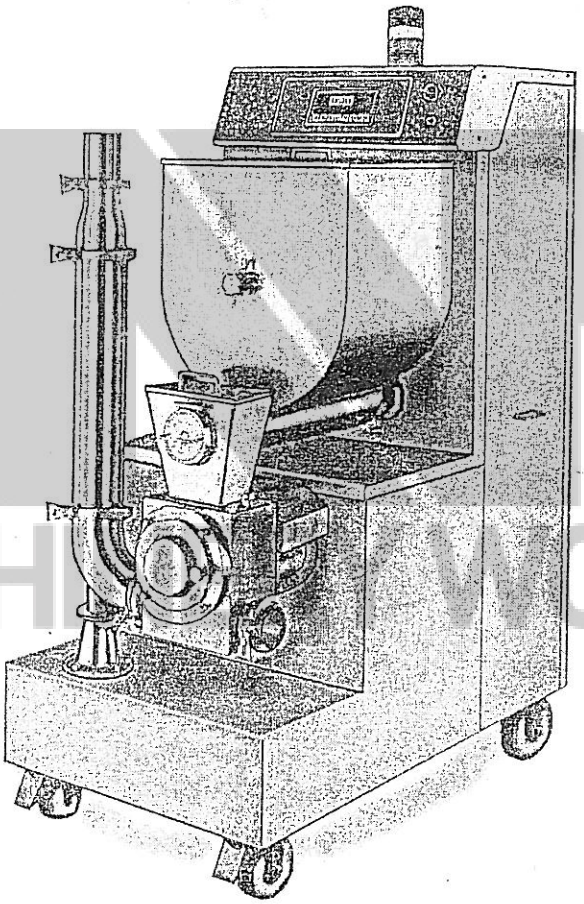
INSTRUCTIONS FOR THE INSTALLATION, USE AND MAINTENANCE

(GB)



FRUIT FEEDER FF 30 INV new
FRUIT FEEDER FF 10 INV new

technogel spa
Grassobbio (BG) ITALIA

CE

Ed. 1999

Introduction

We should like to thank you for purchasing our product. To ensure troublefree operation of your machine, please read this **Instruction Manual** carefully.

The descriptions and illustrations contained in the manual are not binding. **Technogel** reserves the right to make any changes the company considers necessary to the components of the machine at any time in order to fulfil constructional or commercial requirements.

⇒ Who should carry out the work

Please take note of the symbols which appear at the side of each operation required for installation, use and maintenance:

 = Technician

 = User

Where the symbol of the Technician is given (either an electrician, a plumber or a mechanic) this means that the work which must be carried out can be done exclusively by these people. If the operations are carried out by the user this could prove dangerous and must be avoided at all costs.

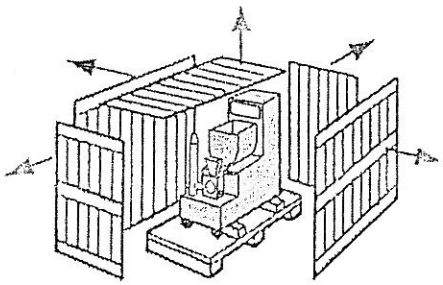
⇒ Installation and machine start-up

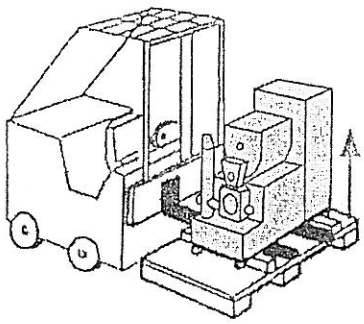
Installation and initial start-up must be carried out by a **technogel** technician or by a technician authorized by **technogel.**

Technogel spa DECLINES ALL RESPONSIBILITY FOR INSTALLATION AND START-UP CARRIED OUT BY UNAUTHORIZED PEOPLE.

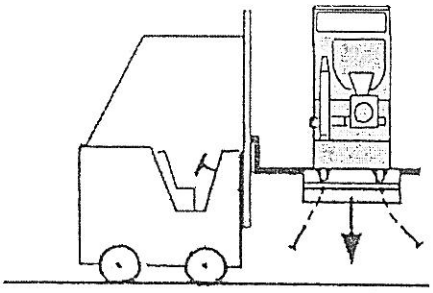
- Instructions for unpacking the machine

FRUIT FEEDER FF 30 INV new: GROSS WEIGHT = 520 KG NET WEIGHT = 400 KG
FRUIT FEEDER FF 10 INV new: GROSS WEIGHT = 360 KG NET WEIGHT = 260 KG





A – remove all the wood panels from the sides and top	B – lift the machine with a fork lift truck inserting the fork between the base of the machine and the bottom of the crate



C – unscrew the four bolts on the base of the crate Which hold the machine locked in position

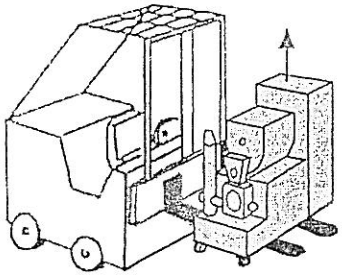
CAUTION:
once the bolts have been removed, the bottom of the crate will detach from the machine base.

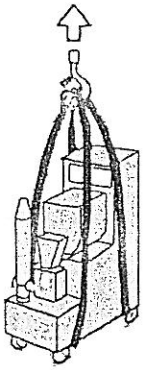
D – after removing the base of the crate, lower the fork lift carriage and rest the machine on the ground

THE CRATE IS MADE OF NATURAL PINE AND CONTAINS NO CHEMICAL SUBSTANCES.
IT CAN THEREFORE BE RECYCLED.

- Instructions for lifting the machine

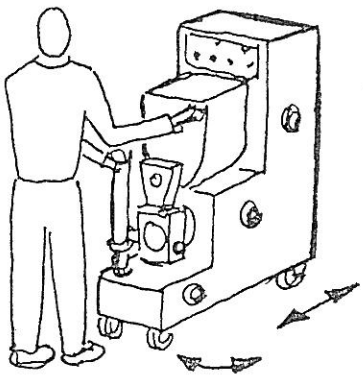
- FRUIT FEEDER FF 30 INV new: NET WEIGHT = 400 KG.
- FRUIT FEEDER FF 30 INV new: NET WEIGHT = 260 KG

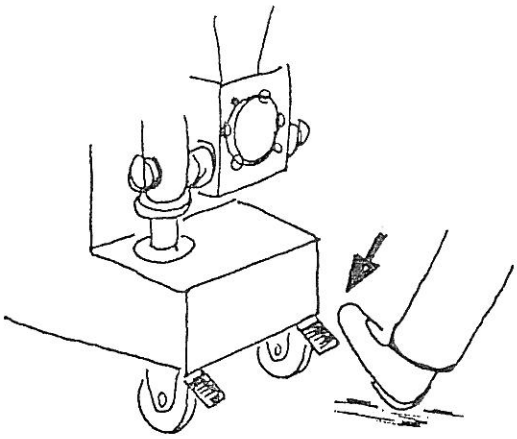




Raise the machine using a fork lift truck, inserting the forks under the sides of the machine between the front and rear wheels	Lift the machine using belts as shown in the figure positioned close to the front and rear wheels – the cable which raises the machine must be positioned exactly in the centre of the machine

- Instructions for moving the machine





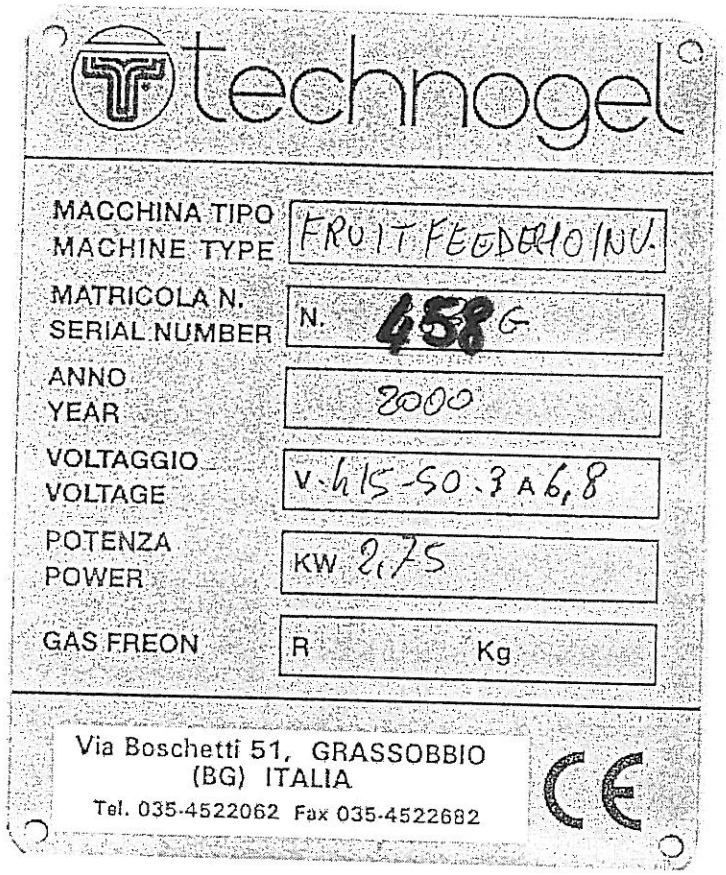
To move the machine, hold it with both hands and move backwards or forwards. The front wheels are rotating castors and the rear wheels are fixed.	After positioning the machine, lock the brakes of the front wheels with the foot. DO NOT USE THE HANDS!

⇒ Machine identification

Each machine is fitted with a plate giving the following information:

- type of machine
- serial number
- year of manufacture
- voltage, hertz and maximum absorption in Amps
- electrical power

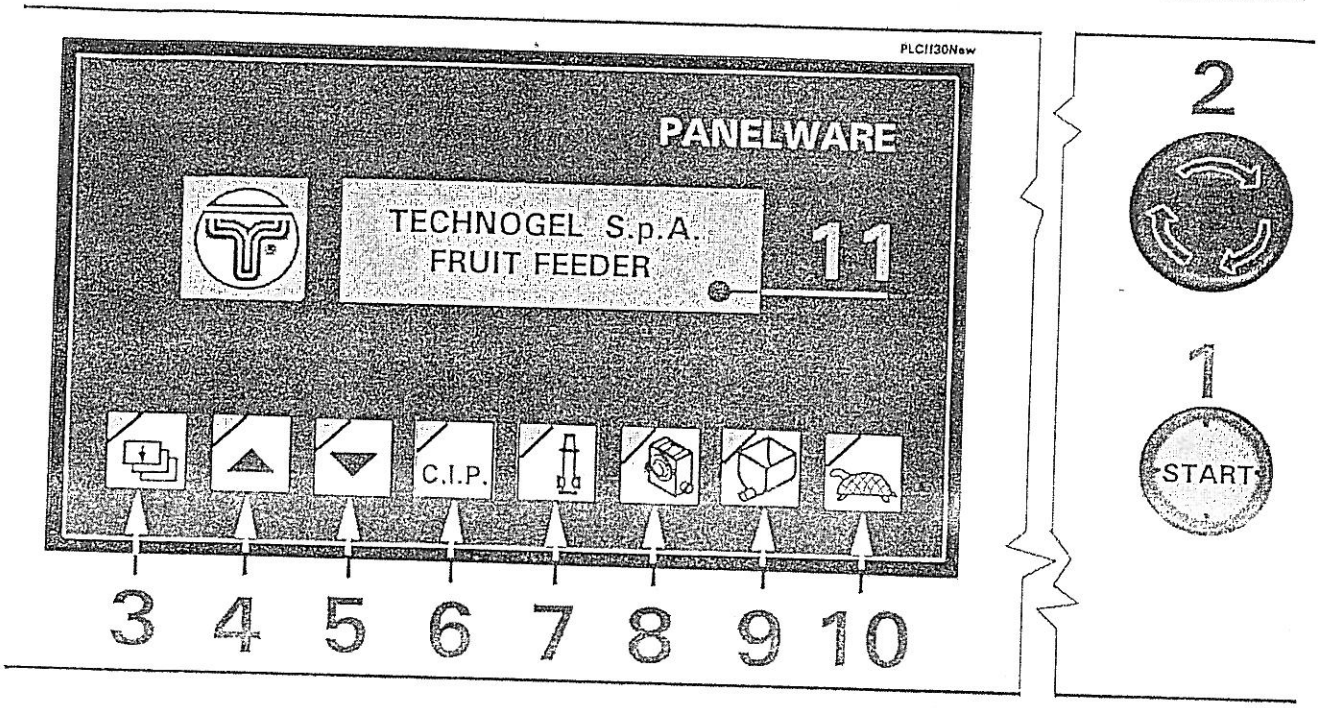
The plate is applied to the rear of the machine. The plate for this machine is as indicated below:



When ordering spare parts and applying for technical assistance, please give the data indicated on the serial plate to ensure precise identification of the machine:

MACHINE TYPE	FF 10 INV new
SERIAL NUMBER	383- G
VOLTAGE	V-415-50-3

⇒ Operation of the PLC (control and regulation of the speed of the motors)



Pushbutton (1) START turns the machine on and off. When the machine is turned on the display will read as shown in the figure above. Pushbutton (2) EMERGENCY will turn off the machine whenever it is pressed.

- How to turn the motors on and off:

Starting of the different motors must occur in cascade: 1st no. 7 (mixer) – 2nd no. 8 (rotor) – 3rd no. 9 (screw). If no. 7 does not start (mixer) the others don't work. If no. 8 (rotor) doesn't start, then no. 9 (screw) doesn't work. During operation, if no, 7 (mixer) stops, nos. 8 and 9 will stop too. Or if no. 8 (rotor) stops then no. 9 (screw) will stop automatically.

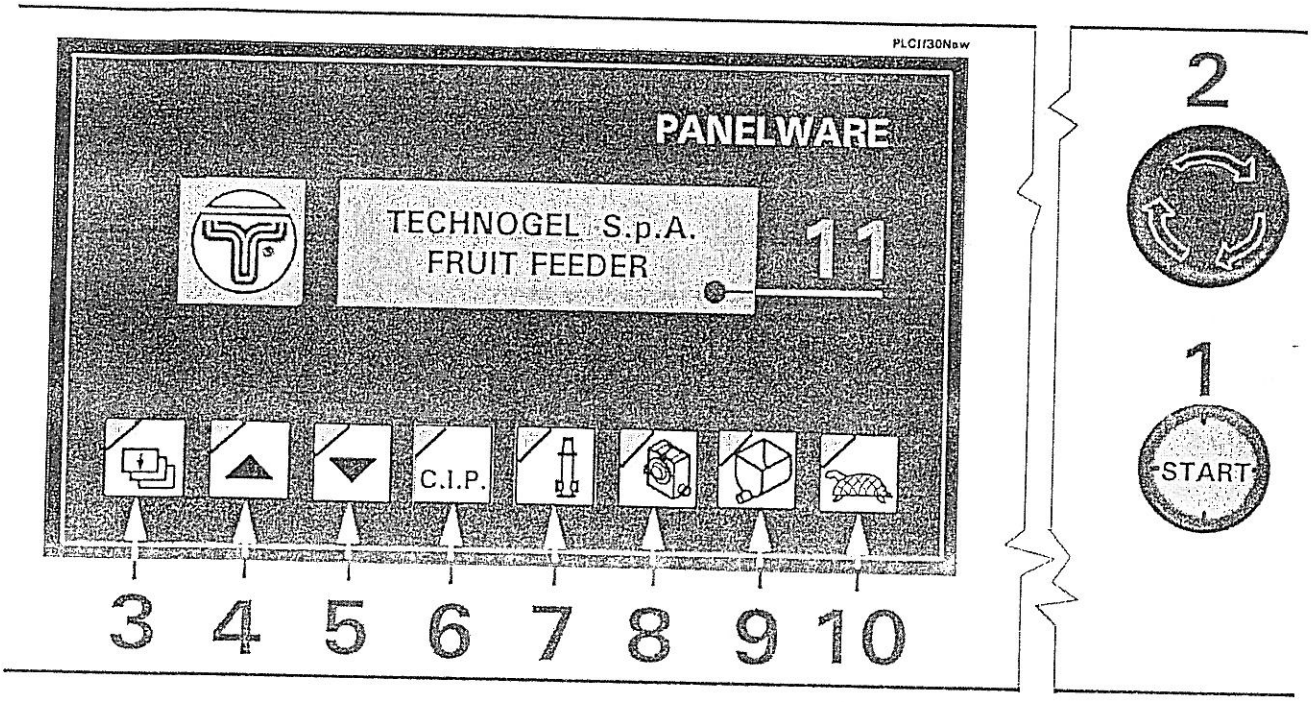
- How to regulate the speed of the different motors

CAUTION: speed adjustment is carried out by percentage and can vary from a minimum of 20% to a maximum of 100% (see table with min. and max. rpm).

Corresponding motor	20% (minimum speed)	100% (maximum speed)
MIXER (7) (BLENDER)	20 rpm	100 rpm
ROTOR (8)	5 rpm	25 rpm
SCREW CONVEYOR (9) (AUGER)	4 rpm	20 rpm

To adjust the speed of each motor with the machine stopped or in operation, press pushbutton (3) and bring up the motor involved (e.g. rotor or screw) on the display (11). Once the display gives the correct motor, vary the speed using pushbuttons (4 and (5) depending on whether it is necessary to increase or decrease the speed. To adjust the speed of the mixer, the motor must be in operation.

If the quantity of product which is to be put into the ice-cream is excessive even after regulating the screw on minimum, press pushbutton (10) so that the motor involved works intermittently and an even smaller quantity of product can be put in. If on minimum speed with intermittent operation the product is insufficient, increase the revs and leave on intermittent mode until the correct quantity of product is established. Pushbutton (10) operates only for the screw motor.



- WASHING pushbutton (6):

  - when automatic washing of the machine must be carried out (applicable with a C.I.P. automatic plant) press the C.I.P. pushbutton (6). Both the mixer and rotor will operate for a pre-set time (the screw will be stopped). On termination of washing, stop the machine by pressing the C.I.P. button once again.

