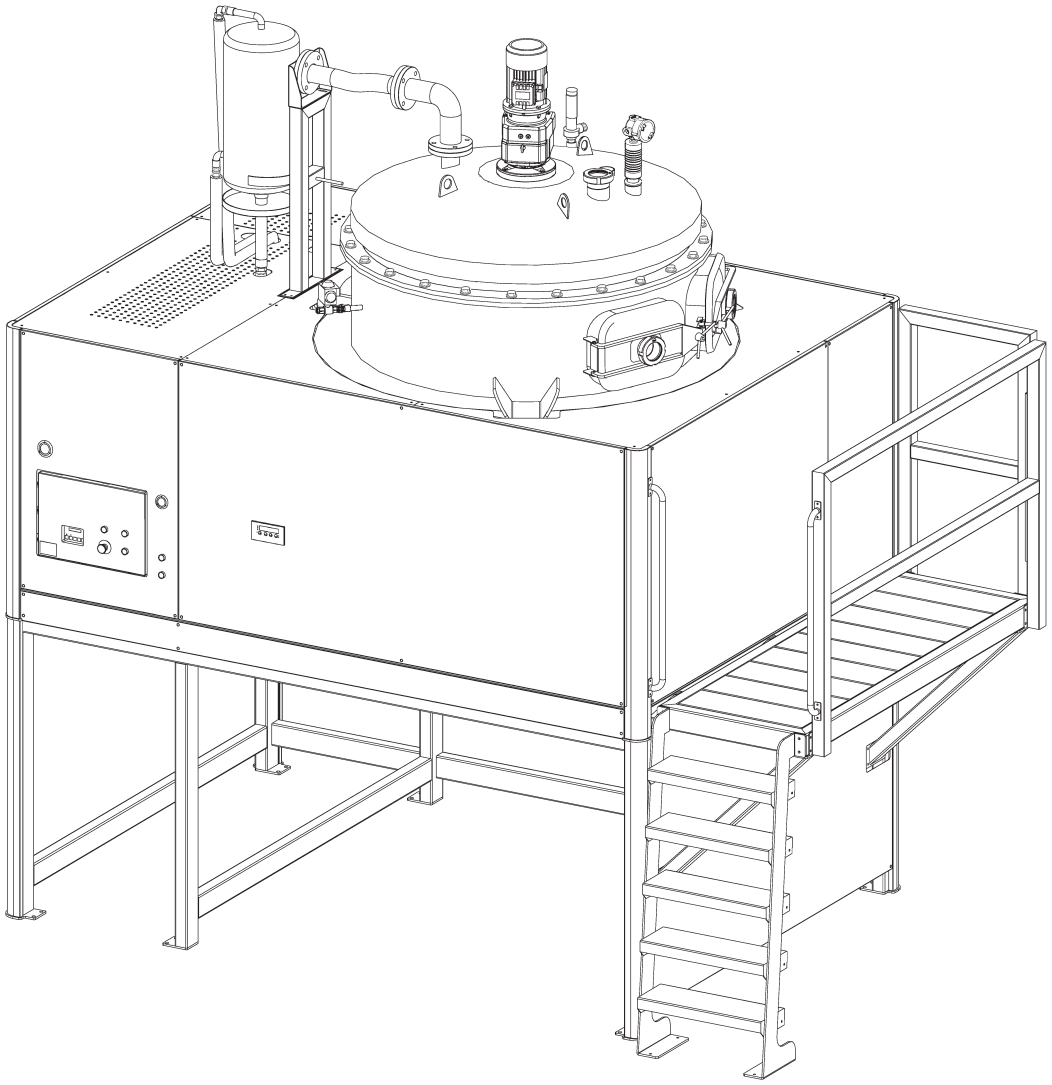
SOLVENT REGENERATOR

ATEX

HR 1200



USER AND MAINTENANCE MANUAL

EDITION 02/10/2017 CODE 54580.00 *TRANSLATION OF THE ORIGINAL*

IMPORTANT

OPERATORS AND MAINTENANCE PERSONNEL MUST READ THE MANUAL CAREFULLY BEFORE WORKING WITH OR ON THE MACHINE. THIS MANUAL MUST BE KEPT NEXT TO THE MACHINE FOR REFERENCE, AND MUST ACCOMPANY THE MACHINE IF IT IS SOLD ON.

IMPORTANT

IN THIS MANUAL, CERTAIN ILLUSTRATIONS SHOW THE MACHINE WITH ITS GUARDS REMOVED FOR CLARITY.

NEVER USE THE MACHINE WITH ITS GUARDS REMOVED, UNLESS EXPRESSLY INSTRUCTED TO DO SO FOR MAINTENANCE.

WARNING

This manual is an integral part of the product. Read the warnings and instructions it contains in full, as they provide important information for the **safe use and maintenance** of the machine. Keep this manual carefully for reference.

1.1 TRAINING WITH THE MANUAL

This user and maintenance manual is an integral part of the machine and is intended to provide the information required:

- to safely handle it;
- to install it correctly;
- for a good understanding of its operation and limits;
- to operate it correctly and safely;
- to run production changeovers and maintenance correctly and safely;
- for cleaning the tank;
- for ambient operating limits;
- for decommissioning it safely and in observance of established regulations regarding health and safety and the environment:

It also highlights the residual risks associated with the machine.

Given its particular technical characteristics, and the type of product to be regenerated, the IST REGENERATOR requires for its proper use that a current copy of the solvent to be regenerated safety sheet be available in its vicinity as well as a copy of the user and maintenance manual; in addition, the IST REGENERATOR must be managed by personnel:

- familiar with the language of the manual;
- with at least two years experience in the use of solvents;
- aware of the risks associated with the use of solvents, particularly the solvent to be regenerated;
- with easy access to and the ability to read, understand and apply the information given in the IST REGENERATOR manual;
- with easy access to and the ability to read, understand and apply the information given in the solvent safety sheets;
- familiar with the prescribed PPE and use them;
- familiar with the information borne by the pictograms (signs);
- familiar with the control actuators and safety equipment.

THE MANAGERS OF THE DEPARTMENT IN WHICH THE MACHINE IS INSTALLED MUST, UNDER ESTABLISHED LAW, READ AND UNDERSTAND THIS MANUAL AND ENSURE THAT IT IS READ AND UNDERSTOOD BY THE MACHINE'S OPERATORS AND MAINTENANCE STAFF INSOFAR AS IT APPLIES TO THEM, AND CHECK THAT THEY HAVE ACTUALLY READ AND UNDERSTOOD IT.

As provided by current work health and safety legislation, the names of the persons trained in the information contained in the user and maintenance manual must be reported, by fax and at the customer's sole responsibility, on letterhead paper, to IST S.p.A.. Any changes in the staff charged with operating the IST REGENERATOR must be reported to the manufacturer, by fax and at the customer's sole responsibility, on letterhead paper, including the names of the persons trained using this manual.

The IST REGENERATOR may not be used unless the department managers have assured themselves that the persons charged with operating it have understood the user and maintenance manual and regenerating solvent safety sheets.

The customer's acceptance of the IST REGENERATOR implies his acceptance of these conditions.

1.2 READING AND USING THE MANUAL

The manual is divided into **sections**, **chapters** and **paragraphs** to facilitate the comprehension of its contents.
The pages are numbered in order.
Information may be found using keywords in the titles of the sections and chapters, but above all by referring to the general index.

The instructions, drawings and documentation included in this manual are of a reserved technical nature, are the property of I.S.T. and may not be reproduced in any way, either in part or as a whole.

The customer is also responsible for ensuring that when this manual is revised by I.S.T., only the updated versions are available in the places of use.

1.3 KEEPING THE MANUAL

The user and maintenance manual must be kept with care and accompany the machine in any changes of ownership throughout its life cycle.

The customer agrees to report the machine's new owner's information to I.S.T. to facilitate the exchange of information between the parties and supply of updates to this manual.

The manual must be kept and handled with care, with clean hands, and not left lying on dirty surfaces.

It must be kept away from damp and heat and in such a way as to be easily available at all times for reference.

Do not modify, remove or tear any part of the manual.

1.4 SYMBOLS

DANGER

Calls the attention to situations or problems which represent a threat to safety consisting in the risk of accident or death.

IMPORTANT

Calls the attention to situations or problems relating to the efficiency of the machine which do not present a risk to personal safety.

WARNING

Calls the attention to important general information which presents no risk to personal safety or the operation of the machine.

1.5 REGULATIONS

This user and maintenance manual has been drawn up in compliance with the regulations governing the drawing up of instructions manuals.
For the specific directives and regulations relating to the regenerator itself, refer to the CE DECLARATION OF CONFORMITY.

1.6 WARRANTY CONDITIONS - LIABILITY

I.S.T. S.p.A. warrants that the products supplied are as established in the agreement in terms of quality and type and that they are free of defects which may cause them to be unsuitable for their specific intended use. The warranty for manufacturing defects is exclusively limited to product defects resulting from defects in the materials used or from design and manufacturing problems attributable to *I.S.T. S.p.A.*

In addition, the warranty does not cover defects due to normal wear and tear of the products in relation to parts subject to fast and continuous wearing out. The warranty on the products purchased may be claimed only on condition that the same products have been paid in full. Unless otherwise agreed in writing, the warranty has a 12 month term starting from the date of installation and shall not exceed 18 months following the delivery date. On stipulating the sales agreement, the warranty term may be extended to 24 / 36 months, subject to prior technical analysis of the application specifications for the machine/equipment.
The abovementioned warranty is valid provided that the products have been used correctly, in accordance with the instructions contained in the Use and Maintenance Manual, that no repairs, modifications or alterations have been made without the prior written permission of *I.S.T. S.p.A*. and that the defects found were not due to chemical or electrical causes. The Purchaser shall verify that the products are conform and free of defects within 7 days as of the product delivery date and, however, always before using the product in any manner whatsoever.

The Purchaser shall report any evident defects or faults found in writing, by and not later than 7 days as of the product delivery date, while any hidden and/or functioning defects (which can therefore be identified only after using the product) shall be reported within 7 days as of their discovery and however, not after the warranty term expiry. Claims must be submitted in writing to *I.S.T. S.p.A*. according to the instructions and modalities specified by the company, indicating in detail the faults or non-conformities found. The Purchaser shall no longer be entitled to any warranty claim if they do not allow I.S.T. S.p.A. to perform reasonable checks as may be required.

Following a valid claim by the Purchaser, *I.S.T. S.p.A*. at its own discretion, with a view towards ensuring the best service at the lowest cost, may:

a) repair the defective products; it is understood that all the expenses resulting from the repair operations performed by *I.S.T. S.p.A.* shall be borne by the same.

b) send to the Purchaser's Headquarters (DAP Incoterms 2010) components of the same type and in the same quantity as those found defective; in this case, the repair under warranty may only be carried out by expert/qualified personnel and only after written authorisation from *I.S.T. S.p.A.*, which will always include specific instructions.

c) any credit notes in the Purchaser's favour, for a sum not exceeding the cost of the same repair if carried out in the factory of *I.S.T. S.p.A.*, will only be issued upon acceptance by *I.S.T. S.p.A*. of the estimate, which the Purchaser must communicate prior to the work. In such cases, *I.S.T. S.p.A*. may request the return of the defective products, which will become its property.

In the event that the defects found are not attributable to *I.S.T. S.p.A.,* the expenses incurred for product repairs and replacements shall be calculated and invoiced to the Purchaser.

The warranty herein includes and replaces all legal warranties for defects and conformities and fully relieves *I.S.T. S.p.A*. from any possible liability connected with the products supplied; in particular, the Purchaser cannot advance other claims for damages and in no event shall *I.S.T. S.p.A*. be held liable for indirect or consequential damages.

2.1 MANUFACTURER AND MACHINE IDENTIFYING DATA

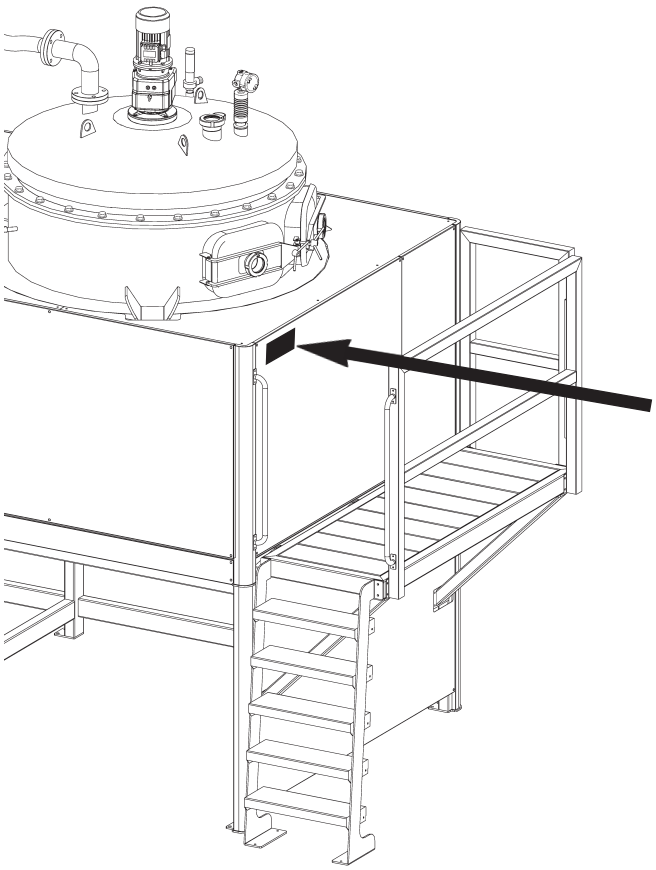
Manufacturer: I.S.T. - ITALIA SISTEMI TECNOLOGICI S.p.A.
via S. Anna, 590
41122 MODENA (MO) - ITALY
tel. 39.059.314305 - fax +39.059.315726
VAT code: 02799130360

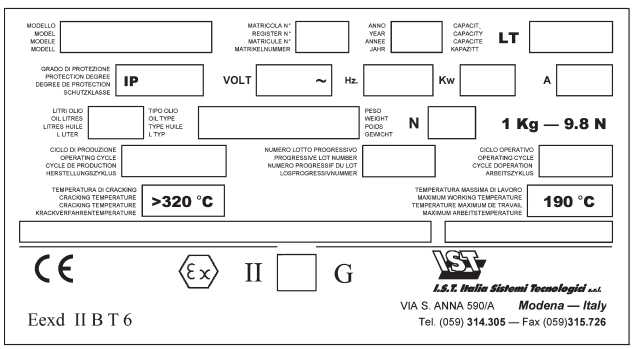
Machine: SOLVENT REGENERATOR
type: HR
model: 1200

2.2 NAMEPLATE

The nameplate is found on the machine side.

Do not tamper with or modify the nameplate data in any way.





2.3 PROHIBITED ACTION, MANDATORY ACTION AND DANGER SIGNS

The machine is fitted with prohibited action, mandatory action and danger signs. These must be observed in full; failure to do so can result in serious injury.

Make sure the signs are always present and legible and replace them if they are not.

ELECTROCUTION HAZARD
Indicates the presence of live electrical equipment.

BURN HAZARD
Indicates the presence of high temperature components and the risk of burning the hands.

HAND CRUSHING HAZARD
Indicates the presence of components that may be hazardous for fingers or hands.

DO NOT SMOKE AND/OR USE OPEN FLAMES

DO NOT USE WATER TO PUT OUT FIRES
In case of fire, use proper powder or CO_2 extinguishers.

REMOVAL OF THE GUARDS AND/OR SAFETY DEVICES IS PROHIBITED.

NO UNAUTHORISED ACCESS.

WEAR PROTECTIVE GLOVES.

WEAR A MASK TO PREVENT INHALATION OF NOXIOUS SUBSTANCES.

WEAR PROTECTIVE EYE GLASSES OR AN EYE/FACE MASK.

SAFETY FOOTWEAR MUST BE WORN.

SAFETY HELMETS MUST BE WORN.

READ THE MANUAL CAREFULLY BEFORE USING THE MACHINE OR SERVICING IT.

2.4 SAFETY INSTRUCTIONS

Failure to observe elementary rules of caution and safety is the main cause of accidents in the workplace.

- Before starting up, using or servicing the machine, read this manual through in full;
- Use the machine within its rated technical limits;
- The machine may only be operated or serviced by qualified staff and in observance of established safety rules, including any such as are not expressly reported in this manual;
- Keep the distiller's signs and safety equipment in good working order and condition at all times; if removed for reasons for maintenance, they must be restored before the machine is used again;
- Do not attempt to open the machine's covers or guards while it is operating;
- Do not wear rings, wristwatches, jewellery, or loose clothing which may be trapped by moving parts; wear appropriate safety clothing. Observe all established safety regulations;
- Never tamper with the machine's safety equipment;
- Clean the machine's panelling and control panels with a soft cloth and a small amount of mild detergent solution; do not use solvents such as alcohol or benzene to clean the machine; doing so can damage it.
- Keep the area around the machine clean in order to prevent tripping or slipping.
- Do not use the machine if it is malfunctioning; report any operating problems or malfunctions to the maintenance manager;
- Do not work on the machine unless authorised to do so and do not allow unauthorised staff to work on it;
- Before working on the electrical equipment, disconnect the machine's power supply;
- Keep the electrical panel closed at all times;
- Opening the tank lid during the distillation cycle is extremely dangerous: doing so allows high temperature noxious gas to escape;
- Wear gloves while filling and emptying out the tank, wear a mask to prevent inhalation of noxious substances, and always wear glasses to protect your eyes;
- Do not wear clothing capable of accumulating electrostatic charge; any sparking can ignite the solvents;
- Do not smoke or approach the machine with open flames while it is running or during maintenance or other work.
- In case of fire, disconnect the machine's power supply and use proper powder or CO_2 extinguishers to put it out. Never use water to do so;
- DO NOT allow the regenerator to be used by pacemaker wearers or pregnant women.
- Do not use mobile phones near the regenerator.

2.5 DANGER FROM CHEMICAL REACTIONS

The operator must know the characteristics of the solvents, their reactions, the hazards they pose and the necessary precautions to be taken. This information is given on the technical safety data sheet that should be provided with the solvent at the time of its purchase.

It is a good practice to keep the data sheets for the solvents in an accessible place (possibly together with this manual) for easy and quick consultation.

Only flammable solvents belonging to explosive groups IIA and IIB and having a self-ignition temperature higher than 250°C must be distilled.

The operator may be exposed to danger from chemical reactions if unsuitable solvents are let into the purifier tank.

2.5.1 PEROXIDES

Reactions caused by the presence of peroxides must be avoided. These can form in the absence of stabilisers and in the presence of oxygen, in solvents such as:
Tetrahydrofuran (THF, tetramethylene oxide or 1.4 -Epoxybutane)
Diethyl ether (Ethyl ether, Ether, Ether Oxide or Sulfuric Ether)
Diisopropyl ether (Isopropyl ether or DIPE)
1.4 Dioxane (Dioxane, p-Dioxane or Diethylene oxide)
Ethyl Cellosolve (Ethylene glycol monoethyl ether or 2-Ethoxyethanol) alkoxides and ketones
Butyl Cellosolve (Ethylene glycol monobutyl ether or 2-Butoxyethanol)

Those using such solvents must be aware of the possibility of formation of peroxides if stabilisers are absent, since the hazard level of these solvents is not only limited to the distillation phase but also to all the handling phases (storage, use, etc.).
The safety data sheet for these solvents must provide information regarding the risk of peroxide formation and the necessary precautions to be taken (stabilisers, types, quantities and methods of analysis).

2.5.2 NITRIC SUBSTANCES AND NITRATES

Substances or solvents that may cause reactions due to the heating of nitric substances (Nitromethane, Nitroaromatics) and nitrates (esters of nitric acid) cannot be used in these purifiers due to the risk of explosion.

2.5.3 NITROCELLULOSE

Particular care must be taken in the case of solvents contaminated with Nitrocellulose as a residual component of certain types of paints. The safety data sheet of products containing Nitrocellulose (paints, inks, etc.) must indicate their content.

