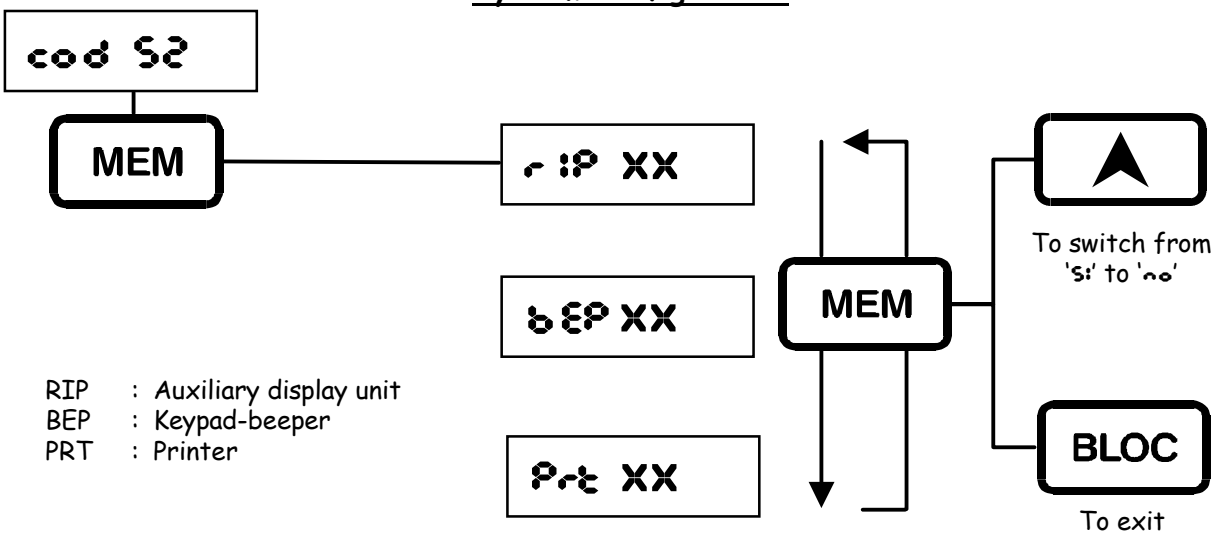
PC : maximum load of cells
NC : Number of cells
SC : sensitivity
GE : Electronic gain
GA : ADC-gain
NS : sampling

Configuration and tests – 6th part ([Start] to exit)

- ✓ follow the procedure "How to switch on" and interrupt pressing (▲▼)
- ✓ choose the desired code with (▲▼) and confirm with [ENTER]
- ✓ The following functions depend on the code selected



