AZKOYEN
INDUSTRIAL

Technical information

VITALE S

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1. INTRODUCTION

The semiautomatic machines of the *Vitale* series are destined for the elaboration of espresso coffee and soluble drinks consisting of the mixing of warm water with product in powder or granulated.

In the rest of the book, and for major briefness, the elements that are indicated will be named like:

The machines of the series Vitale: machine or machines. The group of expenditure of the coffee: group. The electroválvulas: EV.

1.1. DEFINITIONS

Espresso coffee: Infusion of coffee elaborated according to the following conditions:

- 7 g of ground coffee.
- The temperature of the infusion water between 92º C and 96º C.
- The water pressure at 8 kg/cm²La presión del agua de *erogación* a 9 kg/cm².
- The infusion time of the coffee between 15 and 20 seconds.
- The volume of water in the infusion 50 ml.

Volume dosage: this dosage system measures the volume of water that is used for the espresso infusion.

Water pump: an electro magnetic system for pumping the infusion water and giving it the correct pressure.

Infusion: this is the name given to the process of passing hot water through the ground coffee to extract its oils and essences.

- **Volumetric infusion**: when the process of infusion uses a constant volume of water.

Coffee tablet: the residual compressed coffee grounds after the infusion process.

Programming mode: when the *machine* is ready for any of its functions or parameters to be programmed.

Working mode: when the *machine* is in the working state and ready to prepare any of the services it offers.

1.2 MODELS

The **Vitale** S range is made up of models to elaborate *espresso coffee and café exprés* and instant beverages.

- The models with **espresso** coffee elaborate espresso coffee and can elaborate instant beverages.

- The **instant** models only elaborate instant beverages.

1.3 PRINCIPLE TECHNICAL CHARACTERISTICS

- Semi automatic function: The pulsation of a finger is sufficient to elaborate a magnificent espresso coffee. The pulsation of a finger is sufficient to elaborate a magnificent espresso coffee.
- It grinds the coffee at the moment it is ordered.
- Products that each machine can elaborate:

Model	Coffee beans	Instant coffee	Decaffeinated	Chocolate	Milk	Tea
Vitale Se	Yes					kit
Vitale Se+2	Yes			Yes	Yes	kit
Vitale Si+4		Yes	Yes	Yes	Yes	kit

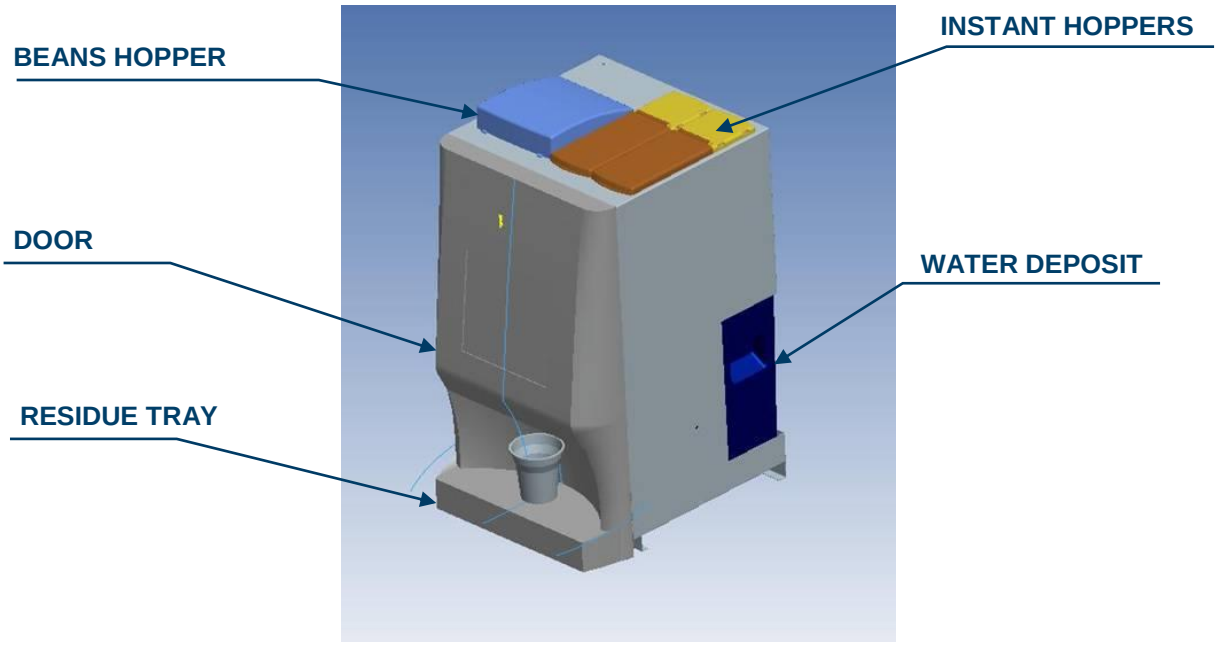
- The water temperature is programmable.
- The ground coffee dose is programmable between 5 g and 8 g.
- *Water pump* for water pressure incorporated in the *machine*.
- Volume dosage of water in the different *espresso coffee* services is programmable.
- Electrical consumption:

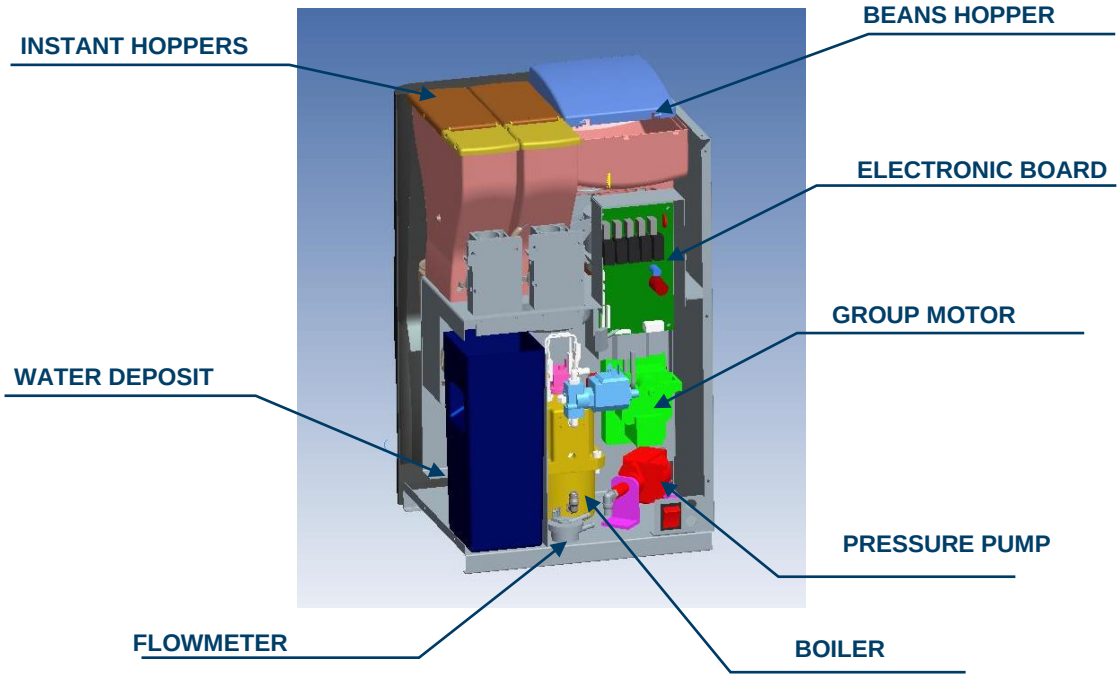
VITALE soluble	Tensión	Potencia	Longitud
Mains voltage	230 Vca / 50 hz		
Heating element	230 Vca / 50 hz	1100 W	
Mains flex			1.800 mm

VITALE espresso	Tensión	Potencia	Longitud
Mains voltage	230 Vca / 50 hz		
Heating element	230 Vca / 50 hz	1100 W	
Mains flex			1.800 mm

2. DESCRIPTION OF COMPONENTS

2.1. MAIN COMPONENTS





A1. Coffee beans hopper

It has a capacity of 1,1 kilograms.

A2. Instant product hopper

With a capacity of 1,6 litres in each one of the hoppers of instant for instant products.

The approximate weight of the product is:

	Capacity in grams		
Product	SE	SE+2	SI+4
coffee			400
Decaffeinatted			400
Milk		600	600
Chocolate		800	800

A3. Ground coffee dosage element.

Situated on the side of the grinder, its function is to measure the quantity of ground coffee for each service, and later put a dose into the *infusion element*.

The principle function is based on a moving wall that the ground coffee moves and a micro switch that is activated by the moving wall. On activating the micro switch, the grinder stops and the EV drops the ground coffee into the *infusion element*.

Technical characteristics:

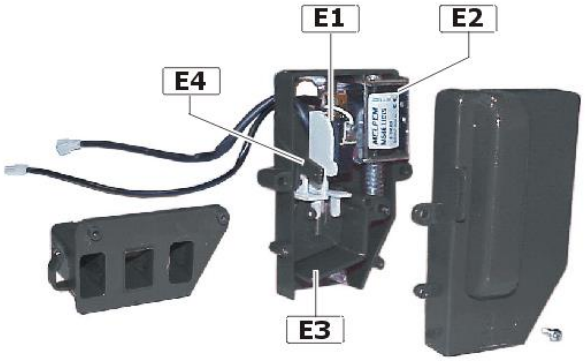
Voltage	230 Vac
Regulation	Minimum 5g and maximum 8g
Regulation lever	7 points: Point 1 is 5 g Point 7 is 8 g

E1. Micro switch

E2. Solenoid

E3. Micro activated flap

E4. Regulation lever



A4. Beaters

The mixing of the products with hot water from the boiler is done with these elements.

Technical characteristics.

Make of motor	Mabuchi
Voltage	24 Vcc
Power	20 w
Speed	16.000 rpm

The EVs of the instant beverages are an important part of the beating process. They control the hot water from the boiler to the beaters for the elaboration of the instant beverages

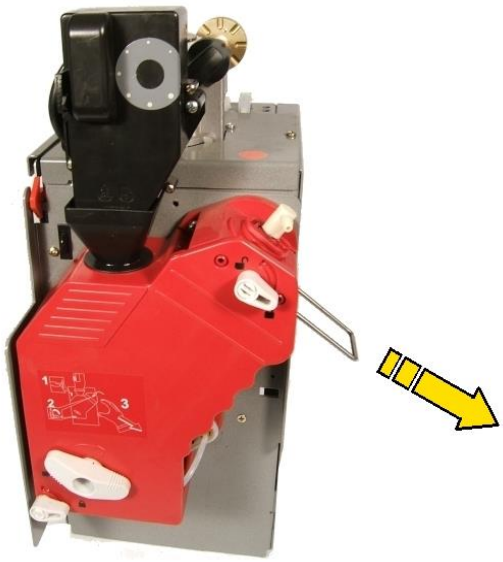
They are fitted to a brass support that provides a constant temperature by means of being in physical contact with the boiler. This way, during the elaboration of the instant beverages, the hot water that goes to the beaters does not suffer excessive temperature losses.

The working voltage of the EVs is 24 Vdc
Maximum pressure they accept is 15 Kg/cm²

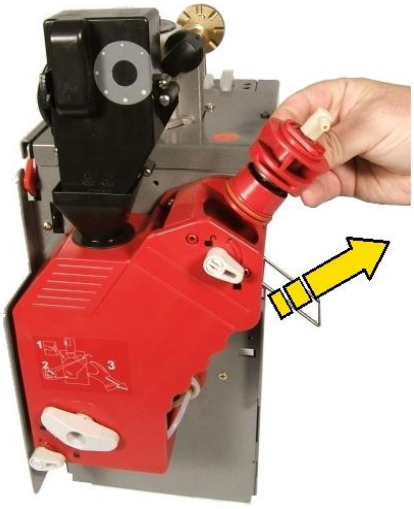
A5. Group

Made of resin, it is the element that the *machine* uses to make the espresso coffee.

Between the *piston* and its support there is a spring and a espacer that, depending how it is placed, will vary the capacity of ground coffee the chamber will hold. The spacer should be placed **between** the piston and its support when the dosage is set for 5 to 6.5 g of ground coffee. When the dosage is set for 7 to 8 g of ground coffee, the space should be placed **on** the piston support.



