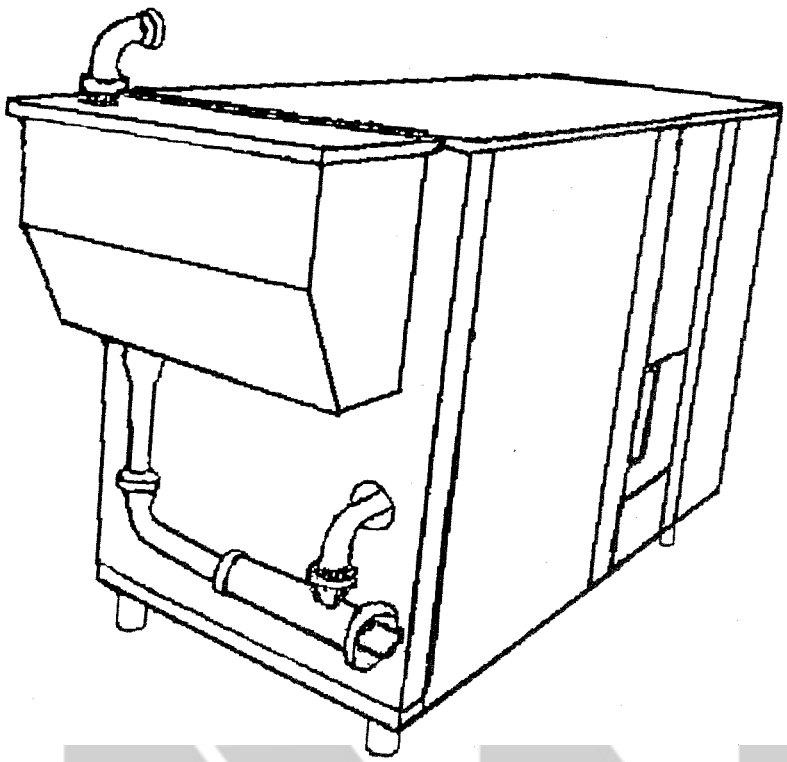
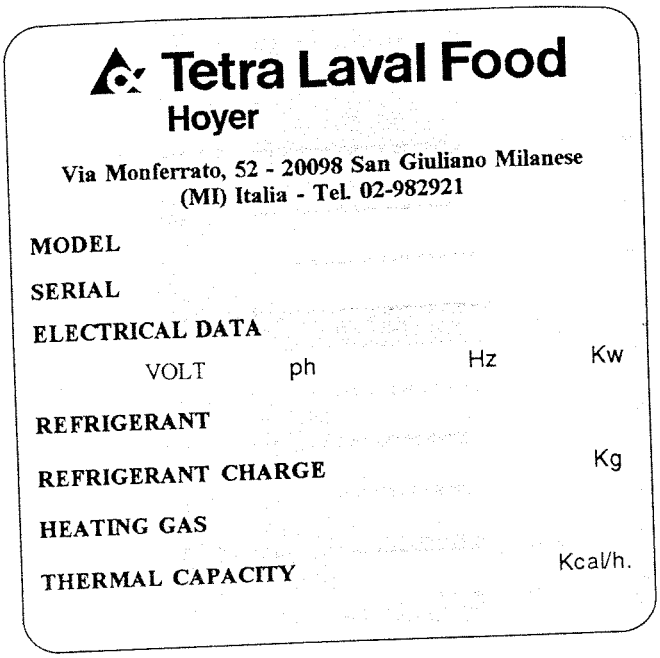
CIP WASHING UNIT

USER'S MANUAL AND SPARE PARTS CATALOGUE



INDEX

CHAPTER.1 - IDENTIFICATION DATA



Note: When calling our Service Department, please supply the data above.

CHAPTER.2 - INTRODUCTION

2.1 Preliminary Observations

- The illustrations and drawings showing the machine are intended for general reference only and are not necessarily accurate in every particular;
- the dimensions and characteristics of the machine, given in this Manual, are not to be considered binding and may be changed without prior notice;
- the drawings and all the other documents supplied as part of this machine are property of Tetra Laval Food Hoyer S.p.A. and must not be made available to third parties without expressed written permission on the part of Tetra Laval Food Hoyer S.p.A.

2.2 General Safety Regulations

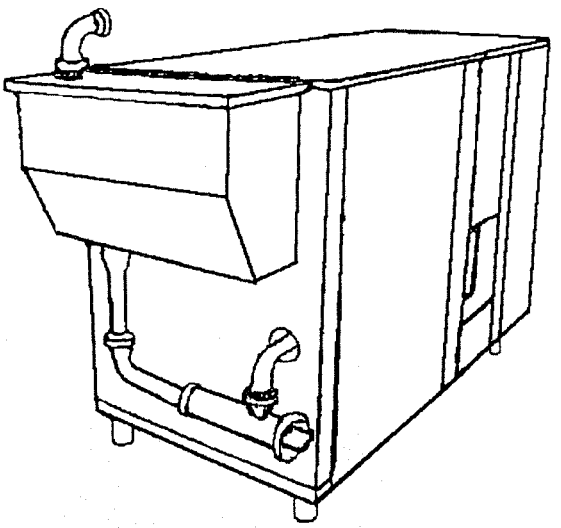
- THIS SAFETY CODE HAS BEEN COMPILED IN YOUR INTEREST. Strict adherence to these rules will reduce the risks of injury both to yourself and to others.
- DO NOT attempt to move, install, set-up or operate this machine until you have read and fully understood this Manual. If doubt persists, ask your supervisor;
- make sure all guards and protective covers are in position BEFORE starting the machine;
- never leave tools, parts or other loose material on or in the machine;
- should a product jam occur inside the machine, press one of the emergency stop buttons. NEVER ATTEMPT TO PLACE HANDS INSIDE THE MACHINE WHILE IT IS RUNNING;
- remember that even with the mains isolator in the "OFF" position, the incoming cables are still live;
- never disconnect pneumatic connectors without turning off the air supply;

2.3 Special Warnings and Cautions

- Personnel working with this machine must adhere strictly to all statutory safety regulations as well as the specific rules listed below. Failure to do so may result in personal injury and damage to the machine;
- any maintenance or repair work must only be carried out after the machine has been switched off. The mains isolator must be padlocked in the "OFF" position, the air valve must be closed and a warning notice placed on the machine;
- the User must ensure that all the instructions laid down in the Manual are closely followed;
- any tampering with the safety system, for whatever reason, is at User's risk;
- never attempt to over-ride safety switches or make them inoperable;
- the safety of any additional equipment used with the "FF 1000", if not supplied by Tetra Laval Food Hoyer S.p.A., is under User's responsability.
- The machine is covered by guarantee as per purchase contract. The guarantee will automatically expire for any unauthorised repair from Hoyer during the guarantee period.

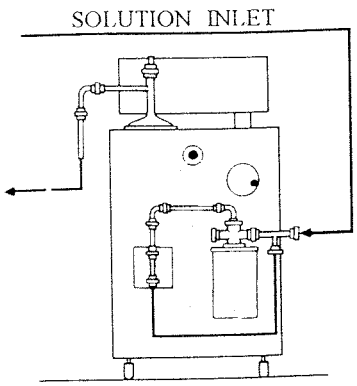
CHAPTER 3
MACHINE DESCRIPTION AND TECHNICAL DATA

MACHINE DESCRIPTION AND OPERATION

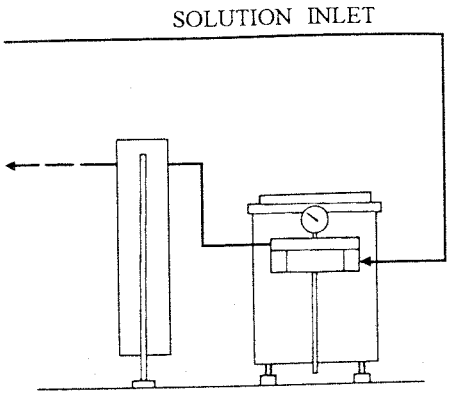


- The "Cip Washing Unit" is planned to carry out automatic cleaning cycles in connection to "GM continuous freezer", "MP pasteurizing plant" and "Ageing vats".
- All equipment of the Cip Washing Unit is enclosed in one, single stainless steel structure.
- The work cycle (first rinse-wash with caustic soda - second rinse - wash with nitric acid-final rinse) is carried out in a completely automatic manner.
- Special programmers make it possible to measure out rinsing and washing time intervals as well as quantities of the solutions to be used.
- The solution can be heated by means of electric heater, while an electronic thermostat, previously set up, regulates the control and display of temperature.

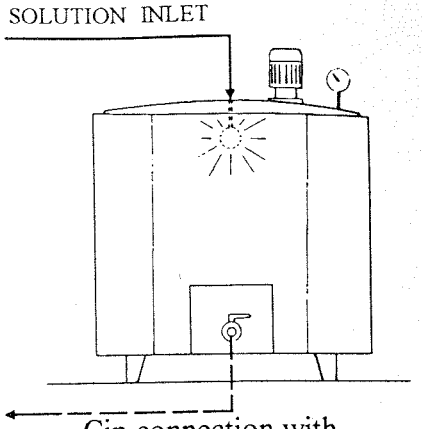
MACHINE DESCRIPTION AND OPERATION



Cip connection with GM continuous freezer



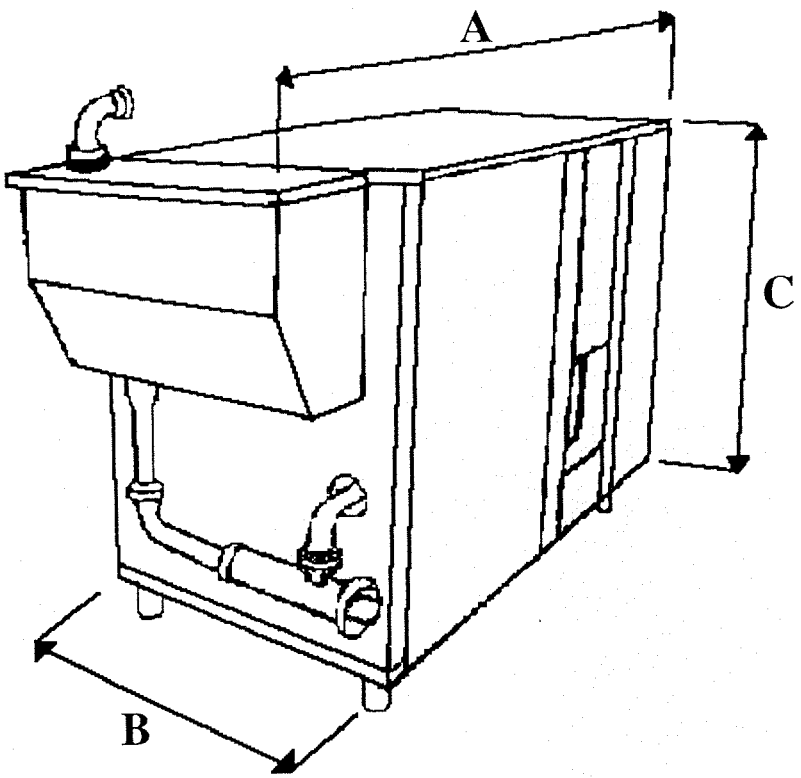
Cip connection with MP pasteurizing system



Cip connection with aging vat

- The cip washing unit can be used for both open circuits (aging vats) or closed circuits (freezers, heat exchangers).