- SELF-DIAGNOSIS

Problem	Display (11)	Consequence
Excessive pressure of ice-cream	"ice-cream pressure high"	Red light comes on and rotor and screw are stopped
Activation of "mixer" thermostat	"mixer thermostat"	All motors stopped
Activation of "rotor" thermostat	"rotor thermostat"	Rotor and screw motors stopped
Activation of "screw" motor	"screw thermostat"	Screw motor stopped
Fault in "mixer" inverter	"mixer inverter block"	All motors stopped
Fault in "rotor" inverter	"rotor inverter block"	Rotor and screw motors stopped
Fault in "screw" inverter	"screw inverter block"	Screw motor stopped

WARNING:

This type of PLC does not allow programming of all the products used with the relative speeds depending on the quantity of product to be put into the ice-cream. As explained on page 13, it is necessary to make a table of all the products used in your type of production and depending on the quantity of ice-cream used with the machine, take note of the different motor speeds.
Each time the machine starts, depending on the type of product used and the quantity of ice-cream, the appropriate speeds must then be programmed.

Please note that when the machine is stopped the speeds of the rotor and screw motors can be pre-set, while the speed of the mixer motor must be set with the machine in operation.

⇒ Checking the directions of rotation

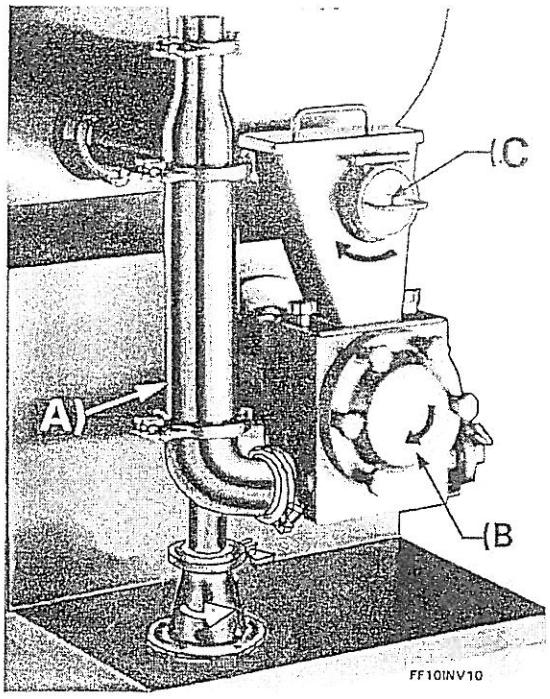
Although the directions of rotation are already established during the commissioning stage and these will not change even if the power cable phases are inverted, here below is the correct direction of rotation for the three motors:

A) – mixer B) – rotor C) - screw conveyor

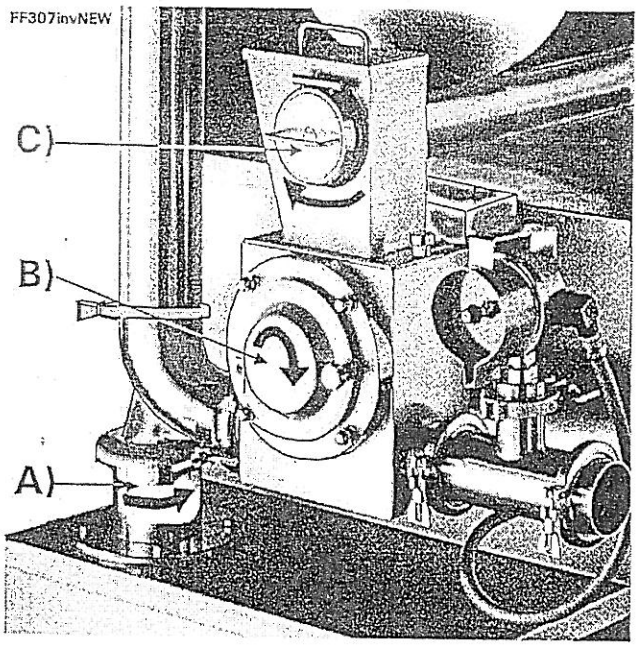
Please note that there is a compulsory procedure for the order in which the motors are started: first the "mixer", then the "rotor" and then the "screw". If you try to start the rotor first, for example, it will not start.

To check whether the motors rotate in the right direction:

- Press pushbutton (3) (page 8) until the word "**mixer**" appears on the display (11). Press pushbutton (7) (mixer symbol). To stop, press pushbutton (7) once again.
- Press pushbutton (3) (page 8) until the word "**rotor**" appears on the display (11). Press pushbutton (8) (rotor symbol). To stop, press pushbutton (8) once again.
- Press pushbutton (3) (page 8) until the word "**screw**" appears on the display (11). Press pushbutton (9) (screw symbol). To stop, press pushbutton (9) once again.



FF 10 INV new

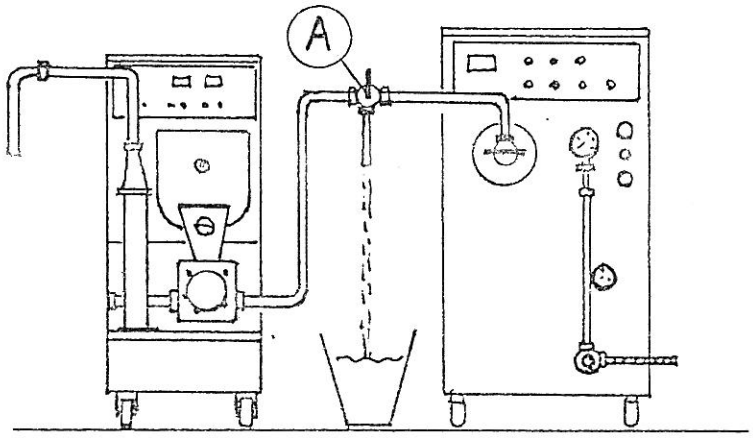


FF 30 INV new

If the directions of rotation are not correct owing to intervention on the machine, please consult the electrical diagram or apply to TECHNOGEL spa for information.

⇒ Connection between machine and freezer

We recommend assembly of a 3-way faucet (A) between the fruit feeder and the freezer which produces the ice-cream.
The faucet enables the consistency of the ice-cream to be checked at the start and when the texture or consistency is at the right point it can be diverted to the fruit feeder.
It also means that the ice-cream can be diverted if there are any problems downstream from the fruit feeder.

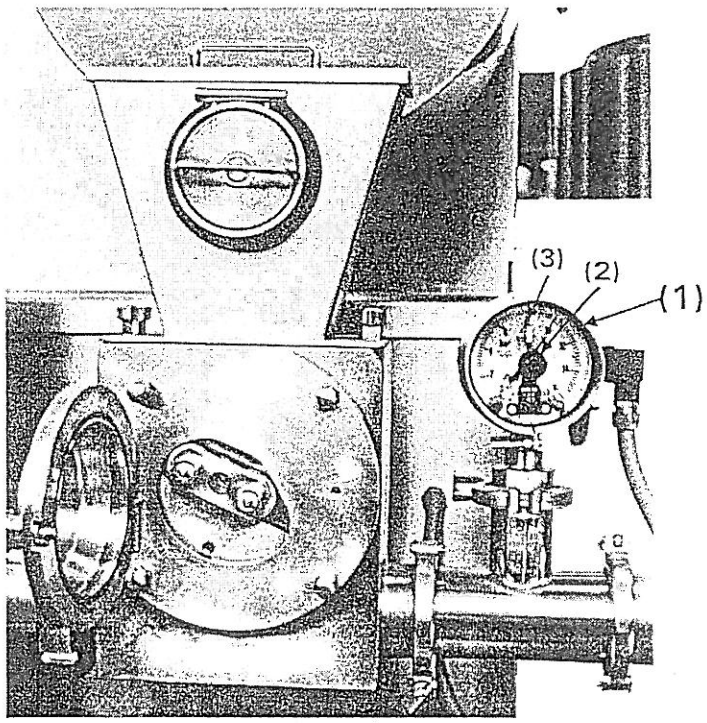


⇒ Checking the setting of the safety pressure switch (1):

CHECK APPLIES ONLY TO FRUIT FEEDER TYPE FF 30

The pressure switch (1) (see photo) must be set at 10 bar. The needle (3) must be on 10 on the pressure gauge. If the setting is not on 10, position the needle (3) using knob (2) so that it is on 10.

Never allow the needle to go above 10. Excess pressure would break the safety plug and production would have to be stopped in order to replace it.



FF30 5

MIX WORM SCREW
REDUCTION UNIT. RM150-1/5
RV - 14025.6

⇒ Maximum and minimum quantities of ice-cream which the machine will take

The machine can be connected to more than one freezer providing the total amount of ice-cream does not exceed the maximum given below. To ensure the ice-cream passes through the machine without spoiling, the minimum quantity must not be less than that indicated below.

	Minimum quantity of ice-cream	Maximum quantity of ice-cream
FF 10 INV new FF 30 INV new	150 litres per hour 900 litres per hour	900 litres per hour hour

⇒ Connection between the fruit feeder and packing machine

Make sure the packing machine dispenser connected to the fruit feeder is open when the packing machine is stopped.

If the dispenser is closed and rubber piping is used for the connection between the fruit feeder and the packing machine, with the high pressure created it could explode. If metal piping is used, high pressure could break the safety plug before the safety pressure switch comes into action (see page 11).

TECHNOGEL spa DECLINES ALL RESPONSIBILITY FOR ANY DAMAGE ARISING FROM THE USE OF UNSUITABLE OR INCORRECTLY POSITIONED CONNECTING PIPES, AND/OR INCORRECT START-UP OF PACKING MACHINERY CONNECTED TO THE FRUIT FEEDER.

⇒ Products to be added to the ice-cream

There are a number of different products on the market designed for use with ice-cream which need special treatment before use.

With dry products such as nuts – nut bits – hazel nuts – chocolate chips or bits – raisins, etc. there are no problems.

For sticky products such as candied fruit – marron glacé and others, they must first be washed by spraying them with an alcoholic solution (e.g. maraschino) so as to remove some of the sugar coating. If this is not done, the product tends to stick and create lumps which could obstruct the passage in the machine's rotor.

Never use water for washing the products. Water would remain stuck to the product and would turn to ice on contact with the ice-cream.

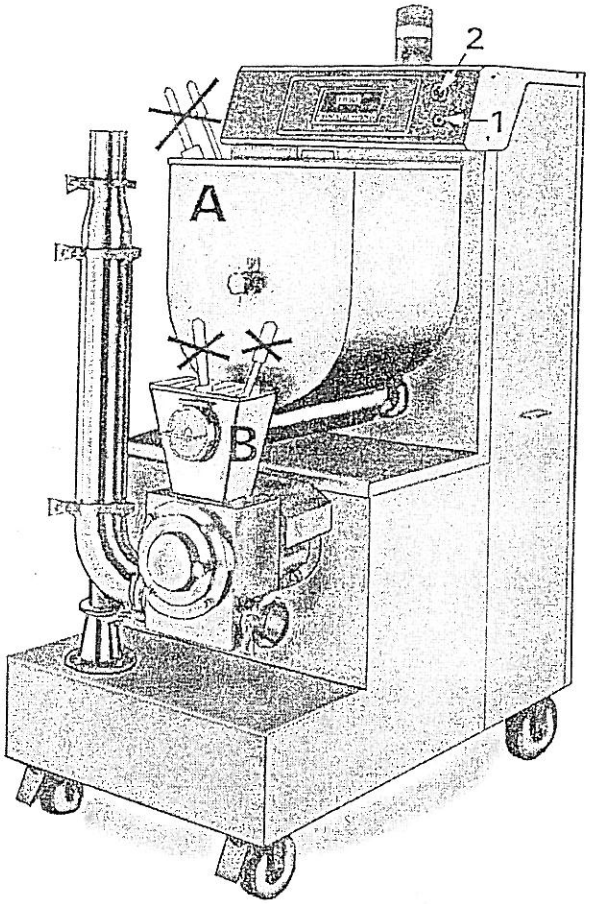
To dispense small-sized products (nut grains, chocolate flakes etc.) use the screw on low capacity (the one with flaps on low spirals); for large-sized products (whole nuts – cherries – marron glacé etc. use the spiral on high capacity (the one with flaps on high spirals).

SAFETY WARNINGS

- For safety reasons, never put scoops or utensils into the tank containing product (A) or the rotor loading hopper (B) when the machine is in operation.

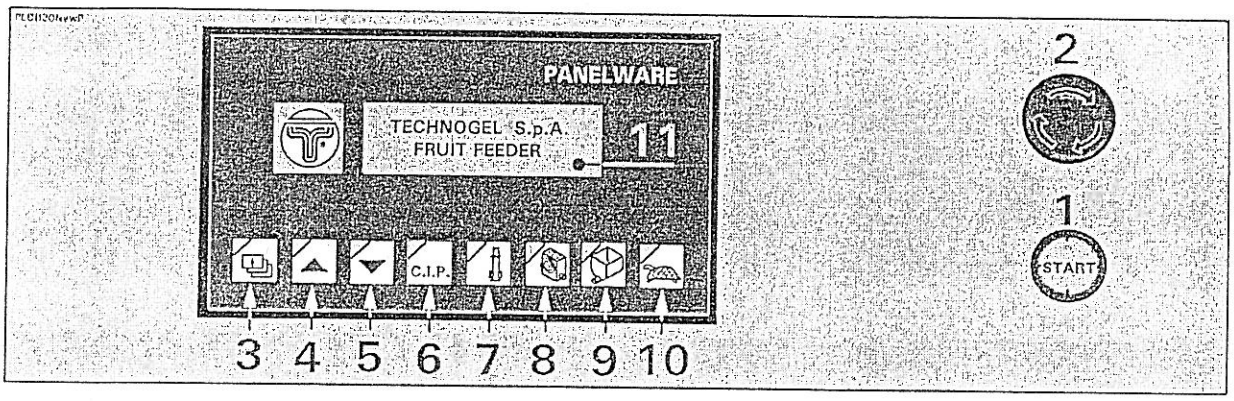
- When the hopper (B) is dismantled the machine must not operate. Check periodically that the safety sensor interrupting operation of the machine works properly.

- Before carrying out any work involving the internal parts of the machine, disconnect the power supply using pushbutton (1) or press the emergency button (2).



TECHNOGEL spa SHALL NOT BE HELD RESPONSIBLE FOR ANY DAMAGE ARISING FROM TAMPERING WITH THE SAFETY PROTECTIONS ON THE MACHINE OR FROM ANY USAGE WHICH IS NOT IN COMPLIANCE WITH THE INSTRUCTIONS CONTAINED IN THIS MANUAL

⇒ Machine startup



A) Pour the product into the tank bearing in mind that the maximum capacity is 50 litres (FF 10) and 65 litres (FF 30).

B) Feed the fruit feeder with ice-cream. When this starts to emerge from the mixer tube, start the MIXER (pushbutton 7). Adjust the starting speed to 50% (see page 8).

C) After approximately 15 seconds, start the ROTOR (pushbutton 8). Adjust the starting speed to 50% (see page 8).

Do not start the SCREW CONVEYOR

D) Wait for the ice-cream to emerge from the tube with the right consistency and then start the SCREW CONVEYOR (pushbutton 9). Adjust the starting speed to 20% (minimum) (see page 8).

E) Increase the speed of the SCREW CONVEYOR very slowly checking that the ROTOR empties the hopper of product. If the product does not empty, increase the speed of the ROTOR using the PLC (see procedure on page 8). Check that the ice-cream contains the desired product and make sure it is thoroughly mixed.

Otherwise see the table below:

FAULTS FOUND WHEN PRODUCT EMERGES FROM FRUIT FEEDER	WHAT TO DO
Too much or too little product in the ice-cream Too much product even with the screw on minimum revs	*Increase or decrease the speed of the SCREW CONVEYOR with the PLC (see page 8)* *Put on intermittent mode (pushbutton 10) and correct conveyor speed if necessary (see page 8)*
Rotor has difficulty in emptying product	*Increase speed of ROTOR with the PLC (see page 8)*
Product not thoroughly mixed into the ice-cream	*Increase speed of the MIXER with the PLC (see page 8)*
Product breaks or crumbles on output (especially with large-sized crumbly product e.g. nuts)	*Decrease speed of the mixer with the PLC (see page 8)*

⇒ Useful tips to ensure correct usage of the machine

- Always start with the SCREW CONVEYOR on minimum.

- After increasing the speed of the screw conveyor, wait for the ice-cream inside the machine to change before increasing the speed again. Make sure the rotor manages to amalgamate most of the product which emerges otherwise increase the speed of the rotor.

- Once the correct dosage of ice-cream and product added has been established, make a table for all products indicating the speed of the SCREW CONVEYOR, ROTOR and MIXER as shown below:

Type of product	Litres/hr ice-cream	Speed of rotor	Speed of screw conveyor	Intermittent mode YES NO	Speed of mixer
Whole nuts	.....	.....%	.....%		.....%
Nut bits	.....	.....%	.....%		.....%
Chocolate flakes	.....	.....%	.....%		.....%
Nuts	.....	.....%	.....%		.....%
Candied fruit	.....	.....%	.....%		.....%
Raisins	.....	.....%	.....%		.....%
Cherries	.....	.....%	.....%		.....%
.....	.....	.....%	.....%		.....%

- Remember that machine startup must be carried out in a definite order: first the MIXER, then the ROTOR then the SCREW CONVEYOR.

- If it is necessary to stop the machine for a moment, stop the rotor (which will automatically stop the SCREW CONVEYOR) and leave the MIXER in operation.

- Remember to wash sticky products before putting them into the machine.

- It is a good idea to put a small quantity of product into the tank and to add other product during production

- If there are problems at the outlet of the fruit feeder, stop the screw conveyor.