To purify solvents containing Nitrocellulose, contact IST technical support, and bear in mind the following in any case:
- never exceed a temperature of 120°C when heating heat transfer oil;

***If the regenerator is NOT prepared with the nitrocellulose kit**: keep the purifier in a separate zone from the production cycle and the operators' workstations or other occupied areas, possibly outdoors, ensuring sufficient protection against the elements.*

- never set the thermostats so that they cause the residue to dry;
- storing the washing solutions for long periods may lead to the formation of peroxides. Before starting the distillation, a check should be made to verify their presence. Take steps to adequately eliminate them (e.g. by correcting the pH to an alkaline value);

***Only for NON-continuous cycle models**: unload the distillation residues after each cycle to prevent the accumulation of residual sludge containing Nitrocellulose, as the higher the concentration, the greater the probability of creating hazardous conditions.*

- particular care should be taken when disposing of residual sludge from distillation containing concentrations of Nitrocellulose. Use resealable metal containers and add small quantities of water to prevent the sludge from completely drying out (which increases the risk of auto-ignition of the nitrocellulose).

2.5.4 EXOTHERMIC REACTIONS

Do not regenerate solvents or mixtures and contaminants capable of generating exothermic reactions (reactions which generate an uncontrolled release of heat).
Check the safety sheets thoroughly.

2.5.5 PRECAUTIONS AGAINST ELECTROSTATIC DISCHARGES

- The operator must not wear clothing capable of accumulating electrostatic charge (e.g. clothing made of synthetic fibres).
- To clean the tank and other parts of the machines use damp cloths (not made of synthetic fibres).
- Check that the power supply is properly earthed.

2.5.6 SPILLS

*Any spills of polluted or regenerated solvent around the regenerator must be immediately removed, with scrupulous attention to the indications on the solvent safety data sheet (**SECTION 6- MEASURES IN THE EVENT OF ACCIDENTAL SPILLAGE)***

2.5.7 LIST OF COMMON RECYCLABLE SOLVENTS
(TECHNICAL STANDARD CEI EN 50014:1998-06)

Division A

1. HYDROCARBONS

- Alkanes:
E.g.: hexane, cyclohexane, etc.

- Alkenes:
E.g.: propene (propylene).

- Aromatic hydrocarbons:
E.g.: styrene, etc.

- benzenoid hydrocarbons:
E.g.: toluene, xylene, etc.

- Hydrocarbon mixtures:
E.g.: cleaning solvent, kerosene, etc.

2. COMPOUNDS CONTAINING OXYGEN

- Alcohol and phenols:
E.g.: propanol, etc.

- Ketones:
E.g.: acetone, ethyl acetate, etc.

- Esters:
E.g.: butyl acetate, methyl acetate, etc.

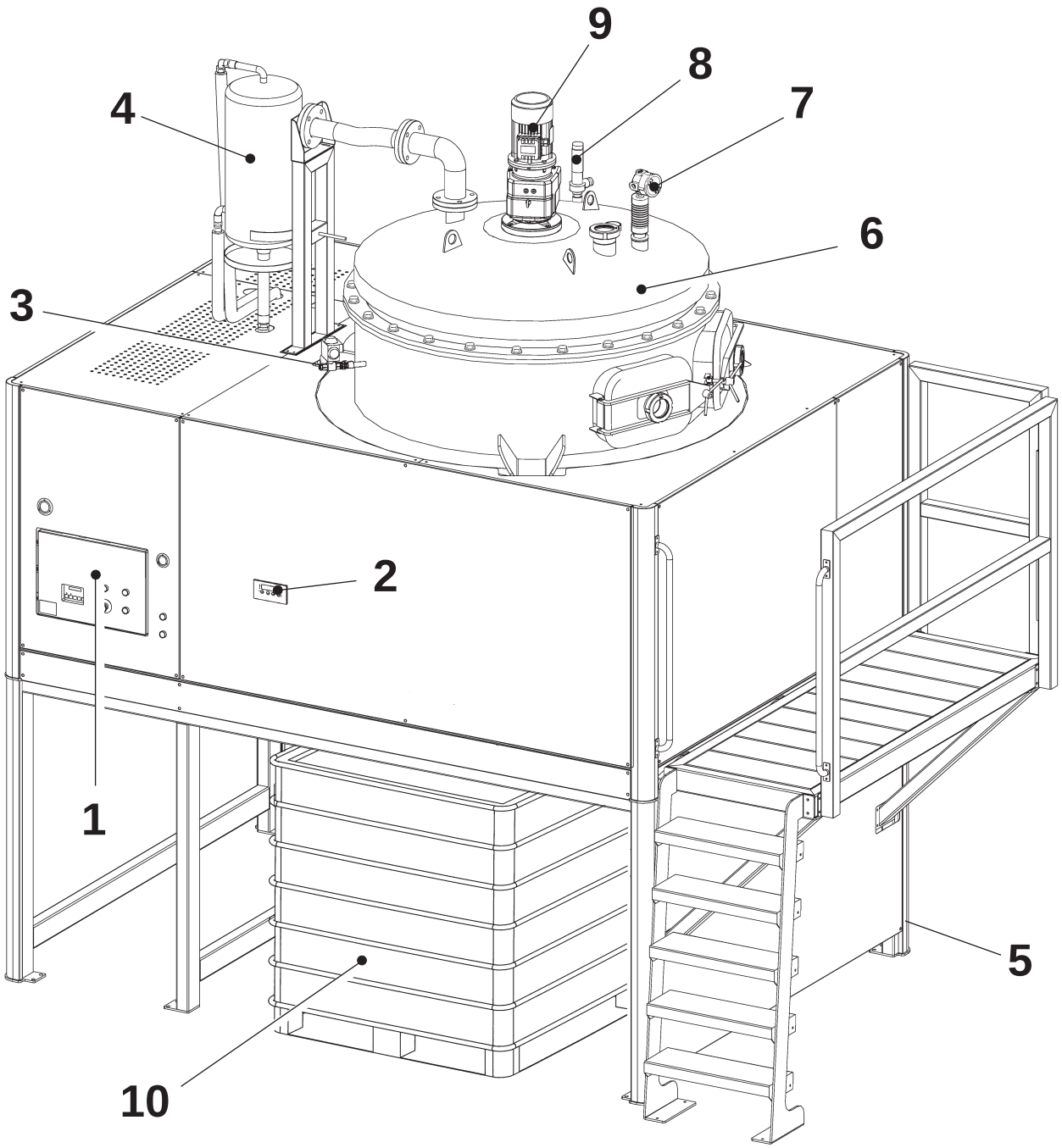
3. COMPOUNDS CONTAINING HALOGENS

- Compounds without oxygen:
E.g.: methyl chloride, chloroethylene, etc.

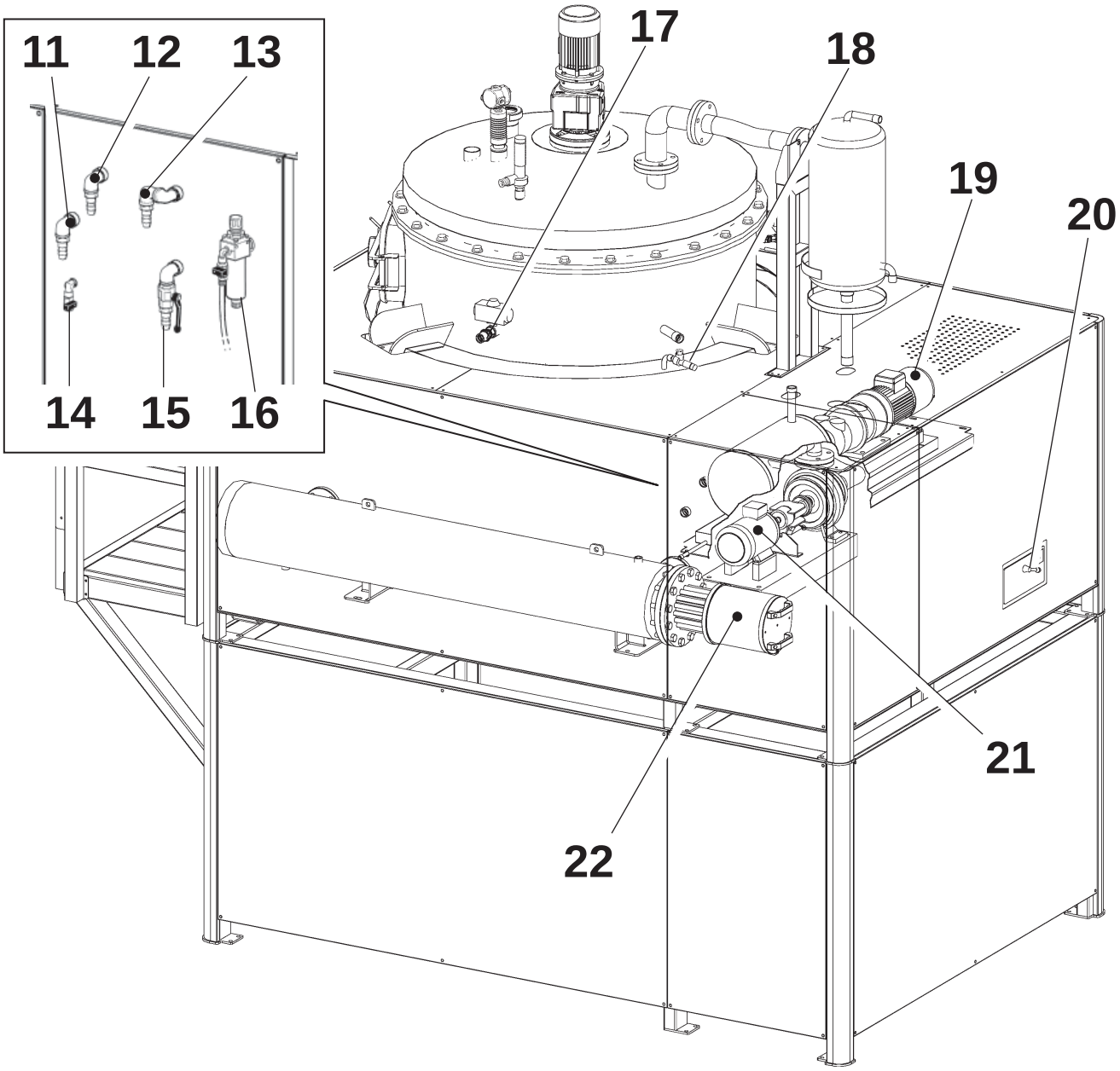
Division B

1. HYDROCARBONS

3.1 GENERAL DESCRIPTION



1 - CONTROL PANEL
2 - DIGITAL WEIGHT INDICATOR
3 - DISCHARGE ACTUATOR
4 - WATER COOLING CONDENSER
5 - SUPPORT FRAME AND STEELWORK
6 - TANK COMPLETE WITH AGITATOR
7 - MULTIPOINT LEVEL SWITCH
8 - SAFETY VALVE
9 - SCRAPER MOTOR
10 - RESIDUE COLLECTION TANK (OPTIONAL)



11 - CLEAN SOLVENT OUTLET

12 - DIRTY SOLVENT INLET

13 - WATER DISCHARGE

14 - LIQUID RING VACUUM TANK DISCHARGE

15 - WATER OUTLET

16 - AIR FILTER

17 - WATER INLET ACTUATOR

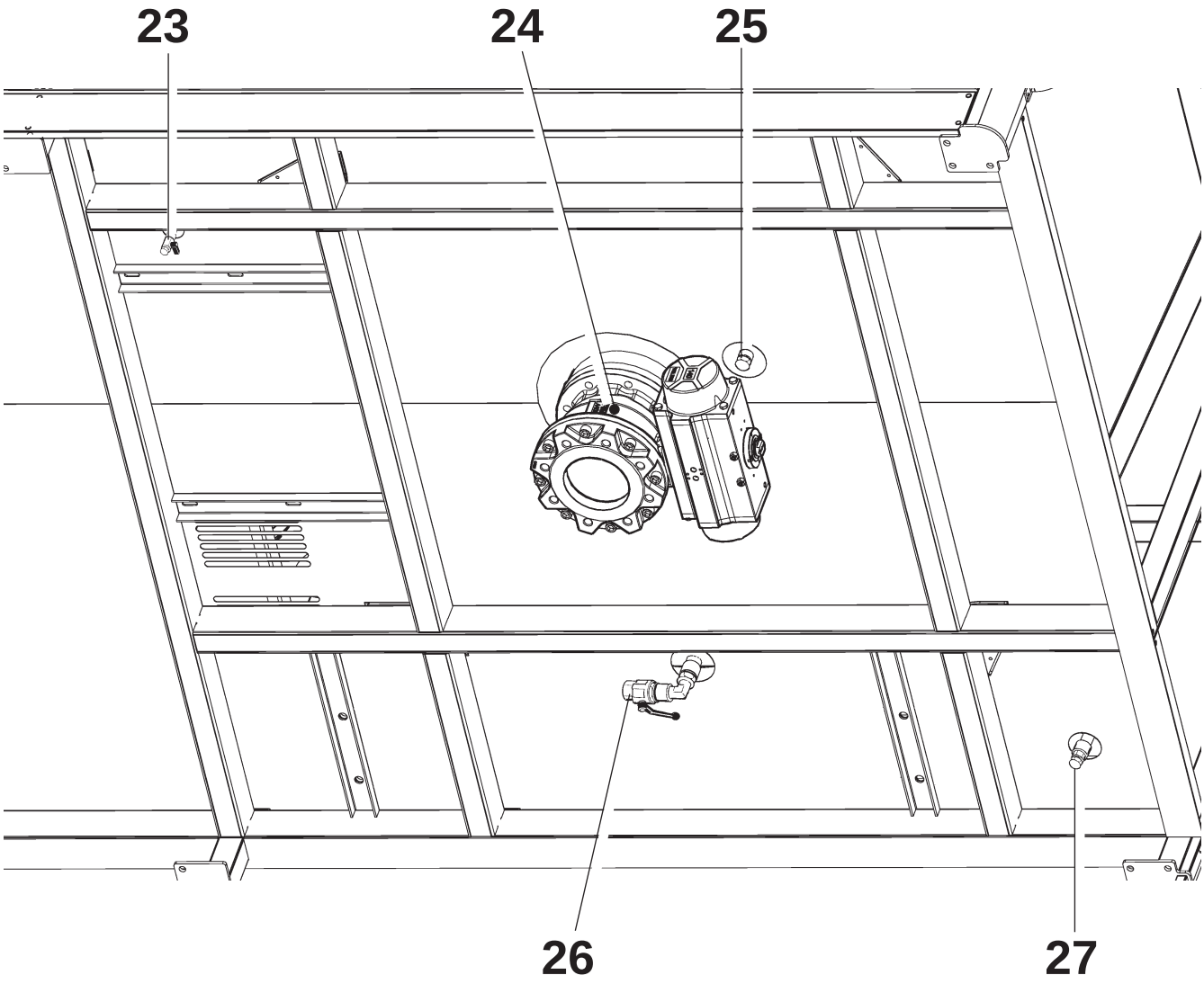
18 - SAFETY VALVE

19 - LIQUID RING VACUUM

20 - MASTER SWITCH

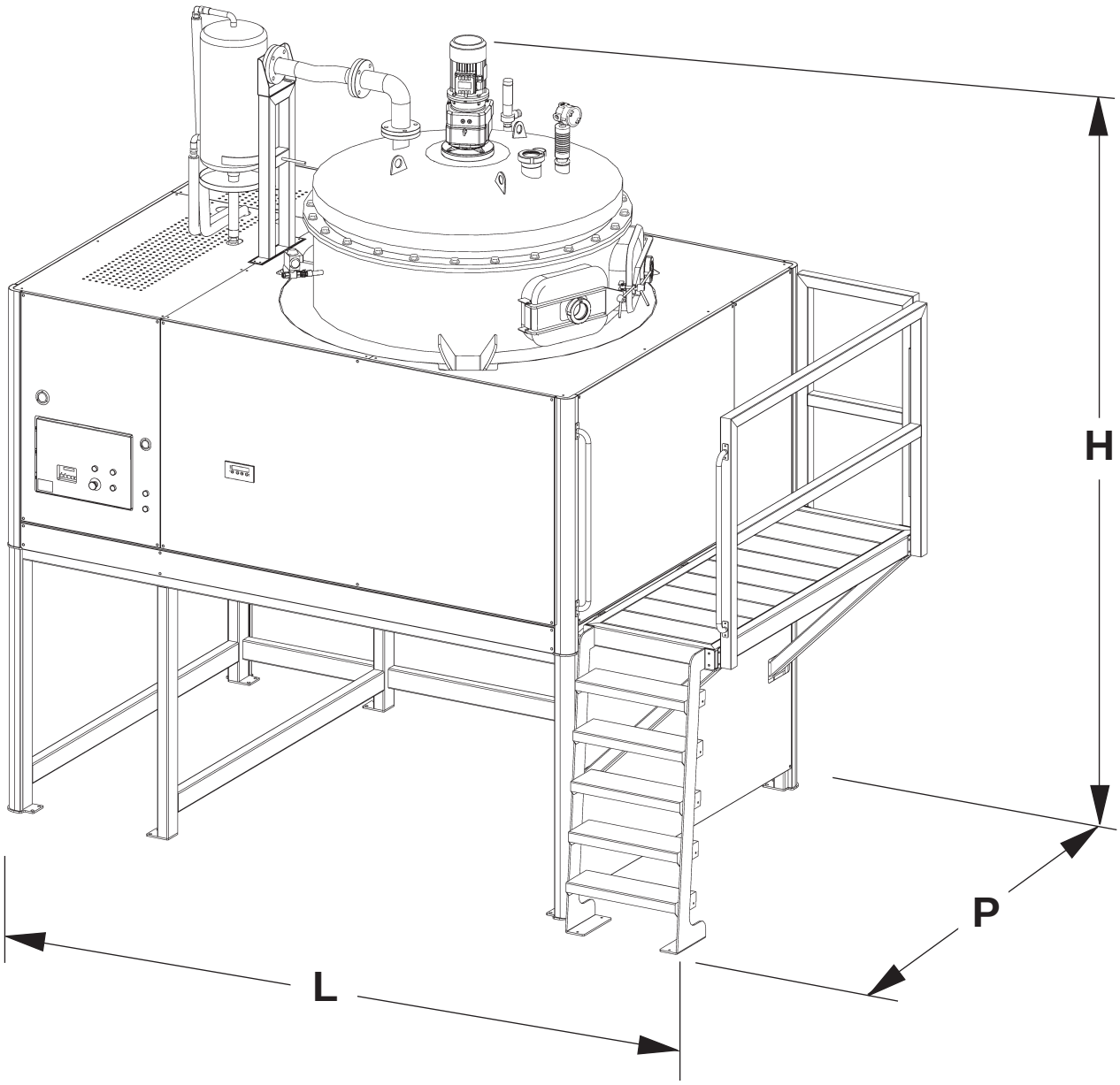
21 - HEAT EXCHANGER

22 - HIGH-SPEED RECIRCULATION PUMP



23 - OIL RECIRCULATION PUMP DISCHARGE VALVE
24 - RESIDUE DISCHARGE VALVE
25 - TANK OIL OUTPUT
26 - TANK OIL INPUT
27 - HEATING ELEMENT OIL DRAIN VALVE

3.2 DIMENSIONS



mm	L	P	H
HR 1200	3900	2300	4000
HR 1200 with Demister	3900	2300	4300

3.3 TECHNICAL DATA AND SPECIFICATIONS

ATEX regenerator	HR 1200
Tank capacity	1200 litres
Power supply voltage	380 - 415V/3/50 Hz +/- 2%
optional:	400/3/60 Hz +/- 2% 460/3/60 Hz +/- 2%
Control voltage	Very low voltage 24V =
Installed capacity	Heater 66000W Oil pump 1100W Scraper 550W Vacuum pump 1500W (optional)
Operating temperature	50° - 190°C
Maximum safety temperature	230°
Indirect heating by heat transfer oil	MOBILTHERM 605
Quantity of heat transfer oil	200 litres
Water cooling option	minimum flow rate 2m^3 / h at 10/15°C
Electrical system standards	60079-0 EN 60079-1 EN 60079-11 EN 60079-14 EN 60079-25
Weight	Kg. 2600
Ambient operating temperature	+5 / +40
Precision of sensors	+/- 2°
Safety thermostat precision	+/- 5%

3.4 MACHINE GENERAL DESCRIPTION AND INTENDED USE

The HR SERIES regenerator is a machine composed of:
- A solvent loading system by means of a liquid ring vacuum pump;
- A solvent containment tank complete with agitator;
- A heating system;
- A condensation system;
- A regenerated solvent and polluted residue discharge system.

The HR SERIES regenerator is designed and built to distil some solvents polluted by use to obtain clean solvent for reuse. It specifically allows the distillation of certain solvents in explosive groups IIA and IIB, with auto-ignition temperatures of above 250°C.