TECHNICAL DATA



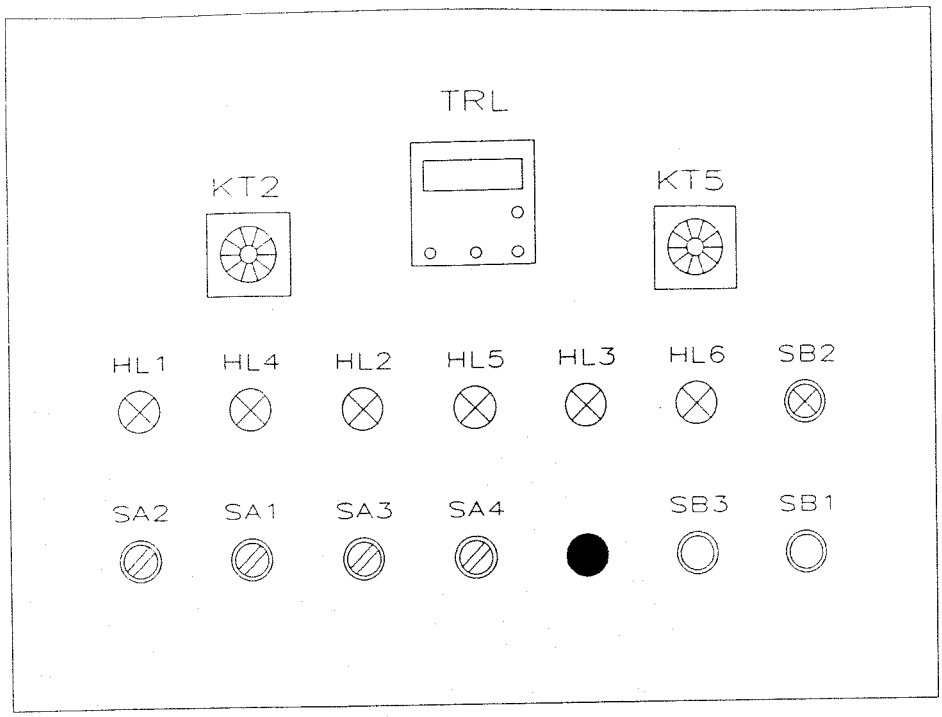
Installed power: 18 kW

Weight: 200 kg

Air consumption: 10 Nlt/min

Dimension: A= 1900 mm
B= 770 mm
C= 1100 mm

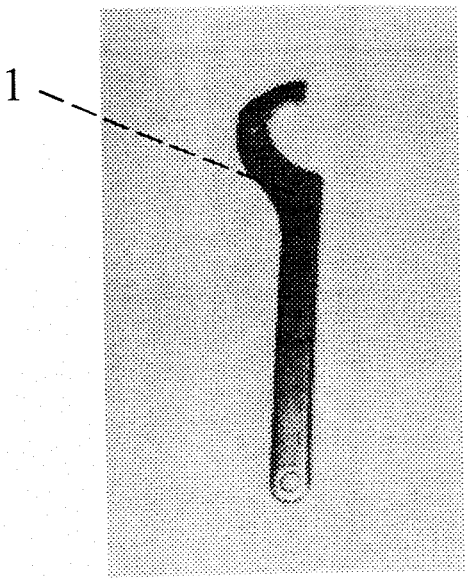
CONTROL PANEL



LEGEND - FIG.1

TRL - Termoregulator	- Setting of washing solution temperature
KT2 - Timer	- Setting of soda dosing time
KT5 - Timer	- Setting of acid dosing time
HL1 - Indicator light	- First rinsing with water
HL2 - Indicator light	- Second rinsing with water
HL3 - Indicator light	- Third rinsing with water and final rinsing
HL4 - Indicator light	- Washing with soda
HL5 - Indicator light	- Washing with acid
HL6 - Indicator light	- Washing cycle end alarm
SB1 - Push-button	- Washing stop
SB2 - Illuminated push-button	- Washing start
SB3 - Push-button	- Alarm reset
SA1 - Selector light	- Sucking pump
SA2 - Selector light	- Delivery pump
SA3 - Selector light	- Dosing pump
SA4 - Selector light	- Heater

TOOLING



The "Cip washing unit" is supplied with spare parts (optional). Spare parts include a sector key (1) to dismantle the fittings.

SPARE PARTS SUPPLIED WITH THE MACHINE

The machine is supplied with a"standard spare parts"equipment, consisting of:

CODE N°	DESCRIPTION	QT
018020533	GASKET DN 25	7
018020540	GASKET DN 40	12
018020555	GASKET DN 50	2
018020570	GASKET DN 70	1
336066240	GASKET OR 231	1
336067214	GASKET OR 8650	3
018020575	GASKET CLAMP 1"	2
016060565	NUT DN25	3
016060592	NUT DN40	4
016070124	PIPE PVC 10x16	5
016070457	PIPE PVC 25x34	5
016070481	RUBBER PIPE 35x53	6
314102026	PIPE LIE DN25	1
016070480	RUBBER PIPE 25x41	1
018047194	SECTOR KAY	1
017040915	LAMP 30V	10
016060813	HOSE ADAPTER DN40 1"	4
016060769	HOSE ADAPTER DN25 3/4"	1
016960007	HOSE ADAPTER CLAMP 1"	2
011045510	AIR HOSE ADAPTER	1
011045511	AIR FITTING	1
016060327	FEMALE SCREWED FITTING DN40	1
016060397	MALE SCREWED FITTING DN25	1
016060300	FEMALE SCREWED FITTING DN25	1
016060202	MALE SCREWED FITTING DN25 3/4	1
151042000	WASHING KIT	1
141040357	CLAMP FITTING 1 1/2"	2
017030012	FUSE 4A	3
017030015	FUSE 10A	6
017030019	FUSE 25A	3
017085466	RELAY MK-3P	1
017085630	TIMER	1
018060964	HOSE CLAMP 40/60	4
018060963	HOSE CLAMP 32/52	2
018060957	HOSE CLAMP 14/22	2
018060961	HOSE CLAMP 25/45	2
016060218	CLAMP 1"	2
141042008	TE WASHING	1
016060978	REDUCTION DN40/25	1

Note:
In addition to the "standard spare parts" equipment it is possible to buy spare parts for one or two years (optional).

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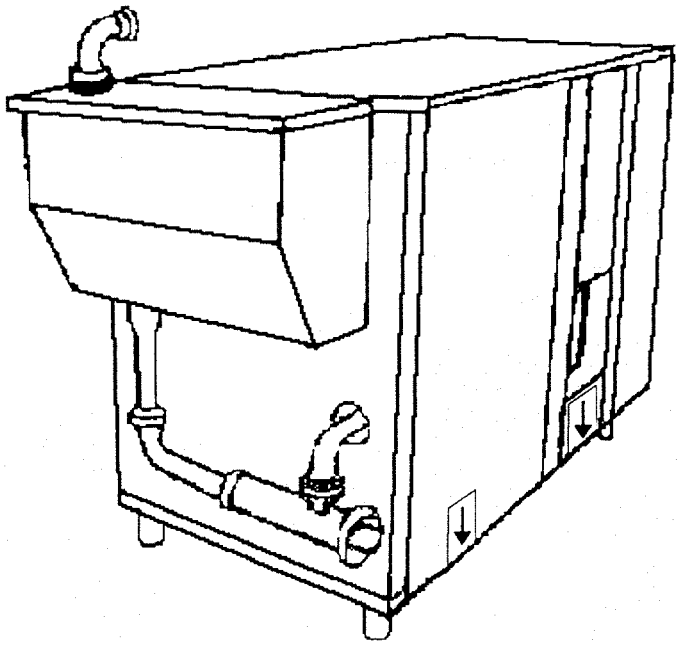
CHAPTER 4
INSTALLATION

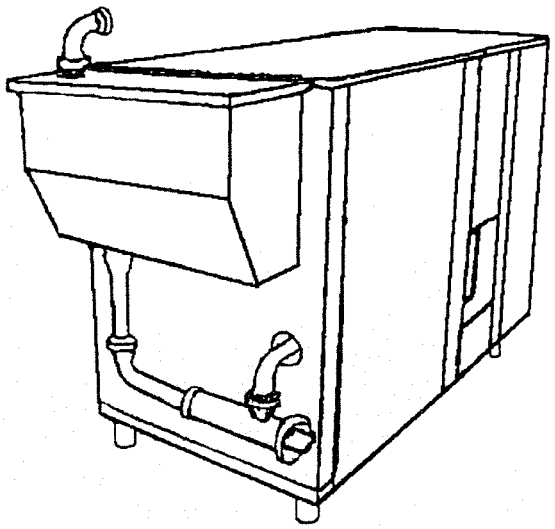
UNPACKING THE MACHINE AND DELIVERY CHECKS



- FIG.1 -

- Remove the nails from top cover. Remove sides. Becareful not to drop the wooden spacer blocks, placed between the sides of the crate.
- Remove the spare parts box and other components from the machine.
- Unstrap the wooden blocks, which keep the machine blocked during the shipping.
- Remove the cellophane protecting cover.
- Lift the machine with a forklift or pallet truck. Adjust the height of the feet and lower the machine to the floor.
  Note: Lift the machine positioning the forklift in the points indicated by the arrows as shown in the above "Fig.1".
- Reassemble the eventual disassembled units.