Pull out the clip

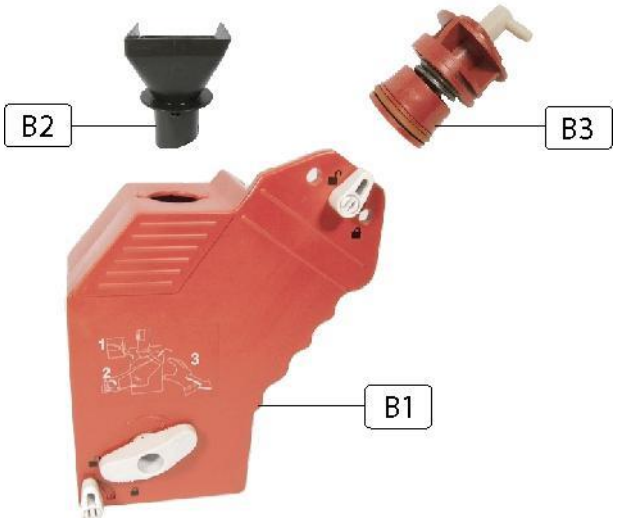


Remove the piston

B1. Infusion element inferior

B2. Loading funnel

B3. Piston



The possible regulation of the capacity of the *infusion element*, using the washer, and the position of the dosage handle are shown in the table below:

Dose	Piston washer position		Dosage position
5 g	Under	Under	1
5,5 g	Under	Under	2
6 g	Under	Over	3
6,5 g	Under	Over	4
7 g	Under	Over	5
7,5 g	Over	Over	6
8 g	Over	Over	7

The *infusion element* has moving parts that are activated by a 24 Vdc motor that moves a crank which moves the *coffee* from the dosage element to the piston. At the same time it also moves a lever that activates a *micro switch*; this indicates the position of the *infusion element* to the control board.

At rest, the *infusion element* cannot move from its position as it is held by the piston. Before extracting the piston the black extraction button (C7) should be pressed (with the machine switched on). On pressing the extraction button the *infusion element* will position itself in the coffee loading position. After this the two levers that hold it can be turned and it can be removed with ease.

In the *infusion element* support there is another *micro switch* that deactivates when the *infusion element* is removed. This way, the control board knows whether the *infusion element* is correctly positioned or not.

To replace the *infusion element* into the machine it may be in any position and it does not matter if it moves while out of the machine. It only needs to be replaced and the two holding levers fixed. When the presence micro switch is activated, the *infusion element* motor will position it correctly.

C1. Piston

C2. Group

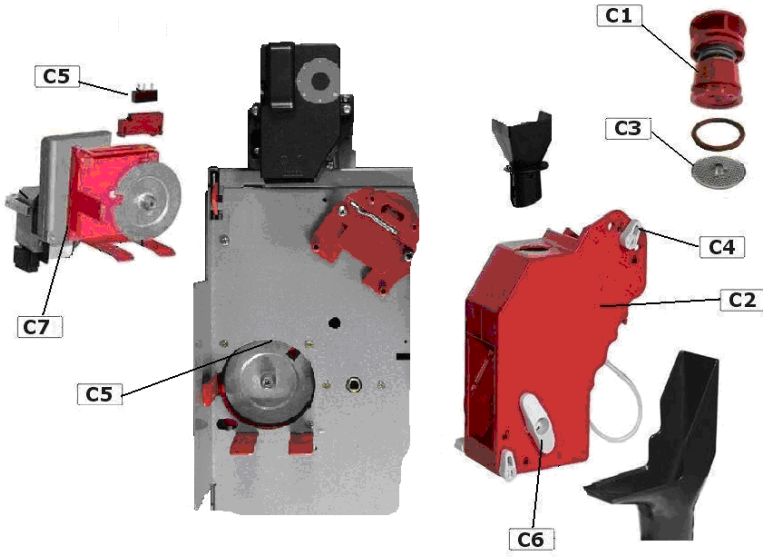
C3. Filter

C4. Holding handle

C5. Position microswitch

C6. group movement handle

C7. Group motor



A6. Tray of liquid residues

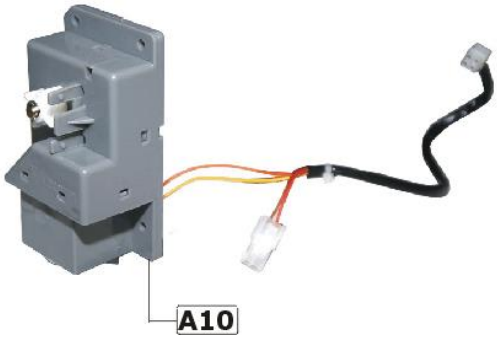
It gathers all the liquid residues that the machine generates. It has capacity for 1 liter. When it reaches the level of filling indicator of notice is activated. Whenever we exceed 40 services, if we have not emptied the tray of liquid residues, the machine will warn to do it.

A7. Programming button

A8 . Residue bucket

It gathers all the solid residues that the machine generates of ground and distributed coffee.

A19. Product extractors



Technical characteristics:

Motor manufacturer	Mabuchi
Voltage	24 Vdc
Speed	40 rpm

A10. Coffee grinder

It's the M03 Azkoyen model.

Technical characteristics:

Voltage	230 Vac
Nominal power	400 w
Speed	1250 rpm
Diameter of the grinders	63 mm
Grind points	0.026 mm

Moving the handle anticlockwise gives a coarser grind and moving it clockwise gives a finer grind.

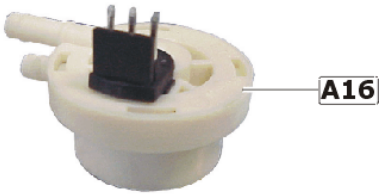
A11. Button Panel

The selection push-buttons are cromed buttons surrounded with a plastic frame translucent and retro-illuminated with blue LEDs. Each one has two cards with 3, 7 or 9 push-buttons.

The electronic card of push-buttons also is directly connected to the control card.

The panel with the labels of product can move backbeing very simple the substitution of the labels for others.