The regeneration of polluted solvents occurs through distillation; once the solvent to be regenerated is fed into the tank through an automatic loading system, the used solvent is brought to boiling point and its vapours are condensed by means of a water-cooled heat exchanger. In this way, the volatile fraction (solvent) is separated from the contaminant (pigments, inks, resins, oils, etc.) so that:
- the regenerated solvent is conveyed towards the outlet and collected in a container;
- the contaminant remains inside the tank and is removed at the end of the cycle through a special pneumatic valve on the bottom of the tank;
- for a better recycling yield, the HR SERIES is equipped with an agitator that keeps the inside of the tank clean.

As indicated in the Use and Maintenance Manual, once the necessary data is set for the SW program to obtain the evaporation of the previously loaded solvent (for recycling), the work cycle starts and runs until the end of the cycle is reached, when it stops.

The HR SERIES regenerator works in normal conditions, with a heat transfer oil temperature of between 50° and 190°C.
In conformity with the regulations on explosive atmospheres (ATEX), the HR SERIES regenerator is equipped with a safety system to prevent temperatures of over 230°C being reached (ref. Heating element safety thermostat).

The HR SERIES regenerator is designed and built to distil flammable solvents in groups IIA and IIB with an ignition temperature above 250°C.
Use of the HR SERIES regenerator ***in the cases described below*** *is prohibited:*
- *for regenerating solvents in groups IIA and IIB with an autoignition temperature below 250°C;*
- *for regenerating solvents in group IIC;*
- *for regenerating products other than solvents.*

Any use of the HR SERIES regenerator ***other than that indicated above*** *must be avoided.*

The HR SERIES regenerator operates with an UNATTENDED workstation; depending on the solvent to be regenerated and the quantity loaded, the machine in question only requires monitoring during the first hour of operation, with sporadic surveillance every 2 hours thereafter.

The HR SERIES regenerator is designed and built in compliance with the ATEX standard for installation in production premises classified as follows:

GROUP II CATEGORY 2G

The aforementioned classification of the HR SERIES regenerator allows its installation in areas classified as ZONE 1 in accordance with directive 99/92/EC

In terms of construction, the IST REGENERATOR consists of:

- a tank, complete with a hatch, for the solvent to be regenerated;
- heat transfer oil heating elements;
- support frame and steelwork;
- heat exchanger;
- electrical equipment on board the machine;
- control station;
- oil recirculation pump.

For further information, see part 9 and 11 of this technical file

3.5 HAZARDOUS EMISSIONS

The IST REGENERATOR, in its various configurations and versions, is designed and built to distil certain solvents polluted by use in order to obtain clean solvent for reuse.
The groups of solvents that can be recovered are given in ch. 2.5.6 and 3.4, and in all cases, the hazards associated with the substances placed in the IST REGENERATOR are defined by safety data sheets.

The safety sheets are the responsibility of the user, who is familiar with the attendant risks

The IST REGENERATOR is a source of possible emissions during certain phases of the process; the associated dangers therefore relate to:

- **Inhalation of gas/vapour** cleaning the tank, discharging residues, work on the safety valve and maintenance activities.

- **Contact/splashing** cleaning the tank, discharging residues, work on the safety valve and maintenance activities.

- **Swallowing** residual risk (cleaning the tank, discharging residues and maintenance activities).

These dangers expose the operator for a limited time (around 10 minutes every 4 hours), depending solely on his experience and skill.

In any case, the operator must use the PPE indicated in the solvent safety data sheet (for which the customer has sole responsibility).

The emissions have the following characteristics:

Liquid and at room temperature (limited exposure).

Gaseous and at a temperature of between 60° and 150° (rare exposure, due to intervention of the safety valve in the case of malfunction).

Liquid residues/sludges at temperatures of between 40° and 70° (limited exposure).

It is not currently possible to quantify the emissions generated by the IST REGENERATOR, as they are related to the type of solvent used by the customer and the environment in which the IST REGENERATOR is installed. It is therefore advisable to take samples after commissioning to verify the emission level during the activity in which the operator is most exposed.

3.6 IMPROPER USE OF THE MACHINE

I.S.T. distillation units are designed and fabricated with the best available technology, to operate in maximum safety, in conformity with established accident prevention regulations.
However, this depends on proper use and maintenance.
Any use of the machine not indicated or deducible from this manual is to be considered improper and prohibited, and I.S.T. cannot be held liable in any way for the consequences (damage and injury) resulting from such improper, erroneous and unreasonable use.

4.1 DELIVERY OF THE MACHINE

Ambient storage temperature +0 / +40°

The shipped material is carefully checked before being handed over to the shipping agent.
When you receive the machine, check it for shipping damage and check that the packaging has not been tampered with and any material removed.
If you remark any damage or removed material, notify the shipping agent and the manufacturer immediately.
Also check that the delivery matches the order.

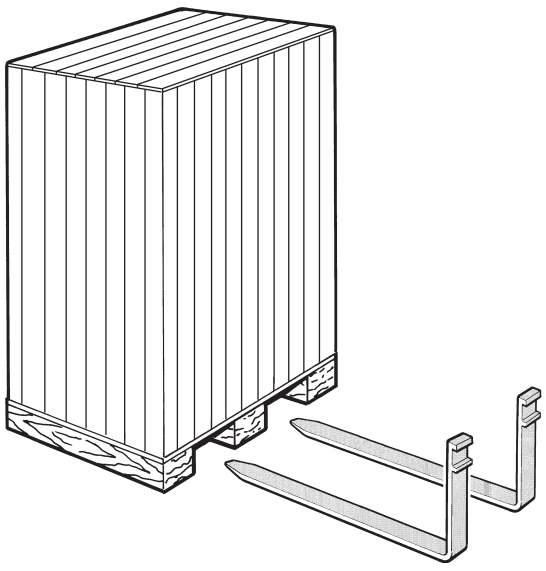
4.2 UNPACKING THE MACHINE

The packaging procedure will vary in relation to the distance and type of shipping.
The machine is usually shipped wrapped in plastic sheeting inside a wooden crate fixed to special base.
Lift the machine using a forklift truck, take it as close as possible to the site of installation and remove the packaging.

The packaging materials (plastic bags, polythene, pluriball, nails, staples, etc.) must be sorted for disposal as required by the law. Do not burn or dump them.
The packaging is composed of a crate on a wooden pallet (CER150103) and plastic sheeting (CER 200104).
These materials may be disposed of as household waste using sorted public collection bins. However, given the quantity of material, it may be necessary to contact the local waste management service for their disposal.

4.3 LIFTING THE MACHINE

Use a forklift truck to lift the machine. Insert the forks under the feet.



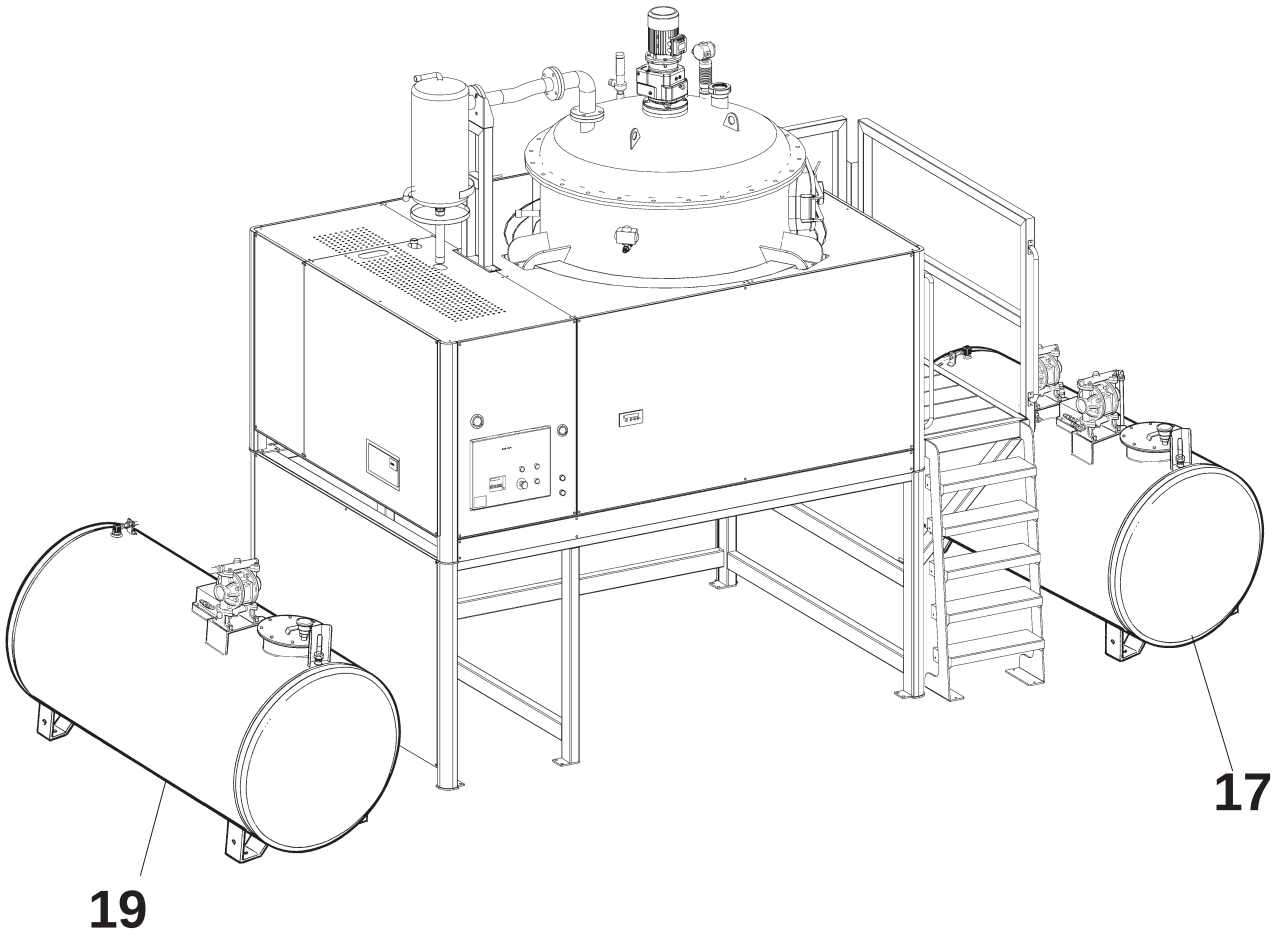
4.4 ASSEMBLING THE MACHINE

The regenerator is assembled on the Customer's premises by qualified technicians from the Manufacturing Company.

The regenerator must not be assembled by the customer.

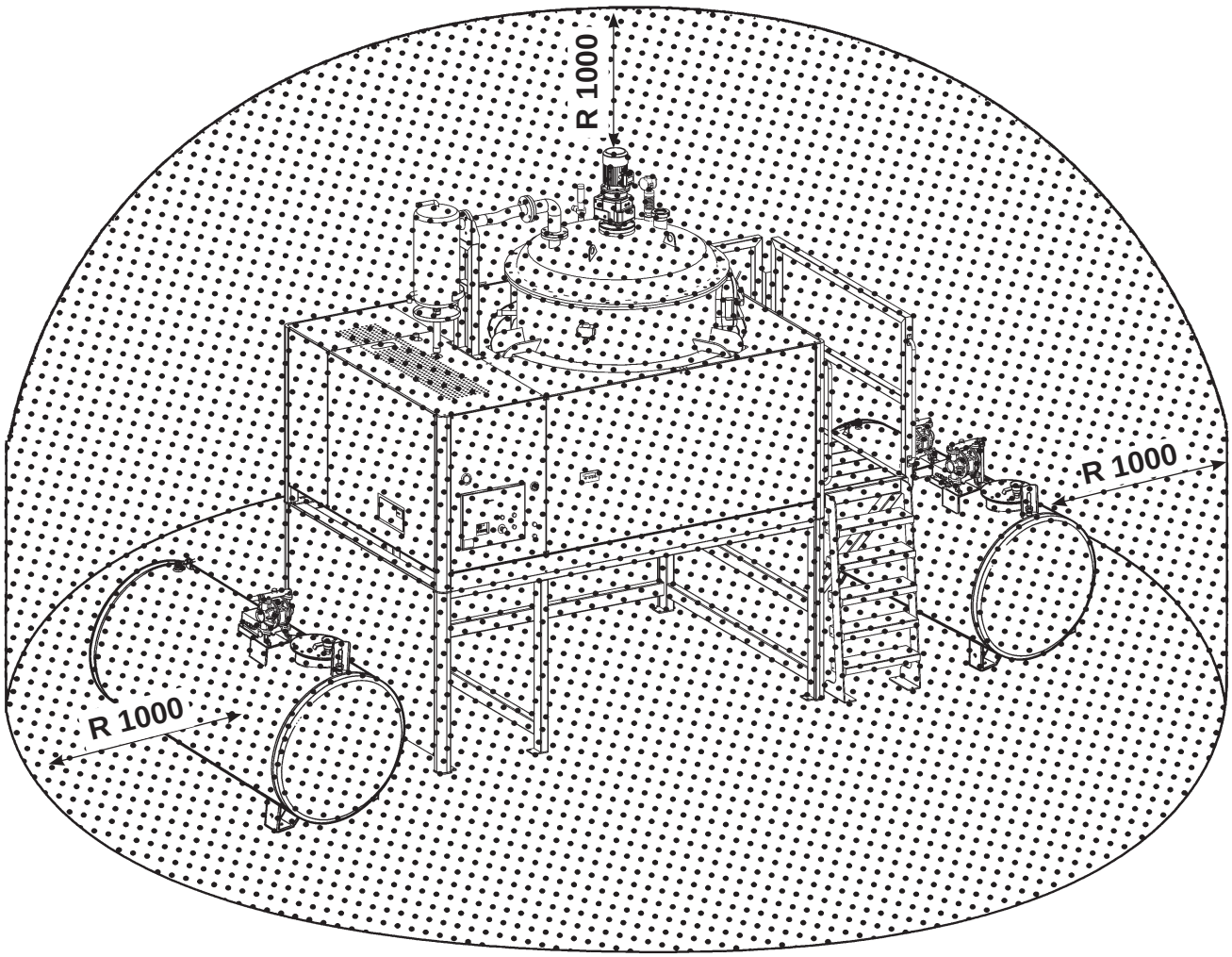
4.4.1 POSITIONING OF COLLECTION TANKS (optional)

Position the tanks on the sides of the regenerator at a distance of about 30 cm.
The used solvent collection tank on the right-hand side (17) and the regenerated solvent collection tank on the left-hand side (19).



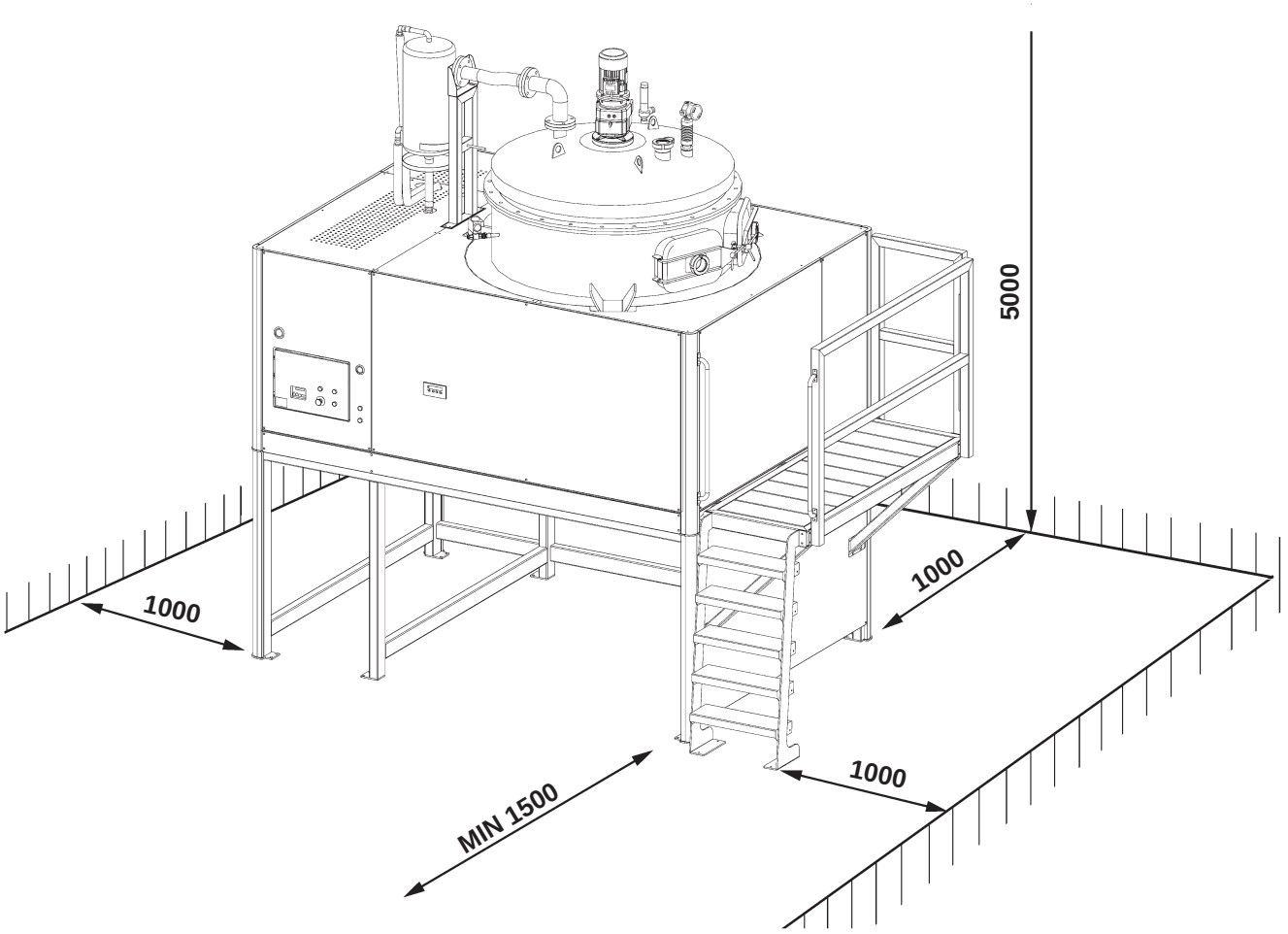
4.5 INSTALLING THE MACHINE

Install the regenerator in a large, well-ventilated space, away from workstations and other occupied areas.
The installation in the building involves a classification of the environment which, according to standard EN60079-10, is zone 2.
This zone 2 extends around the regenerator to a radius of 1 metre.



Avoid installing the regenerator in a steel box, a cellar, under a staircase, in a basement or in a space with no natural ventilation.

If the machine is installed outdoors, it must be protected against the weather and supervised to prevent tampering and interference by unauthorised persons.
For proper use of the machine, it is advisable to leave a clearance area of 1000 mm on the side, 1000 mm at the back for the discharge of residues, 1500 mm at the front and 5000 mm above it. For proper operation and ventilation, install the regenerator in a spacious and well-ventilated location.



4.5.1 MINIMUM AMBIENT LIGHTING LEVELS

The minimum permitted ambient lighting level is 120 Lux for operation and other activities, 500 Lux for maintenance.