UNPACKING THE MACHINE AND DELIVERY CHECKS



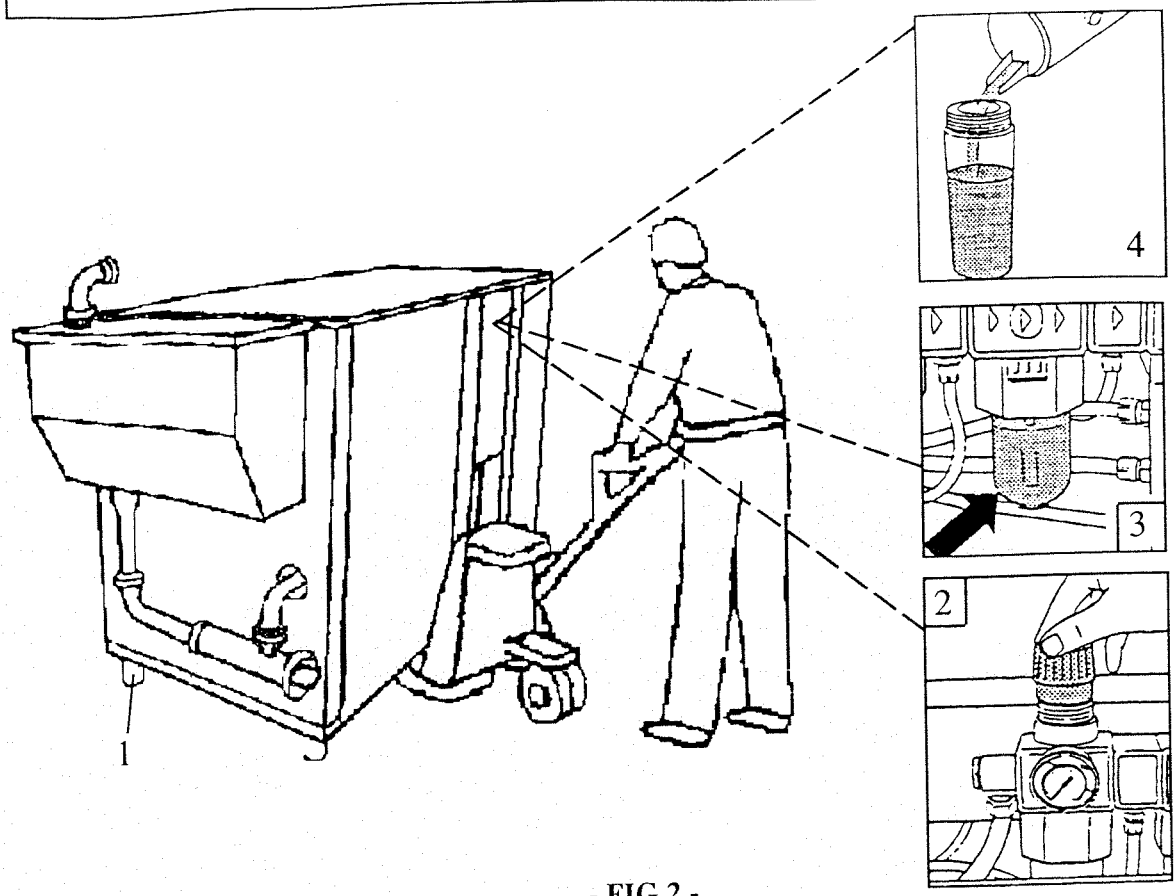
- The machine should be unpacked upon receipt and the following checks should be carried out:

  A) Make sure that the machine has not been damaged during shipment.

  B) Check that all the covers and panels have been secured properly and that there are no loose parts.

  C) Visually check all the electrical components to make sure that they are intact and have not been physically damaged.

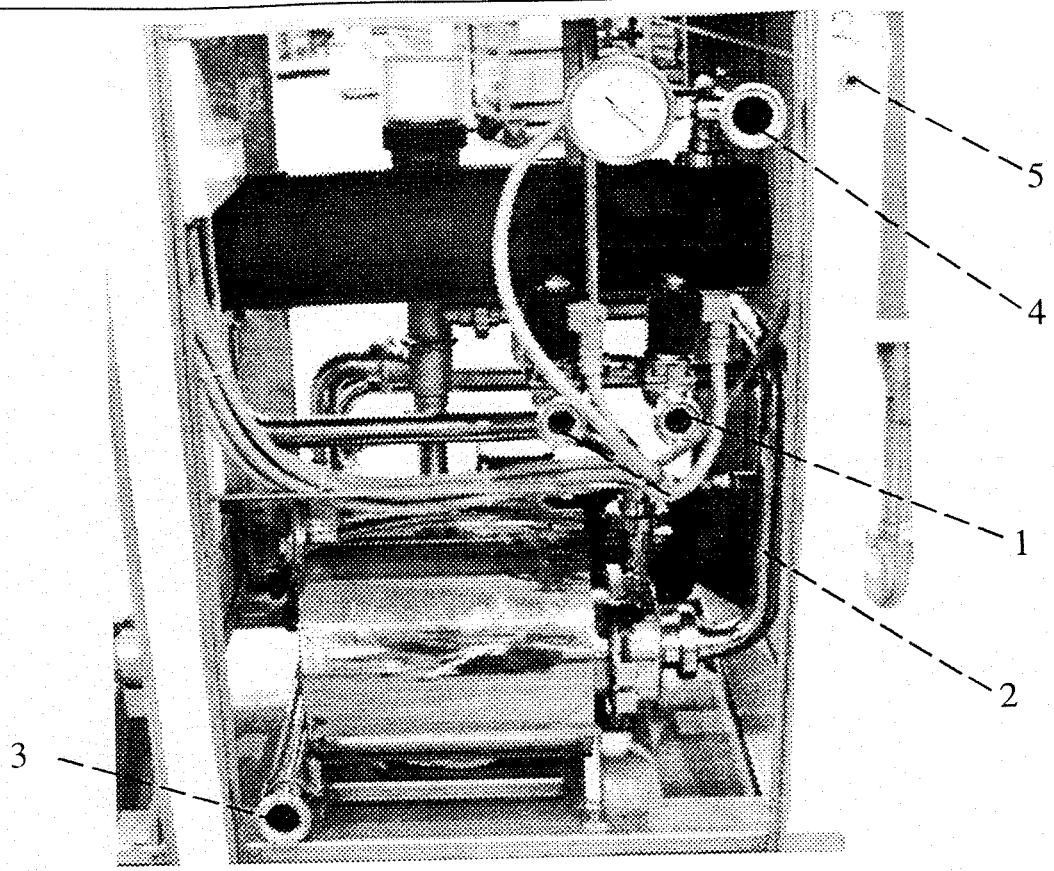
TRANSPORT AND INSTALLATION



- FIG.2 -

- Move the machine by placing the forks of the lift truck as shown in figure, and lift the machine slowly.
- Place the machine in the production area, check the ID plate to make sure the machine is compatible with the existing voltage.
- Level the machine and adjust the working height as required by adjusting the legs (Fig.2, 1).
- Connect mains (3 phase + earth) to a power supply of 32A minimum. The electrical power cable should be connected to a wall mounted cutout box.
- Connect the air supply (Fig.3, 5), set the machine air pressure to 6 bar (Fig.2, 2).
- Check that the air lubricator has oil to the oil level mark (Fig.2, 3). Add (Fig.2, 4) if necessary with oil type IP MELLANA 320 or equivalent. Do not overfill.

TRANSPORT AND INSTALLATION



- FIG.3 -

The Cip Washing Unit consists of :

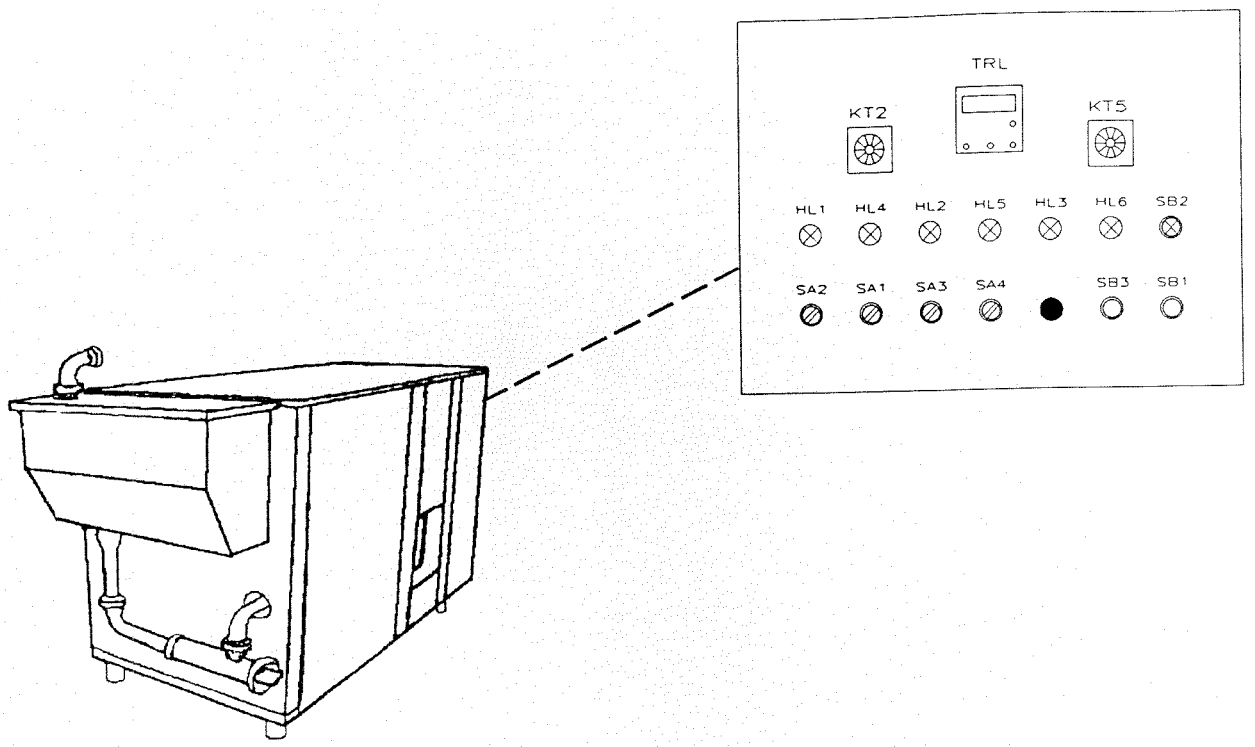
- delivery pump for the solutions (Fig.5, 7)
- sucking pump (Fig.5, 10)
- dosing pump for soda and acid (Fig.5, 14)
- heat-exchanger with electric heater (Fig.5, 6)
- Control panel (see chapter 3.4)
- Container for soda (Fig.5, 15)
- Container for acid (Fig.5, 16)

Position the machine next to the equipment to be washed.