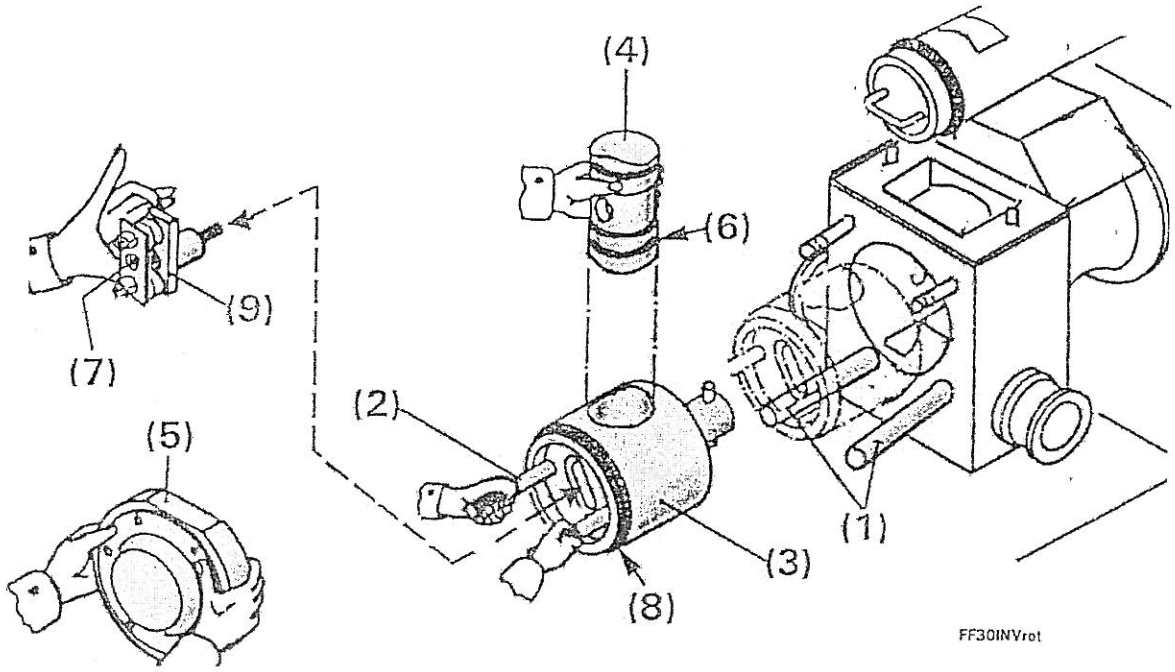
- Before starting production, make sure that the piping which takes the ice-cream from the fruit feeder to a packing machine is large enough and is not squashed at any point. A long narrow pipe with many bends could cause excessive pressure and prevent the fruit feeder from operating correctly.

ROTOR OF MACHINE FF30

- pull cam 5 to remove it; mount the two rods 1 (supplied with the machine in the spare parts box) and screw them onto the two stud bolts as indicated in the figure. Take care not to block them.

- screw the two knobs 2 (also supplied with the machine in the spare parts box) onto rotor 3 and gripping them with both hands, rotate rotor 3 in a clockwise direction as far as it will go and remove it by pulling towards the outside. When it detaches from the stator, allow it to rest on rod 1.

- Dismantle the piston entrainer 9 by unscrewing screw 7 (caution – to unscrew it, turn using the special wrench in a clockwise direction) and then piston 4.



- dry all the pieces thoroughly and after lubricating the rubber seals 6 and 8 with vaseline together with the external surface of rotor 3, re-assemble all pieces.

CAUTION !!!

When piston 4 is assembled in the seat of the rotor, make sure that seals 6 do not cut.

When the complete rotor is assembled in the stator, make sure it is correctly positioned. Precision is important as if it is not correctly positioned it could block.
Once the rotor is assembled, make sure that seals 8 are in position correctly.
Dismantle the rods and the service knobs by unscrewing them, remount cam 5 complete with cover and fully tighten the four bolts with a wrench.

IT IS EXTREMELY IMPORTANT TO KEEP THE ROLLERS OF THE PISTON ENTRAINER WELL-GREASED USING GREASE FOR FOODSTUFFS. APPLY USING THE APPROPRIATE LUBRICATORS.

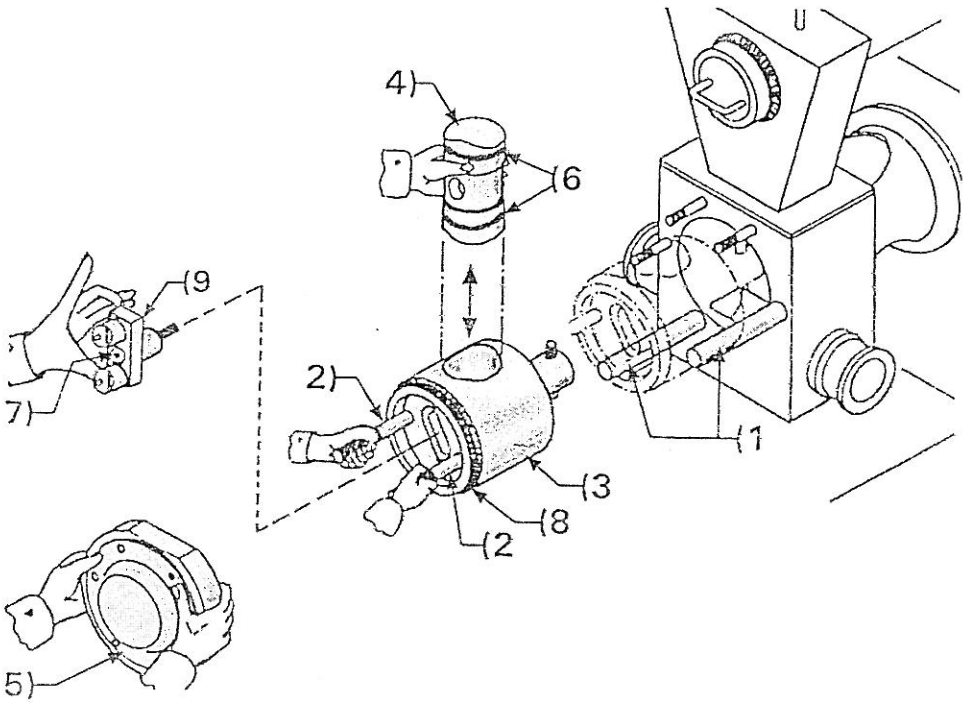
TAKE CARE IN HANDLING THE DIFFERENT PIECES, ESPECIALLY ROTOR (3). AS THEY ARE MADE OF RATHER SOFT MATERIAL, THEY COULD DENT IF DROPPED AND IT WOULD THEN BE DIFFICULT TO RE-ASSEMBLE THEM.

ROTOR OF MACHINE FF 10

- pull cam 5 to remove it; mount the two rods 1 (supplied with the machine in the spare parts box) and screw them onto the two stud bolts as indicated in the figure. Take care not to block them.

- screw the two knobs 2 (also supplied with the machine in the spare parts box) onto rotor 3 and gripping them with both hands, rotate rotor 3 in a clockwise direction as far as it will go and remove it by pulling towards the outside. When it detaches from the stator, rest it on rod 1.

- Dismantle the piston entrainer 9 by unscrewing screw 7 (caution – to unscrew it, turn using the special wrench in a clockwise direction) and then piston 4.



- Dip all the pieces in a solution of water with dissolved sterilizing detergent – <u>avoid the use of corrosive solutions with a chlorine base</u> as these could cause early wear and tear on the stainless and chromed surfaces.

- rinse all the pieces thoroughly and after lubricating the rubber seals 6 and 8 with vaseline together with the external surface of rotor 3, re-assemble all pieces.

CAUTION !!!

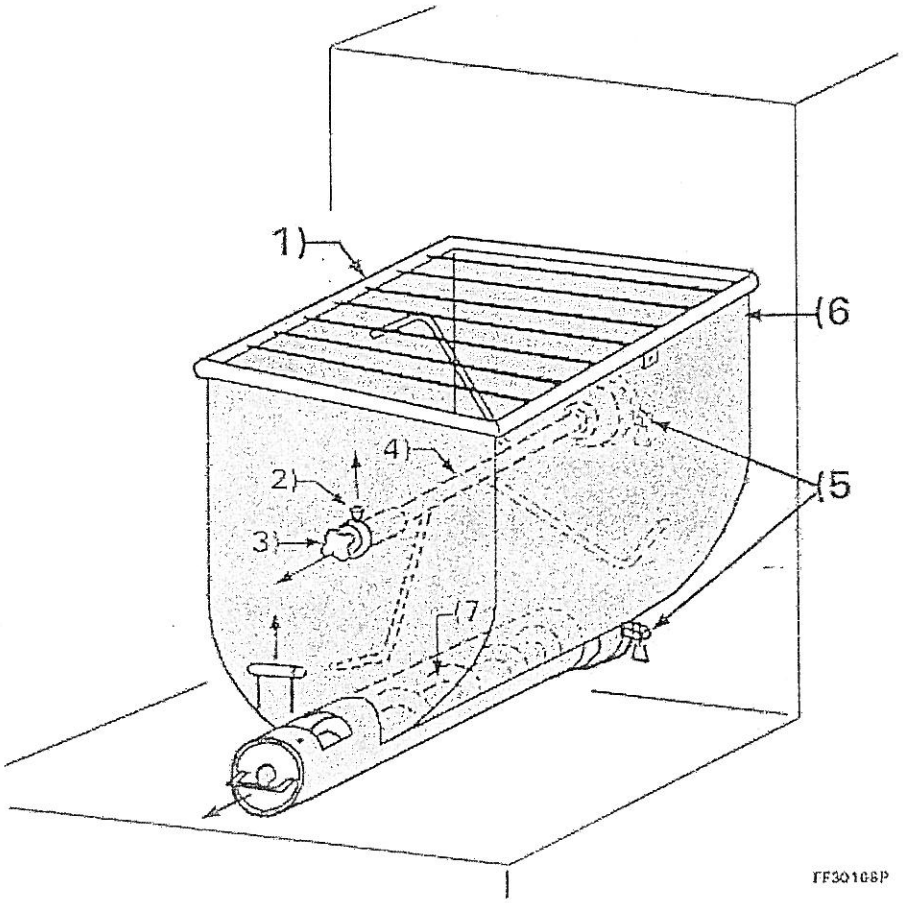
When piston 4 is assembled in the seat of the rotor, make sure that seals 6 do not cut.
When the complete rotor is assembled in the stator, make sure it is correctly positioned. Precision is important as if it is not correctly positioned it could block.
Once the rotor is assembled, make sure that seals 8 are in position correctly.
Dismantle the rods and the service knobs by unscrewing them, remount cam 5 complete with cover and fully tighten the five handwheels with a wrench.

IT IS EXTREMELY IMPORTANT TO KEEP THE ROLLERS OF THE PISTON ENTRAINER WELL-GREASED USING GREASE FOR FOODSTUFFS. APPLY USING THE APPROPRIATE LUBRICATORS.

TAKE CARE IN HANDLING THE DIFFERENT PIECES, ESPECIALLY ROTOR (3). AS THEY ARE MADE OF RATHER SOFT MATERIAL, THEY COULD DENT IF DROPPED AND IT WOULD THEN BE DIFFICULT TO RE-ASSEMBLE THEM.

- dismantle the ingredient tank by first removing the protection grid 1. After removing retainer 2 and extracting the mixer centering device 3, extract the product mixing device 4. Remove the screw conveyor 7 by pulling outwards.

- to dismantle all tank 6, detach the two clamps 5 by unscrewing them. The tank will then detach from the machine and it can then be washed and disinfected separately.



- Reassemble all parts and the machine is ready to start production once again.

ALWAYS REASSEMBLE THE DIFFERENT PROTECTIONS (PROTECTION GRID AND HOPPER) AND TIGHTEN ALL HANDWHEELS WITH APPROPRIATE TOOLS. CHECK EVERYTHING BEFORE STARTING PRODUCTION.

TECHNOGEL spa DISCLAIMS ALL RESPONSIBILITY FOR ANY DAMAGE CAUSED BY CHANGES MADE TO ANY PROTECTION DEVICES ON THE MACHINE OR INCORRECT ASSEMBLY OF MACHINE COMPONENTS.

⇒ Noise level

The noise level of the machine when in operation measured at 1 metre distance is less than 70 dB (A).

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⇒ Technical assistance

Technical intervention carried out by unauthorized personnel could prove dangerous for their safety.

We therefore strongly recommend that if there is any fault in the machine, you should call the AUTHORIZED TECHNICAL SERVICE.

TECHNOGEL spa DISCLAIMS ALL RESPONSIBILITY FOR ANY DAMAGE ARISING FROM TECHNICAL INTERVENTION CARRIED OUT BY UNAUTHORIZED PEOPLE.

TECHNOGEL spa DISCLAIMS ALL RESPONSIBILITY FOR ANY DAMAGE ARISING FROM THE USE OF NON-ORIGINAL SPARE PARTS WHICH HAVE NOT BEEN APPROVED FOR ASSSEMBLY ON A MACHINE MANUFACTURED BY THE COMPANY.

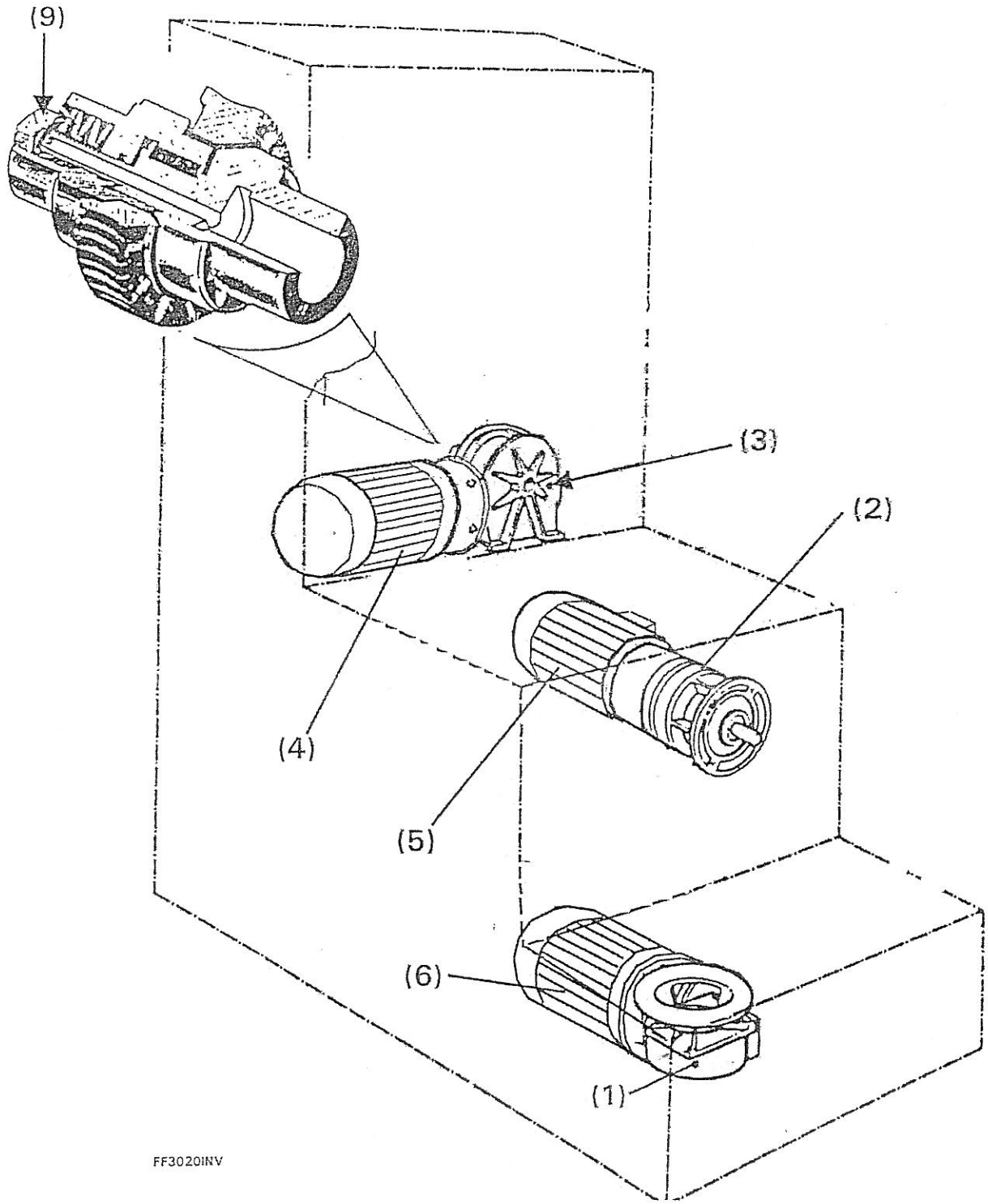
The next few pages give instructions for the user and technical service for MAINTENANCE AND REPAIRS to the machine.

The heading "Notes" indicates the person qualified to carry out the work without any danger.