4.5.2 CONNECTING THE USED SOLVENT TANK

- WATER CONNECTION

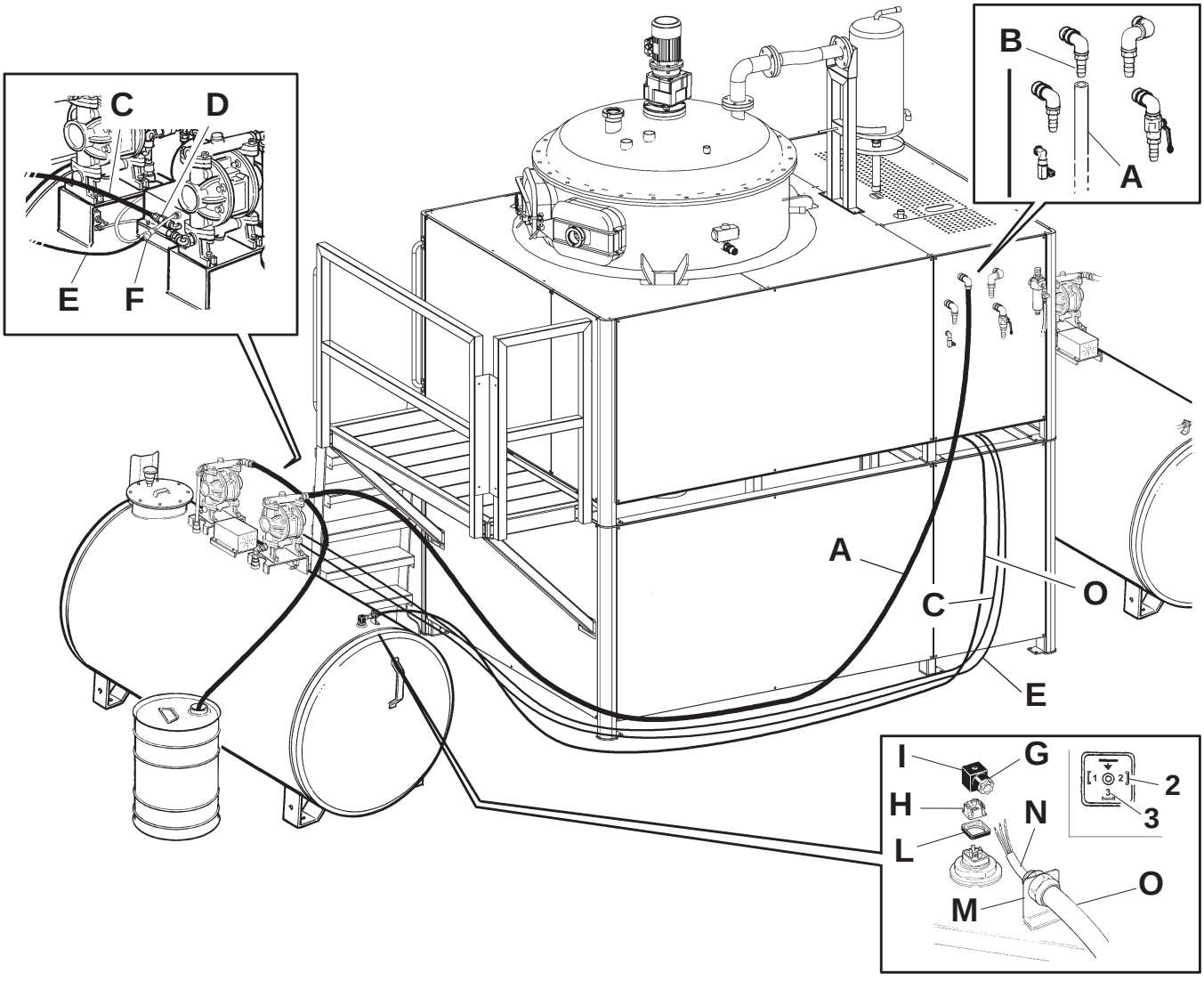
Connect hose (A) to fitting (B).

- COMPRESSED AIR CONNECTION

Connect hose (C) to fitting (D) and hose (E) to fitting (F).

- ELECTRICAL CONNECTION

Fix the sheath (O) to the support (M). Remove the plug (G) from the level switch (L) while taking care with the fixing screw (I). Insert the cable (N) in the plug (G), connect the wires to the connector (H), following the numbering 2, 3 and G (ground). Insert the connector (H) in the plug (G) and connect them to the level switch (L), fixing it with the screw (I).



4.5.3 CONNECTING THE REGENERATED SOLVENT TANK

- WATER CONNECTION

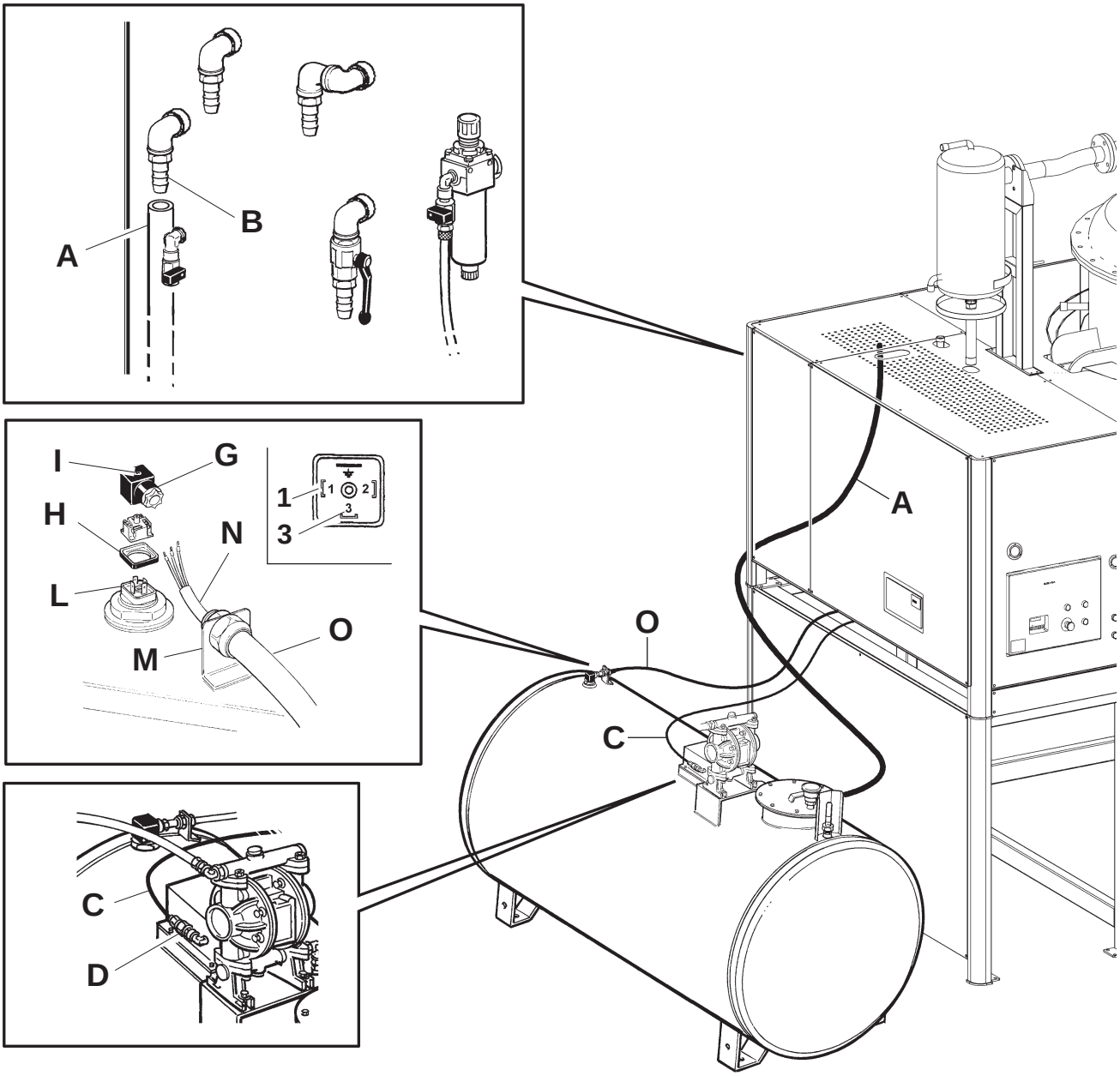
Connect hose (A) to fitting (B).

- COMPRESSED AIR CONNECTION

Connect hose (C) to fitting (D).

- ELECTRICAL CONNECTION

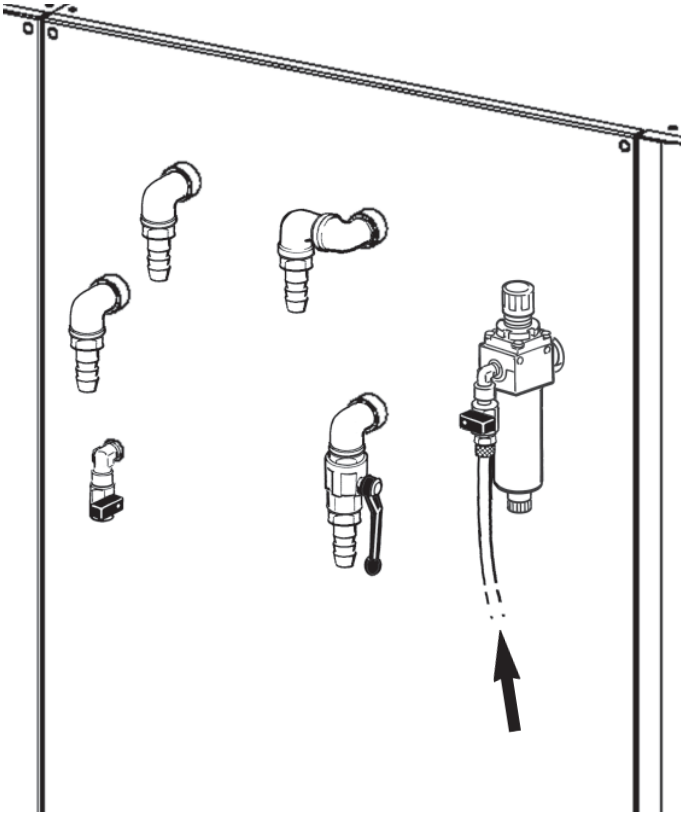
Fix the sheath (O) to the support (M). Remove the plug (G) from the level switch (L) while taking care with the fixing screw (I). Insert the cable (N) in the plug (G), connect the wires to the connector (H), following the numbering 1, 3 and G (ground). Insert the connector (H) in the plug (G) and connect them to the level switch (L), fixing it with the screw (I).



4.6 COMPRESSED AIR CONNECTION

For the compressed air connection, insert a ø 6-8 Rilsan pipe from your own compressed air system directly into the quick fitting, without pressure regulators.

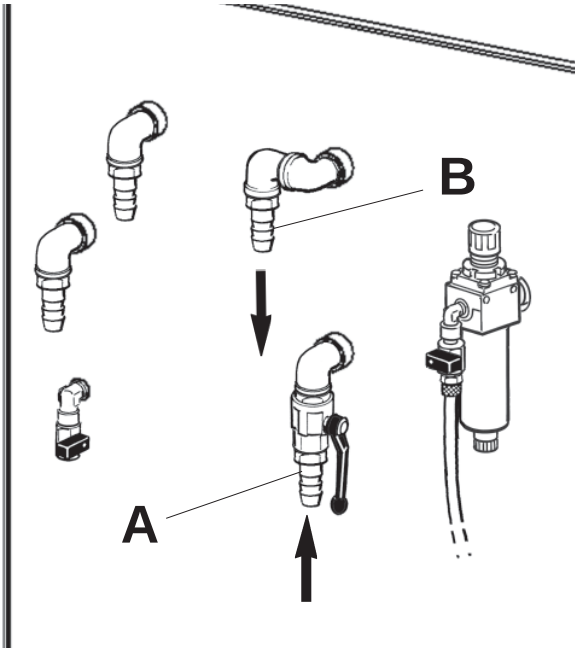
Caution, max. input pressure 8 - 9 bar



4.7 WATER CONNECTION

Ensure that your water supply, connected to our regenerator, has a minimum flow rate of 2 m^3hour of water at 10/15°C and is fitted with a purifying filter

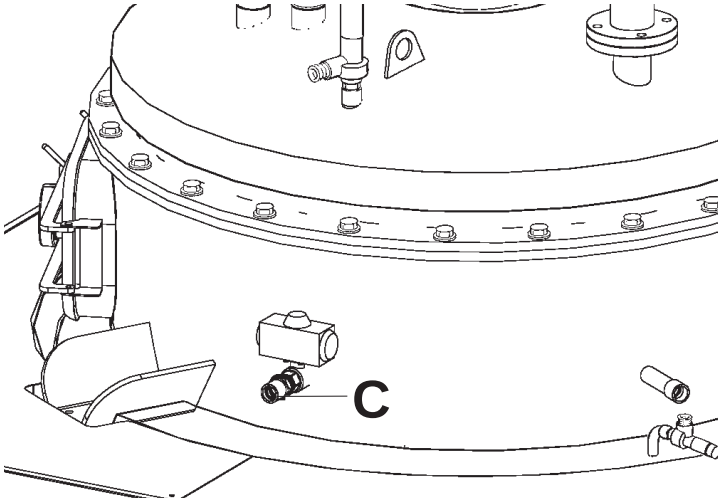
Connect your water supply outlet to hose connection (A) with a 25 mm internal Ø hose and secure it with a jubilee clip. Connect the discharge pipe to hose connection (B) in the same way.



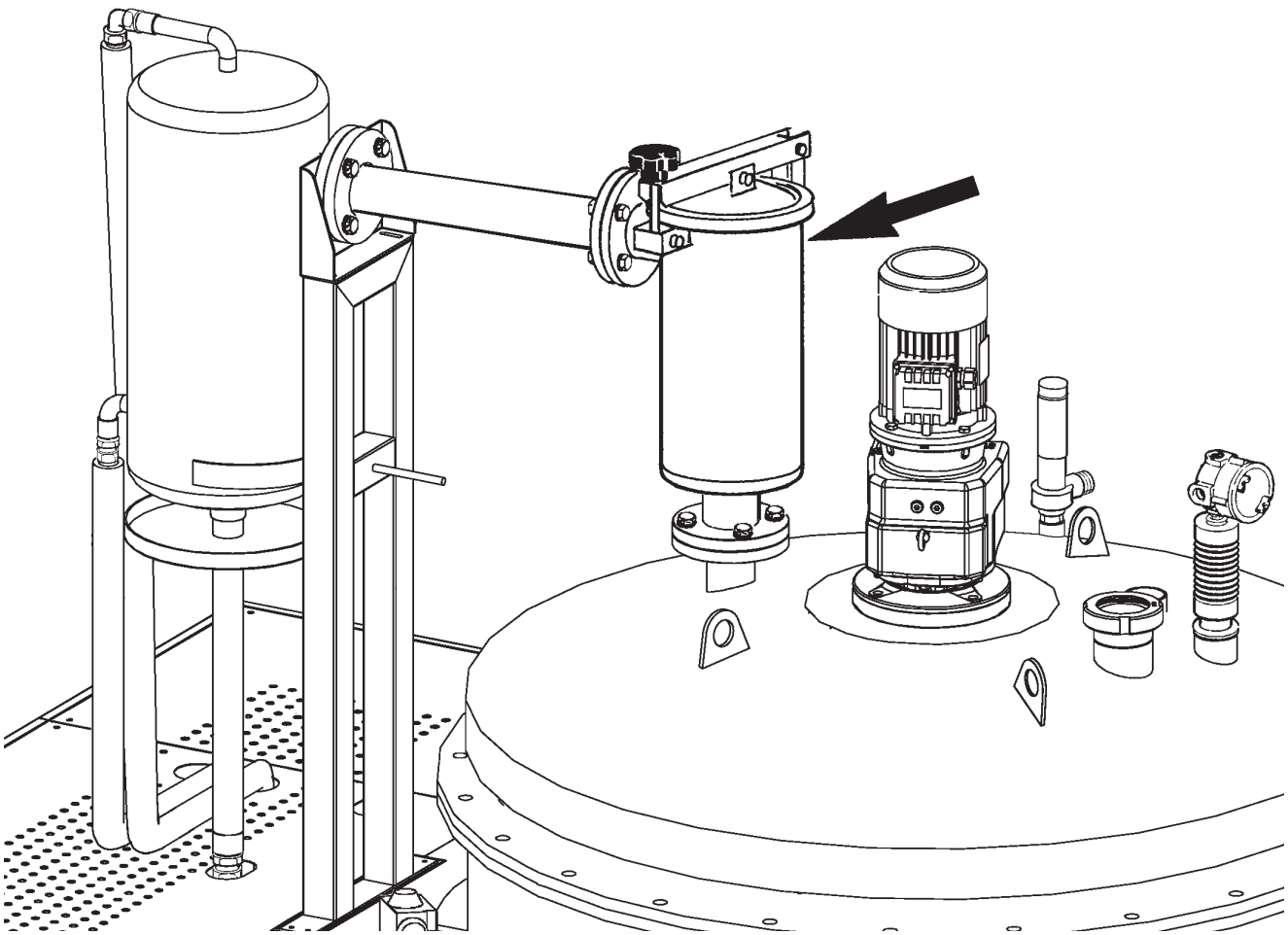
4.7.1 NITROCELLULOSE KIT (optional)

Make sure your water system, connected to our regenerator, has a minimum water flow capacity of 20 l/min

Connect the outlet of your water system to the hose connection (C) with a 20 mm internal Ø hose and secure it with a jubilee clip.



4.8 DEMISTER KIT (OPTIONAL)



4.9 ELECTRICAL CONNECTION

Only qualified electricians are permitted to work on the electrical equipment, no matter how minor the job.

- The machine must be connected to the mains power supply in compliance with the regulations laid down by the relevant Authorities, the accident prevention provisions of the accident insurance institute and the explosion protection requirements of the ATEX directives.
- The compatibility of the power supply type and mains voltage must be carefully checked with the information given on the machine nameplate (2.2 NAMEPLATE) and/or in table 3.3 TECHNICAL DATA AND SPECIFICATIONS.
- Install a plug compliant with EU or local regulations to the power cord.
- The plug must have an earth pin.
- Check that the power supply is properly earthed.
- The machine must be connected to the mains via a wall-mounted thermal-magnetic differential circuit breaker, in accordance with the ATEX directives.

- Hook the machine up to the power supply cautiously, with the circuit powered down and in observance of safety regulations.
- Do not use multiple sockets, adaptors or extension cords for this purpose.
- Do not use the equipment if the power cord or plug are damaged.
- When the connection is completed, turn the switch to the “I” position and check that the display lights up (2) (5.1.1 ELECTRICAL PANEL).

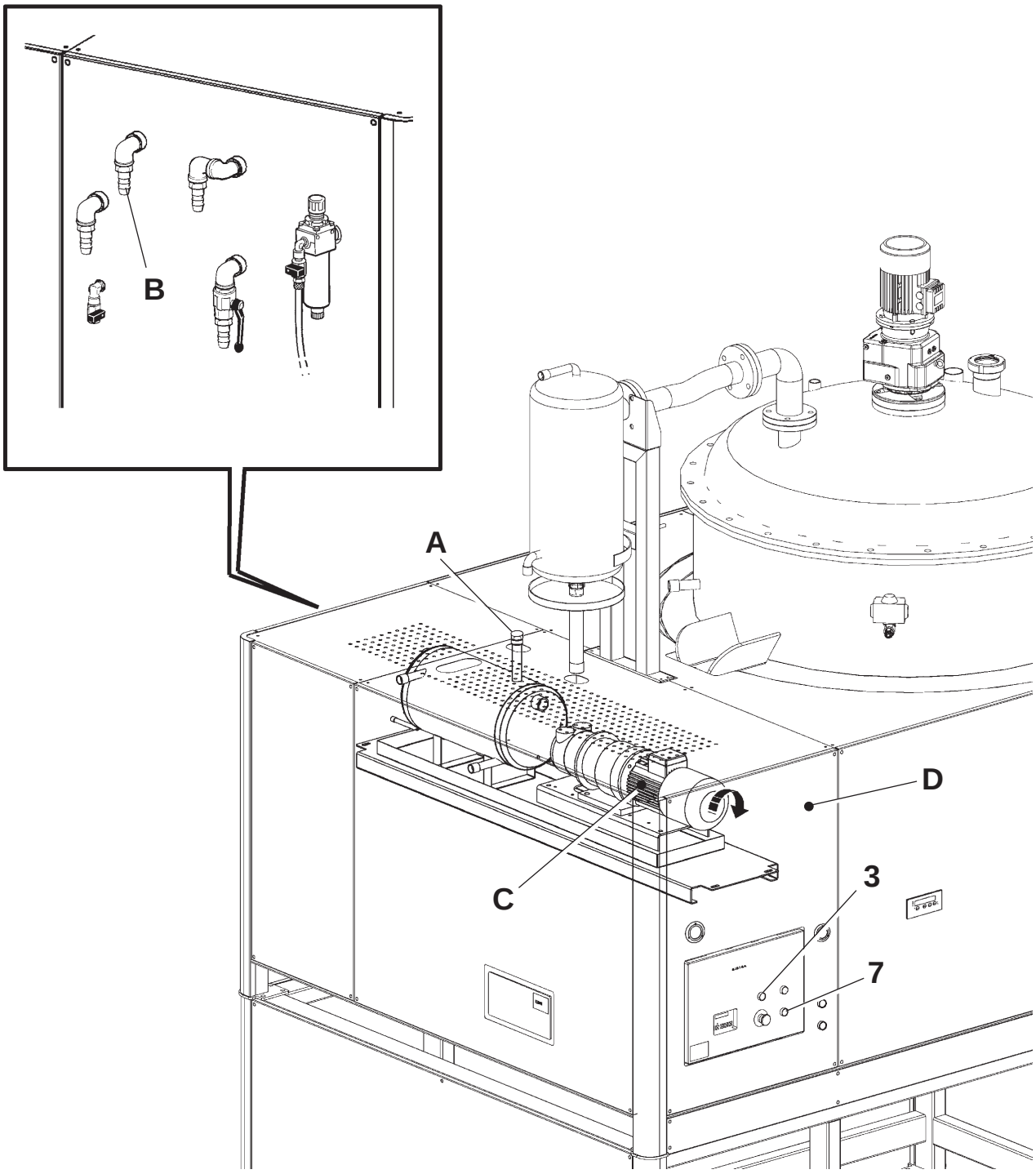
The power cord must not touch the ground or be routed along it, and must not be stretched or crushed.