- Connect to point (Fig.3, 1) the steam or hot water inlet.
- Connect to point (Fig.3, 2) the fresh water inlet.
- Connect point (Fig.3, 3) to the drain.
- Connect to point (Fig.3, 4) the solution delivery pipe.
- Connect to point (Fig.5, 1) the return pipe in case of closed circuits and to point (FIG.5, 2) in case of open circuits.

Note: fill the containers with acid and soda.

OPERATIONAL CHECK

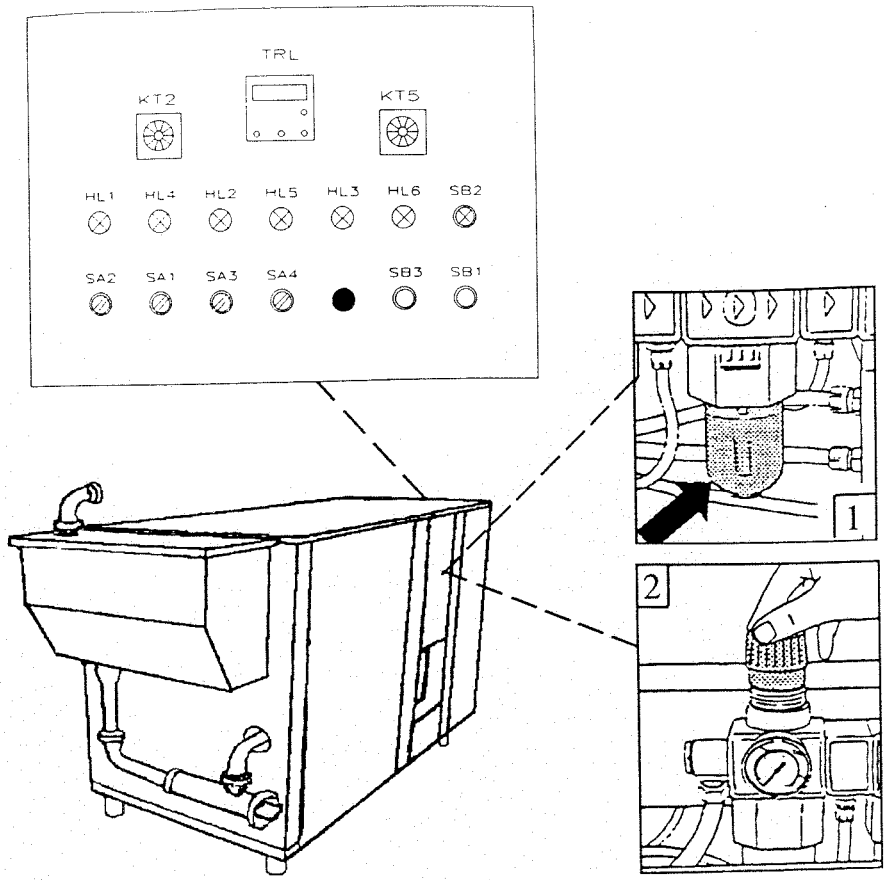


CHECK MECHANICAL OPERATION OF THE MACHINE AS FOLLOWS:

- Close all covers.
- Switch ON main switch.
- Turn ON air supply.
- Check the rotation direction of the pumps (it is indicated by arrows on the pumps).

CHAPTER 5
OPERATING PROCEDURES

PRELIMINARY CHECKS

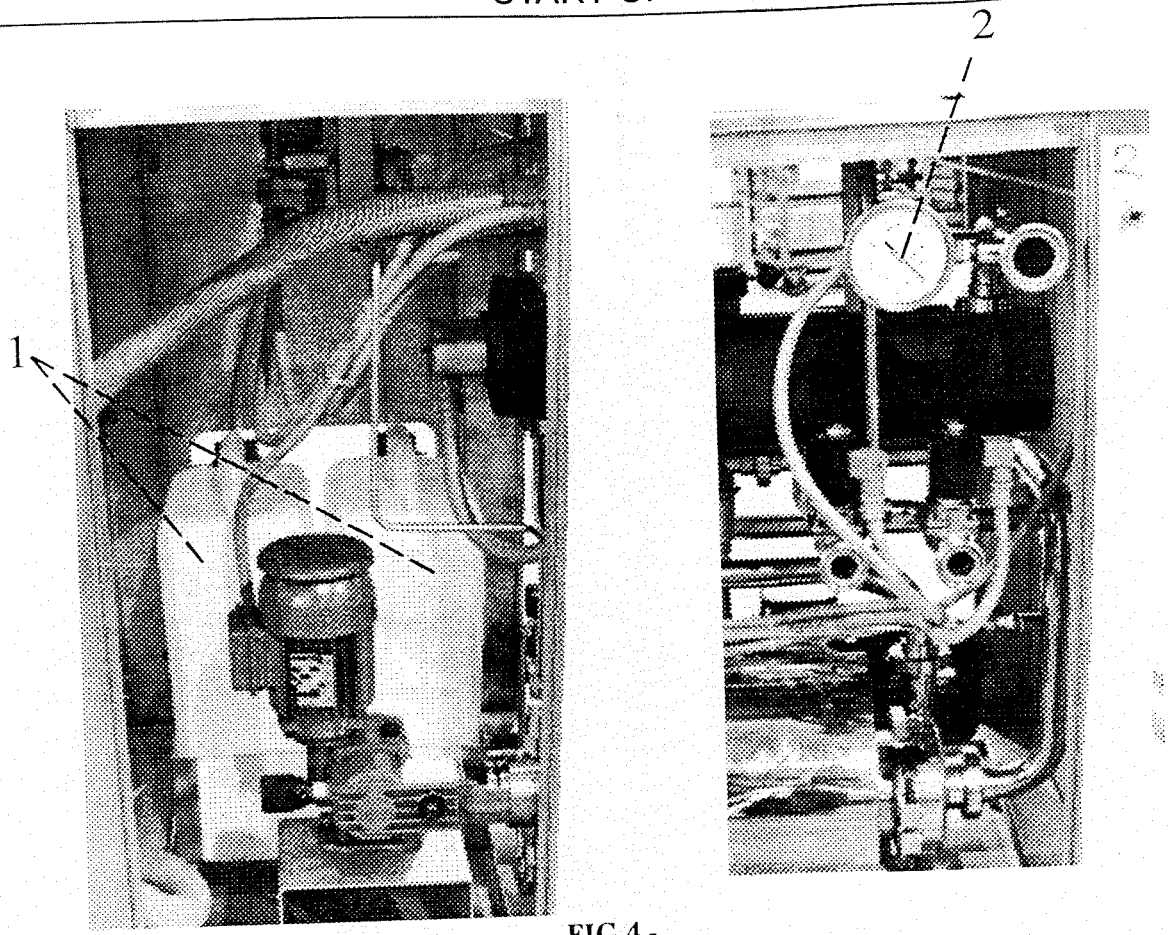


Before starting production, the operator should carry out the following checks:

- Check that the air pressure is 6 bar (1)
- Check the oil level in the air lubricator (2)
- Verify the correct functioning of keys of the control panel. In case of malfunctioning, contact immediately the technical assistance service.

Warning: Never start production before checking that the machine is safe.

START UP

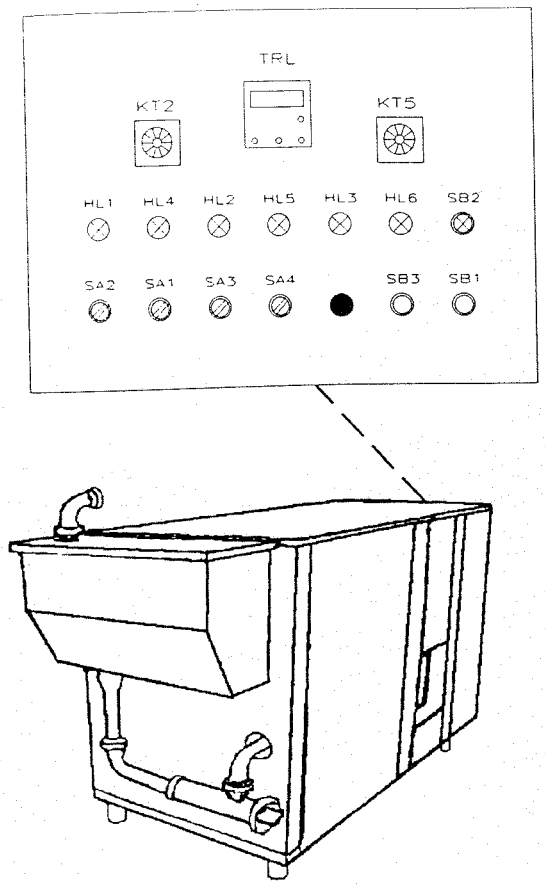


- FIG.4 -

Through the window panel check that the two containers of acid and soda (Fig.4, 1) are adequately filled. Carry out this check periodically according to number of washing operations effected in one day.

- Place the hand of the pressure gauge (Fig.4, 2) on 1.5/2 bar approx.
- The unit is ready to operate.

PRODUCTION CYCLE



- Turn on the main switch located under the control panel to switch on power to the unit.

- Adjust instruments (KT2-KT5) so as to set the operating time of soda and acid dosing pump.

Note: The longer the time the more solution is sent into the circuit.

The concentration of the washing solution should be approximately as follows:

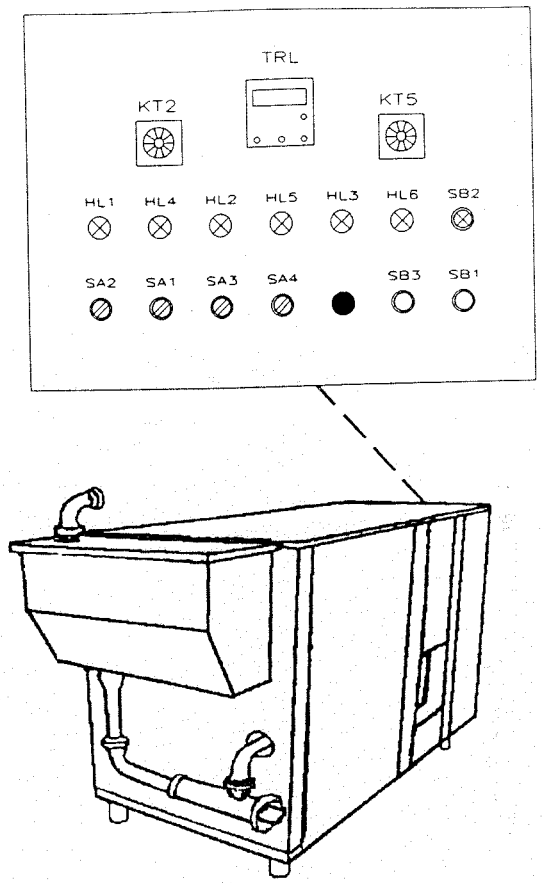
- SODA : 05 - 08 % max.
- ACID : 03 - 05 % max.