⇒ Troubleshooting

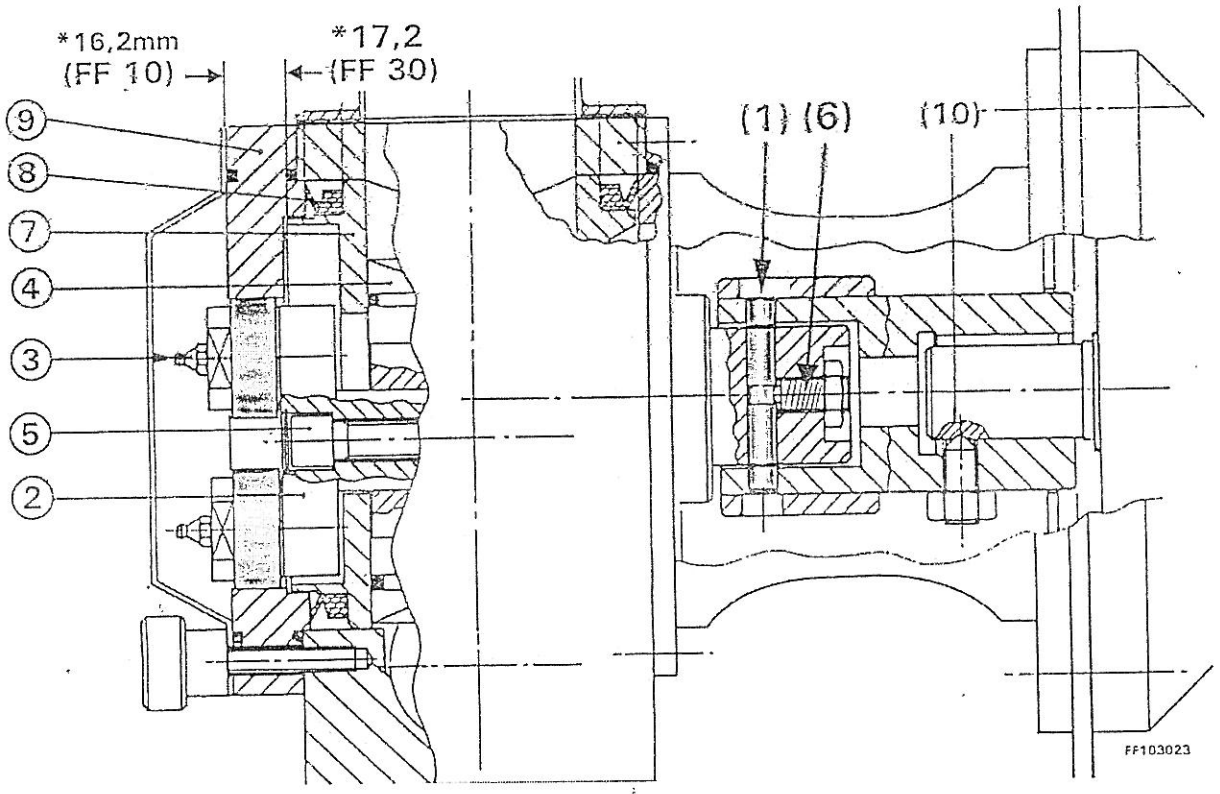
PROBLEM	CAUSE	REMEDY	Notes
The small hopper B (p. 13) fills with ice-cream	*The rotor turns too slowly* *The seals (6) of piston (4) are worn. See p. 17 or 18.* *The rotor (3) is very worn on the outside. (see p. 17 or 18).*	Increase the rotor revs (see p. 8) Replace seals (see p. 17 or 18 Replace the rotor	
The pressure on the safety gauge is too high and the alarm frequently goes off and the machine stops.	*The machine is being fed with too much ice-cream.* *The pipe from the feeder to a packing machine has a bend in it.* *The pipe leading from the machine is too small or too long.*	Check the maximum capacity (see p. 12) Remove any bends or choking of the pipe. Check the pipe and change if necessary.	 
There are air bubbles in the ice-cream as it comes out of the machine.	*The small millings on the rotor are closed corresponding to the position of the inlet and outlet holes on the piston.*	Dismantle the rotor and clean thoroughly. After reassembling, start the machine and increase the speed of the rotor. If the rotor does not rotate quickly enough, air is not coming out properly.	When the machine operates properly, you will hear the spray inside the hopper each time the rotor piston pushes the product into the ice-cream.
One or all of the motors stop or don't start when the machine is turned on. One of the motors stops even if the thermostat is connected.	*See section entitled "SELF-DIAGNOSIS" on p. 9.* *Possible intervention of internal safety devices on the Inverter caused either by excessively high current or excess heat.*	Reset thermostat and check that absorption of the motor during operation is correct. Disconnect power supply to the machine using button 1 (p. 8) and turn on again after about 30 mins. If the fault recurs, check the specific Inverter Manual or call the Authorized Service Centre.	
Irregular movement of mixer in ingredient tank and loss of speed on SPEED CONVEYOR.	*Adjustment nut is possibly loose on the restrictor incorporated in the reduction unit (p. 22 pos. 9)*	Tighten the torque adjustment nut making sure that adjustment is not excessive. The mixer arm must stop and not bend if a rigid piece falls into the tank.	
The machine makes a lot of noise around the rotor head while in operation.	*The rollers (9 p. 17 or 18) have no lubrication and are seizing.* *Possible seizing of the rotor on the surface of the stator owing to chrome plating lifting.*	Apply grease as indicated in section on "Rotor Dismantling" (p. 17 or 18). Replace if necessary. Check by dismantling the rotor. If the stator surface is OK, smooth the external surface of the rotor and reassemble. If the scoring is not excessive the machine will operate anyway.	After washing, always check that the rollers rotate.  Slight scoring of the rotor is normal in use of the machine.

⇒ Speed reduction unit with torque converter



⇒ Troubleshooting

PROBLEM	CAUSES	REMEDY
The rotor gear reduction unit works but the rotor does not rotate.	*The safety plug (1) is broken (see dwg. below) owing to a blockage of the rotor or something metallic has fallen into the rotor piston.*	Replace the safety plug after dismantling the rotor (see p. 17 or 18). Release the broken plug bny first loosening the presser (6) (see dwg. below).



For any other problem, please contact TECHNOGEL's Technical Office.

⇒ Maintenance

After each washing

- Apply grease of the type suitable for use with foodstuffs to the entrainment rollers (page 23 pos. 3).
- The seals must have a film of vaseline applied to them before being assembled in their seats.
- Check that the seals on the rotor are correctly mounted as indicated on page 23 pos. 8, i.e. with the lip towards the outside.

- Periodic maintenance

- The mixer control reduction units (page 22 pos. 1) and those of the mixer (page 22 pos. 3) are lubricated with oil. Check the level at periodic intervals and top up. The following types of oil should be used:

IP MELANIA OIL 220
BP ENERGOL GR 550 XP

or similar with the following viscosity characteristics:

viscosity SAE 120
viscosity 220 cst at 40°C
viscosity 22 degrees Engler at 50°C

0.23 litres should be used for each reduction unit. Change the oil after every 1500 hours of operation.

- The rotor reduction unit (page 20 pos. 2) is lubricated with oil.
Check the level at periodic intervals and top up as necessary using the following types of oil:

IP MELANIA OILS 220
BP ENERGOL GR 550 XP

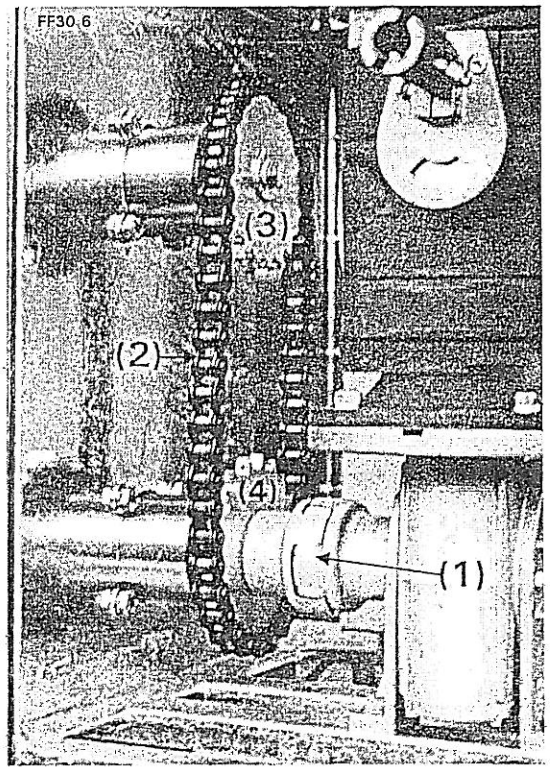
or similar with the following characteristics:

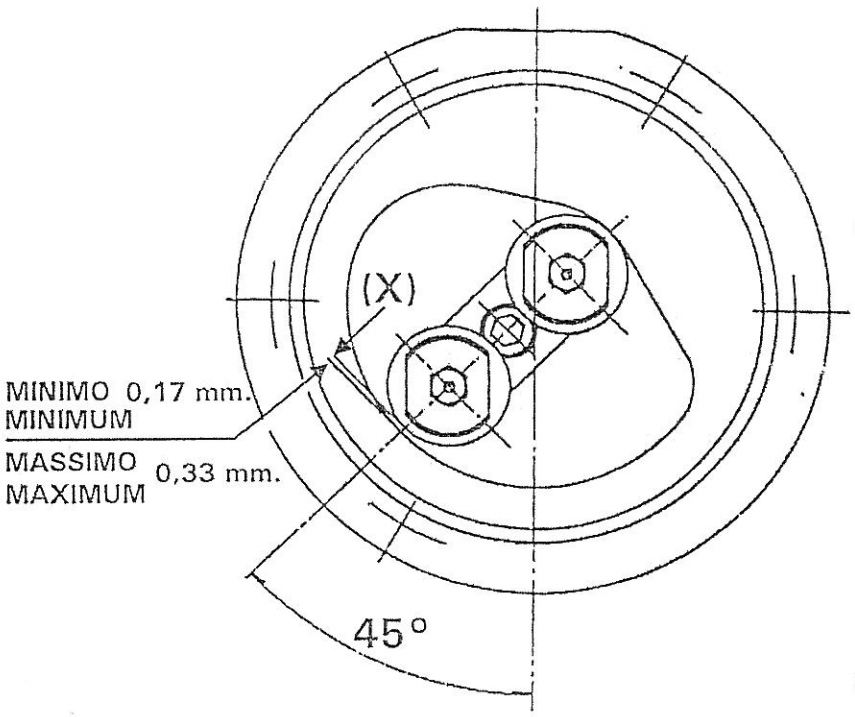
viscosity SAE 120
viscosity 220 cst at 40°C
viscosity 22 degrees Engler at 50°C

Change the oil after every 1600 hours of operation.

- Keep the chain located on the mixer control well-greased (page 25 pos. 2).
- During assembly of the rotor unit, check that the two seals (page 23 pos. 8) are equidistant from the surfaces of the stator.
If the converter has to be replaced, it is necessary to effectuate the conical seat of the shaft (page 23 pos. 19) complying with the distance indicated with an asterisk in the figure which enables you to check the centering of the seals (page 23 pos. 8).

- If the cam has to be replaced (page 23 pos. 9) or the complete roller holder unit (page 23 pos. 2), it is necessary to check before the machine is started, that there is play and no interference between the roller holder and the cam in the position indicated on page 25 pos. X as this would cause breakage of the pieces.


FF30.6
(3)
(2)
(4)
(1)


(X)
MINIMO 0,17 mm.
MINIMUM
MASSIMO 0,33 mm.
MAXIMUM
45°
FF30 17

⇒ Technical characteristics FRUIT FEEDER FF 10

ROTOR motor	1.84 KW
MIXER motor	0.37 KW
SCREW CONVEYOR motor	0.37 KW
N° 3 FANS	Single phase 0.108 KW each

Magnetothermal setting And Inverter thermostats		V.200 50/60HZ	V.220 50HZ	V.220 60HZ	V.380 50HZ	V.380 60HZ	V.415 50HZ
Rotor motor	A.		9		9		
Rotor inverter	A.		7,6		7,6		
Mixer motor	A.		3		3		
Mixer inverter	A.		2,4		2,4		
Screw conveyor motor	A.		3		3		
Screw conveyor inverter	A.		2,4		2,4		

The adjustments described above are made in the factory.

⇒ Technical characteristics FRUIT FEEDER FF 30

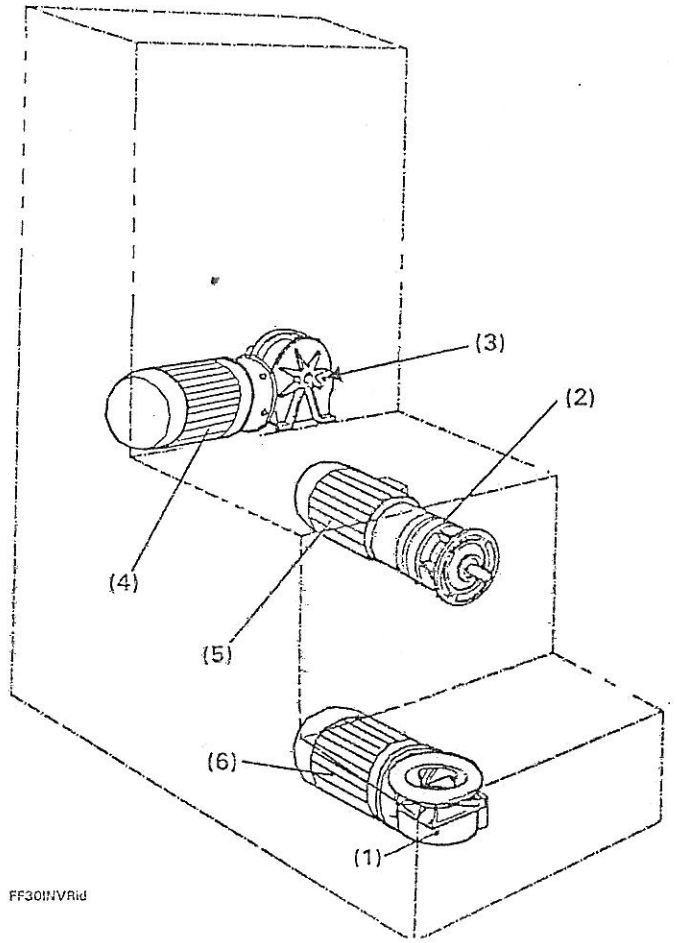
ROTOR motor	1.84 KW
MIXER motor	0.37 KW
SCREW CONVEYOR motor	0.55 KW
N° 3 FANS	Single phase 0.108 KW each

Magnetothermal setting And Inverter thermostats		V.200 50/60HZ	V.220 50HZ	V.220 60HZ	V.380 50HZ	V.380 60HZ	V.415 50HZ
Rotor motor	A.		9		9		
Rotor inverter	A.		7,6		7,6		
Mixer motor	A.		3		3		
Mixer inverter	A.		2,4		2,4		
Screw conveyor motor	A.		7		7		
Screw conveyor inverter	A.		3		3		

The adjustments described above are made in the factory.

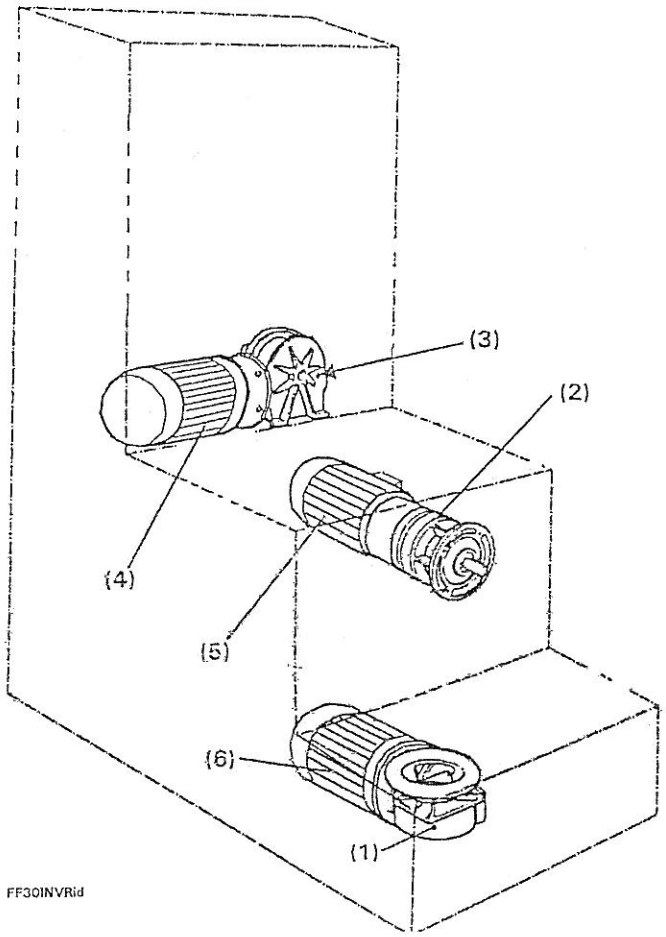
TECHNOGEL spa DECLINES ALL RESPONSIBILITY FOR DAMAGE TO PERSONS DERIVING FROM ANY CHANGE MADE IN THE PREFIXED VALUES OR FROM USE OF FUSES OF INCORRECT SIZE OR WITH CHARACTERISTICS DIFFERING FROM THOSE DESCRIBED.