The manufacturer is not liable for the consequences of failure to observe these instructions.

4.10 LIQUID RING VACUUM FILLING WITH ROTATION DIRECTION CHECK

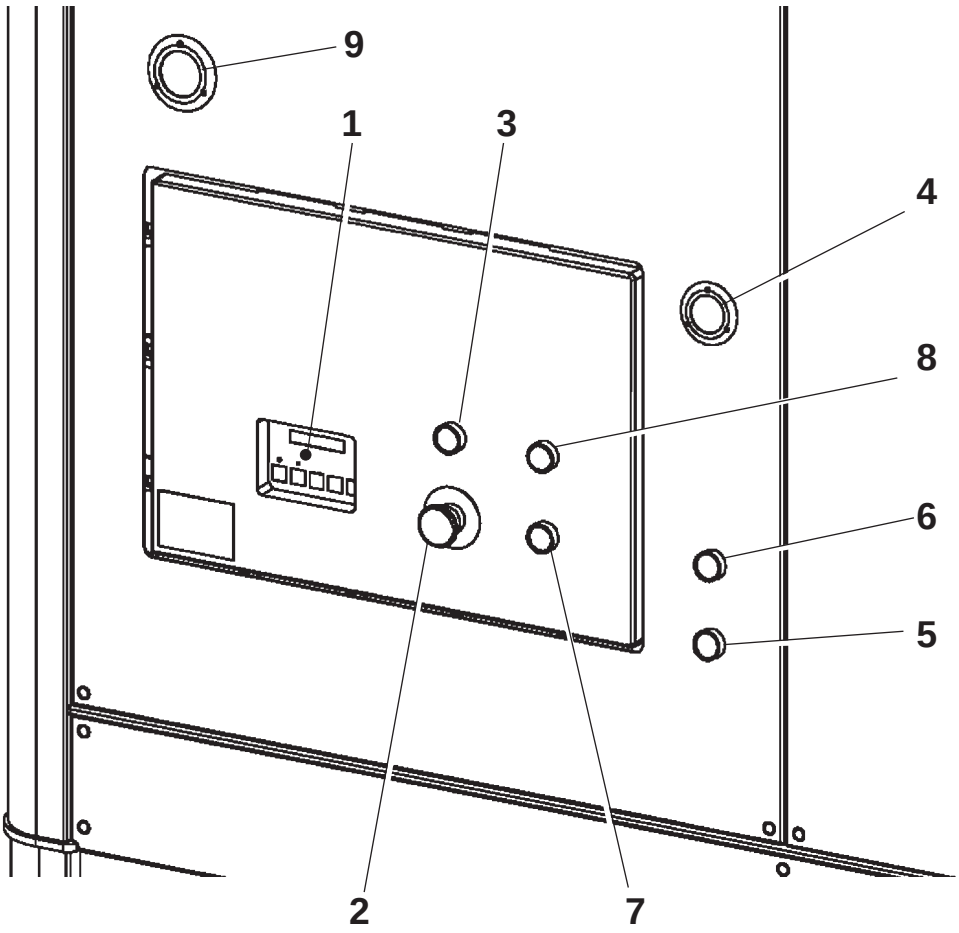
Take off the guard (D), remove the cap (A) and pour in virgin solvent up to the solvent outlet on the hose connection (B).
Press the Reset button (7), press the start button (3) and check that the motor (C) turns in a clockwise direction.

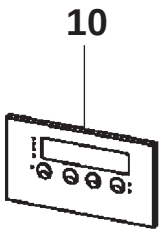
In the event of black out or malfunction, always top up the solvent in the vacuum pump.



5.1 DESCRIPTION OF CONTROLS

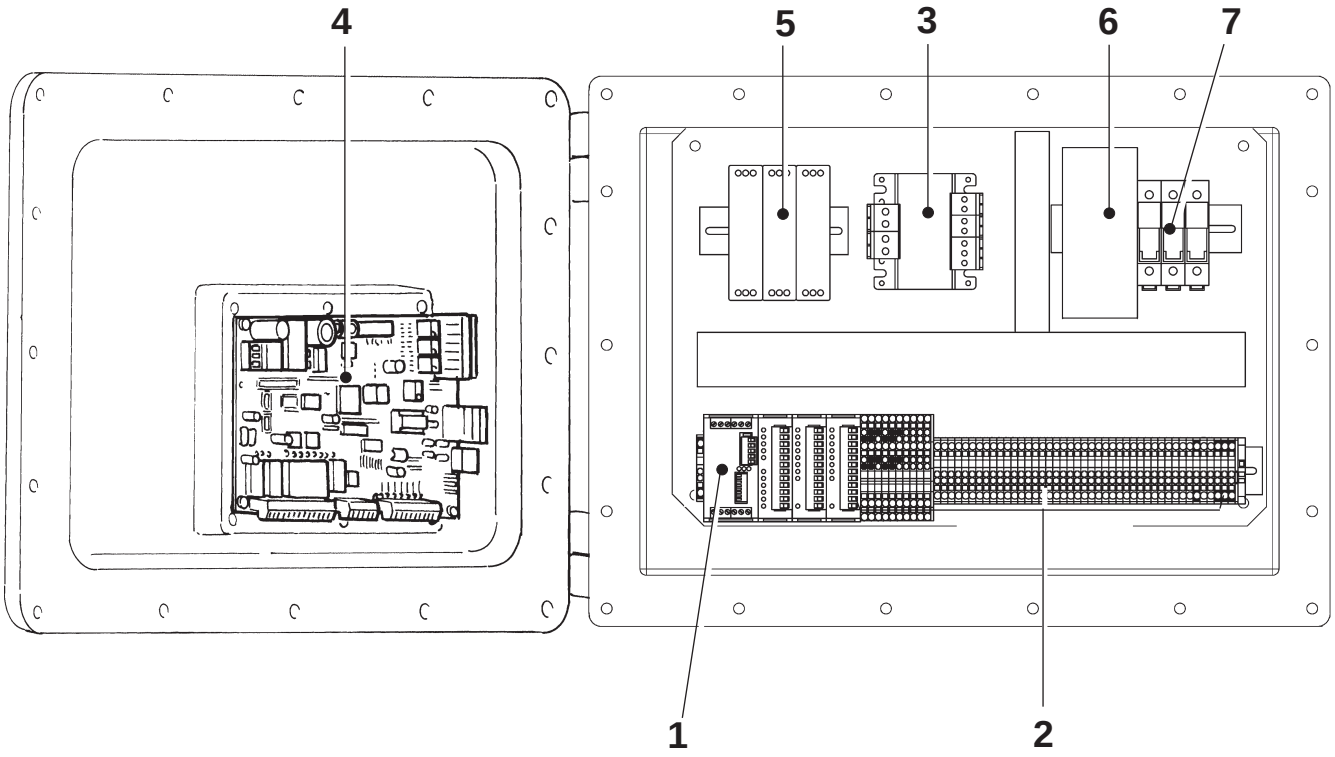
5.1.1 CONTROL PANEL EXTERIOR





1 - DISPLAY
2 - EMERGENCY STOP BUTTON.
3 - START BUTTON
4 - AIR PRESSURE GAUGE.
5 - Discharge valve MANUAL OPEN BUTTON.
6 - Discharge valve MANUAL CLOSE BUTTON.
7 - RESET BUTTON.
8 - RESET INDICATOR LIGHT
9 - PRESSURE GAUGE VACUUM GAUGE.
10 - DIGITAL WEIGHT INDICATOR

5.1.2 CONTROL PANEL INTERIOR



1 - EXPANDED MEMORY (CAN BUS).

2 - TERMINAL BLOCK.

3 - STABILISED POWER SUPPLY.

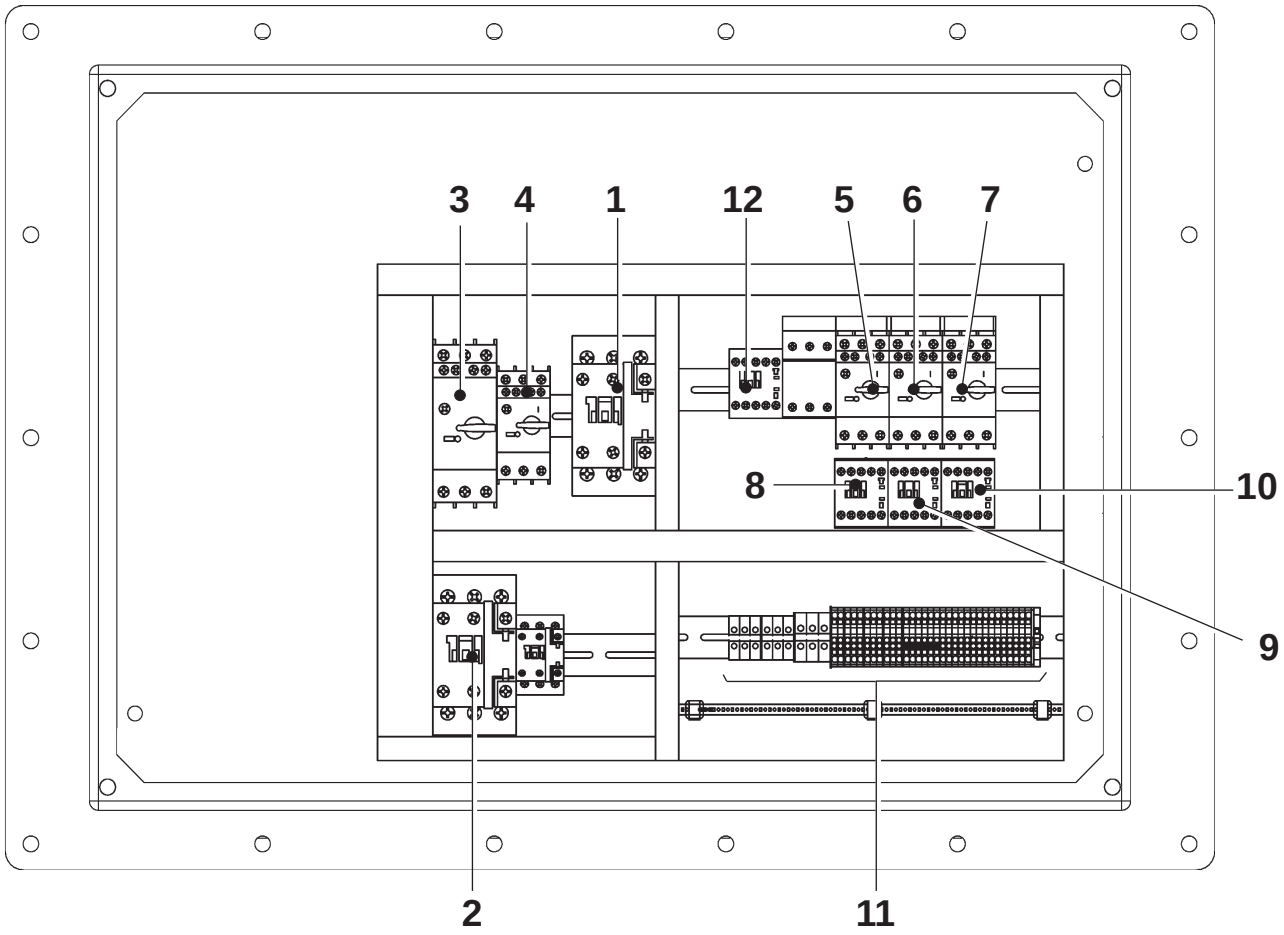
4 - DIGIT TOUCH 2004 BOARD.

5 - INTRINSIC BARRIERS.

6 - TRANSFORMER

7 - FUSES

5.1.3 POWER PANEL INTERIOR



1 - HEATING ELEMENT CONTACTOR.

2 - HEATING ELEMENT CONTACTORS.

3 - HEATING ELEMENT MOTOR PROTECTION.

4 - HEATING ELEMENT MOTOR PROTECTION.

5 - VACUUM PUMP MOTOR PROTECTION

6 - OIL PUMP MOTOR PROTECTION.

7 - AGITATOR MOTOR PROTECTION.

8 - VACUUM PUMP CONTACTOR

9 - OIL PUMP CONTACTOR.

10 - AGITATOR CONTACTOR.

11 - TERMINAL BLOCK.

12 - CONTACTOR RESET.

5.2 USE AND OPERATION

Before operating the regenerator, make sure you have understood the contents of this manual; contact the manufacturer in case of doubt.
The equipment may only be operated in compliance with the protective regulations laid down for the use of solvents.
Only flammable solvents belonging to explosive groups IIA and IIB and having a self-ignition temperature higher than 250°C must be distilled.

5.3 PROGRAMMING THE DISTILLATION CYCLE

Before starting this operation, it is essential to check the safety data sheet for the solvent to be purified to ensure that the mixture formed with the contaminant does not create conditions that can trigger a chemical reaction (formation of peroxides, heating of nitric substances, nitrates, nitrocellulose, etc.).

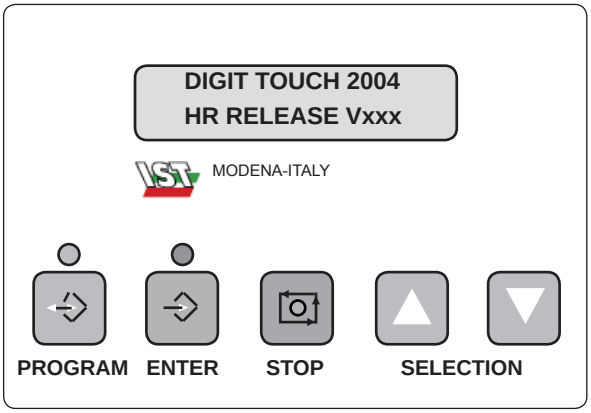
Information regarding the boiling point of the solvent is given in the technical and safety data sheets, which must be requested from the supplier together with the solvent at the time of purchase.
It is a good practice to keep the data sheets for the solvents (possibly together with this manual) in an accessible place for easy and quick consultation.

Turn the main switch. Check that the display lights up (1).
If the display does not turn on, CHECK the power supply.

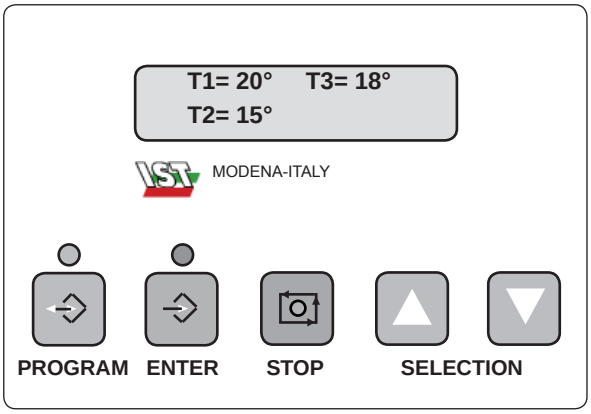
- AUTOMATIC CYCLE
- 1 CYCLE
- T1 = 100°C
- T2 = 50°C
- T3 = 50°C
- M = 120 MIN. (IF TIMED OR AUTOMATIC/TIMED CYCLE IS SELECTED)
- MAXIMUM ALARM LEVEL 600 sec. (AUTOMATIC LOAD OPTION)

5.3.1 MENU FUNCTIONS OUTSIDE OF THE PROGRAM

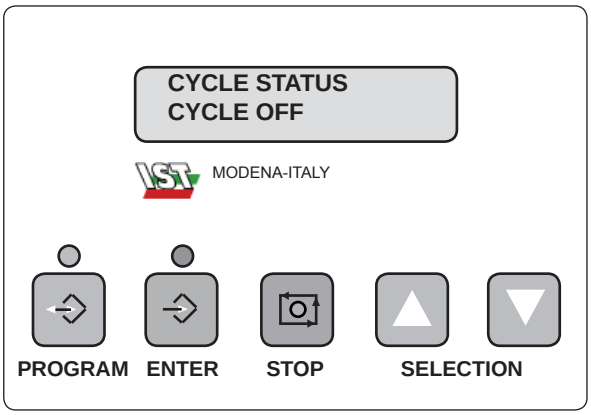
- When the switch is turned (2) (ch. 3.1) the display lights up and the following words are displayed:
  DIGIT TOUCH 2004
  HR RELEASE Vxxx



- After a few seconds, the temperatures appear on the display: T1 - T2 - T3



- Press the SELECTION button to view the current status of the cycle on the display.



- Press the SELECTION button again to view further information, including:

NEXT SERVICE (indicates the time remaining until the next OIL CHANGE)

TIME IN CYCLE (indicates the total machine operating hours)

MAX. CYCLE TEMP. (indicates the maximum vapour temperature recorded during distillation)

INP – OUT (Indicates the current status of the PLC inputs and outputs)

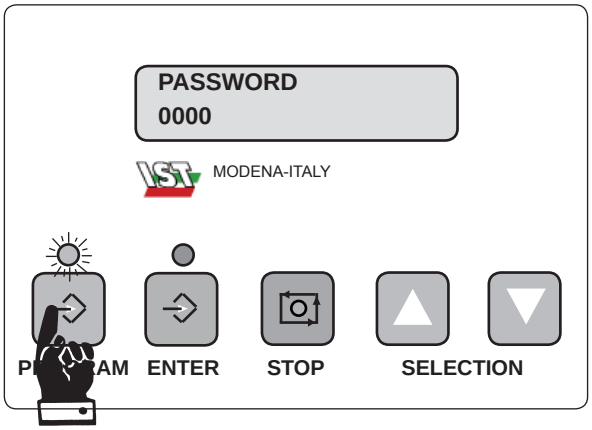
CAN INP – CAN OUT Indicates the current status of the expanded memory inputs and outputs.

CAN INP Indicates the current status of the expanded memory inputs.

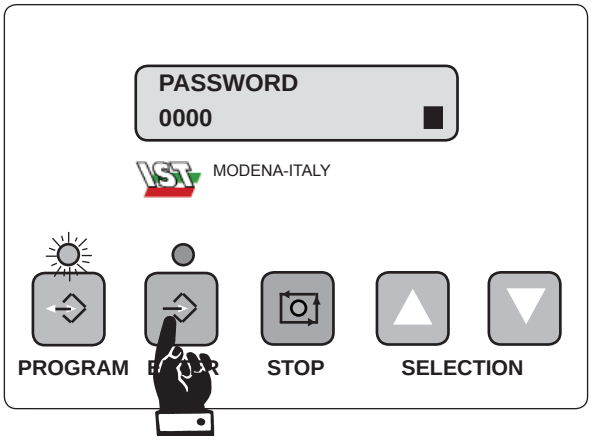
5.3.2 PROGRAMMING OF PASSWORD-PROTECTED PARAMETERS

This programming paragraph explains how to update some parameters that modify the operation of the regenerator.
Do not disclose this information to unauthorised personnel.