- At the start it is suggested to follow the trial and error method by taking and analyzing a sample of solution when the farthest equipment is being washed.

- Subsequently by means of the thermoregulator TRL set the temperature you wish to attain during the washing phase with soda and acid.

- When first installing the unit it is necessary to check the rotation direction of the pumps.
After checking that the selector switches SA1-SA2-SA3-SA4 are set on the automatic position, it is possible to start the washing cycle by means of push-button SB2.

PRODUCTION CYCLE



A standard washing cycle is normally made up of 5 phases:

PHASE DESCRIPTION	MINUTES	TEMPERATURE
1st rinsing with cold water	3 - 5'	20-30° C
Washing with soda	15 - 20'	60-70° C
2nd rinsing with cold water	1 - 3'	20-30° C
Washing with acid	10 - 15'	60-70° C
Final rinsing with cold water	5 - 19'	20-30° C

- The length of each of the above 5 phases making up a cycle can be adjusted by means of timers which are housed inside the control panel. The times referring to each phase are approximate and may be varied to be optimized according to any requirement.

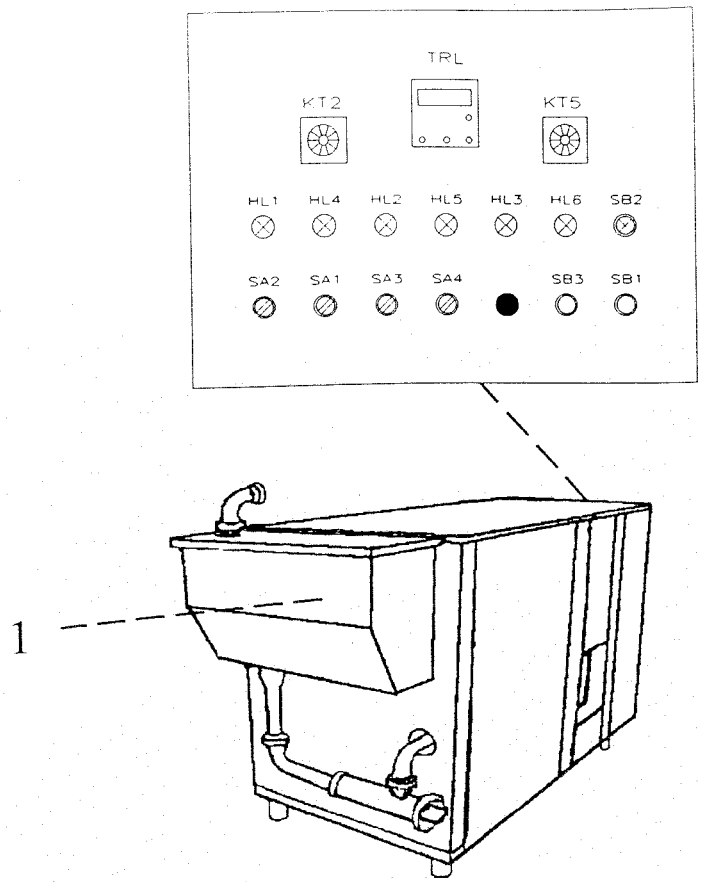
- The second set point of thermoregulator TRL must be adjusted for a temperature slightly higher than that of normal operation. This temperature acts as a safety thermostat.

- It is possible to keep under supervision the phases, as they follow one another, through the relevant signal lamps HL1-HL2-HL3-HL4-HL5.

- At the end of the washing cycle the signal lamp HL6 will light up and an acustic alarm will start. To turn off this alarm press the push-button SB3.

- Should it be necessary to stop the washing unit at any time of the washing phase press the STOP push-button SB1. Obviously operation is to be resumed from the first phase.

SHUT DOWN



At the end of washing the alarm is activated; press push-button SB3 to reset.

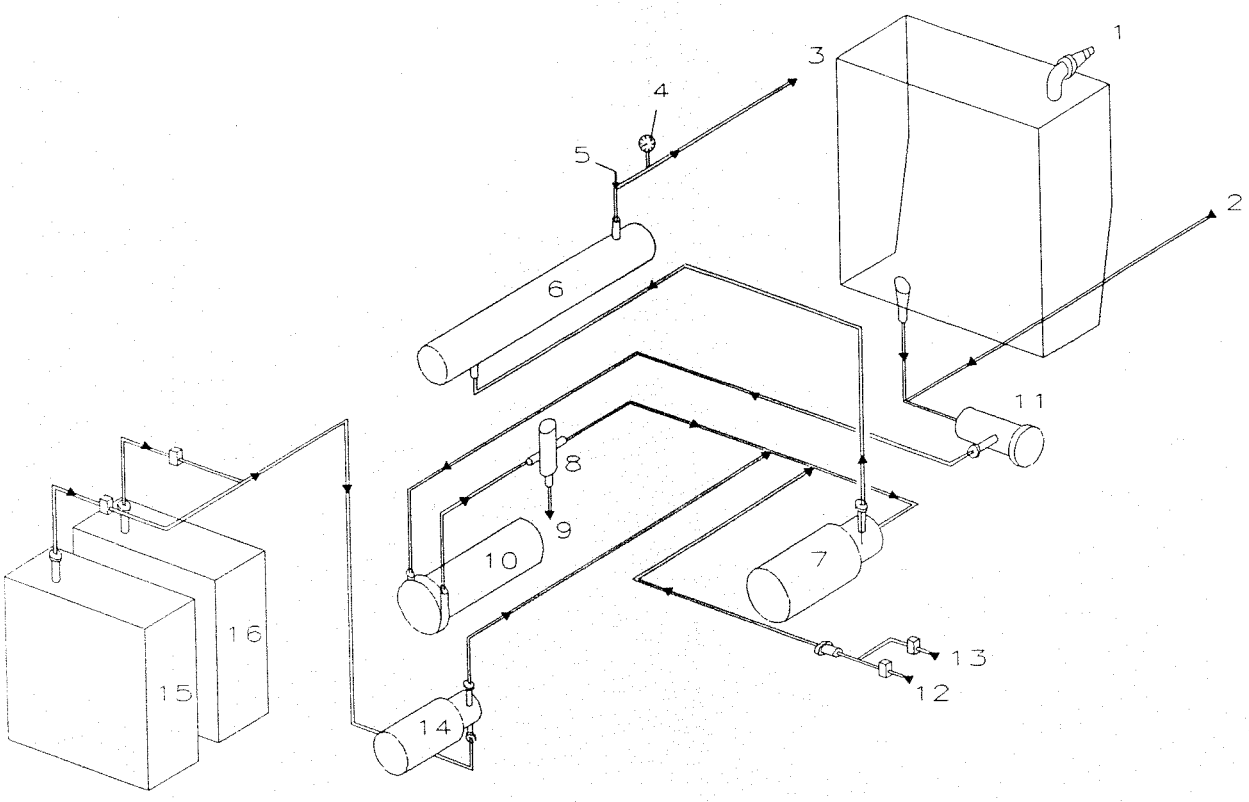
- Turn OFF the main switch.

- Turn OFF the air supply.

- Remove the eventual residual from tank.

- Disconnect the piping.

FLOW SHEET



- FIG.5 -

1 - Closed circuit with freezer or heat exchanger. (Return pipe)
2 - Open circuit with ageing vat. (Return pipe)
3 - Feed pipe to the freezer, heat exchanger, ageing vat, etc..
4 - Pressure gauge of the feed pipe.
5 - Temperature probe of the feed pipe.
6 - Heat exchanger with electric heater for heating of the solution.
7 - Delivery pump
8 - Pneumatic valve
9 - Solution drain
10 - Sucking pump
11 - Filter
12 - Hot water feeding
13 - Steam feeding
14 - Dosing pump
15 - Soda container
16 - Acid container