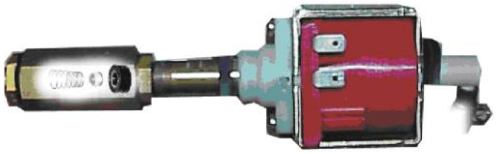
A12. Volumetric counter



Its function is to measure the quantity of water that is pumped for the elaboration of the espresso coffee

A13. Water pump

This element has the job of pumping water from the cold water deposit to the hot water boiler; the cold water pushes the hot water towards the EVs for the instant products or towards the *infusion element* for making espresso coffee



When an espresso coffee is elaborated, the water pressure needed is quite high to be able to pass through the compressed ground coffee in the *infusion element*. This resistance the coffee offers makes the water pressure in the boiler increase up to a pressure of 9 Kg/cm². At this pressure the by-pass opens allowing a small amount of water to return; sufficient to prevent the water pressure from going over the 9 Kg/cm².

The by-pass is a small hole covered with a ball that is held in place by a spring. This spring will hold a pressure of 9 Kg/cm², but over this pressure it compresses and allows the water to pass.

The pressure of 9 Kg/cm² is considered the ideal for elaborating espresso coffee.

When the instant beverages are elaborated, there is no resistance offered and so during there elaboration the water pump works at lower pressures than when elaborating espresso coffees.

Technical characteristics:

Voltage	230 Vdc
Power	48 w
Working pressure	9 Kg/cm²
Maximum pressure	12 Kg/cm²

The pump has an anti return valve that prevents the return of water from the boiler.

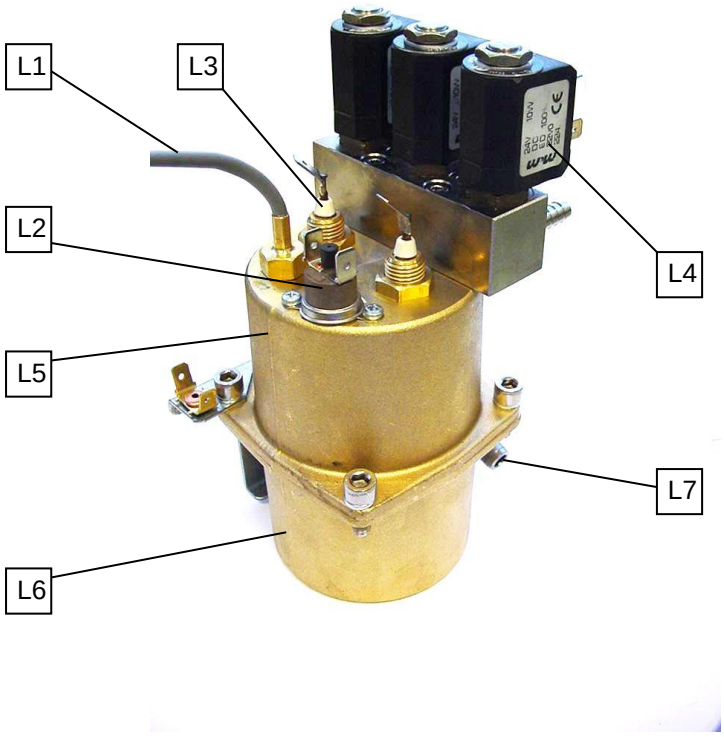
A14. Water deposit

It has capacity for 4 litres. It is at atmospheric pressure and temperature. From this deposit is taken the water to elaborate the *espresso coffee* and instant beverages.	

A15. Boiler

The boiler works under pressure and has a capacity of 320 cc.It warms up the water for the elaboration of the products, espresso coffee or soluble products.

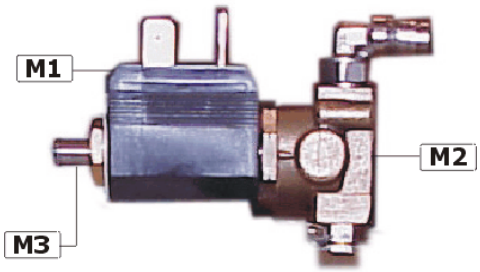
L1. Temperature sensor (PTC)
L2. Clixon, rated at 120º C
L3. 1100 W heatting element
L4. Electrovalves
L5. upper cover
L6. lower cover
L7. water inlet



The boiler is made of brass and does not need any device to control the level of water as the boiler fills automatically from the moment the machine is switched on. After this the water that is used is replaced with water from the cold deposit so the boiler is always full.

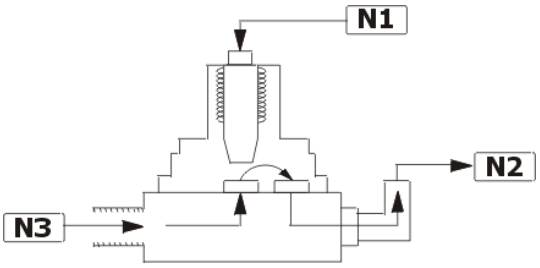
There are three outlets; one through a 3-way *EV* for the elaboration of espresso coffee. This *EV* has an outlet from the boiler, another goes to the *infusion element*, and the third that, at rest, allows the *infusion element* to be at atmospheric pressure.

M1. Solenoid
M2. Valve
M3. 3rd outlet



When the machine is in the espresso coffee making process, the third is closed while the outlet from the boiler and the inlet to the *infusion element* are open to each other.

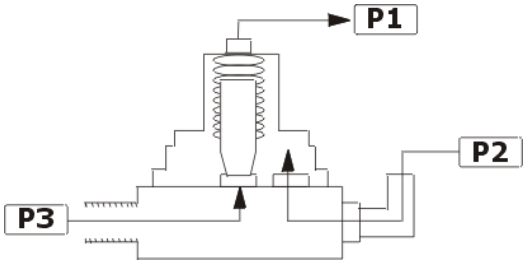
N1. 3rd outlet closed
N2. To the infusion group
N3. From the boiler



When the machine finishes elaborating an espresso coffee, the *EV* goes to rest state and closes the outlet from the boiler leaving the *infusion element* open to the third outlet. In this way the water that did not pass through the coffee and was retained in the *infusion element* goes out through the third outlet to the residue bucket.

The water recedes back from the *infusion element* towards the third outlet because of the pressure it was submitted to by the pump in the infusion process.

P1. 3rd outlet open
P2. Infusion element joined to atmospheric pressure
P3. Boiler water closed



The other two outlets are connected to the instant beverage.