- Gear reduction unit FF10



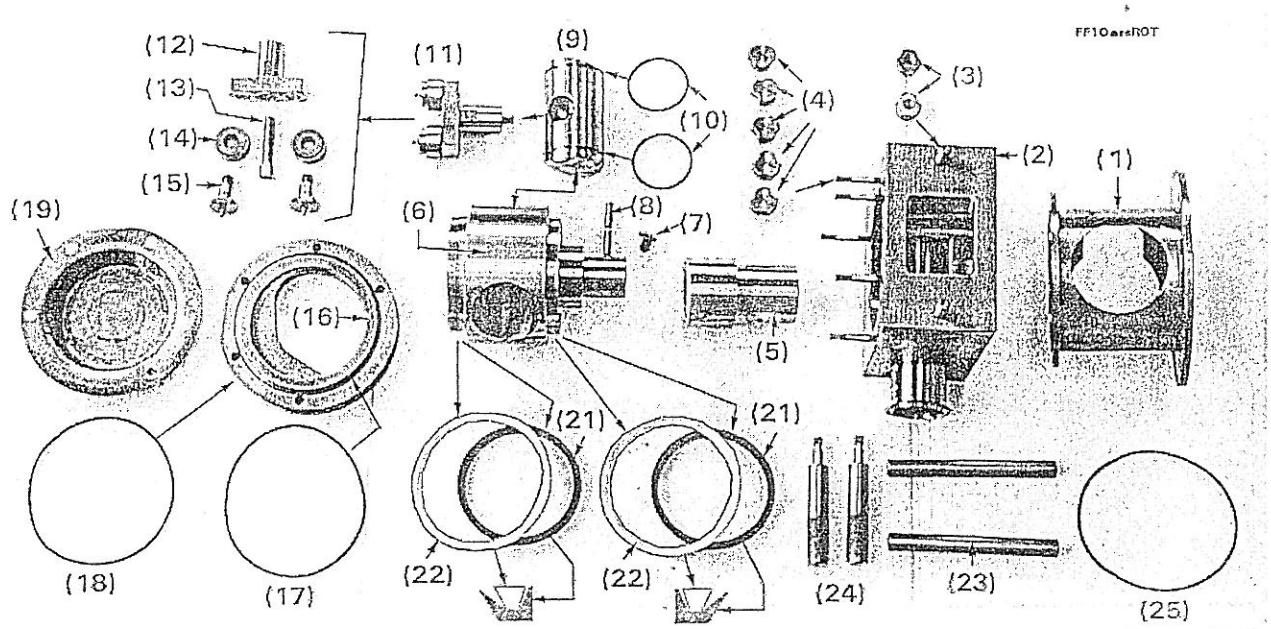
Pos.	Name of component	Code
4	0.5 HP motor B5 1400 rpm 230/400 V 50/ 60Hz	MO-0002
6	0.5 HP motor 1400 rpm 230-400V 50/60Hz	MO-13737.6
3	Screw conveyor worm screw reduction unit RMI 50 – 1/70	RV-14167.6
5	2.5 HP motor 1400 rpm 230/400 v 50/60 HZ	MO-7801.6
1	Mixer worm screw reduction unit RMI 50 – 1/15	RV –14025.6
2	Rotor reduction unit EF 15/2R 1/49	RV-7176.6

⇒Motor reduction unit FF30



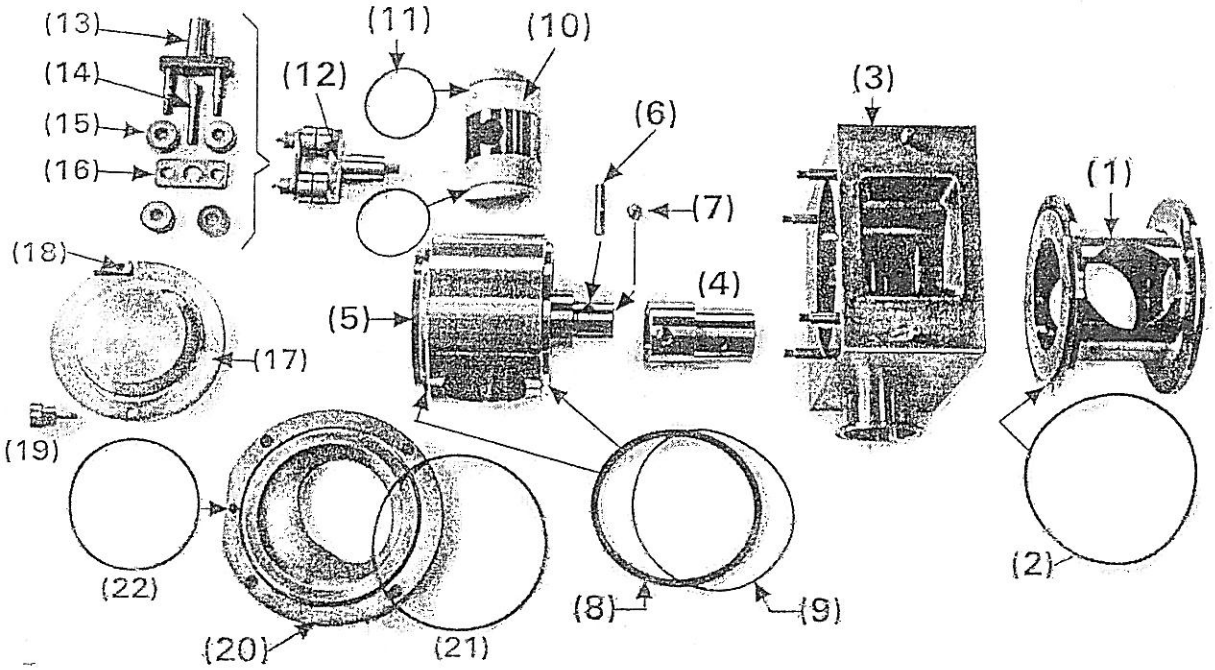
Pos	Name of component	Code
4	0.75 HP motor B5 1400 rpm 230/400 V 50/ 60Hz	MO-0008
6	0.7 HP motor 1400 rpm 230-400V 50/60Hz	MO-14527.6
3	Screw conveyor worm screw reduction unit RMI 70 – 1/70	RV-12965.6
5	2.5 HP motor 1400 rpm 230/400 v 50/60 HZ	MO-7801.6
1	Mixer worm screw reduction unit RMI 50 – 1/15	RV –14025.6
2	Rotor reduction unit EF 15/2R 1/49	RV-7176.6

⇒ Rotor group FF 10



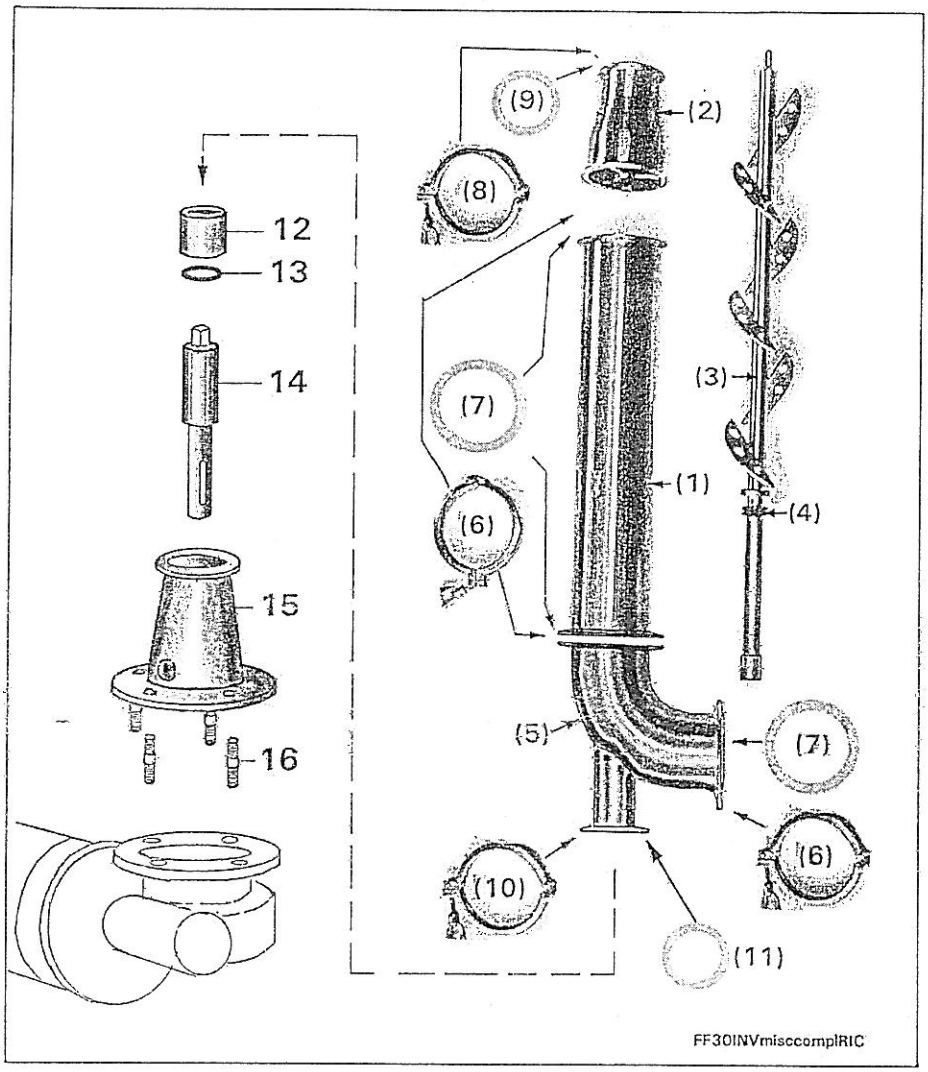
Pos.	Name of component	Code
1	Pump body support	DFA-4598.3/20
2	Pump body	DFA-4566.3/10
3	Hopper blocking handwheel	DFA-4546.0
4	Cam cover blocking handwheel	DFA-4548.0
5	Rotor entrainment hub	DFA-4918.2/10
6	Rotor	DFA-4555.3/01
7	Safety plug lock presser	DFA-4745.6
8	Brass safety plug	DFA-4572.0/20
9	Rotor piston	DFA-4571.0
10	O-ring for piston	DF-0080
11	Complete piston entrainer	DFA-4827.0
12	Piston entrainer TDFA4827.0	DFA-4724.0
13	Piston entrainer locking screw	DFA-4808.0
14	Complete roller ⇒ casing bearing (n°1) ⇒ side support (n°2) ⇒ external roller (n°1) ⇒ internal roller (n°1)	DFA-4808.4/10 CS-12164.6 DFA-4671.0 DFA-4669.0 DFA-4670.0
15	Roller lock greaser screw	DFA-4826.0
16	Cam	DFA-4813.0/01
17	Cam O-ring	DFA-0025
18	Cam cover O-ring	DFA-0025
19	Cam cover	DFA-2464.0/20
21	Rubber V seal for rotor	GU-6075.6
22	Teflon seal support	DFA-6679.0
23	Rod guide for dismantling rotor	DFA-3988.0/10
24	Knobs for dismantling rotor	DFA-3442.0
25	O-ring for pump body support	DFA-0025

⇒Rotor group FF 30



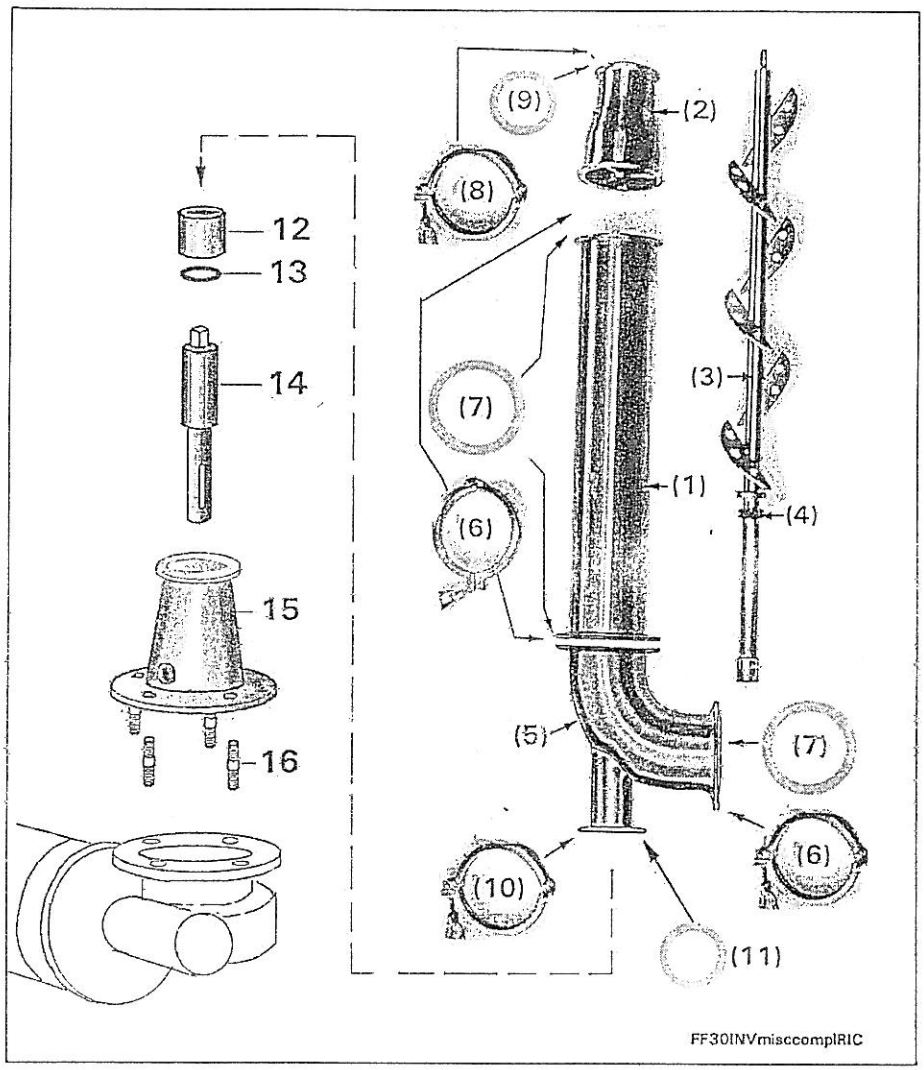
Pos.	Name of component	Code
1	Pump body support	DFA-7032.3/20
2	Support O-ring	DFA-0415
3	Pump body with stud bolts	DFA-4824.3/20
4	Rotor entrainment hub	DFA-4825.2/20
5	Rotor	DFA-4727.4/01
6	Brass safety plug	DFA-4744.0
7	Safety plug lock presser	DFA-4745.6
8	Rubber V seal for rotor	DFA-0024
9	O-ring for rotor (to mount with V seal)	DFA-00088
10	Rotor piston	DF-4723.2/10
11	O-ring for piston	DFA-0279
12	Complete piston entrainer	DFA-4721.4/10
13	Piston entrainer	DFA-4721.2/10
14	Piston entrainment lock screw	DFA-4724.0
15	Complete roller ⇒ casing bearing (n°1) ⇒ side support (n°2) ⇒ external roller (n°1) ⇒ internal roller (n°1)	DFA-4808.4/10 CS-12164.6 DFA-4671.0 DFA-4669.0 DFA-4670.0
16	Roller lock plate	DFA-4722.0
17	Cam cover	DFA-4915.3/02
18	Cover hinge	DFA-4809.2
19	Cover lock handwheel	
20	Cam	DFA-4732.0/01
21	Cam O-ring	DFA-0026
22	Cam/cover O-ring	DFA-0415

⇒ Mixer unit FF 10 INV



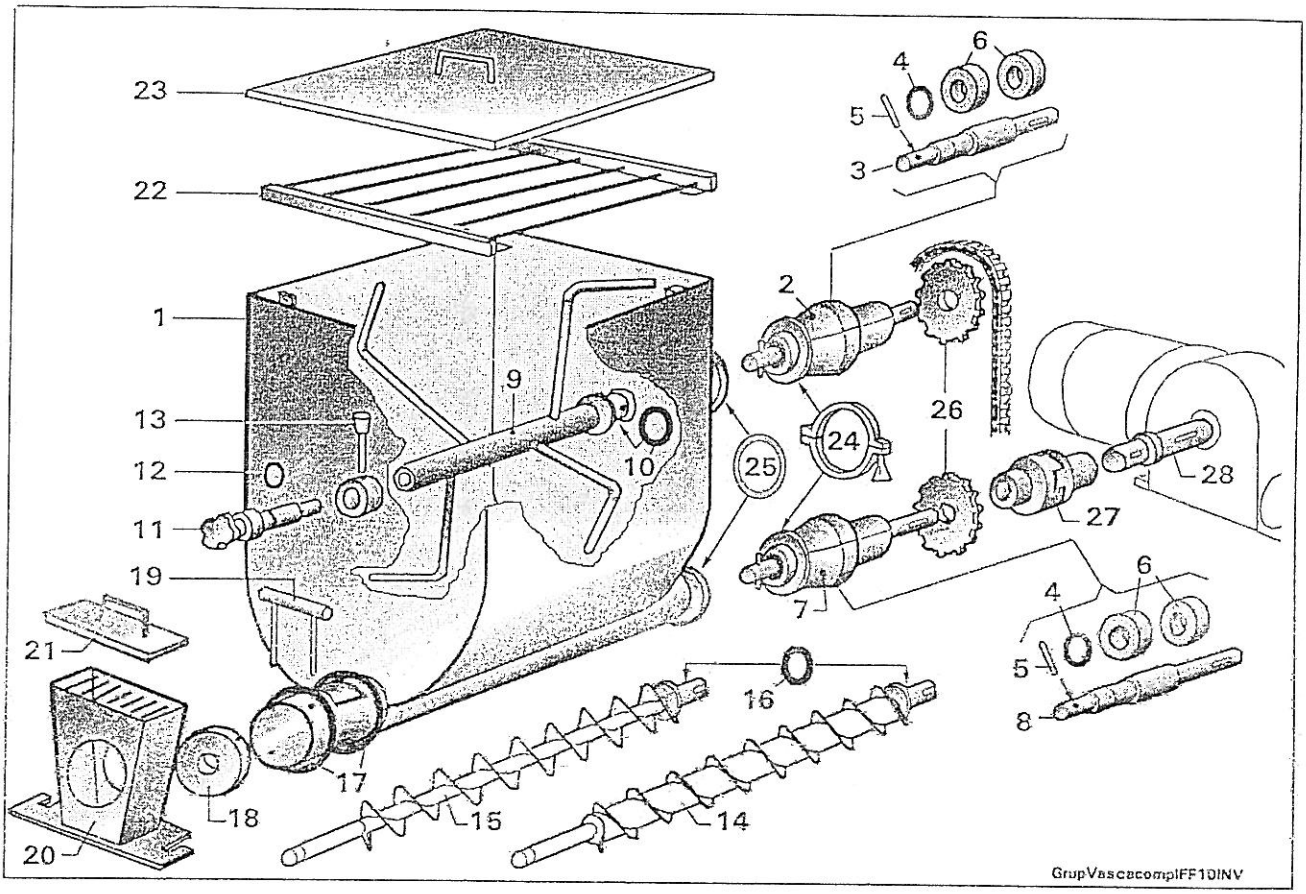
Pos.	Name of component	Code
1	3" mixing pipe	DFA-14194.2
2	Adapter with guide	DFA-4505.3
3	Mixer with perforated flaps	DFA-14204.3
4	V-shaped seal for mixer	GU-4280.0/10
5	Mixer pipe connecting bend	DFA-14198.3
6	3" Triclamp closing clamp	DFA-0156
7	3" Triclamp O-ring	DFA-0157
8	2" Triclamp closing clamp	DFA-0152
9	2" Triclamp O-ring	DFA-0153
10	2" Triclamp closing clamp	DFA-0152
11	2" Triclamp O-ring	DFA-0153
12	Paraspruzzi	DFA-4512.0/11
13	Guarnizione "OR" paraspruzzi	VR-018
14	Albero miscelatore	DFA-7272.0/10
15	Supporto miscelatore	DFA-14020.2
16	Prigioniero supporto	DFA-14580.0