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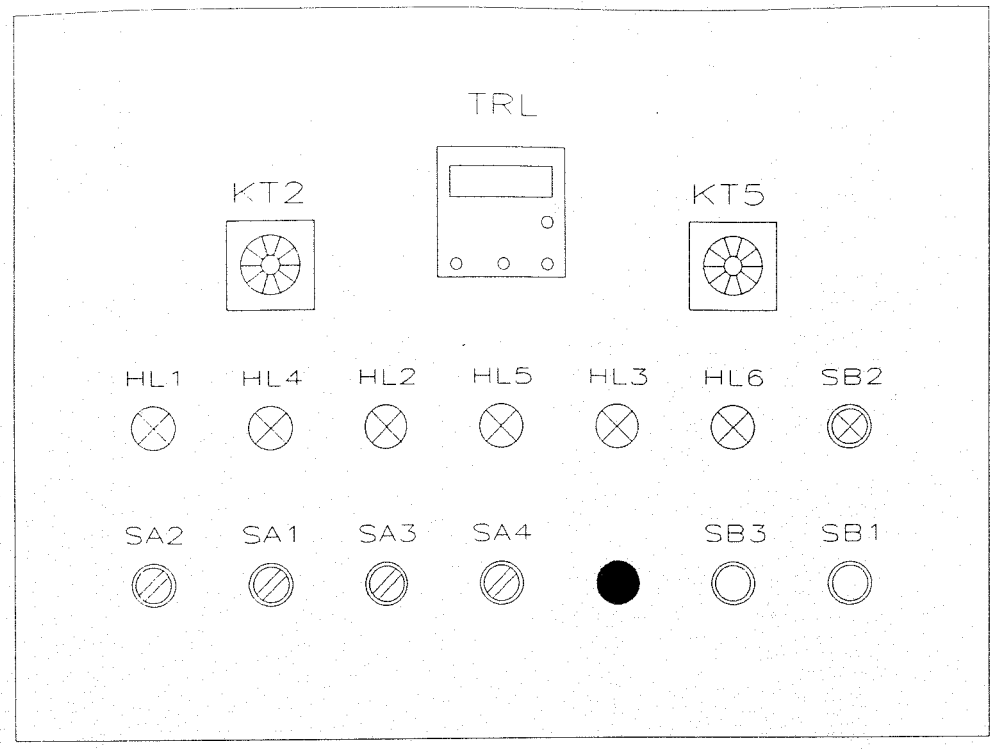
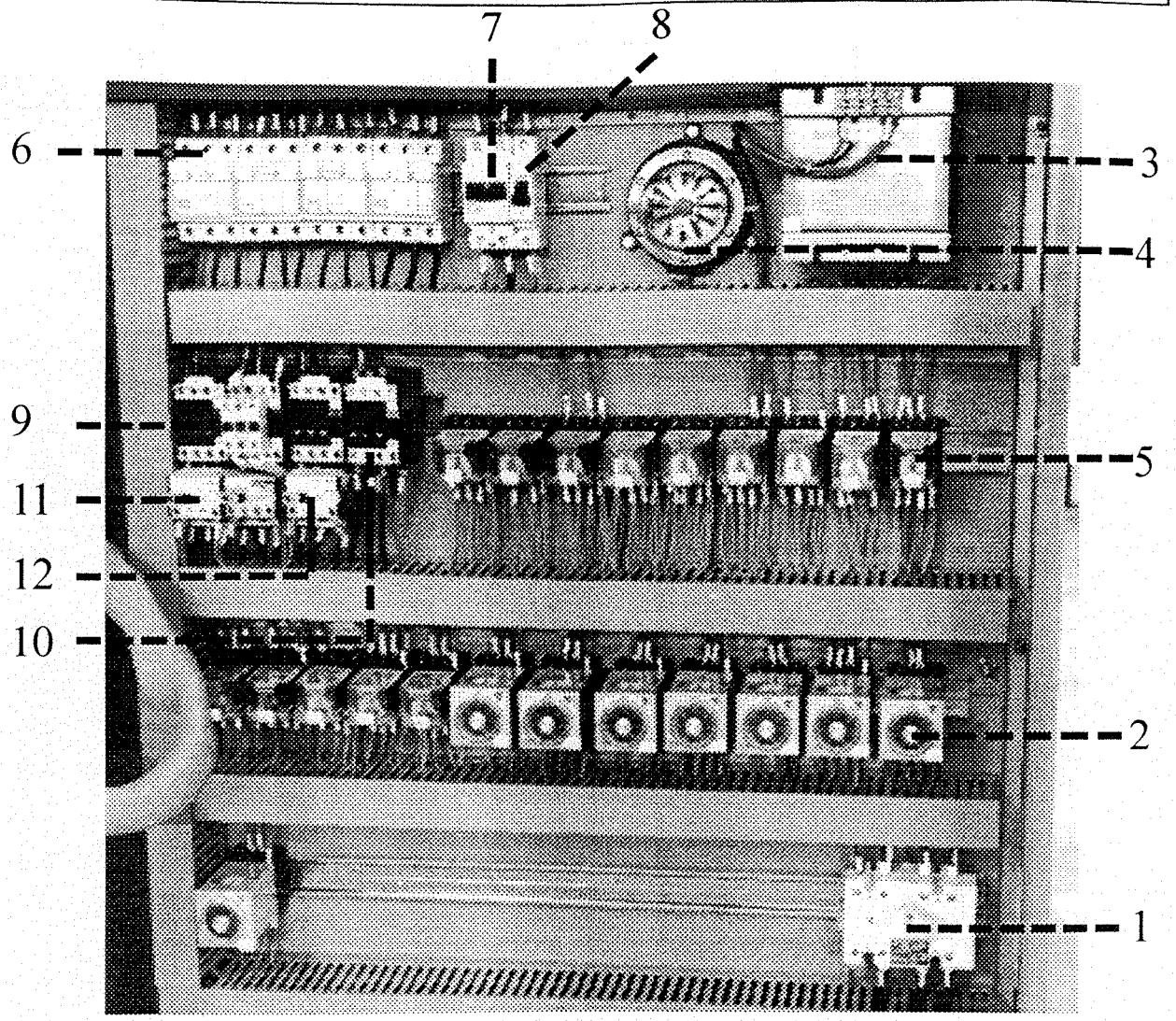
CHAPTER 6
SPARE PARTS CATALOGUE

TABLE.1



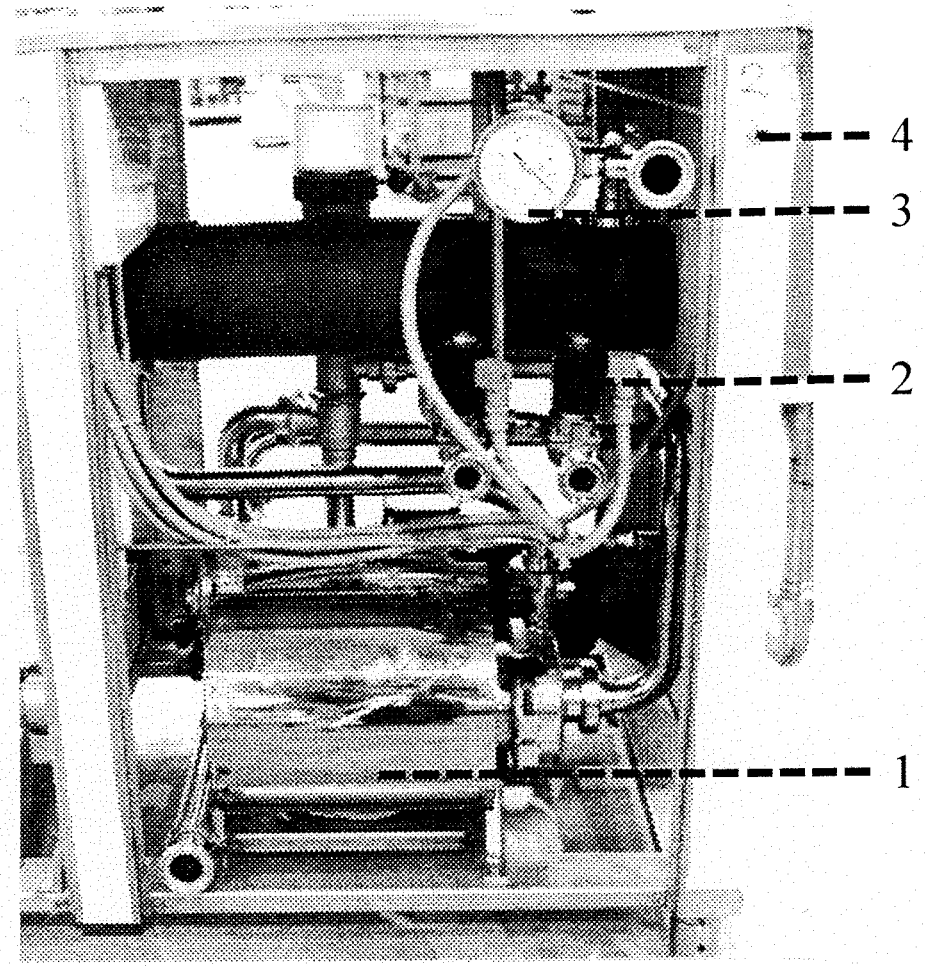
LEGEND			CODE N°
TRL	-	Termoregulator	- 017988007
KT(2-5)	-	Timer	- 017085630
HL(1/5)	-	Indicator light	- 017060906
HL6	-	Indicator light	- 017060905
SB1	-	Red push-button	- 017060916
SB2	-	Green illuminated push-button	- 017060913
SB3	-	Yellow push-button	- 017060912
SA(1-2-4)	-	Green selector light 3P	- 017060896
SA3	-	Green selector light 2P	- 017060895

TABLE.2



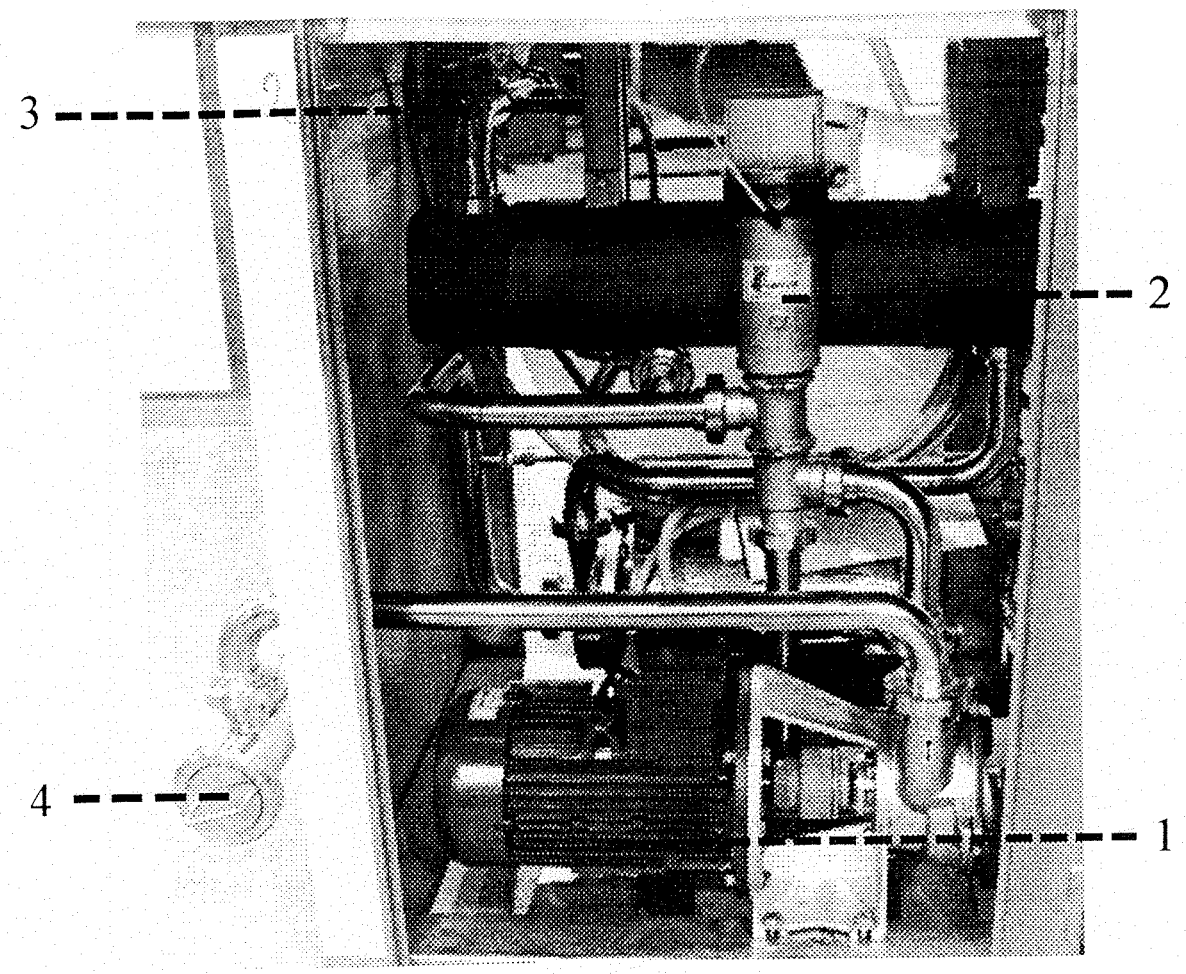
LEGEND			CODE N°
1	-	Main Switch	- 017035252
2	-	Timer	- 017085630
3	-	Transformer	- 017090273
4	-	Alarm	- 011990086
5	-	Relay MK-3P	- 017085466
6	-	Fuse holder	- 017030005
	-	Fuse 4A	- 017030012
	-	Fuse 10A	- 017030015
	-	Fuse 25A	- 017030019
7	-	Bipolar automatic switch	- 017035377
8	-	Unipolar automatic switch	- 017035366
9	-	Contactor LS7	- 017080249
10	-	Contactor LS17	- 017080288
11	-	Overload 1.2-1.8A	- 017070169
12	-	Overload 4-6A	- 017070172