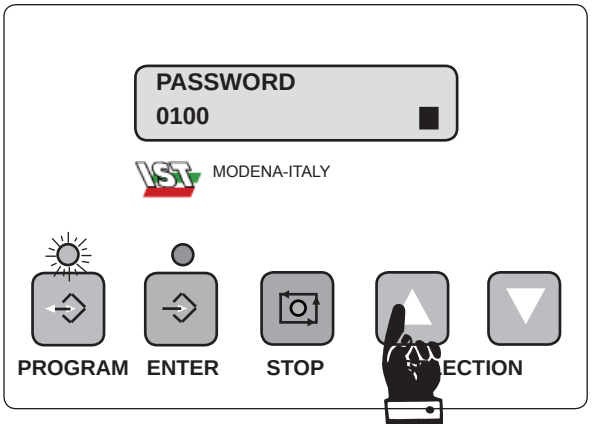
- Turn the main switch (1) to position 1 while pressing and holding the PROGRAM button until PASSWORD 0000 appears on the display



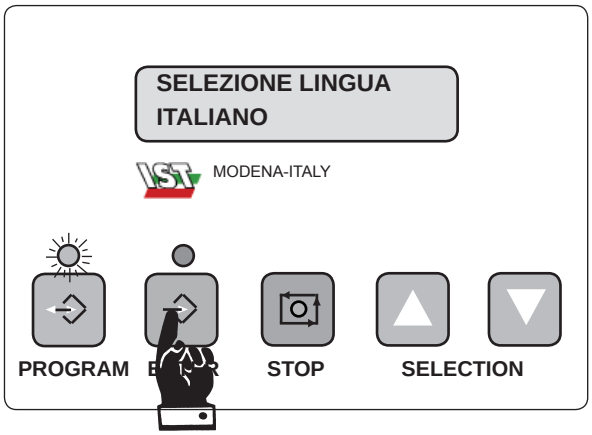
- Press the ENTER button and a flashing rectangle appears on the display.



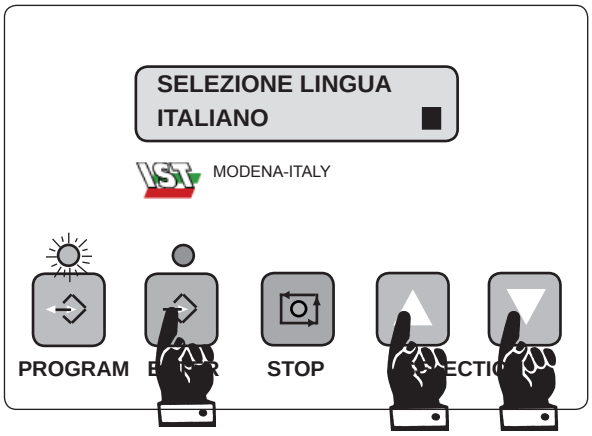
- Use the SELECTION button to set the parameter to 0100



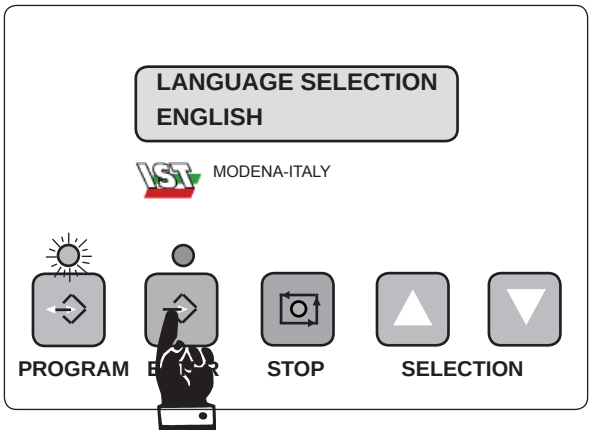
- Press the ENTER button again and SELEZIONE LINGUA ITALIANO (LANGUAGE SELECTION ITALIAN) appears on the display



- If you want to change the parameter, press the ENTER key and select the language with the SELECTION keys.

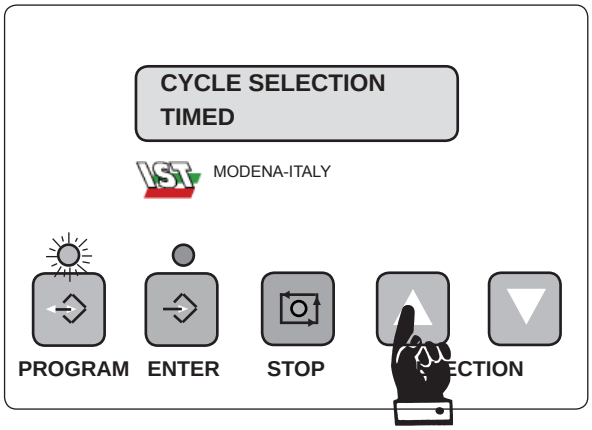


- When you have selected the language, press the ENTER button.



The next two parameters (unit number 1 and BAUD RATE 38400) are for a network connection to view data via computer, in case you need to contact I.S.T.

- Press the SELECTION button until "AUTOMATIC CYCLE SELECTION" appears on the display.



The I.S.T. regenerator allows the operator to choose the program best suited to the type of solvent to be regenerated.

1 - AUTOMATIC: this is the most versatile program; the purification cycle is based on a reading of the solvent vapours.

2 - TIMED: the purification cycle is based on a predetermined time.

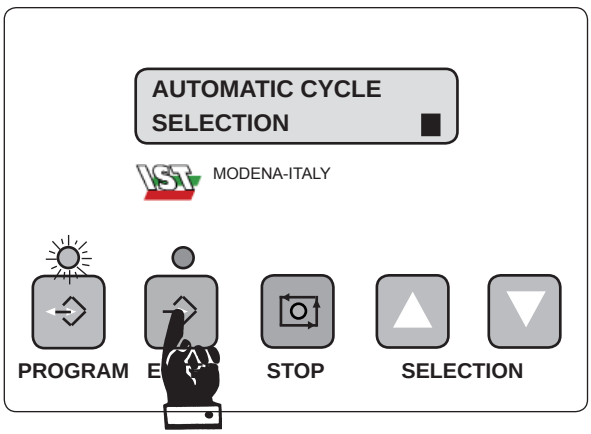
3 - AUTOMATIC/TIMED: this is a combination of the first two and is a program suitable for regenerating mixtures of particular solvents.

4 - MULTISET POINT: the purification cycle is based on different times and temperatures. This program is suitable for solvent mixtures with very different boiling points.

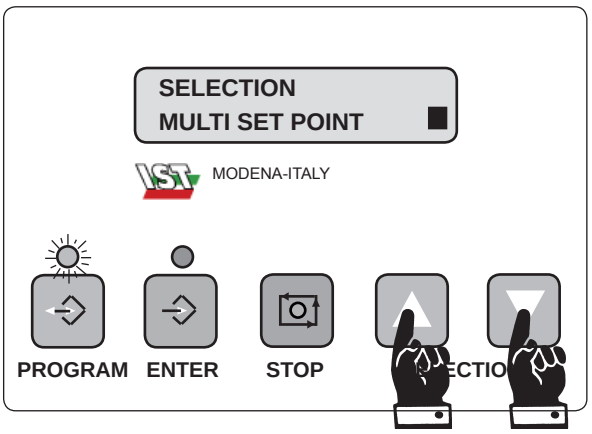
5 - REFILL (Optional): the purification cycle is divided into **two phases**; in the first, the distillation tank
is kept constantly full automatically ch. 5.3.5. In the second phase, the cycle ends with one of the settings described above in ch. 5.3.13.

6 - CLEANING RESIDUES: for the use of this program, see chapter 5.3.18.

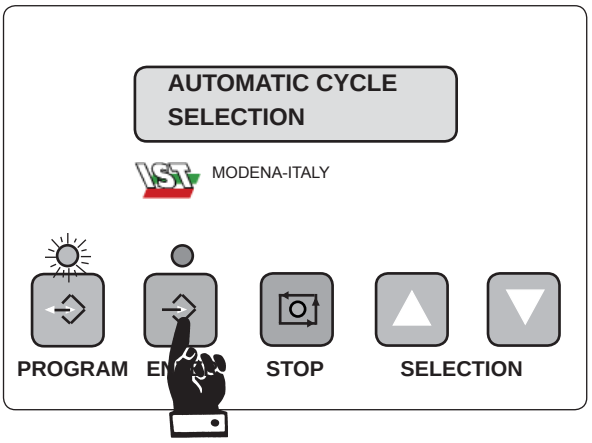
- Press the ENTER button and a flashing rectangle appears on the display beside the lower line of writing.



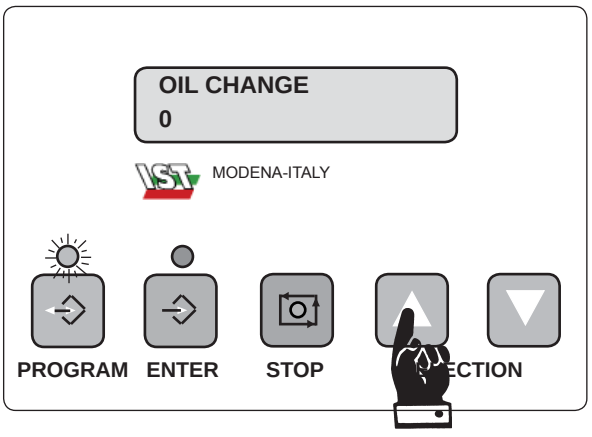
- Pressing the SELECTION button repeatedly switches between the following and the previous cycles.



- Select the chosen cycle, press the ENTER button once more and the rectangle goes off.

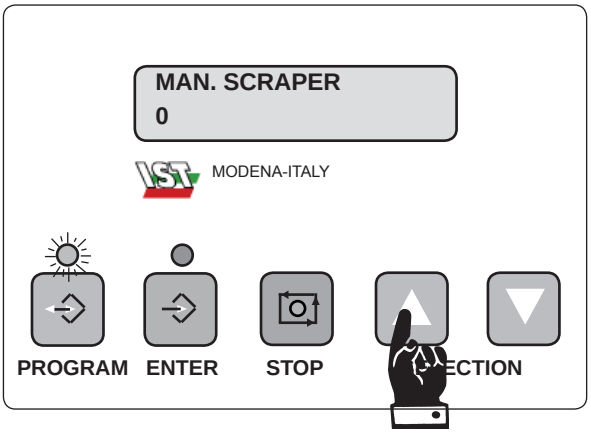


- Press the SELECTION button until OIL CHANGE appears on the display
0



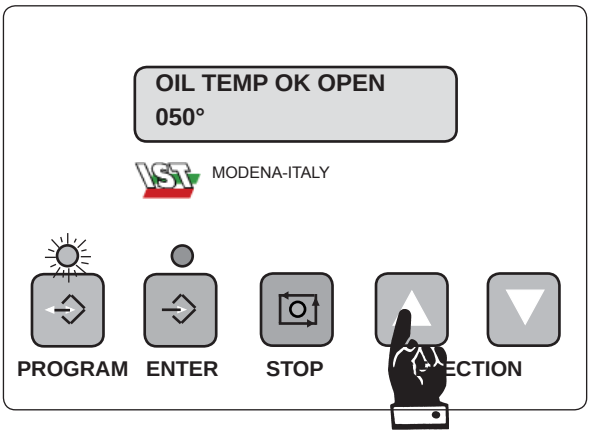
NOTE: for the use of this program, see paragraph 6 OIL CHANGE

- Press the SELECTION button until MAN. SCRAPER appears on the screen 0



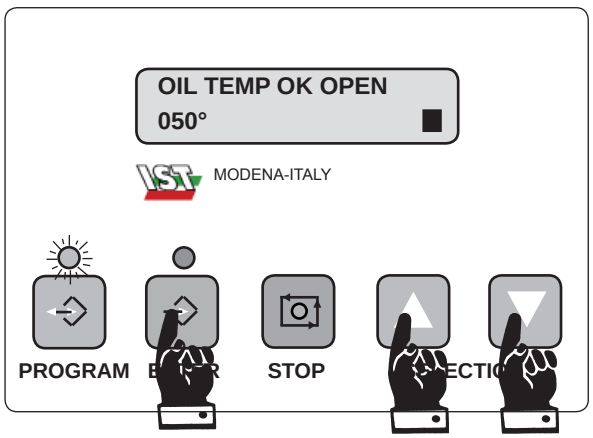
NOTE for the use of this program, see paragraph 5.5.5 MANUAL SCRAPER

- Press the SELECTION button until OIL TEMP. OK OPEN 050°

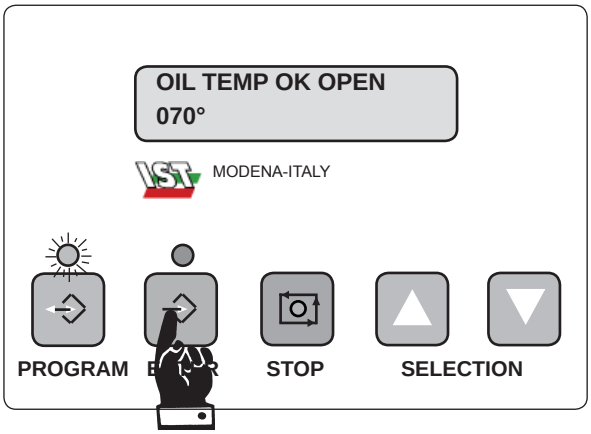


This parameter changes the activation temperature of the AWAITING OPENING OK notification (5.5.1) at the end of the cycle. The temperature should be set to that of the solvent for regeneration with the lowest boiling point.

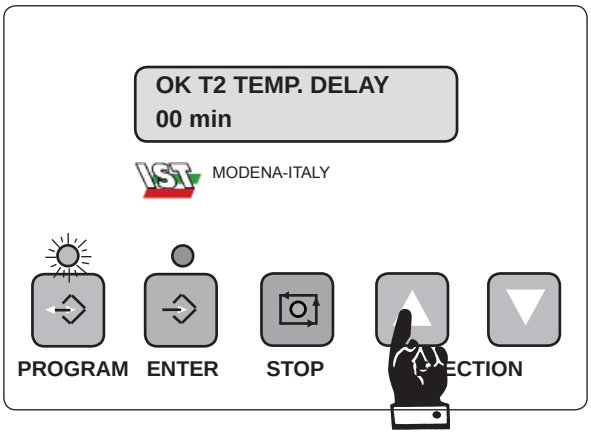
- If you want to change the parameter, press the ENTER key and select the temperature with the SELECTION keys.



- Select the temperature and press the ENTER button.

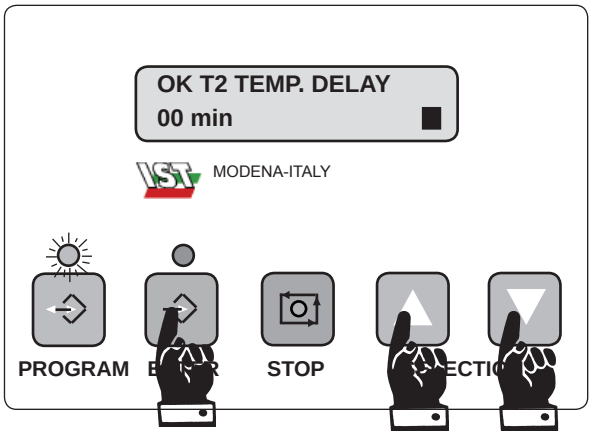


- Press the SELECTION button and the display will show:
DELAY CHECK TEMPERATURE T2

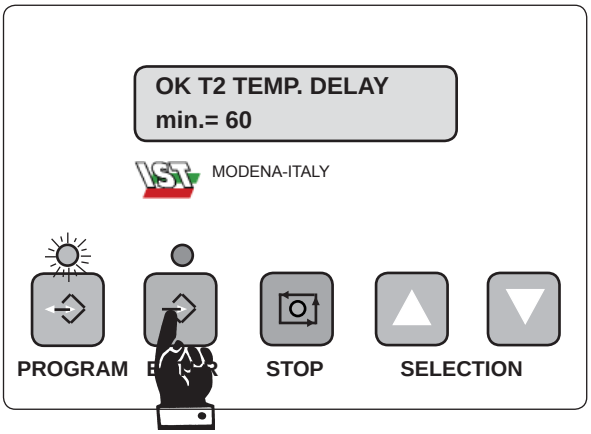


This parameter allows the T2 temperature check to be delayed at the start of the distillation cycle.

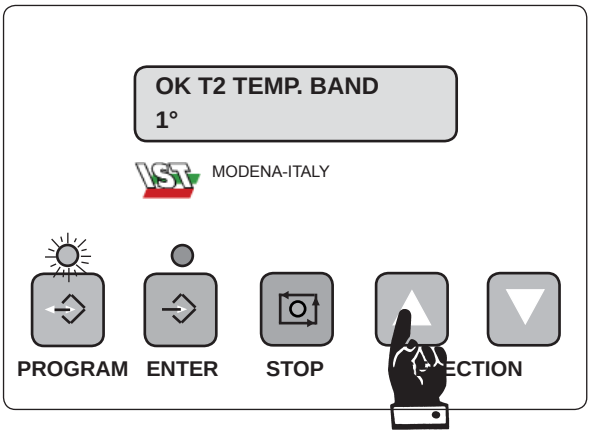
- If you want to change the parameter, press the ENTER key and select the time with the SELECTION buttons.



- Select the time and press the ENTER button.

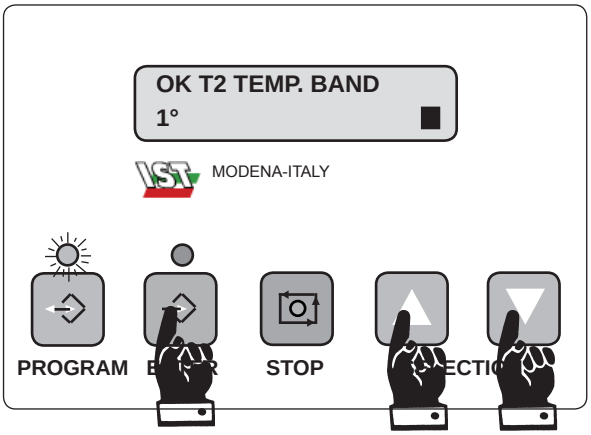


- Press the SELECTION button and the display will show:
ADJUSTING T2 TEMPERATURE BAND

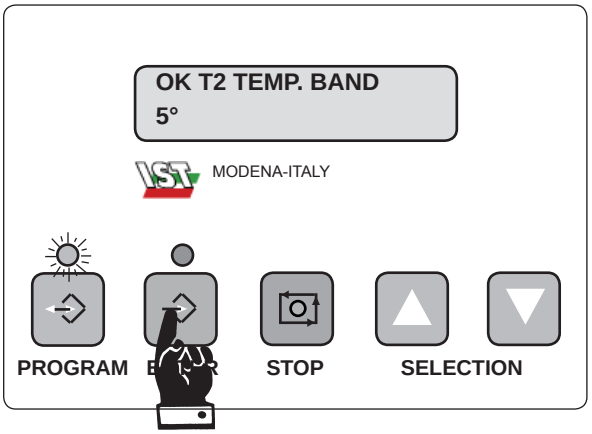


This parameter allows you to enter a Δ T° for temperature T2.

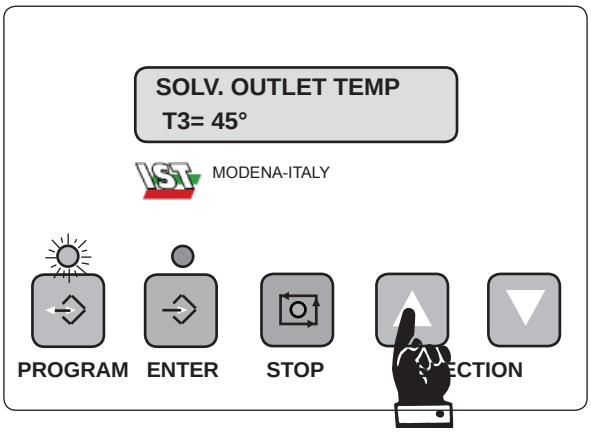
- If you want to change the parameter, press the ENTER button and select the temperature with the SELECTION buttons.



- Select the temperature and press the ENTER button.

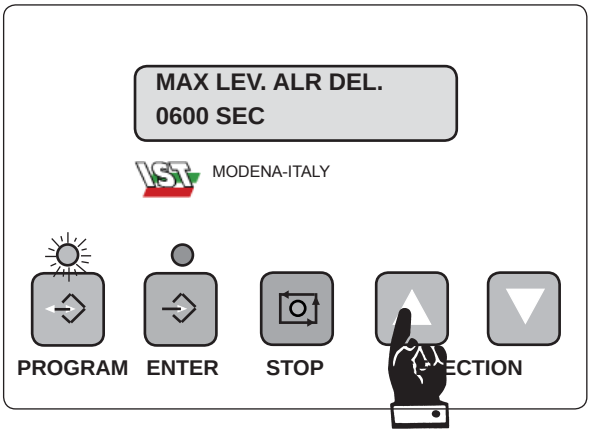


- Press the SELECTION button and the words SOLVENT OUTLET TEMPERATURE T3= 45° appear on the display.