⇒ Mixer unit FF 30 INV



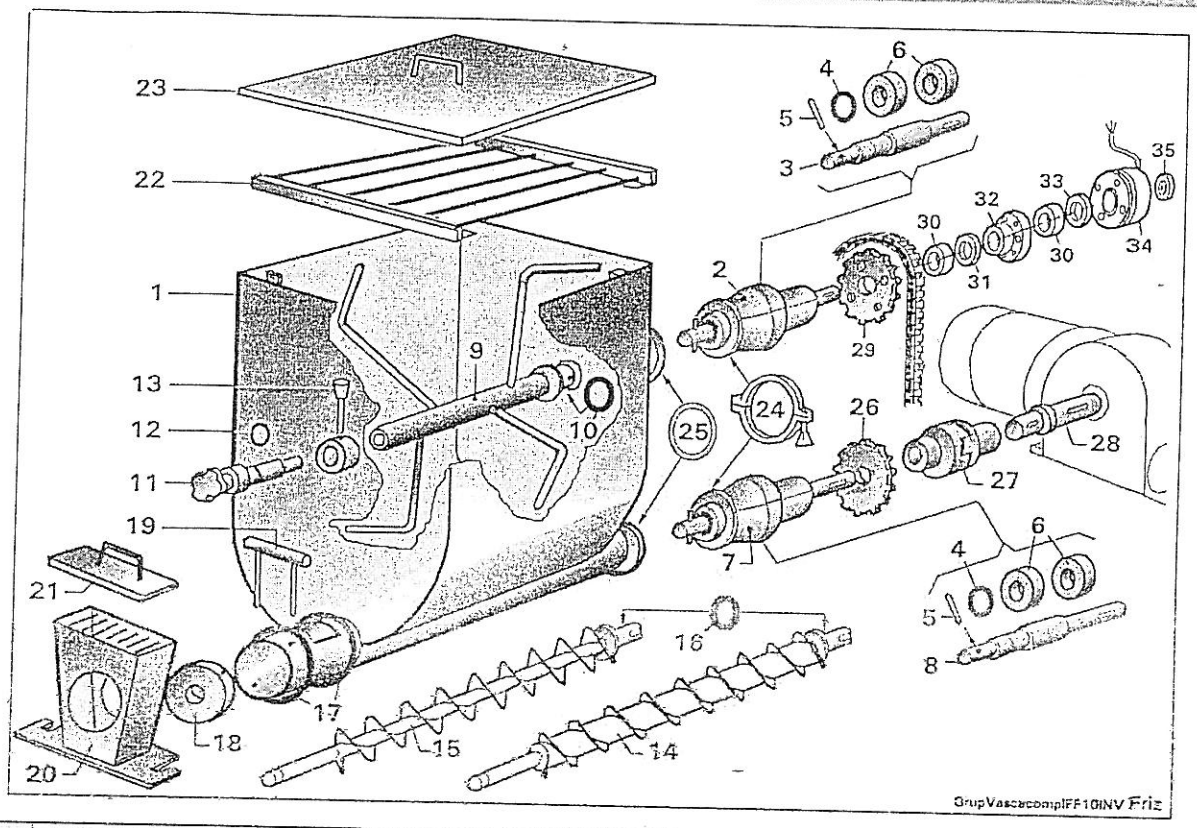
Pos.	Name of component	Code
1	4" mixing pipe	DFA-14022.2
2	Adapter with guide	DFA-7273.4
3	Mixer with perforated flaps	DFA-7268.3/10
4	V-shaped seal for mixer	GU-4280.0/10
5	Mixer pipe connecting bend	DFA-14028.3
6	4" Triclamp closing clamp	DFA-0160
7	4" Triclamp O-ring	DFA-0161
8	3" Triclamp closing clamp	DFA-0156
9	3" Triclamp O-ring	DFA-0157
10	2" Triclamp closing clamp	DFA-0152
11	2" Triclamp O-ring	DFA-0153
12	Paraspruzzi	DFA-4512.0/11
13	Guarnizione "OR" paraspruzzi	VR-018
14	Albero miscelatore	DFA-7272.0/10
15	Supporto miscelatore	DFA-14020.2
16	Prigionieri supporto	DFA-14580.0

⇒Ingredient tank FF 10S and FF10INV without clutch



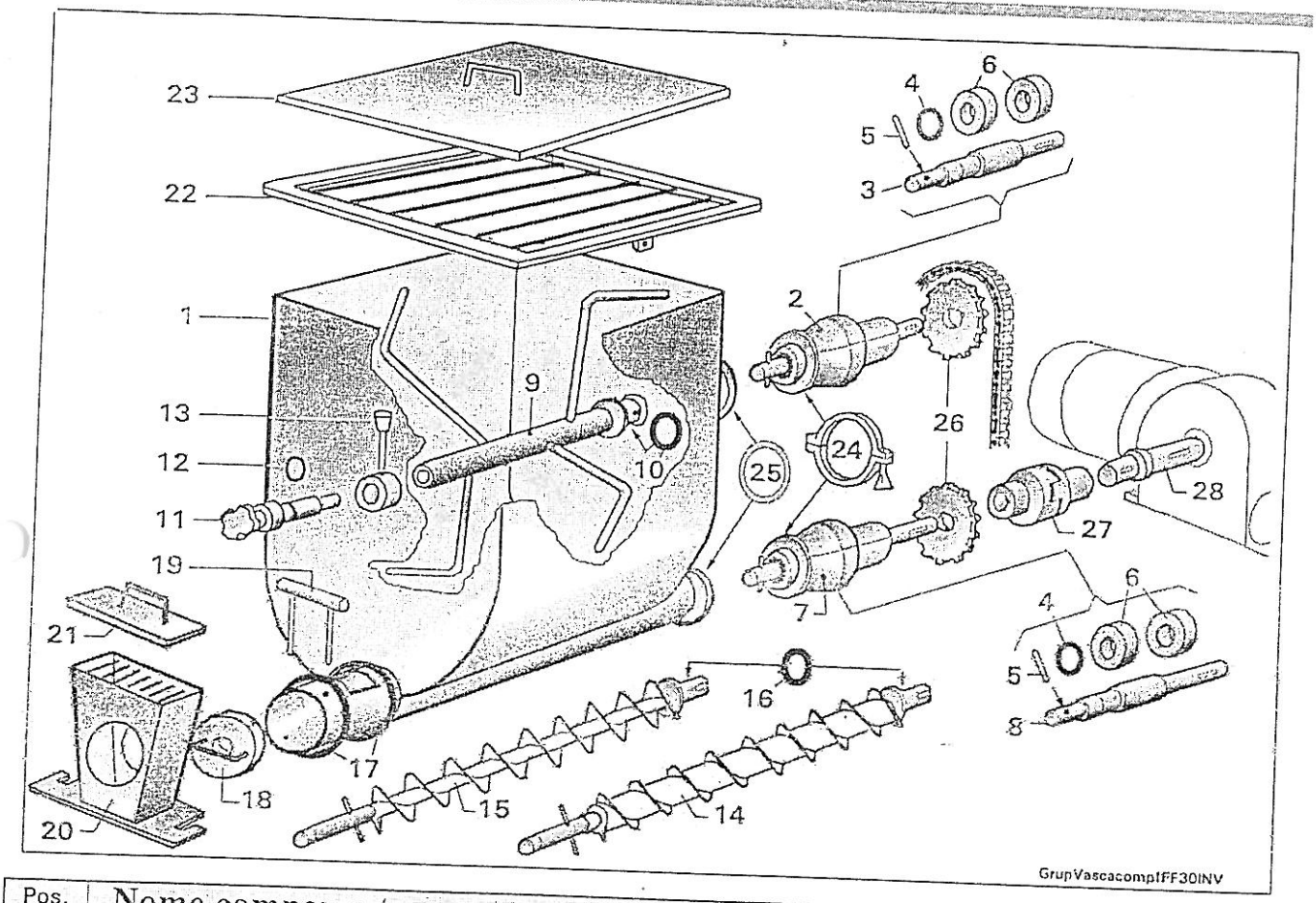
Pos.	Nome componente	Codice
1	Vasca ingredienti	DFA-11710.3
2	Corpo supporto superiore	DFA-4502.0
3	Albero supporto superiore	DFA-4497.0
4	Guarnizione supporto	DFA-0399
5	Spina per albero	SPCI-8X35
6	Cuscinetto per supporto	CS-5635.6
7	Corpo supporto inferiore	DFA-4502.0
8	Albero per supporto inferiore	DFA-4503.0
9	Agitatore interno vasca	DFA-4482.2/10
10	Guarnizione a V per agitatore	GU-3903.0
11	Manicotto guida agitatore	DFA-4485.3
12	Guarnizione "OR" per manicotto	DFA-0229
13	Spinotto ferma manicotto	DFA-3885.3
14	Coclea a "bassa capacità"	DFA-6077.3
15	Coclea a "alta capacità"	DFA-6076.3
16	Guarnizione a V per coclea	GU-3903.0
17	Guarnizione a labbro per vasca	GU-3881.0
18	Supporto guida coclea	DFA-4495.2
19	Forca blocca supporto	DFA-3884.2
20	Tramoggia	DFA-4543.3/20
21	Coperchio tramoggia	DFA-4544.2
22	Griglia protezione vasca	DFA-11714.2
23	Coperchio griglia	DFA-4545.0
24	Morsetto Tri-clamp	DFA-0156
25	Guarnizione Tri-clamp	DFA-0157
26	Corona dentata	IG-3622.0/10
27	Giunto completo	DFA-3890.4
28	Albero riduttore	DFA-3974.0/10

- Ingredient tank FF 10S and FF10INV *with clutch*



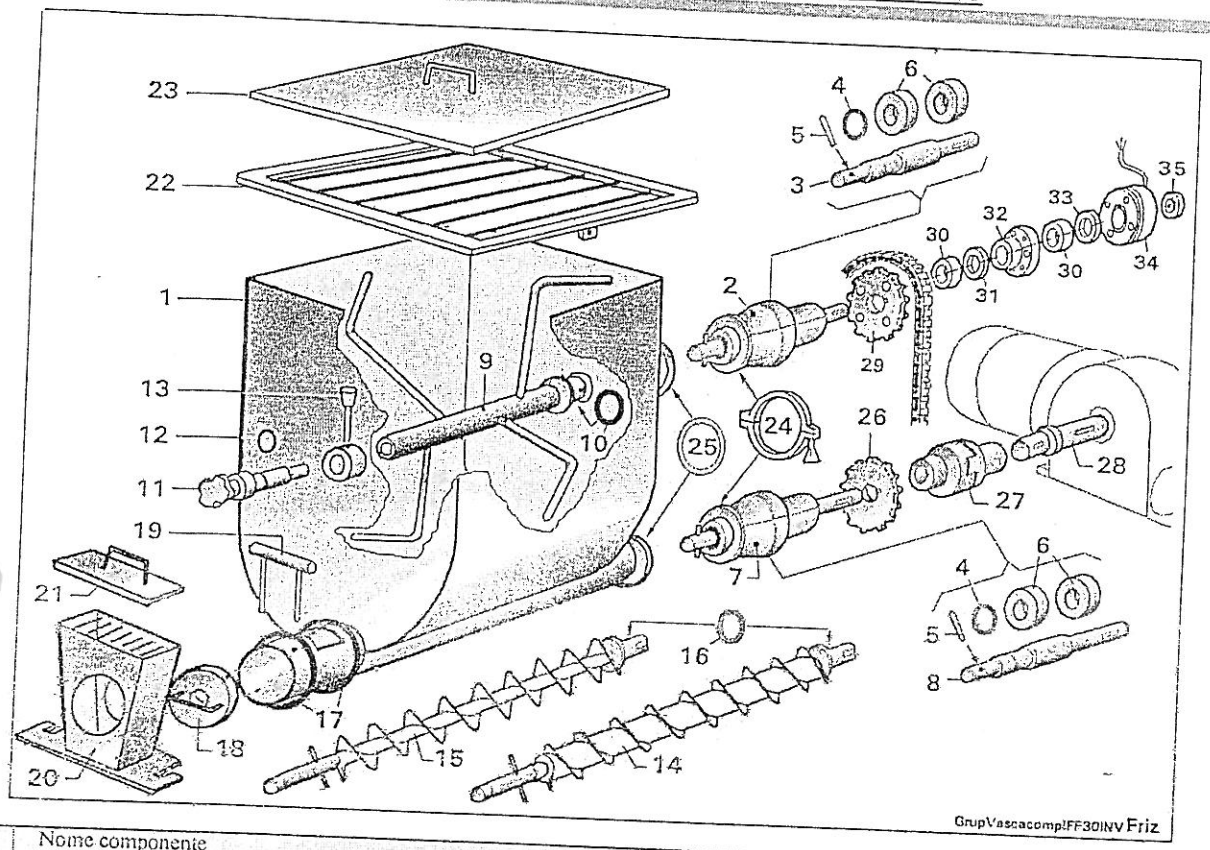
Pos.	Nome componente	Codice		
1	Vasca ingredienti	DFA-11710.3		
2	Corpo supporto superiore	DFA-4502.0		
3	Albero supporto superiore	DFA-4880.0		
4	Guarnizione supporto	DFA-0399		
5	Spina per albero	SPCI-8X35		
6	Cuscinetto per supporto	CS-5635.6		
7	Corpo supporto inferiore	DFA-4502.0		
8	Albero per supporto inferiore	DFA-4503.0		
9	Agitatore interno vasca	DFA-4482.2/10		
10	Guarnizione a V per agitatore	GU-3903.0		
11	Manicotto guida agitatore	DFA-4485.3		
12	Guarnizione "OR" per manicotto	DFA-0229		
13	Spinotto ferma manicotto	DFA-3885.3		
14	Coclea a "bassa capacità"	DFA-6077.3		
15	Coclea a "alta capacità"	DFA-6076.3		
16	Guarnizione a V per coclea	GU-3903.0		
17	Guarnizione a labbro per vasca	GU-3881.0		
18	Supporto guida coclea	DFA-4495.2		
19	Forca blocca supporto	DFA-3884.2		
20	Tramoggia	DFA-4543.3/20		
21	Coperchio tramoggia	DFA-4544.2		
22	Griglia protezione vasca	DFA-11714.2		
23	Coperchio griglia	DFA-4545.0		
24	Morsetto Tri-clamp da 3"	DFA-0156		
25	Guarnizione Tri-clamp da 3"	DFA-0157		
26	Corona dentata	IG-3622.0/10		
27	Giunto completo	DFA-3890.4		
28	Albero riduttore	DFA-3974.0/10		
29	Corona per frizione	IG-4882.0		
30	Cuscinetto	DFA-0176		
31	Distanziale per cuscinetto	DFA-3937.0		
32	Flangia porta ingranaggio	DFA-3936.0		
33	Distanziale per frizione	DFA-4883.0		
34	Frizione elettromagnetica ESB 114/S	DFA-0167		
35	Rondella	DFA-3620.0		

⇒ Ingredient tank FF 30S and FF30inv without clutch



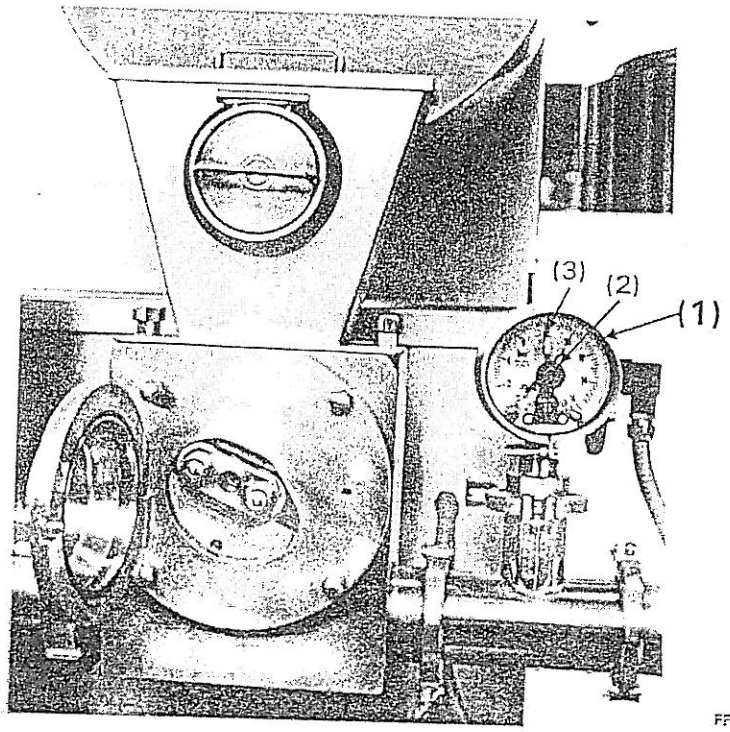
Pos.	Nome componente	Codice
1	Vasca contieni prodotto	
2	Supporto superiore completo	DFA-8064.3
3	Albero supporto superiore	DFA-4496.4
4	Guarnizione supporto	DFA-4497.0
5	Spina per albero	DFA-0399
6	Cuscinetto per supporto	SPCI-8X35
7	Supporto inferiore completo	CS-5635.6
8	Albero supporto inferiore	DFA-4504.4
9	Agitatore interno vasca	DFA-4503.0
10	Guarnizione a V per agitatore interno	DFA-8060.2
11	Manicotto guida agitatore	GU-3903.0
12	Guarnizione "OR" per manicotto	DFA-4485.3
13	Spinotto ferma manicotto	DFA-0229
14	Coclea a "bassa capacità"	DFA-3885.3
15	Coclea a "alta capacità"	DFA-7963.3
16	Guarnizione a V per coclea	DFA-7962.3
17	Guarnizione a labbro per vasca	GU-3907.0
18	Supporto guida coclea	GU-3880.0
19	Forca blocca supporto	DFA-7100.3
20	Tramoggia	DFA-3889.2
21	Coperchio tramoggia	DFA-7208.3/20
22	Griglia protezione vasca	
23	Coperchio griglia	
24	Morsetto Tri-clamp	
25	Guarnizione Tri-clamp	DFA-0156
26	Corona dentata	DFA-0157
27	Giunto completo	IG-3622.0/10
28	Albero riduttore	DFA-3890.4
		DFA-3974.0/10