TABLE.3



LEGEND			CODE N°
1	-	Pump CLC40	- 014910015
2	-	Valve 407A20	- 017095005
3	-	Manometer	- 015075620

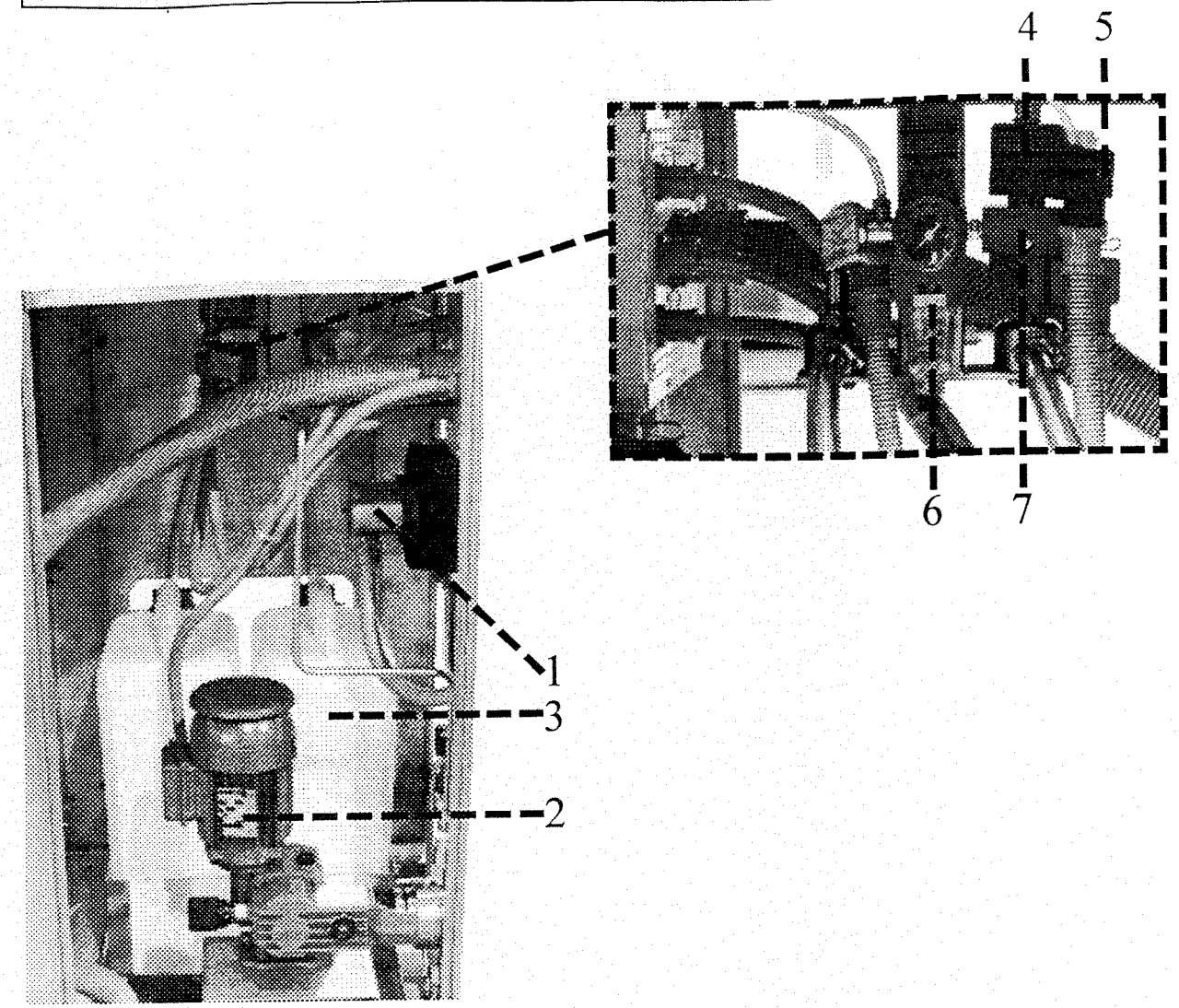
TABLE.4



LEGEND

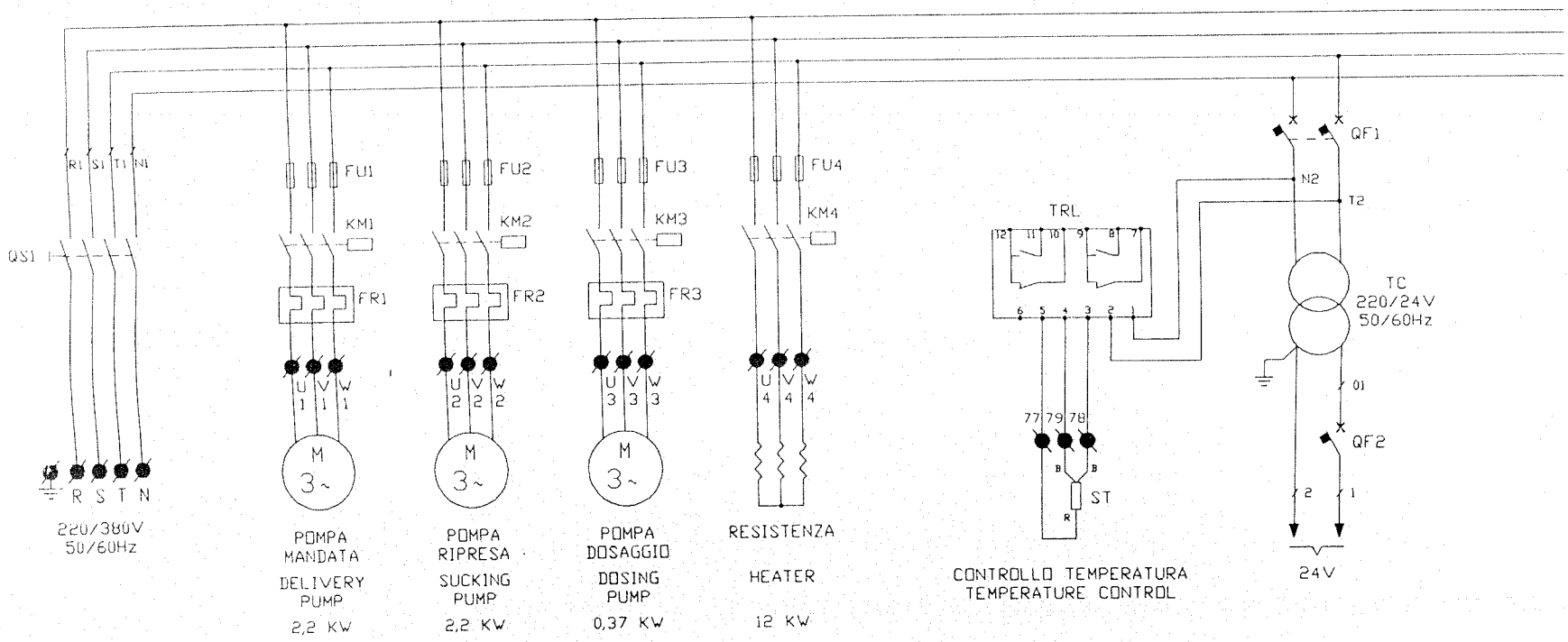
			CODE N°
1	-	Pump A50	- 014010043
2	-	Pneumatic valve	- 016920010
3	-	Probe PT100	- 017988031
4	-	Filter DN40	- 016005111

TABLE.5



LEGEND

			CODE N°
1	-	Heater 12kW	- 017975005
2	-	Pump RB43A70	- 014910022
3	-	Container 25 lt	- 018093018
4	-	Solenoid valve	- 333004041
5	-	Coil 24/50	- 333004370
6	-	Filter	- 333012050