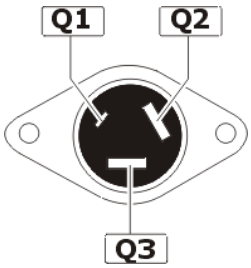
Características técnicas:

Heating element voltage	230 Vca
Power	1.100 w
Temperature programming	81ºC -99ºC
Safety protection with manual reset	120º C
Voltage of 3-way EV	24 Vcc
Power of 3-way EV	10 w
Maximum pressure of EV	15 Kg./cm²
Working temperature of EV	-10º C a 140º C

Control of the *heating element* is done with a *triac* that is situated on the boiler support.

Always respect the position of the connection cables.

Q1. White
Q2. Black
Q3. Brown



Temperature control of the water in the boiler is done with a PTC100. The following table shows the resistance values that the PT100 gives according to the temperature that it is submitted.

ºC	0	1	2	3	4	5	6	7	8	9
0	100,00	100,39	100,78	101,17	101,56	101,95	102,34	102,73	103,12	103,51
10	103,90	104,29	104,68	105,07	105,46	105,85	106,24	106,63	107,02	107,40
20	107,79	108,18	108,57	108,96	109,35	109,73	110,12	110,51	110,90	111,28
30	111,67	112,06	112,45	112,83	113,22	113,61	113,99	114,38	114,77	115,15
40	115,54	115,93	116,31	116,70	117,08	117,47	117,85	118,24	118,62	119,01
50	119,40	119,78	120,16	120,55	120,93	121,32	121,70	122,09	122,47	122,86
60	123,24	123,62	124,01	124,39	124,77	125,16	125,54	125,92	126,31	126,69
70	127,07	127,45	127,84	128,22	128,60	128,98	129,37	129,75	130,13	130,51
80	130,89	131,27	131,66	132,04	132,42	132,80	133,18	133,56	133,94	134,32
90	134,70	135,08	135,46	135,84	136,22	136,60	136,98	137,36	137,74	138,12
100	138,50	138,88	139,26	139,64	140,02	140,39	140,77	141,15	141,53	141,91
110	142,29	142,66	143,04	143,42	143,80	144,17	144,55	144,93	145,31	145,68
120	146,06	146,44	146,81	147,19	147,57	147,94	148,32	148,70	149,07	149,45
130	149,82	150,20	150,57	150,95	151,33	151,70	152,08	152,45	152,83	153,20
140	153,58	153,95	154,32	154,70	155,07	155,45	155,82	156,19	156,57	156,94
150	157,31	157,69	158,06	158,43	158,81	159,18	159,55	159,93	160,30	160,67
160	161,04	161,42	161,79	162,16	162,53	162,90	163,27	163,65	164,02	164,39
170	164,76	165,13	165,50	165,87	166,24	166,61	166,98	167,35	167,72	168,09
180	168,46	168,83	169,20	169,57	169,94	170,31	170,68	171,05	171,42	171,79
190	172,16	172,53	172,90	173,26	173,63	174,00	174,37	174,74	175,10	175,47
200	175,84	176,21	176,57	176,94	177,31	177,68	178,04	178,41	178,78	179,14
210	179,51	179,88	180,24	180,61	180,97	181,34	181,71	182,07	182,44	182,80
220	183,17	183,53	183,90	184,26	184,63	184,99	185,36	185,72	186,09	186,45
230	186,82	187,18	187,54	187,91	188,27	188,63	189,00	189,36	189,72	190,09
240	190,45	190,81	191,18	191,54	191,90	192,26	192,63	192,99	193,35	193,70
250	194,07	194,44	194,80	195,16	195,52	195,88	196,24	196,60	196,96	197,33
260	197,69	198,05	198,41	198,77	199,13	199,49	199,85	200,21	200,57	200,93
270	201,29	201,65	202,01	202,36	202,72	203,08	203,44	203,80	204,16	204,52
280	204,88	205,23	205,59	205,95	206,31	206,67	207,02	207,38	207,74	208,10
290	208,45	208,81	209,17	209,52	209,88	210,24	210,59	210,95	211,31	211,66
300	212,02	212,37	212,73	213,09	213,44	213,80	214,15	214,51	214,86	215,22
310	215,57	215,93	216,28	216,64	216,99	217,35	217,70	218,05	218,41	218,76
320	219,12	219,47	219,82	220,18	220,53	220,88	221,24	221,59	221,94	222,29
330	222,65	223,00	223,35	223,70	224,06	224,41	224,74	225,11	225,46	225,81
340	226,17	226,52	226,87	227,22	227,57	227,92	228,27	228,62	228,97	229,32
350	229,67	230,02	230,37	230,72	231,07	231,42	231,77	232,12	232,47	232,82
360	233,17	233,52	233,87	234,22	234,56	234,91	235,26	235,60	235,96	236,31
370	236,65	237,00	237,35	237,70	238,04	238,39	238,74	239,09	239,43	239,78
380	240,13	240,47	240,82	241,17	241,51	241,86	242,20	242,55	242,90	243,24
390	243,59	243,93	244,28	244,62	244,97	246,69	245,31	245,66	246,00	246,35
400	247,04									

A16. Extractor

Extractor

The steam and vapour that is generated by the beaters can reach the product containers and if they become damp they form lumps in the powder. This consequently results in the irregular extraction of the product. To avoid this, the extractor is used to remove the steam and vapour from the interior of the machine. It works on 24 Vdc

A17. Transformer

Technical characteristics:

Primary	230 Vca
Secondary (blue-blue)	22 Vca
Power	88 VA

A18. Electronic board

All the models of the **Vitale S** range have just one PCB board. This CONTROL board facilitates the voltage for the rest of components and it is the one that takes the decisions for the correct functioning of the machine.

Control board	

A19. DISPLAY

All Vitale S machines have a 2x16 LCD display in blue, similar to that used in the Tempo series.

2.2. Hydraulic circuit

In the following diagram are represented all the elements of the machine that are needed to control and make the water reach the *infusion element* or the instant beverage beaters.