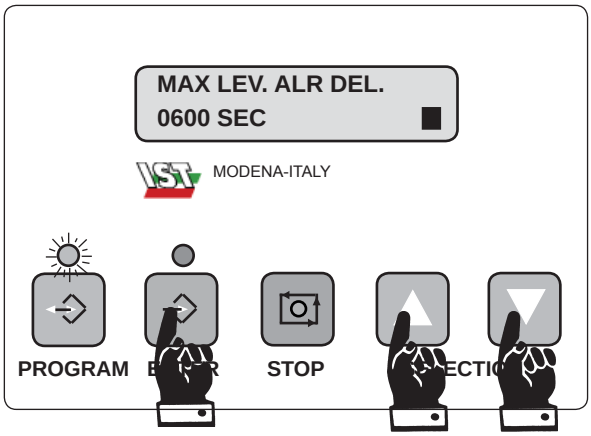
The solvent outlet temperature must be set to 45° (factory default). This is a safety parameter in the event of cooling fan failure. Consult I.S.T. first before changing it.

- Press the SELECTION button and the display will show:
MAXIMUM LEVEL ALARM DELAY
(option with automatic loading)

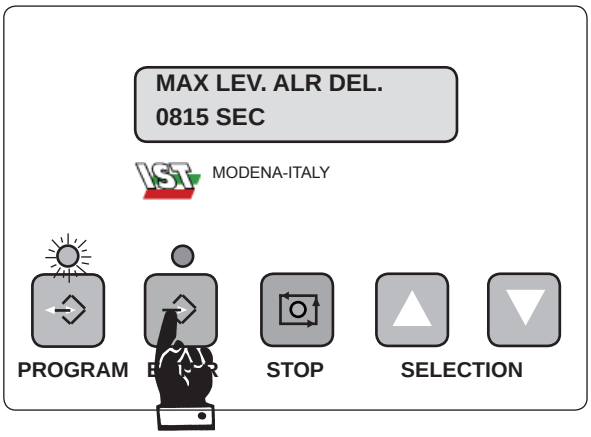


This parameter changes the automatic loading safety alarm time. It is pre-set by I.S.T. based on the type of dirty solvent loading system, but it can be changed to improve the intervention time.
EXAMPLE:
Use a stopwatch to measure the time taken for the tank to load from when the regenerator is started, then press stop.
Enter the parameter according to the instructions and adjust the time to 30 sec. longer than the period timed.
(Loading time 8 minutes = 480 seconds. Adjustment 480 + 30 = 510 seconds)

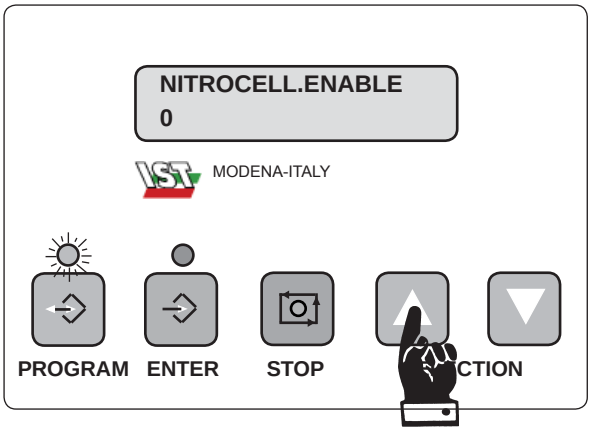
- If you want to change the parameter, press the ENTER key and select the time with the SELECTION buttons.



- Select the time and press the ENTER button.



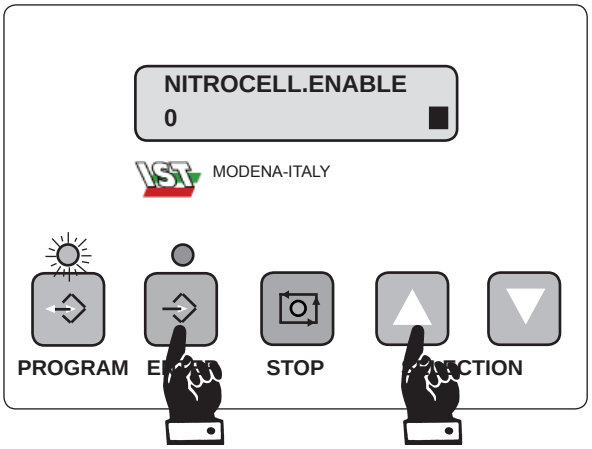
- Press the SELECTION button until:
NITROCELL.ENABLE
0



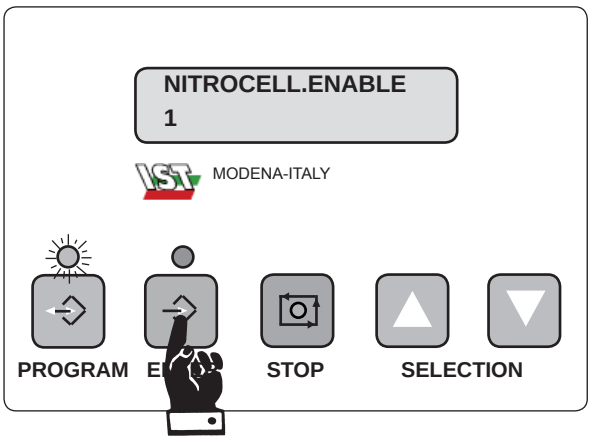
This parameter enables the nitrocellulose safety measures

This parameter is only enabled if the nitrocellulose option is installed on the regenerator

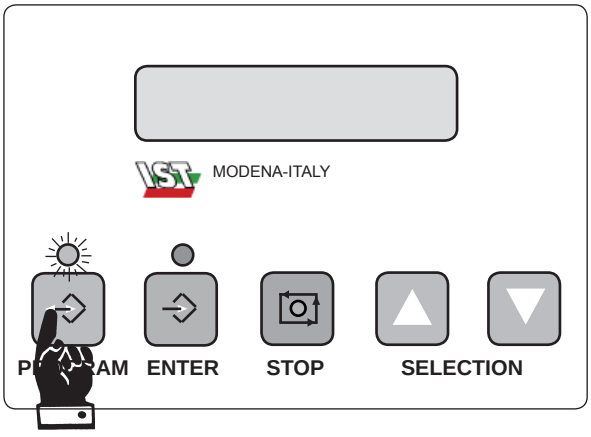
-If you want to enable this parameter, press ENTER and select 1 with the SELECTION button.



- Select the parameter and press ENTER.

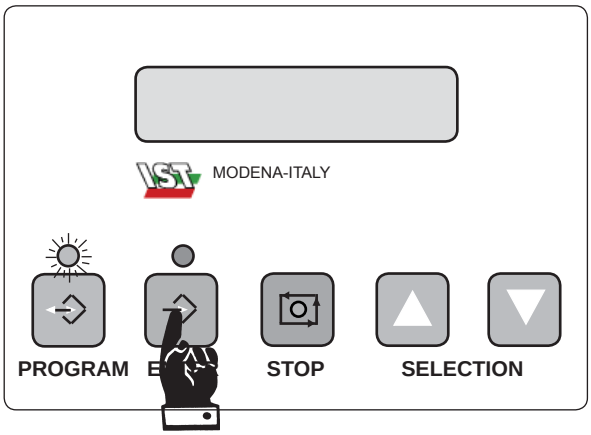


- To exit the program, press the PROGRAM button.



5.3.3 PROGRAMMING THE PARAMETERS

Press the ENTER button and the display will show (ROTOPLUS model only):



SCRAPER

This program allows the operator to choose how to use the installed scraper.

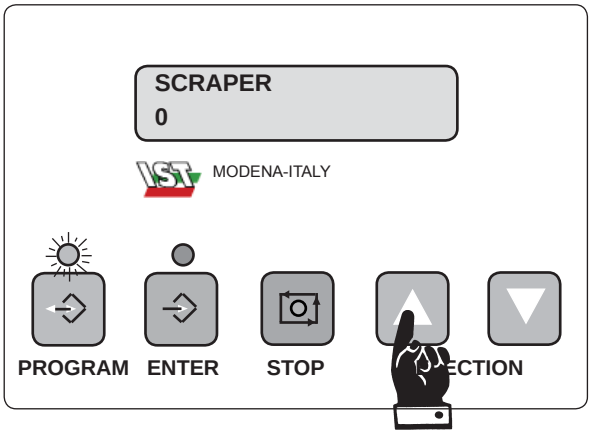
1 - 0: agitator deactivated.

2 - AUTOMATIC: agitator activated automatically.

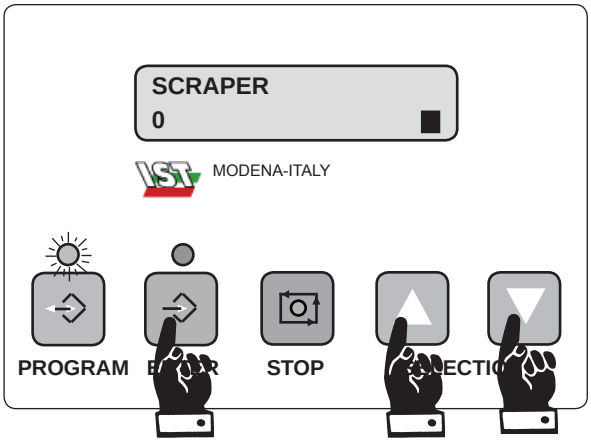
3 - PRE-CYCLE DELAY: agitator activated with programmable delay in the pre-cycle phase.

4 - CYCLE DELAY: agitator activated with programmable delay in the end-of-cycle phase.

- Press the SELECTION button and SCRAPER appears on the display.



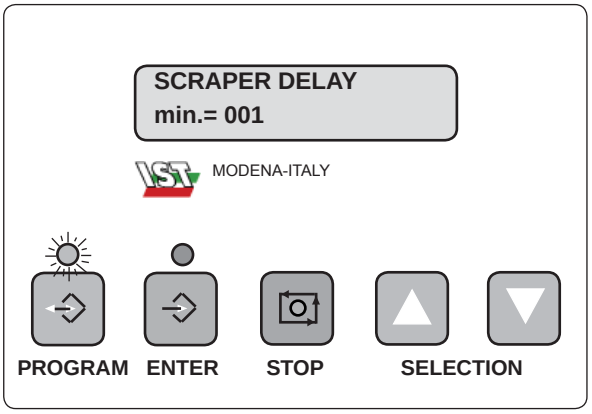
- When you press the ENTER button on the display beside the lower line of writing, a rectangle starts to flash.
  With the SELECTION buttons you can browse the menu and select one of the programs described above.
  Press the ENTER button again to confirm your choice.



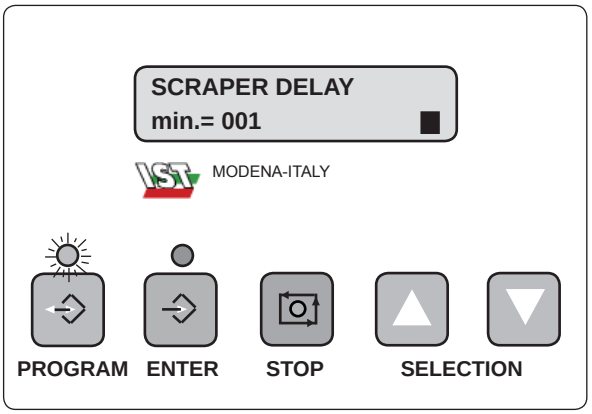
5.3.4 SCRAPER DELAY (Only with option 4 of ch. 5.3.3)

This program allows the operator to program the scraper delay in the cycle phase selected from the previous menu.

- Press the SELECTION button and SCRAPER DELAY will appear on the display.



- When you press the ENTER button on the display beside the lower line of writing, a rectangle starts to flash.
The SELECTION buttons can be used to program the delay in minutes.
Press the ENTER button again to confirm your choice.



5.3.5 PRE-CYCLE SELECTION (only if CYCLE SELECTION = REFILL) (First phase of the REFILL CYCLE)

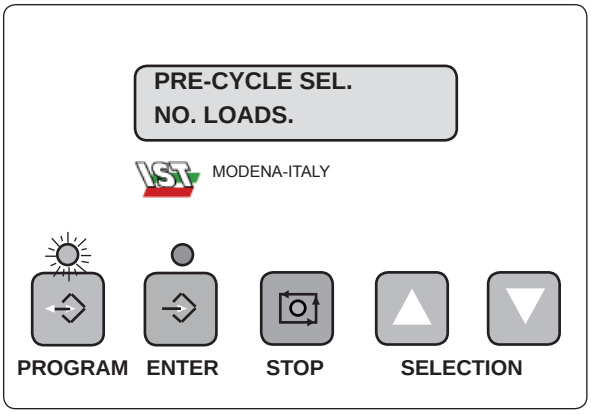
This program allows the operator to choose the working method to be used in the pre-cycle phase.

1 - No. LOADS: the duration of the pre-cycle is determined by the number of times the distillation tank is automatically filled (if selected, see ch. 5.3.6).

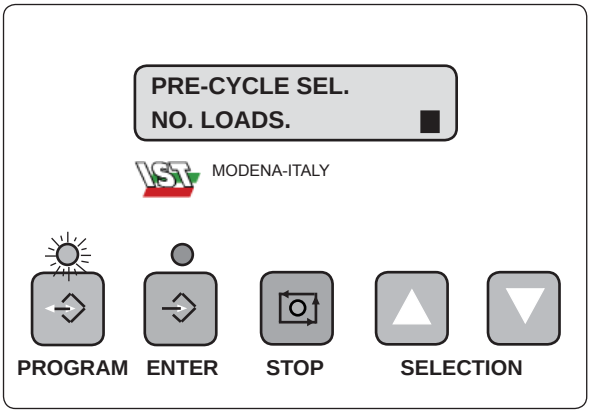
2 -TIMED: the duration of the pre-cycle is determined by a time set by the operator (if selected, see ch. 5.3.7).

3 - MULTISET POINT: the pre-cycle can be fractioned in up to 3 parts, with different durations and heating temperatures that can be programmed by the operator (if selected, see ch. 5.3.8).

- Press the SELECTION button and PRE-CYCLE SEL. appears on the display.



- When you press the ENTER button on the display beside the lower line of writing, a rectangle starts to flash.
  With the SELECTION buttons you can browse the menu and select one of the programs described above.
  Press the ENTER button again to confirm your choice.

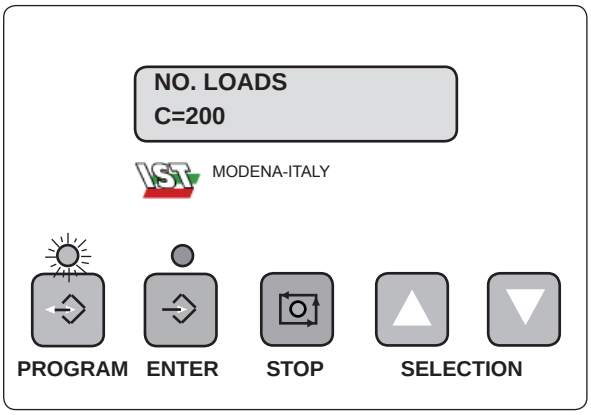


5.3.6 No. LOADS (only if PRE-CYCLE SELECTION = No. LOADS) (Only to be used for special products, after consulting IST)

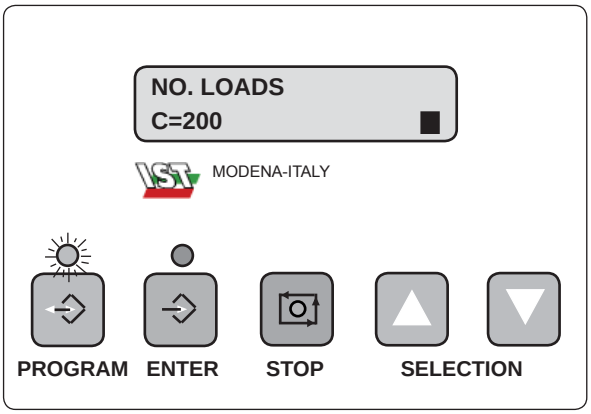
This program allows the operator to program the number of loads required in the pre-cycle phase.

Choose the number to enter following the indications given in the appendix.

- Press the SELECTION button and No. LOADS appears on the display.



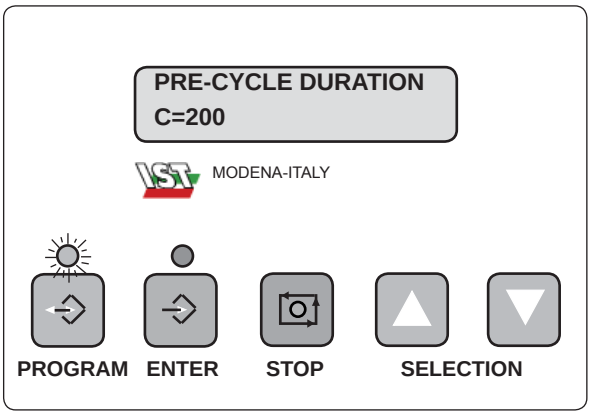
- When you press the ENTER button on the display beside the lower line of writing, a rectangle starts to flash.
The SELECTION buttons can be used to program the number of loads.
Press the ENTER button again to confirm your choice.



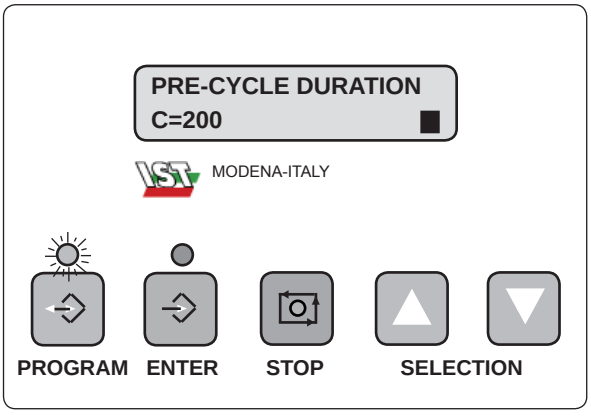
5.3.7 PRE-CYCLE DURATION (Only if PRE-CYCLE SELECTION = TIMED)

This program allows the operator to program the duration of the pre-cycle phase.

- Press the SELECTION button and PRE-CYCLE DURATION appears on the display.



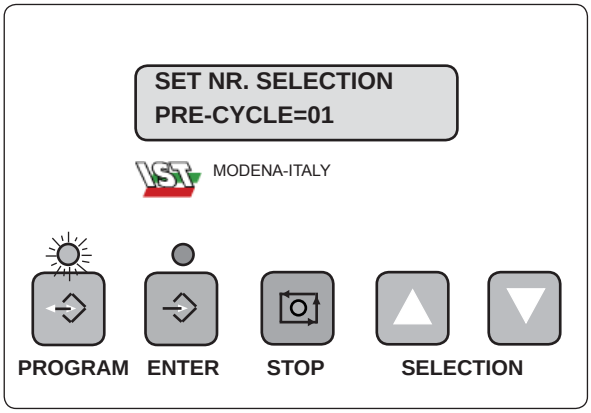
- When you press the ENTER button on the display beside the lower line of writing, a rectangle starts to flash.
The SELECTION buttons can be used to program the duration in minutes.
Press the ENTER button again to confirm your choice.



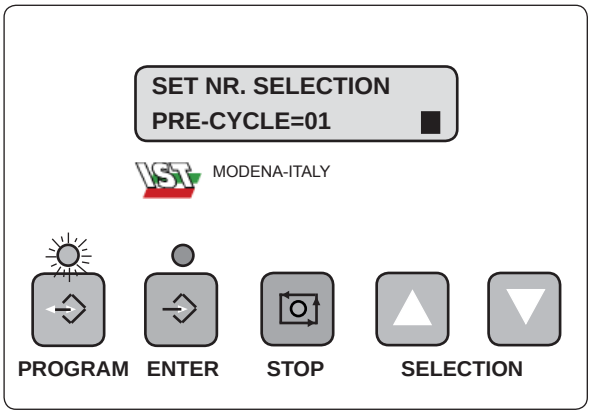
5.3.8 SELECTION No. SET
(Only if PRE-CYCLE SELECTION = MULTISETPOINT)
(Only to be used for special products, after consulting IST)

This program allows the operator to program up to a maximum of three pre-cycle fractions, with different times and temperatures.