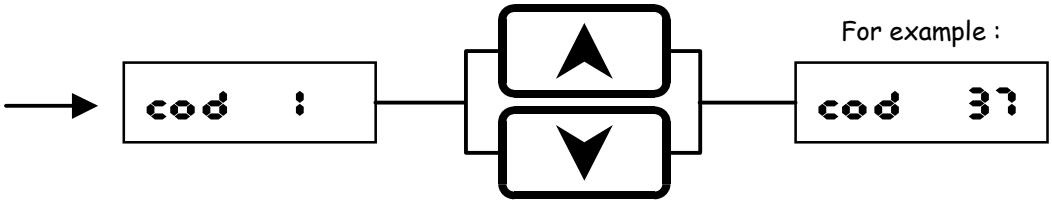
System-configuration

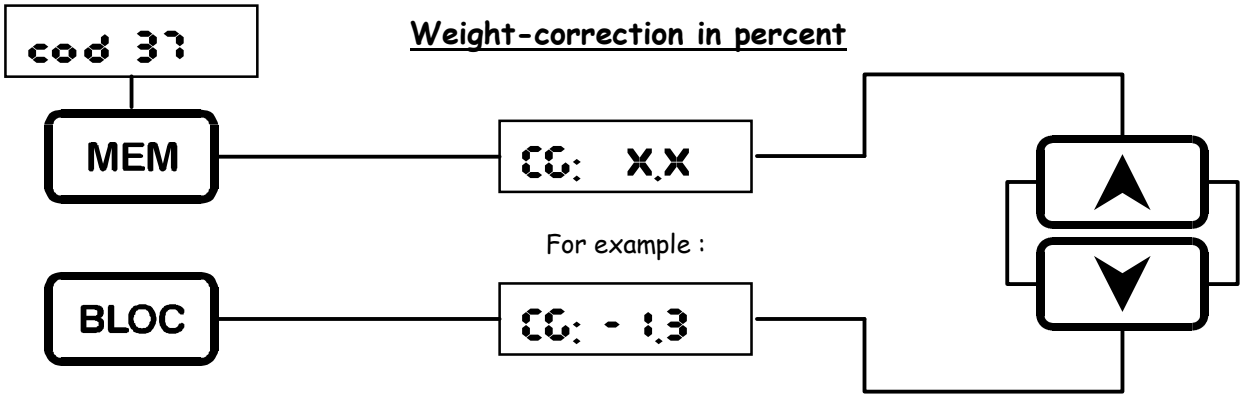


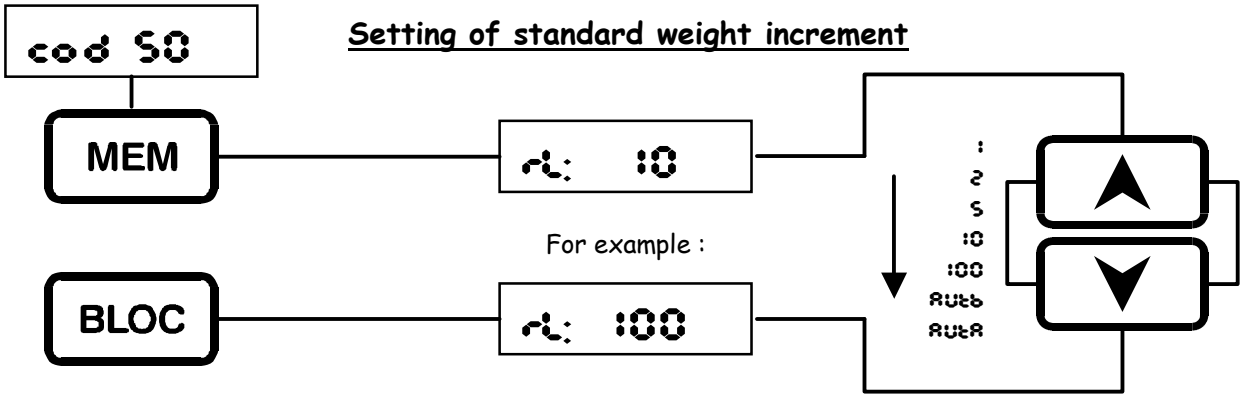
RIP : Auxiliary display unit
BEP : Keypad-beeper
PRT : Printer

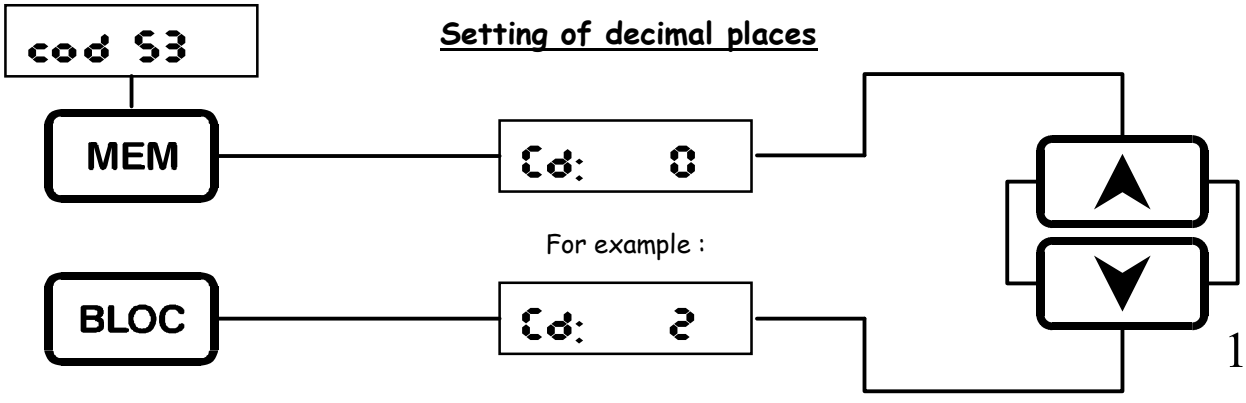
Configuration and tests – 7th part ([Start] to exit)