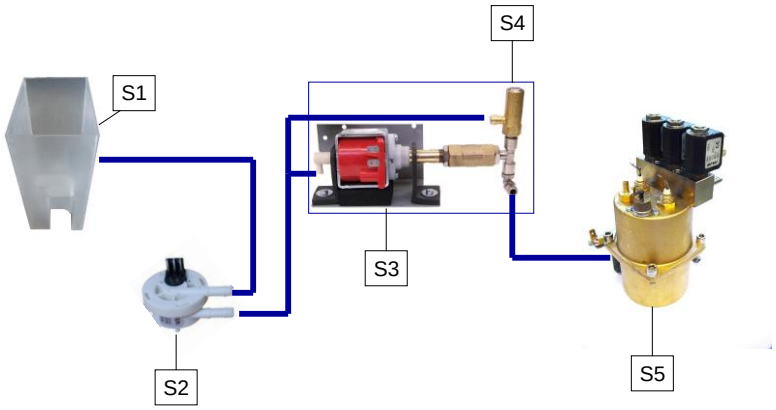
S1. Water deposit

S2. Flowmeter

S3. Pressure pump

S4. Overpressure pump

S5. Boiler



3. INSTALLATION AND SWITCHING ON

3.1. Unpacking

The power supply of the machine requires a socket, or another system, that allows its disconnection. The method used must guarantee the complete disconnection of both poles.

Elemental safety requirements:

a) Never touch any mechanisms with wet hands or feet.

b) Never connect or use the machine barefoot.

c) Never pull on the flex to unplug the machine.

d) Never leave the machine exposed to the elements: sun, rain, snow, etc.

3.2. Switching on

Site the *machine* in its place and level it using the regulating feet.

3.2.1 Water connection

The machine can work with its water deposit of 4 litres(see point A.14) or connected to the mains. To connect the machine to the mains use a **¾" male** connection. The mains supply must provide drinking water at a minimum of 5 litres/minute and a pressure of between 0.5 and 10 kg/cm².

mains supply kit.

Following low voltage safety requirements, the water connection and the socket must be separated by at least **1 metre.**

Depending on the quality of the water, hardness, chlorine, bleach, etc, the connection should be complemented with a filter.

If the machine is fitted with a filter, the minimum water pressure should be **1 Kg/cm².**

3.2.2 Electrical connection

The *machine* works with 230 Vac (50 Hz). The installation must have:

- An earthed socket
- A minimum power rating of 2500 w
- The installation site must have a breaker switch and a good earth connection

3.2.3 Instalation of the services counter

	The machine offers the possibility that there is placed a services meter directly connected to the control card

3.2.4. Filling the product containers

To put products in the containers, you should lift the cover of the machine. Otherwise it is necessary to remove the container from the machine.

After filling the containers for instant beverages, it is advised to request a service of each as the first time it is used, only a small quantity of product is served

1. coffee beans hopper
2. soluble product hoppers

1

2

Now the machine can be switched on.

3.2.5 Filling the hot water boiler

On connecting the machine the hot water boiler fills automatically.

In the espresso coffee machines the following process occur:

- The volumetric counter is tested and the boiler is filled with the EVs closed. When the counter stops spinning, the boiler is full. Then the instant product EVs open to let out the air in the lines and boiler.

3.3. ERROR MESSAGES

In the following table there are described the mistakes that the machine can detect.

LOW TEMPERATURE	The machine displays this warning for approx. 1 min. on being started up.
ERROR: NO WATER	Check the water supply. Fill the water tank
NO COFFEE BEANS	Load the hopper with coffee Check the position of the group outlet shutter
WASTE BIN FULL	Remove the waste tray, clean it and refit it
LONG DISTRIBUTION	Adjust the grinding time to coarser. Clean the group showers Check that there is voltage to the input solenoid.
RESIST. FAULTY	Element broken or disconnected
TEMP.SENSOR ERR.	Probe broken or disconnected
FAIL.WATER LEVEL	Check mains pressure. Input solenoid or level ball broken or disconnected.
DOSAGE ERROR.	Doser broken or disconnected
F.ESPRSS.UNT.POS	The group motor does not work. The position detector does not work properly.
NO WASTE BIN	The tray is missing or not fitted properly.

3.4. CONTROL POINTS

Heatting element

Meassured in the **control board** in the conector jp11

Between pins 1 and 3, will be 220 Vca when heatting element is working. (if 10A fuse is fine)

Erogation pump

Meassured in the **control board** in the conector jp10

Between pins 1 and 7 will be 220 Vca when ulka pump is working.

Erogation group motor

Meassured in the **control board** in the conector jp10

Between pins 2 and 7 will be 220 Vca when the group is working.

Coffee doser

Meassured in the **control board** in the conector jp10

Between pins 3 and 7 will be 220 Vca when doser is activated.

Grinder

Meassured in the **control board** in the conector jp10

Between pins 4 and 7 will be 220 Vca when grinder is working.

Transformer

Meassured in the **control board** in the conector JP12

Pins 1 and 2 = 220 Vca (black looms).

Pins 4 and 5 = 24 Vca (blue looms).

Pressure electrovalve

Meassured in the **control board** in the conector jp8

Between pins 1 and 4 will be 25 Vcc when la electrovalve is activated.

Volumetric counter

Meassured in the **control board** in the conector jp1.

Pin 1 corresponds to +, pin 4 is ground and pin 12 is signal.

When volumetric is turning. The multimeter will show 2,5 Vcc meassuriing between pins 12 and 4.

Doser microswitch

Meassured in the **control board** in the conector jp1.

Between pins 4 and 11 will be 5 Vcc when doser is full.

Between pins 4 and 11 will be 0 Vcc when doser is empty.

group motor microswitch

Meassured in the **control board** in the conector jp1.

Between pins 4 and 10will be 5 Vcc with group in erogation position.

Between pins 4 and 10will be 0 Vcc with group in charge position.

Residue tray microswitch

Meassured in the **control board** in the conector jp1.

Between pins 4 and 9 will be 0 Vcc when tray is in position.

Between pins 4 and 9 will be 5 Vcc when tray is not in its in position.

Floater microswitch(with hydraulic connection to the mains)

Meassured in the **control board** in the conector jp1.

Between pins 4 and 8 will be 5 Vcc when there is no water.

Between pins 4 and 8 will be 0 Vcc with full deposit.

Temperature sensor

Meassured in the **control board** in the conector jp16. values of resistance(ohms) should be meassured (see values in table of PTC).

4. LIMPIEZA Y MANTENIMIENTO

❒ Daily

- *Solid waste bucket*. Empty the coffee residues and rinse with clean water.
- *Liquid collector tray*. Clean with a water and dish washing liquid solution.
- *Beaters*. Carry out various auto-cleaning operations by pressing button "B" on the programming handset.