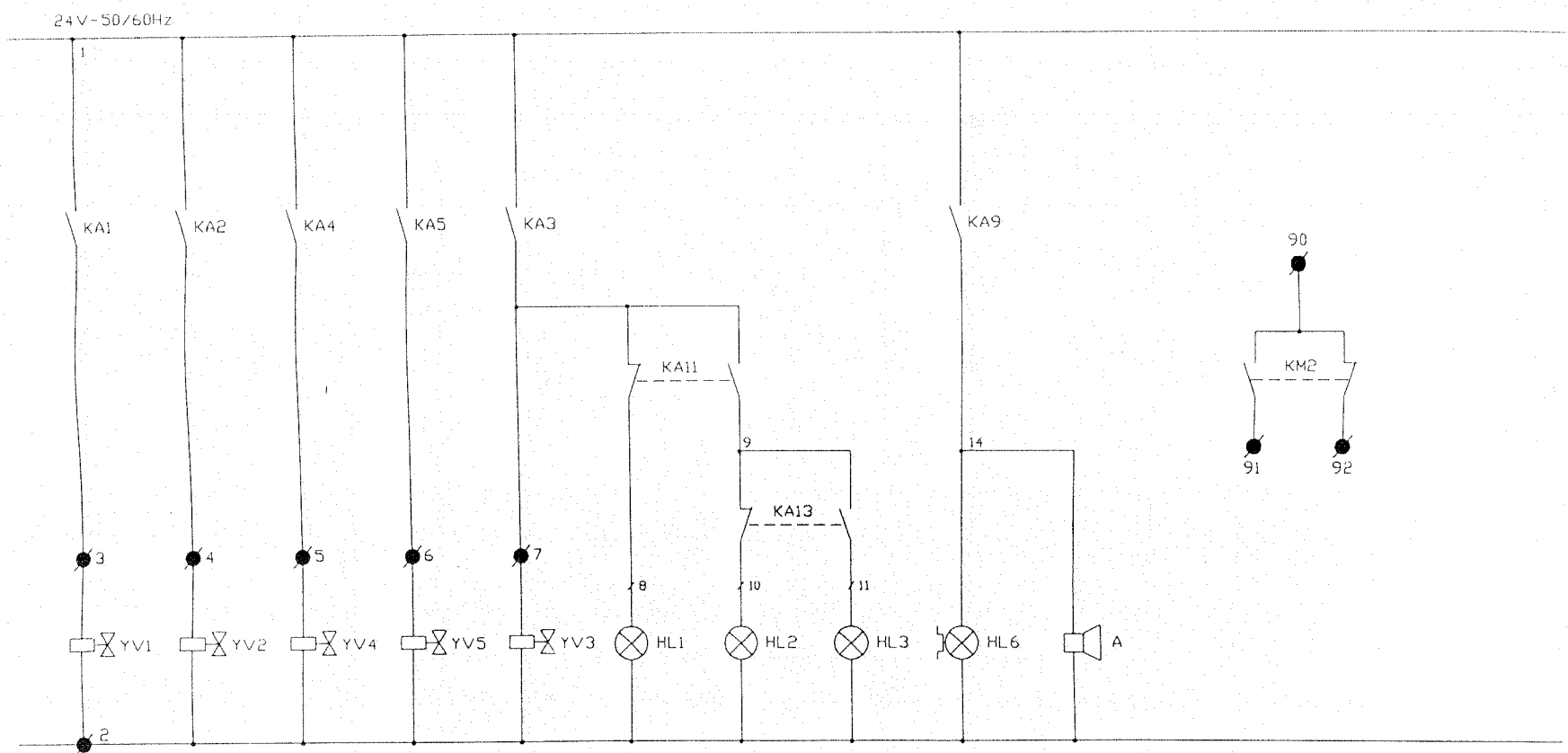
CON TENSIONE 220V ESEGUIRE CAVALLOTTO FRA I MORSETTI T-N
WITH POWER 220V EFFECT JUMP BETWEEN TERMINAL T-N

ALFA-LAVAL
HOYER

CLIENTE:

OGGETTO
C.I.P. ELETTROMECCANICO

FOGLIO	DATA	DISEGNATO	SCALA	DISEGNO N.
01 di 5	13.12.90	L.D.	//	51.03.85

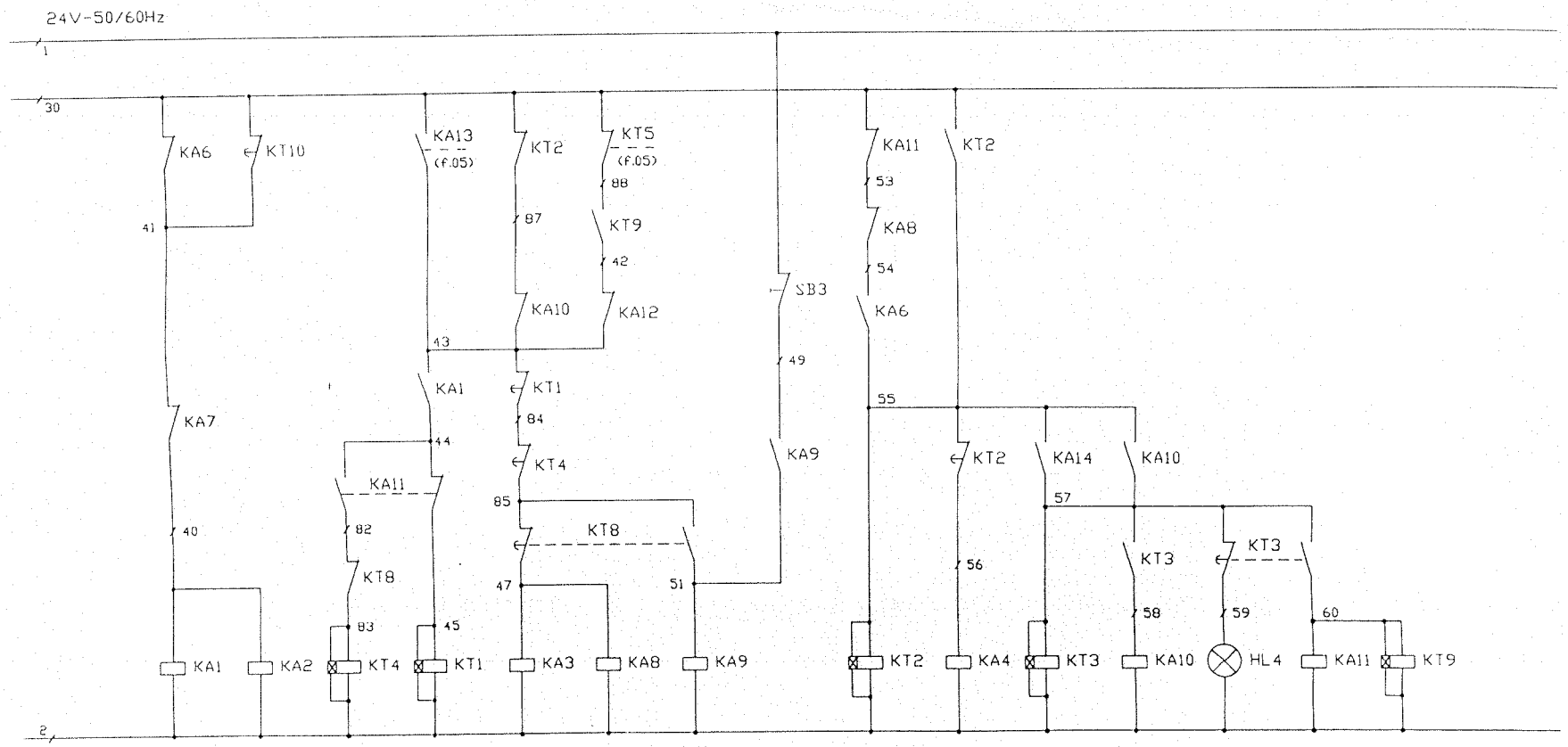


ALFA-LAVAL HOVER

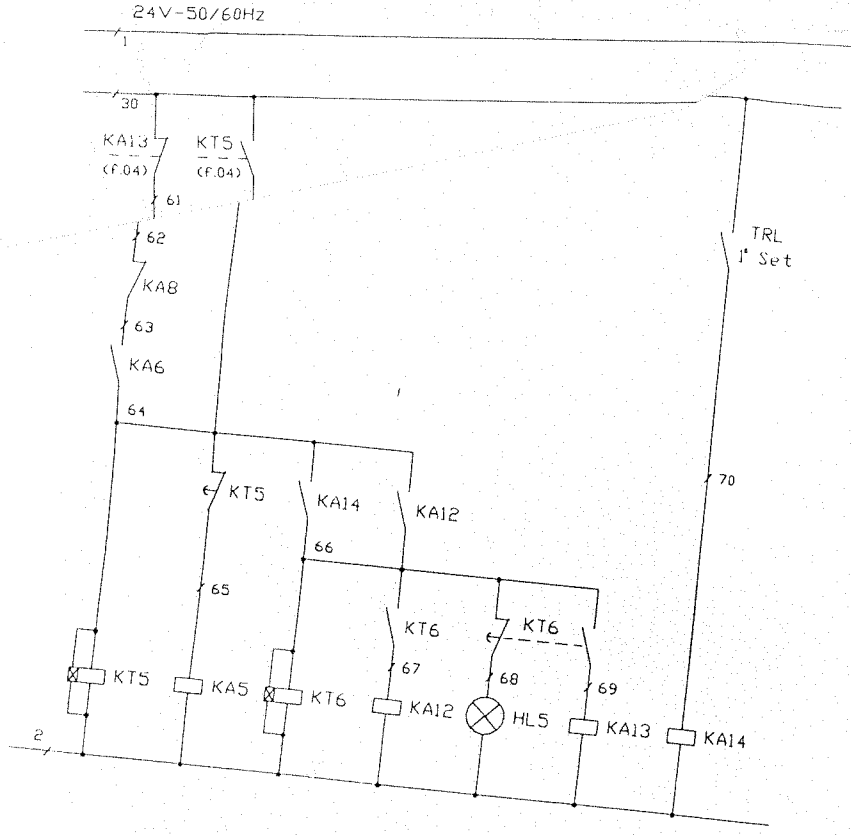
CLIENTE:

OGGETTO: C.I.P. ELETTROMECCANICO

FOGLIO	DATA	DISEGNATO	SCALA	DISEGNO N.
02 DI 5	13.12.90	L.D.	//	51.03.85.01



ALFA-LAVAL HOYER	CLIENTE:				
	OGGETTO: C.I.P. ELETTROMECCANICO				
	FOGLIO 04 DI 5	DATA 13.12.90	DISEGNATO L.D.	SCALA //	DISEGNO N. 51.03.85.01



FASE 1 PHASE 1 (KT1) -PRELAVAGGIO CON ACQUA A PERDERE
PRE-RINSE WITH THROW-AWAY WATER

FASE 2 PHASE 2 (KT2) -DOSAGGIO BASICO
BASIC DOSING

(KT3) -LAVAGGIO BASICO
BASIC CLEANING

FASE 3 PHASE 3 (KT4) -RISCIACQUO CON ACQUA A PERDERE
RINSE WITH THROW-AWAY WATER

FASE 4 PHASE 4 (KT5) -DOSAGGIO ACIDO
ACID DOSING

(KT6) -LAVAGGIO ACIDO
ACID CLEANING

FASE 5 PHASE 5 (KT7) -RISCIACQUO FINALE
FINAL RINSE

FASE 6 PHASE 6 (KT8) -POMPA DI RIPRESA
SUCKING PUMP ON

KT9 TARATURA 2-3' DA NON TOCCARE
2-3' SETTING NOT TO BE TAMPERED WITH

KT10 TARATURA 60-90' ULTERIORE RIEMPIMENTO DI ACQUA NEL CIRCUITO DI LAVAGGIO
60-90' SETTING FURTHER WATER FILLING IN WASHING CIRCUIT

ALFA-LAVAL HOVER

CLIENTE:

OGGETTO: C.I.P. ELETTROMECCANICO

FOGLIO	DATA	DISEGNATO	SCALA	DISEGNO N.
05 DI 5	13.12.90	L.D.	//	