⇒Ingredient tank FF 30S and FF30inv *with clutch*



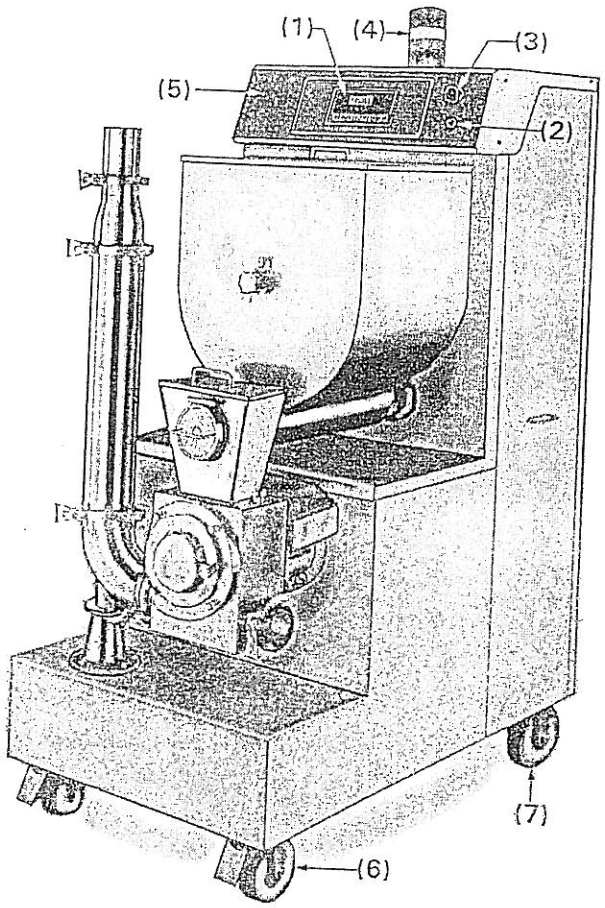
Pos.	Nome componente	Codice
1	Vasca contieni prodotto	
2	Corpo supporto superiore	DFA-4502.0
3	Albero supporto superiore	DFA-4880.0
4	Guarnizione supporto	DFA-0399
5	Spina per albero	SPCI-8X35
6	Cuscinetto per supporto	CS-5635.6
7	Corpo supporto inferiore	DFA-4502.0
8	Albero supporto inferiore	DFA-4503.0
9	Agitatore interno vasca	DFA-8060.2
10	Guarnizione a V per agitatore interno	GU-3903.0
11	Manicotto guida agitatore	DFA-4485.3
12	Guarnizione "OR" per manicotto	DFA-0229
13	Spinotto ferma manicotto	DFA-3885.3
14	Coclea a "bassa capacità"	DFA-7963.3
15	Coclea a "alta capacità"	DFA-7962.3
16	Guarnizione a V per coclea	GU-3907.0
17	Guarnizione a labbro per vasca	GU-3880.0
18	Supporto guida coclea	DFA-7100.3
19	Forca blocca supporto	DFA-3889.2
20	Tramoggia	DFA-7208.3/20
21	Coperchio tramoggia	
22	Griglia protezione vasca	
23	Coperchio griglia	
24	Morsetto Tri-clamp da 3"	DFA-0156
25	Guarnizione Tri-clamp da 3"	DFA-0157
26	Corona dentata	IG-3622.0/10
27	Giunto completo	DFA-3890.4
28	Albero riduttore	DFA-3970.0
29	Corona per frizione	IG-4882.0
30	Cuscinetto	DFA-0176
31	Distanziale per cuscinetto	DFA-3937.0
32	Flangia porta ingranaggio	DFA-3936.0
33	Distanziale per frizione	DFA-4883.0
34	Frizione elettromagnetica ESB 114/S	DFA-0167
35	Rondella	DFA-3620.0

⇒Safety pressure gauge unit



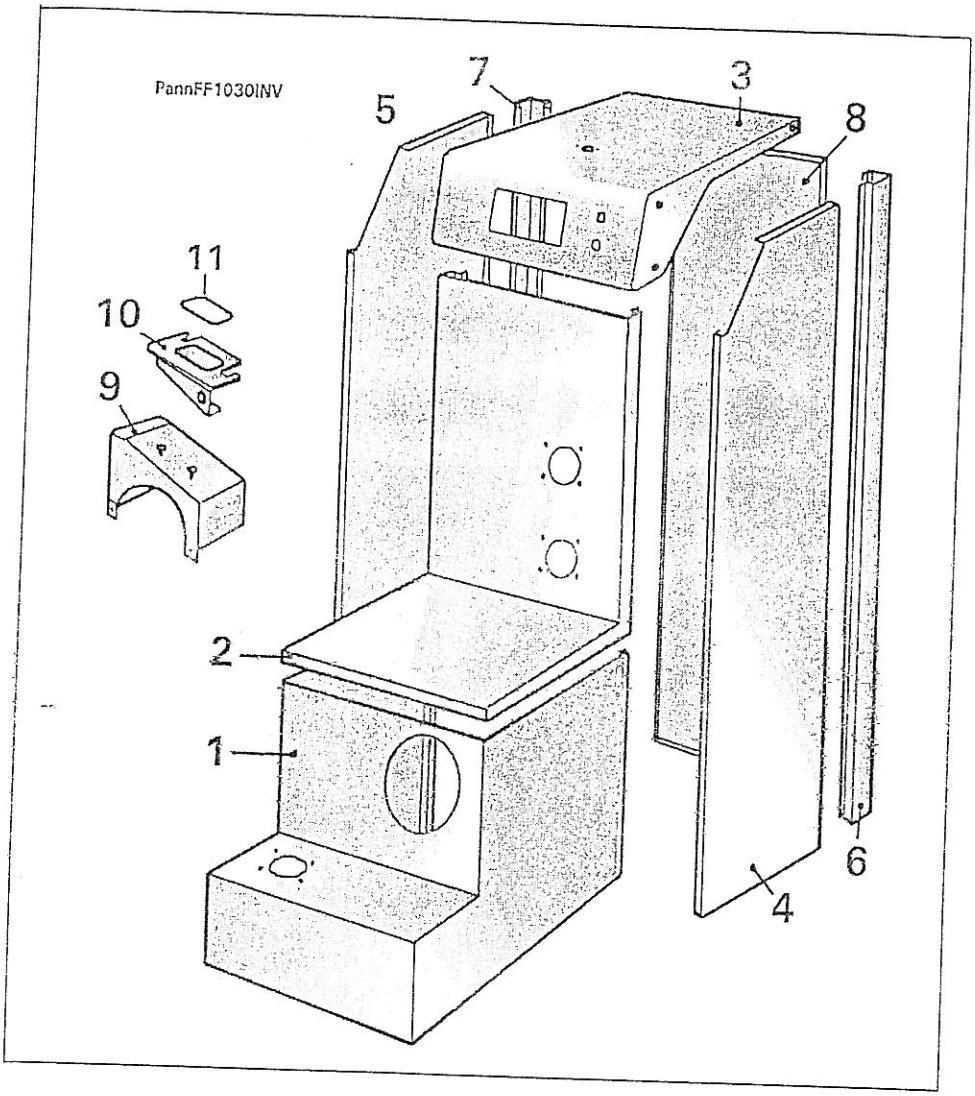
Pos.	Name of component	Code
1	0/15 Bar Safety pressure gauge	DFA-0413

⇒ Control panel unit and wheels



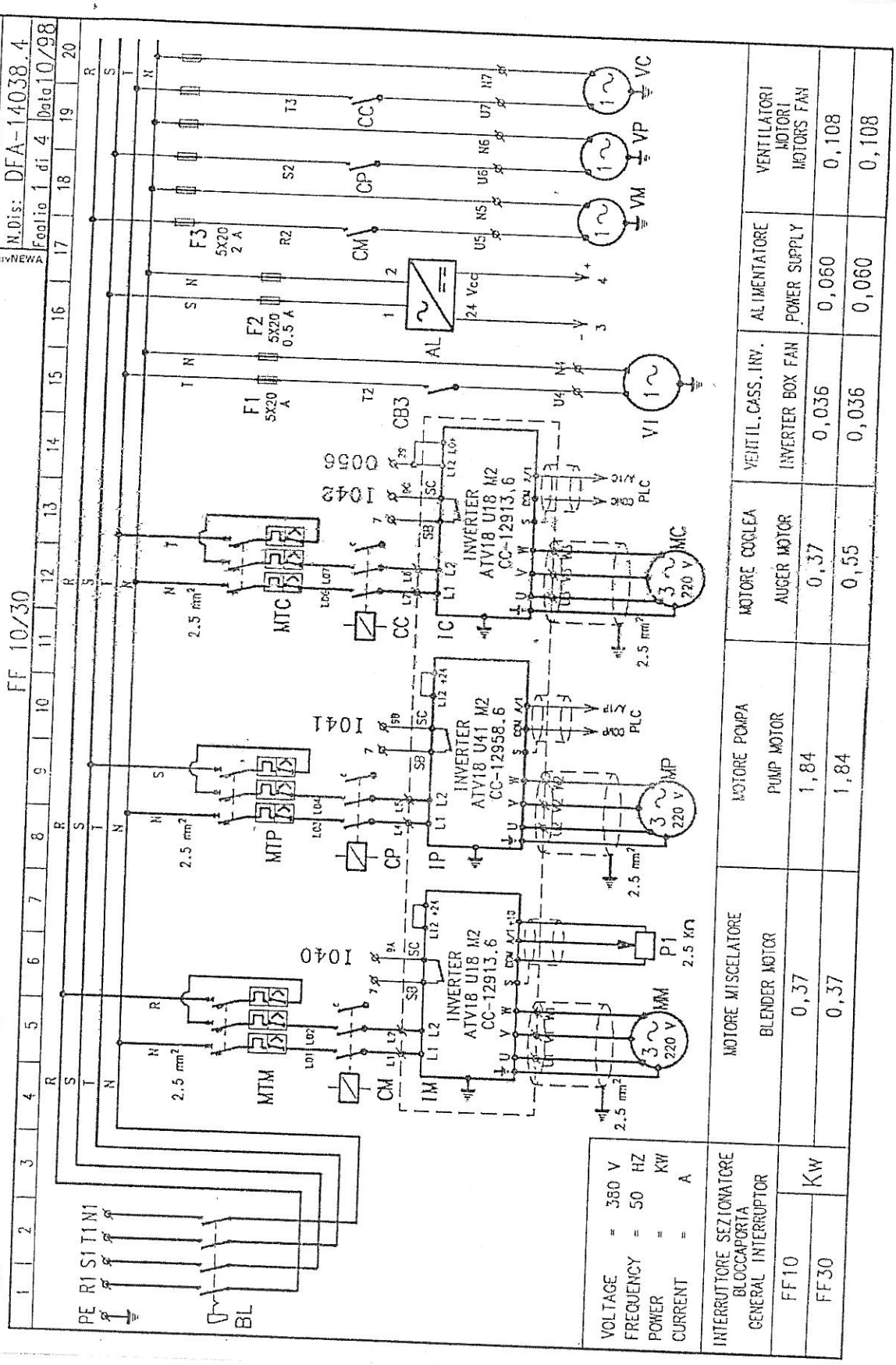
Pos.	Name of component	Code
1	Machine control PLC	CC-13002.6
2	Machine ON-OFF button	CC-4519.6
3	Emergency pushbutton	DFA-0092
4	Red/green emergency light	
5	Self-adhesive label	DFA-14161.0
6	Castor with brake	DFA-0020
7	Fixed wheel	DFA-0021

⇒ Gruppo pannellatura FF10INV e FF30INV

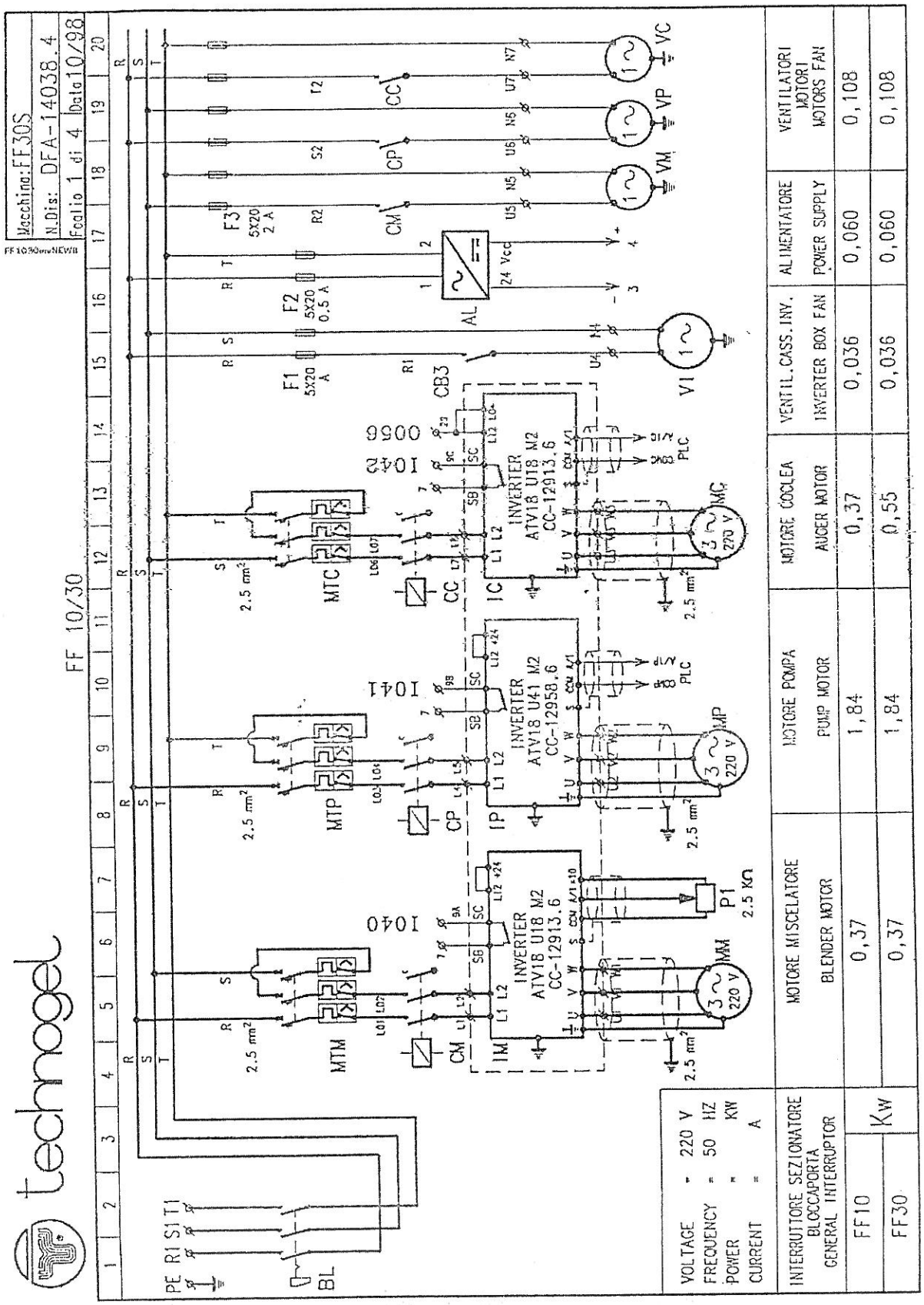


Pos.	Nome componente	FF10 INV Codice	FF30 INV Codice
1	Anteriore inferiore	DFA-14152.2	DFA-14061.2
2	Anteriore superiore	DFA-14151.2	DFA-14062.2
3	Copertura superiore	DFA-14146.0	DFA-14081.0
4	Pannello laterale destro	DFA-14154.2	DFA-14078.2
5	Pannello laterale sinistro	DFA-14153.2	DFA-14079.2
6	Angolare posteriore destro	DFA-14156.0	DFA-14034.0
7	Angolare posteriore sinistro	DFA-14156.0	DFA-14034.0
8	Pannello posteriore	DFA-14155.2	DFA-14037.2
9	Scatola protezione con sicurezza	DFA-14214.3	DFA-14302.3
10	Flangia per lavaggio C.I.P.	DFA-14223.3	DFA-14308.3
11	Guarnizione flangia		