❒ Weekly

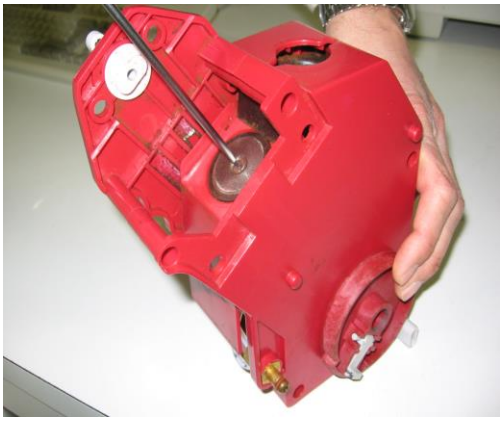
- *Infusion group*. Remove it from the machine and rinse it under a tap to remove coffee particles. Before replacing the group, dry it with a cloth.
- *Beaters*. Remove the beaters, the outlet tubes and the chamber from the machine, and clean everything with a water and dish washing liquid solution. If necessary, only use a soft cloth to clean so as not to scratch their surfaces.

❒ three monthly

- *Product hoppers*. Remove them from the machine and empty them. Clean them with water and dish washing liquid solution. Dry them before replacing into the machine. Clean the supports where the hoppers are fitted.
- *Coffee bean hopper*. Carry out the same as with the product hoppers.

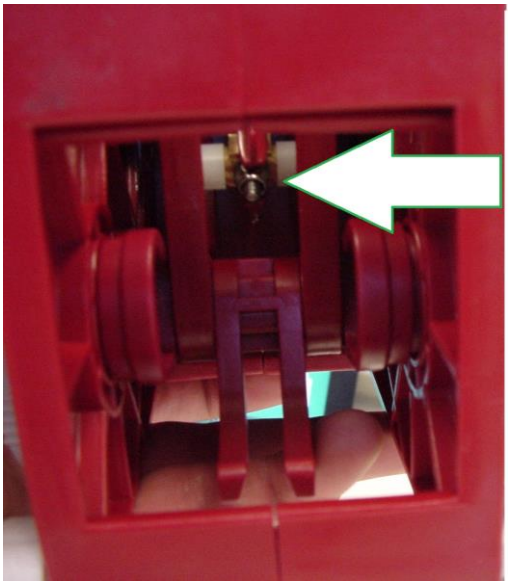
❒ Depending on the use of the machine

- *Piston filter*. Every 15,000 services, it is recommended to remove and clean it. If necessary, it can be cleaned with a non metallic brush. If the holes are blocked, do not introduce sharp objects into the holes to clean them. It is recommended to replace the filter with a new one when is becomes blocked.
- *Infusion group filter*. Clean the infusion group filter at the same time as you clean the piston filter. To remove the filter without damaging it, follow the guidelines below: Move the group to the coffee cake extraction position. Hold the group and the lever with one hand while loosening the filter screw with the other. On replacing the screw it is recommended to use Loctite 243 or a similar product to keep it tight.



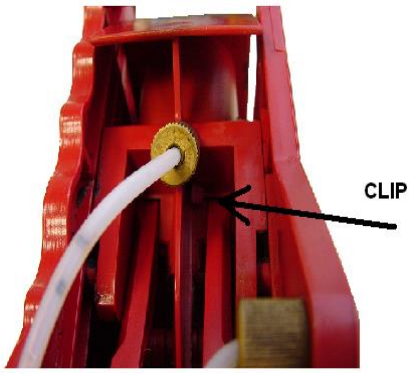
- *Piston seal*. Replace every 30,000 services
- *Group seals*. Replace every 60,000 services. To get to these it is necessary to remove the group filter. They are reachable by following the explanation below.

1. Remove the nut that holds the spindle shaft at the bottom of the group, it is recommended to support with a screwdriver the shower filter at the same time.



2. Push the shaft from the bottom and remove the filter holder.

3. Press on the clips(one on each side) shown in the picture below to release the part where the o-ring gaskets.



4. Once replaced the gaskets, replace lids in the group.

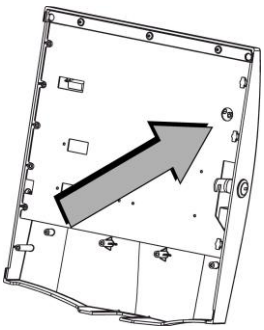
4. 1 BREWER CLEANNING PROCESS

For hygienic motives it is advisable to realize this procedure at least once every 3 months to eliminate the particles of coffee that are in the chamber of the brewer.

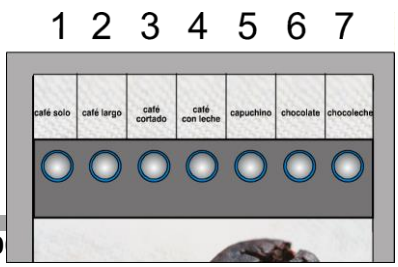
The type of detergent to be used are Tablets of specific detergent for super automatic coffee machines. On the market tablets can be from 2 to 3 gr each one.

Before beginning this operation it is necessary withdraw the tray of liquids of the machine. To empty it of solid residues and of liquids. Later it is mounted in the machine.

Also it is necessary to have a detergent tablet ready to be able to use it.



The programming button must be touched and later must be kept touched during 3 seconds, of this form one enters 2 º level of programming. The leds of the push-buttons of service blink two times intermittently.



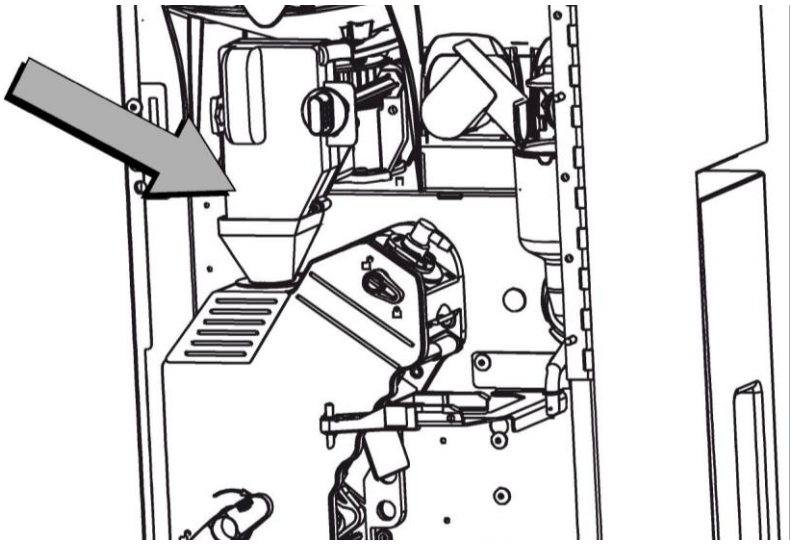
We press button 2 and cleanning process begins.