- ✓ follow the procedure "How to switch on" and interrupt pressing (▲▼)
- ✓ choose the desired code with (▲▼) and confirm with [ENTER]
- ✓ The following functions depend on the code selected









Error-messages

Err 1	:	Overflow : analogue value beyond the AD-converter's operational scale
Err 3	:	During calibration with standard weight : no weight loaded or cells mounted upside-down
Err 5	:	Formulae containing no ingredients
Err 6	:	Parameter-settings not valid
Err 8	:	Total weight to be loaded (heads times ingredient) exceeds 9999
Err 11	:	All available mixing times are already in use
LBAT	:	Battery low or insufficient voltage
Prt nc	:	Printer off-line
No Tare	:	During calibration with standard weight : [MEM] was pressed before [TARE]
No code	:	During configuration : code doesn't exist

Hardware-features

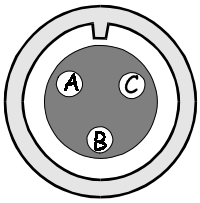
Display	:	LCD, 6 digits (40mm high), backlit
Keyboard	:	12 tactile keys, backlit
Micro controller	:	8 bit Intel®
A/D-converter	:	Sigma-Delta 24 bit
Memory	:	E2 PROM

Operating conditions

Power supply overtension supp.	:	10-30V DC with protection from polarity inversion and
Energy-consumption	:	ca. 5W (250mA - not including options)
Alarm output	:	12V max. 200mA
Power supply cells	:	8,5V (max. 6 cells with 350 Ohm each)
Cell-sensitivity	:	from 0,25mV/V to 2,00mV/V
Fuse	:	resettable fuse 1,85A
Temperature	:	from -20°C to +50°C

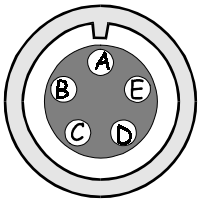
Connectors

Power-supply and alarm



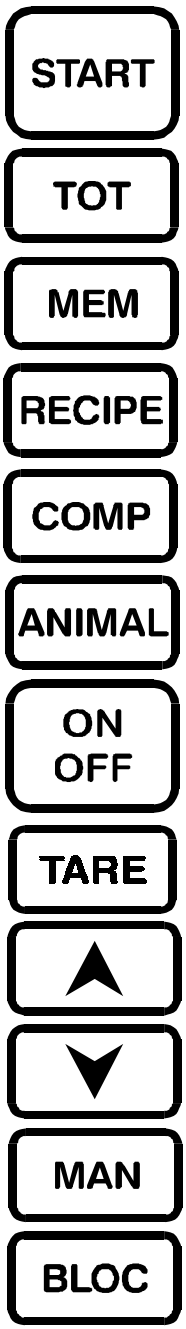
A :	+ Power supply 12 V	Brown & Red
B :	+ Alarm	Red & Green
C :	- Power supply 12 V	Blue & Black
	- Alarm	White & Black

Load-cells



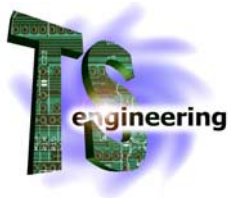
A :	S –	White
B :	P +	Red
C :	S +	Green
D :	P –	Black
E :	Shielding	

Numeration of keys



Number 1
Number 2
Number 3
Number 4
Number 5
Number 6
Number 7
Number 8
Number 9
Number 10
Number 11
Number 12

Manual TSE 3.6 – code ST103600EN11 – Isorella, 1st of March 2001



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Schema di stampa : 24;1;2;23;22;3;4;21;20;5;6;19;18;7;8;17;16;9;10;15;14;11;12;13

fronte		retro	
24	1	2	23
22	3	4	21
20	5	6	19
18	7	8	17
16	9	10	15
14	11	12	13