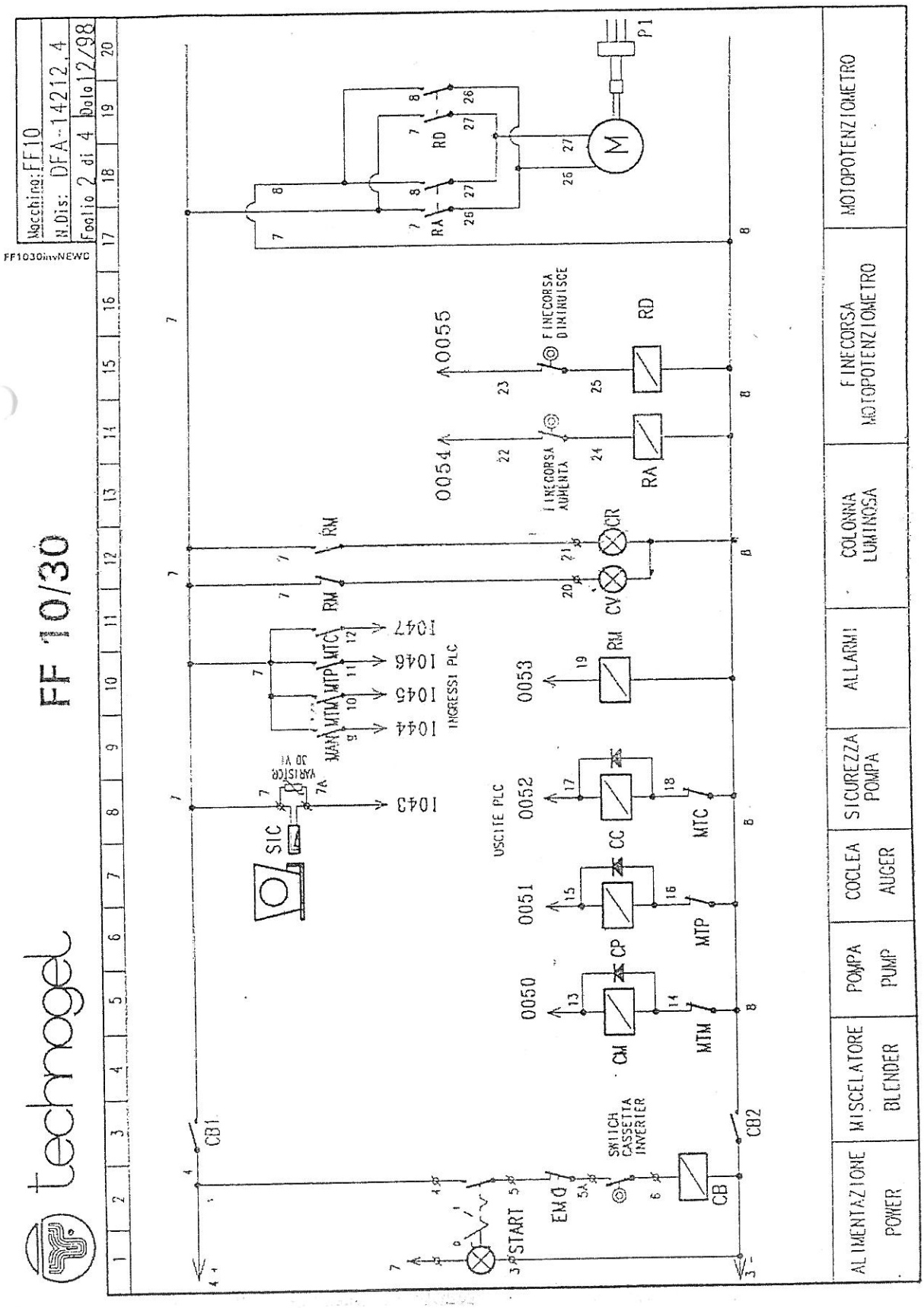
⇓ Electric system: 380/415V FF10 – FF30



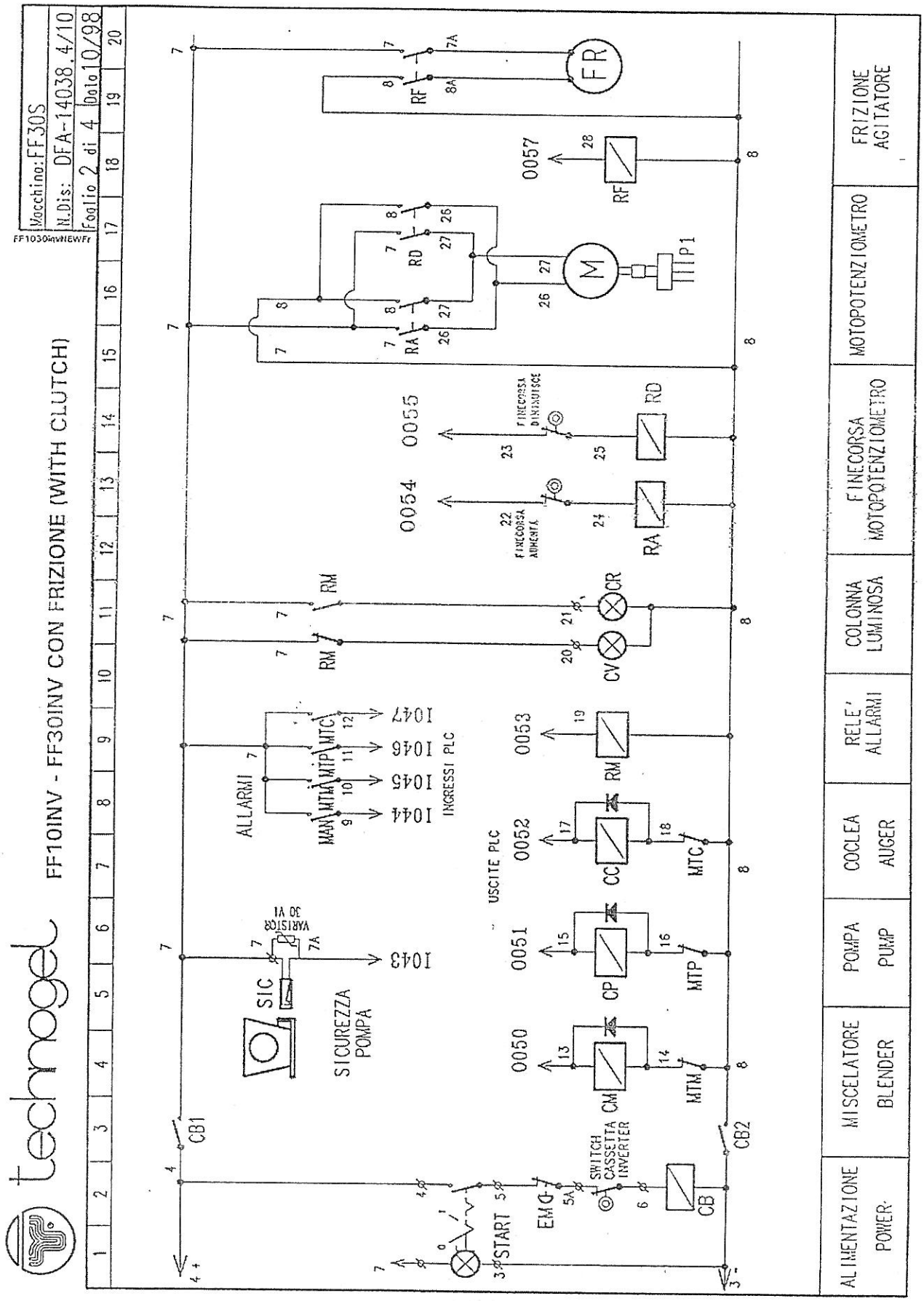
⇒ Electric system: 220V. FF10 - FF30



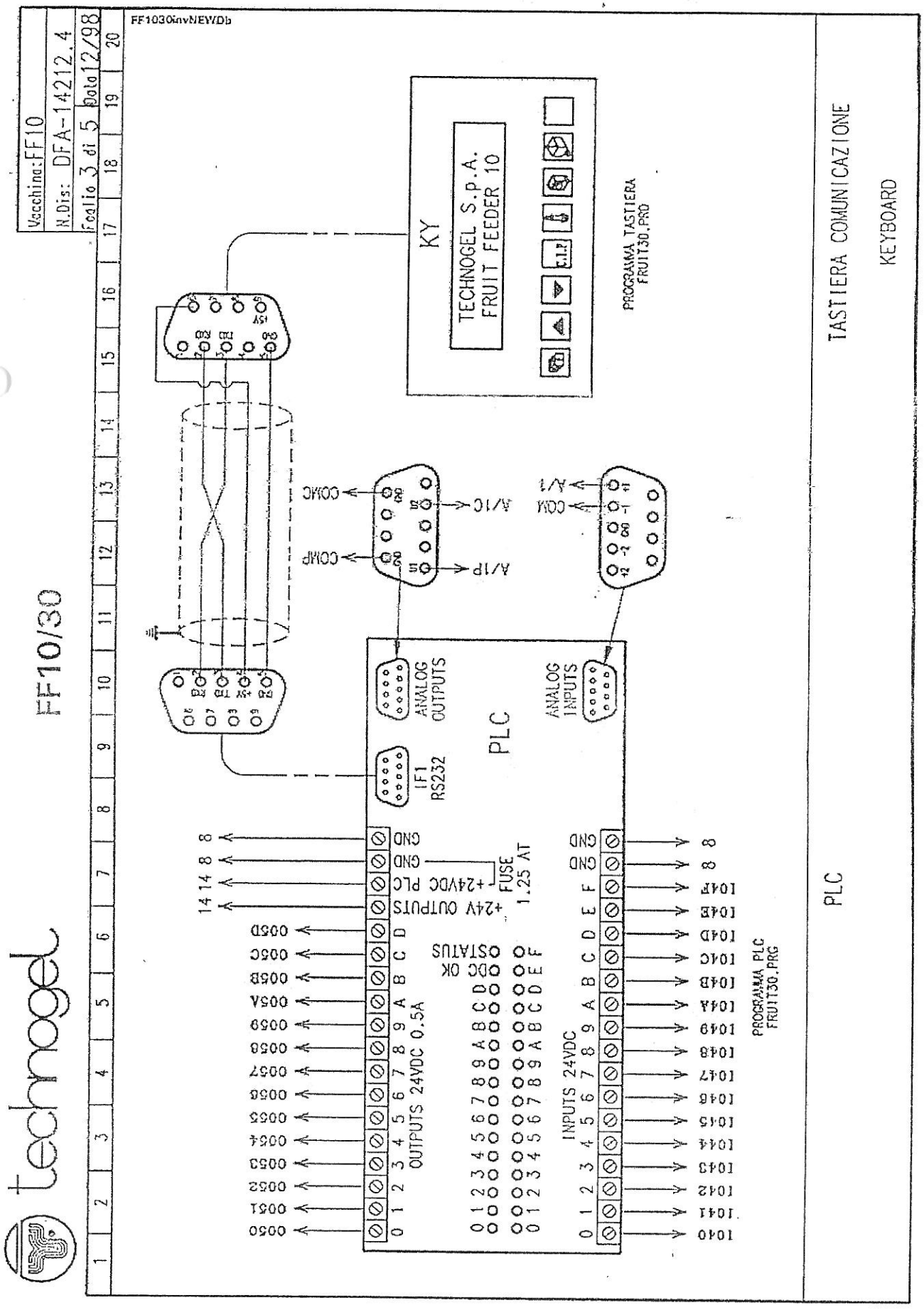
⇒ Electric system: FF10 – FF30 without clutch



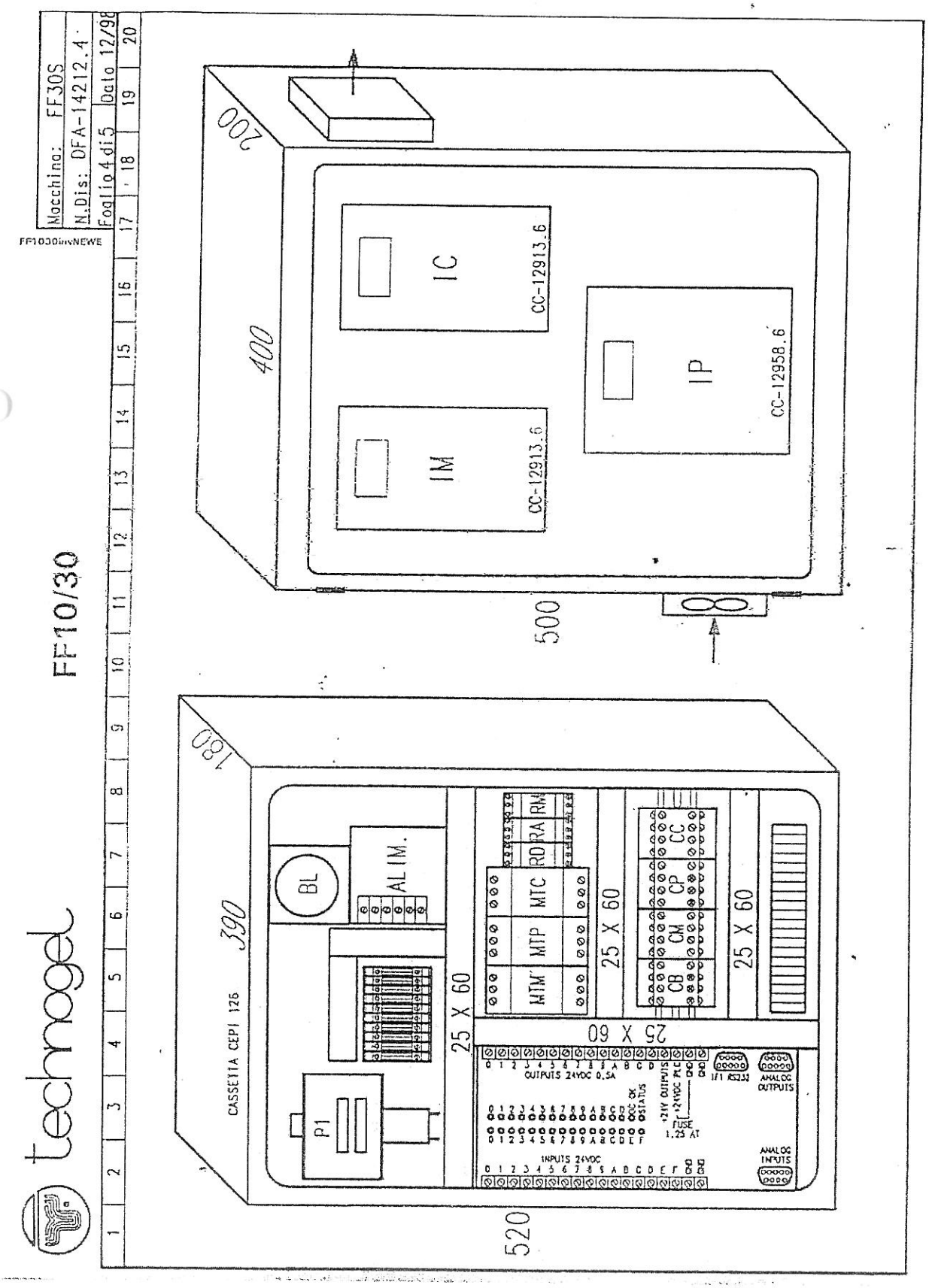
⇒Electric system: FF10 – FF30 with clutch



- Electric system: FF10 - FF30



⇒ Electric system: FF10 - FF30



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FF 10 - FF 30

FF1030inNEW.jf

Macchina:	FF10	
N.Dis:	DFA-14212.4	
Foglio 5 di 5	Data 12/98	

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

COMPONENTI PANNELLO QUADRO COMANDO - ELECTRICAL CABINET PANEL ITEM

POS	NAME	DESCRIPTION	CODE	ITEM
1	BL	INT. GENERALE	CC-10603.6	MECT BREMAS 25A X 3
2	MTM	MAGNETOTER.MISC.	MXT-0032 + T1-0484	GV2M08 + GV2AE11
3	MTP	MAGNETOTER.POMPA	FR3-0243 + T1-0484	GV2M16 + GV2AE11
4	MTC	MAGNETOTER.COCL.	FF10: MXT-0032 + T1-0484 FF30: FR1-085 + T1-0484	GV2M08 + GV2AE11 GV2M14 + GV2AE11
5	CM	TELERUTTORE MISC.	CC-13000.6	LP1 D181000 .
6	CP	TELERUTTORE POMPA	CC-13000.6	LP1-D181000
7	CC	TELERUTTORE COCL.	CC-13000.6	LP1-D181000
8	IM	INVERTER MISC.	CC-12913.6	ATV18 U18 M2
9	IP	INVERTER POMPA	CC-12958.6	ATV18 U41 M2
10	IC	INVERTER COCL.	CC-12913.6	ATV18 U18 M2
11	P1	MOTOPOTENZIOMET.	CC-12967.6 + CC-8586.6	P25C2V2A8AD + 2,5 KOHM
12	F1	2 FUSIBILI	E-00099 + ME-0053	PORTAFUSIBILE + 2A FUSE
13	V1	VENTIL. INVERTER	CC-12195.6 CC-12197.6 CC-12196.6	230V FAN FILTER =2 PROTECTION
14	F2	2 FUSIBILI	E-00099 + ME-0053/0	PORTAFUSIBILE + 0.5A FUSE
15	AL	ALIMENTATORE	CC-14171.6	ABL-6RF2402
16	F3	6 FUSIBILI	E-00099 + ME-0053/2	PORTAFUSIBILE + 2A FUSE
17	START	INTER. START	CC-5719.6	
18	EM	EMERGENCY	DFA-0092	XB2-BS542
19	CB	TELERUTTORE AUS.	T1-0482	CA3 DN4080

POS	NAME	DESCRIPTION	CODE	ITEM
20	SIC	SECURITY INT.	CC-12470.6	STEM D12 10
21	RM	RELE ALLARMI	DFA-0429 + LN-0081	5531.9 RELE + OMRON
22	RA	RELE AUMENTA	DFA-0429 + LN-0081	5531.9 RELE + OMRON
23	RD	RELE DIMINUISCE	DFA-0429 + LN-0081	5531.9 RELE + OMRON
24	PLC	PLC CONTROLLER	CC-12156.6	COMPACT
25	KY	TASTIERA	CC-13002.6	P 120
26	CL	COLONNA LUMINOSA	CC-12151.6 CC-12152.6 CC-12154.6 CC-14018.6	XVA-C21 XVA-C05 XVA-C33 XVA-C34
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technogel macchine e impianti per gelato

SPA / Cap. Soc. L. 600.000.000 int. versato / Via Boschetti 51, Grassobbio (BG) - Italia
P.O. Box 182 - 24100 Bergamo / Telefono 035-4522062 / Telefax 035-4522682

Vostro rif.

Nostro rif.

Data

CE Declaration of conformity

COMPANY: TECHNOGEL S.P.A.

ADDRESS: Via Boschetti 51 - 24050 Grassobbio (BG) ITALY

We, subscriber of the present, declare, under our own responsibility that the machine:

Model: FF10/E – FRUIT FEEDER
Serial n.: 383 G
Built in: 2000-

is in accordance with what established in the "Equipment Directive" n. 392//89/EEC as well as modified from the Board directives 91/368/EEC, 93/68/EEC, and as per directions EN 291/2, EN 292/2, EN 60204-1, rule n. 791/1977, rule "Low Tension" n. 23/73/EEC and as per Legislative Decree n. 476/92, directives "EMC" Electromagnetic Compatibility n. 336/89/EEC

Grassobbio, 30.05.00

TECHNOGEL S.p.A.
Roberto Rossi
Managing Director