1. The brewer goes to a position and spills a water quantity to the coffee residue tray to make a pre-cleanning.

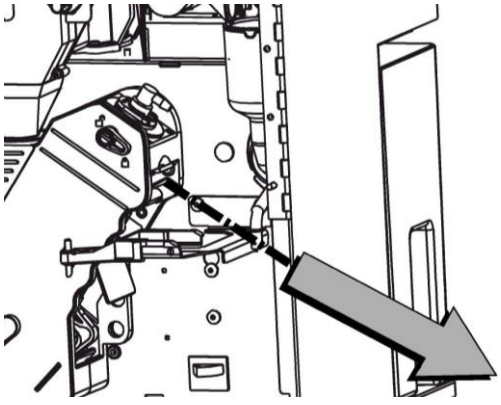
2. The brewer goes to load position.

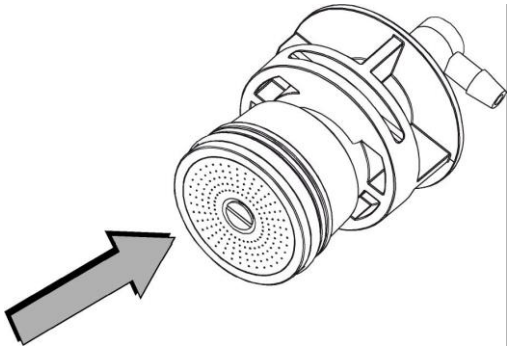
3. Tablet must be inserted and then we can press any of the service buttons.

   The machine begins to do water pulses to fill the conduits with the soapy mixture. it is waited 30 seconds in order that the cleanning is effective and later it begins the phase of wash.



4. The water in the chamber of the brewer throws itself to the coffee residue tray and another cleanning cycle is made.
5. Three espresso coffees are made and cycle finishes.
6. For a correct cleanning it is recommended to withdraw the top piston and to clean the top filter with a paper or with a brush to withdraw possible particles that have stayed in the filter.





4. 2 BOILER DESCALING PRECESS

It is necessary to make this procedure at least once every 3 months whenever antiscale filters or filtered waters are not used.

The process lasts approximately 30 minutes and must not be interrupted.

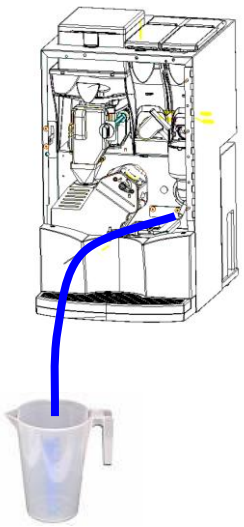
The benefits that are obtained by this procedure are:

- Life of the machine is extended.
- avoids an incorrect functioning of the machine.

If the process of elimination of the lime is not realized adequately, residues of lime can stay in the machine, which will do that residues of lime could be generated rapidly, and provoking damages in the machine.

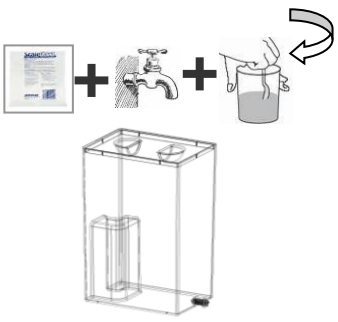
The process for the elimination of the lime only must be realized by citric acid (Scalekleen de Everpure or similar). Never use vinegar for this process.

It is necessary to prepare a container of bigger capacity than two liters and it is necessary to connect the exit of the beater with a rubber or similar to this container, to evacuate the liquids of the process.

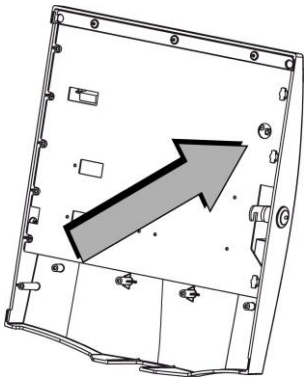


Process:

1. The content of the sachet of citric acid (100 gr.) is spilt in the deposit with 2.5 liters of water (a bit more than half deposit) and it is turned in order that the mixture is dissolved.



2. The programming button must be touched and later must be accessed the DESCALING option inside function 030.



3. We need to remove the water tank, to rinse it with clean water and to fill it up. Process must be repited (only 2 and 3) to do a cycle of wash and rinsing.

5. WORKING CONDITIONS AND NORMS

The optimum working conditions of this equipment is achieved by fulfilling the following requirements:

- Temperatures:
  - Storage: -25 to + 70ºC.
  - Working: 0 to 50º C.
  - Maximum relative humidity without condensation 85%
- Norms that are met:
  - The coffee machines meet the following EU directives: Directive 73/23/CEE electrical safety and Directive 89/336/CEE electromagnetic compatibility.
  - The mains connection cable has an earth wire as established in the electrical safety norm.
  - The boiler has a temperature sensor that controls the connection and disconnection of the heating element automatically.
  - The boiler has a temperature clixon that disconnects the heating element when it reaches 120º C.
  - EN 60335-2-63:96
  - EN 60 335-1(88) + A2(88) + A5(89) + A6(89) + A51(91) + A52(92) + A53(92) + A54(92) + A55(93)
  - EN 55014-1
  - EN 61000-3-2
  - EN 61000-3-3
  - EN 55014-2:98 (EN 61000-4-2, 4-3, 4-4, 4-5, 4-6, 4-7, 4-8 and 4-11)
  - **CE**
- For the correct working of all the elements, the maximum inclination the machine should have on any of its axis should be ± **5º.**

6. VOLUMÉTRIC DIMENSIONS

Messurements in mm and weigth in Kg.

Model	width	height	depth	weight
Vitale Se	305	590	410	25,3 kg
Vitale Se+2	305	590	410	27,2 kg
Vitale Si+4	305	560	410	20,7 kg

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