- Press the SELECTION button and SET. No. SELECTION appears on the display



- When you press the ENTER button on the display beside the lower line of writing, a rectangle starts to flash.
The SELECTION buttons can be used to program the number of fractions.
Press the ENTER button again to confirm your choice.

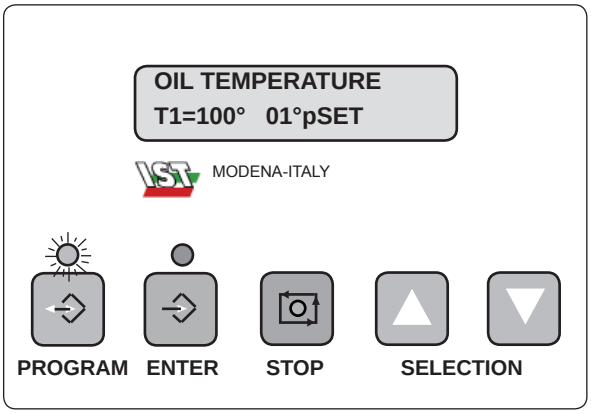


5.3.9 OIL TEMPERATURE 01° pSET (only if PRE-CYCLE SELECTION = MULTISETPOINT)

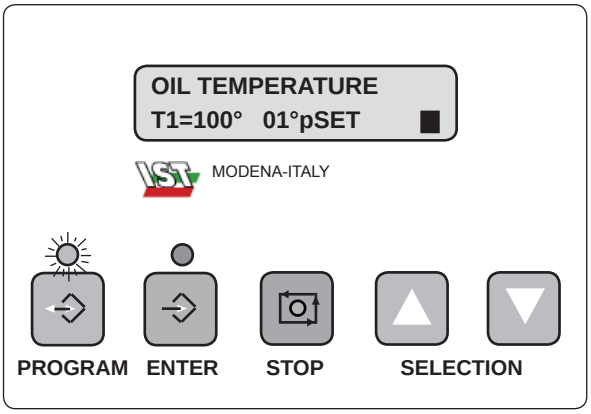
This program allows the operator to program the oil heating temperature during the first pre-cycle fraction.

This procedure is repeated for each programmed fraction.

- Press the SELECTION button and OIL TEMPERATURE 01° pSET appears on the display.



- When you press the ENTER button on the display beside the lower line of writing, a rectangle starts to flash.
The SELECTION buttons can be used to program the desired temperature.
Press the ENTER button again to confirm your choice.

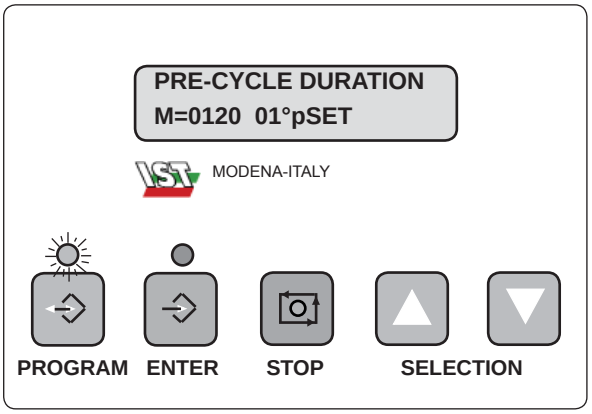


5.3.10 PRE-CYCLE DURATION 01° pSET (only if PRE-CYCLE SELECTION = MULTISETPOINT)

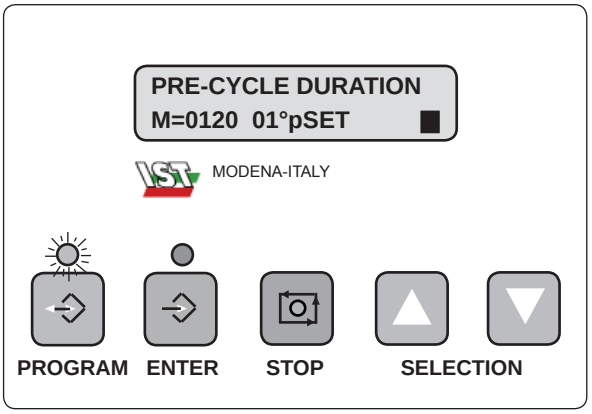
This program allows the operator to program the duration of the first pre-cycle fraction.

This procedure is repeated for each programmed fraction.

- Press the SELECTION button and PRE-CYCLE DURATION 01° pSET appears on the display.



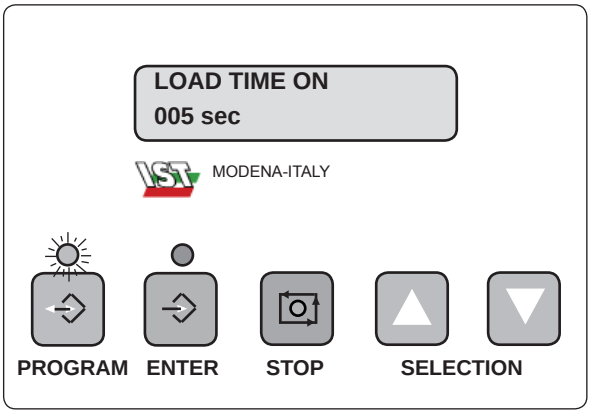
- When you press the ENTER button on the display beside the lower line of writing, a rectangle starts to flash.
  The SELECTION buttons can be used to program the duration in minutes.
  Press the ENTER button again to confirm your choice.



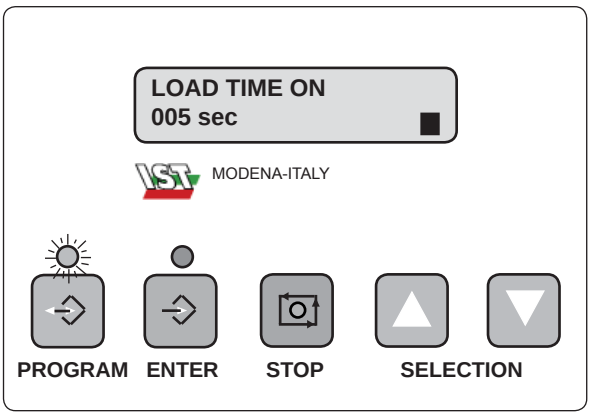
5.3.11 LOAD TIME ON
(Only displayed if CYCLE SELECTION = REFILL ch. 5.3.2)

This program allows the operator to program the open time duration of the valve that controls the automatic input of polluted solvent during the pre-cycle
phase.

- Press the SELECTION button and LOAD TIME ON appears on the display.



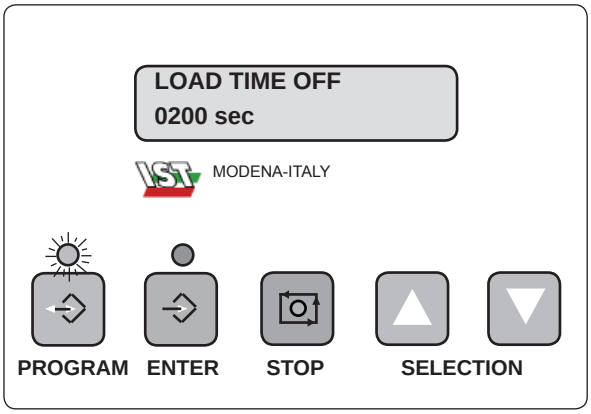
- When you press the ENTER button on the display beside the lower line of writing, a rectangle starts to flash.
The SELECTION buttons can be used to program the duration in seconds.
Press the ENTER button again to confirm your choice.



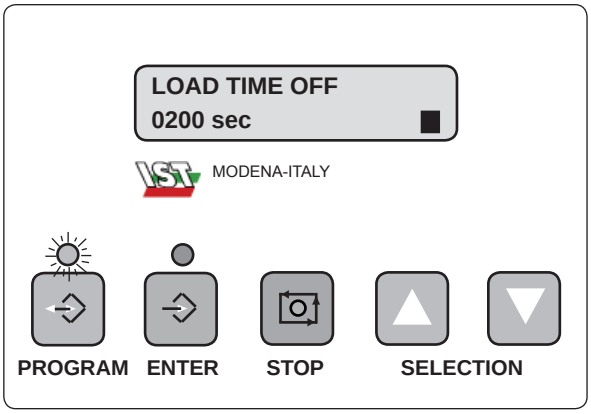
5.3.12 LOAD TIME OFF
(Only displayed if CYCLE SELECTION = REFILL ch. 5.3.2)

This program allows the operator to program the open time duration of the valve that controls the automatic input of polluted solvent during the pre-cycle
phase.

- Press the SELECTION button and LOAD TIME OFF appears on the display.



- When you press the ENTER button on the display beside the lower line of writing, a rectangle starts to flash.
The SELECTION buttons can be used to program the duration in seconds.
Press the ENTER button again to confirm your choice.



5.3.13 END OF REFILL CYCLE SELECTION (Second REFILL CYCLE phase) (Only displayed if CYCLE SELECTION = REFILL ch. 5.3.2)

This program allows the operator to select the work method to use in the end-of-cycle phase.

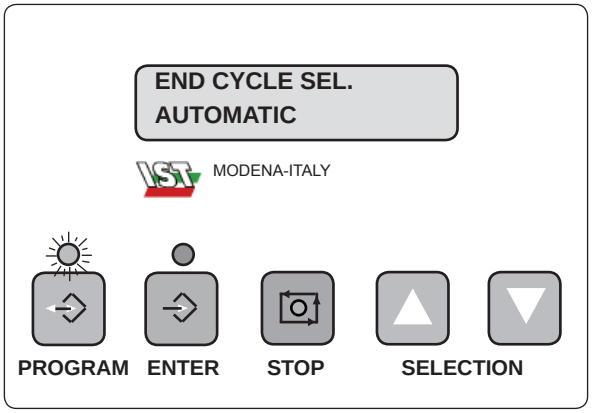
1 - AUTOMATIC: this is the most versatile program; the purification cycle is based on the reading of the solvent vapours.

2 - TIMED: the purification cycle is based on a predetermined time.

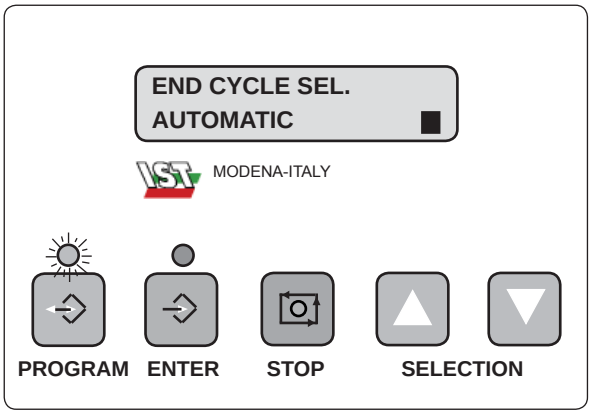
3 - AUTOMATIC/TIMED: this program is a combination of the first two and is suitable for regenerating mixtures of particular solvents.

4 - MULTISET POINT: the purification cycle is based on different times and temperatures. THIS program is suitable for mixtures of solvents with very different boiling points.

- Press the SELECTION button and SEL. REFILL CYCLE appears on the display.



- When you press the ENTER button on the display beside the lower line of writing, a rectangle starts to flash.
  With the SELECTION buttons you can browse the menu and select one of the programs described above.
  Press the ENTER button again to confirm your choice.



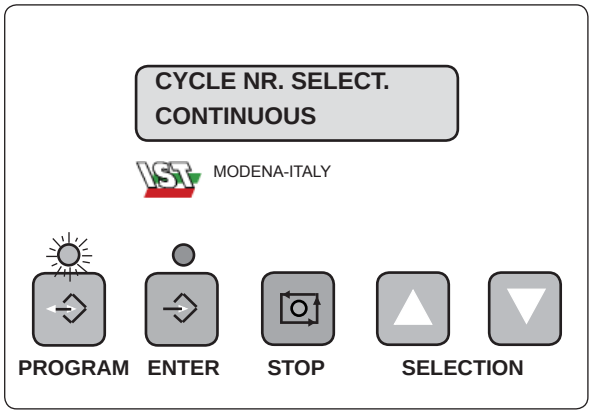
5.3.14 SELECT NUMBER OF CYCLES

This program allows the operator to choose the consecutive distillation cycles to be run.

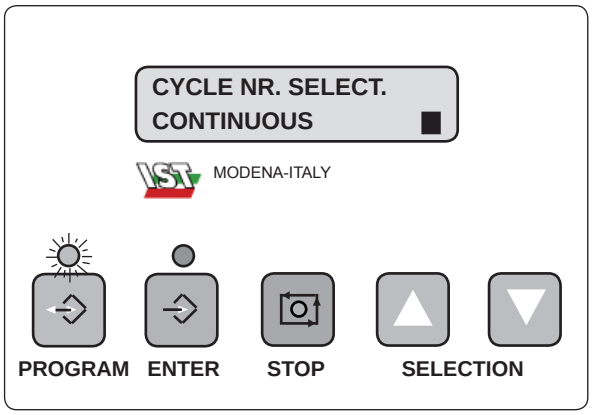
1 - NO. CYCLES: this program selects from a minimum of 1 to a maximum of 9 consecutive distillation cycles.

2 - CONTINUOUS: this program performs the distillation cycles consecutively until the operator gives the signal to stop at the end of the current cycle.

- Press the SELECTION button and SELECT NUMBER OF CYCLES appears on the display.



- When you press the ENTER button on the display beside the lower line of writing, a rectangle starts to flash.
  With the SELECTION buttons you can browse the menu and select one of the programs described above.
  Press the ENTER button again to confirm your choice.



5.3.15 RESIDUE DISCHARGE

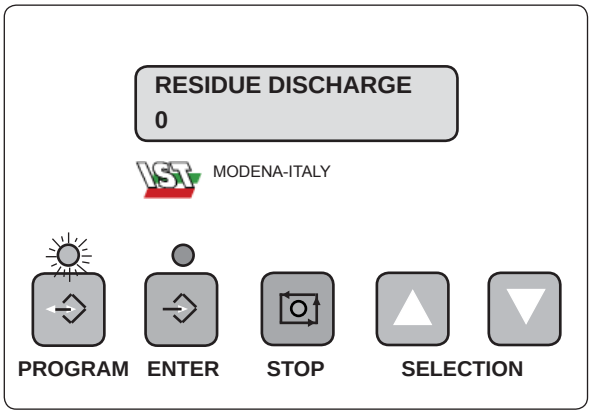
This program allows the operator to select when to discharge the residues.

0 - to discharge the residues only after completing all the previously programmed distillation cycles.

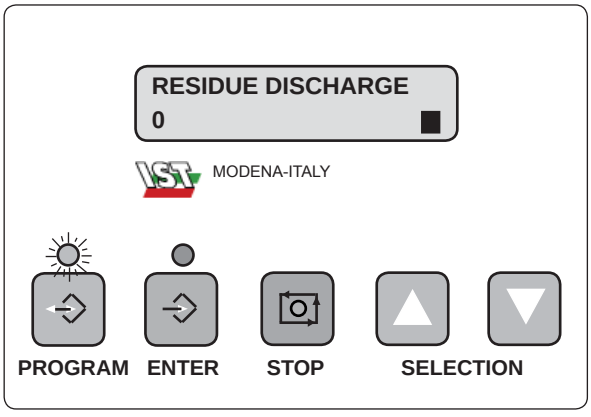
TIMED - to discharge the residues at the end of each distillation cycle for a set time of 15 min.

OPEN - to discharge the residues at the end of each distillation cycle, keeping the valve open until the subsequent cycle starts

- Press the SELECTION button and RESIDUE DISCHARGE appears on the display.



- When you press the ENTER button on the display beside the lower line of writing, a rectangle starts to flash.
  With the SELECTION buttons you can browse the menu and select one of the programs described above.
  Press the ENTER button again to confirm your choice.



5.3.15.1 FINAL DISCHARGE

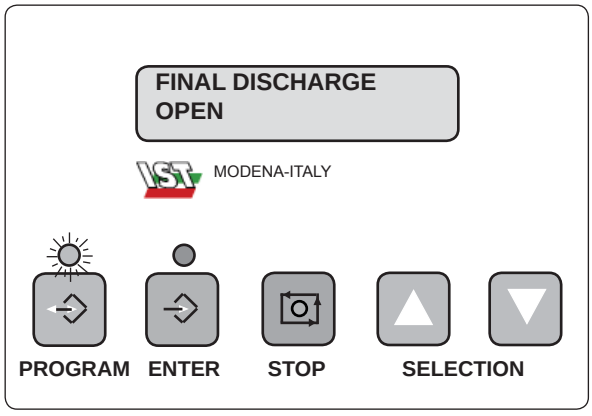
this program allows the operator to select how the final residue discharge is executed.

TIMED - to carry out the final residue discharge for a set time of 15 min and then close the discharge valve.

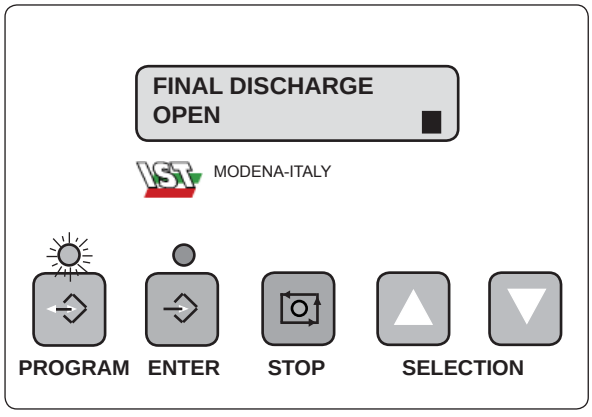
WITH SOAK to carry out the final residue discharge for a set time of 15 min, close the safety valve and fill the regenerator solvent tank.

OPEN - to carry out the final residue discharge keeping the valve open.

- Press the SELECTION button and FINAL DISCHARGE OPEN appears on the display.



- When you press the ENTER button on the display beside the lower line of writing, a rectangle starts to flash.
  With the SELECTION buttons you can browse the menu and select one of the programs described above.
  Press the ENTER button again to confirm your choice.

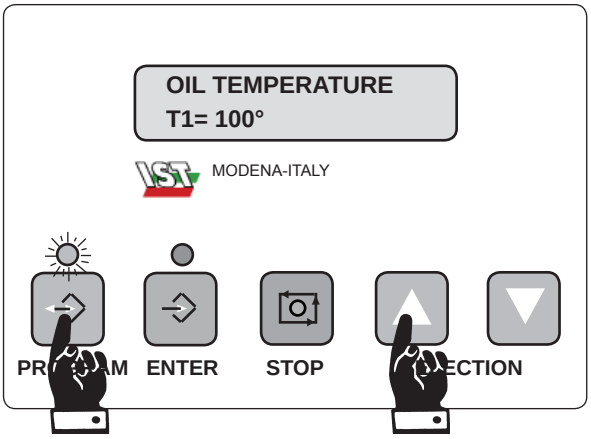


5.3.16 SELECTING TEMPERATURES AND TIMES

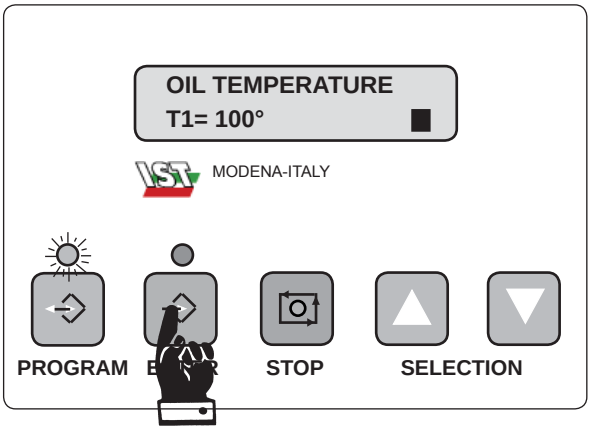
The method for adjusting the temperatures and times proposed by I.S.T. in the following paragraphs is indicative. The use of multiple solvents may require a different adjustment method. For any clarifications, contact I.S.T.

The heat transfer oil temperature must be set 30°- 40° higher than the boiling point of the solvent, e.g.: (Acetone boiling point 56°) T1 setting = 96°

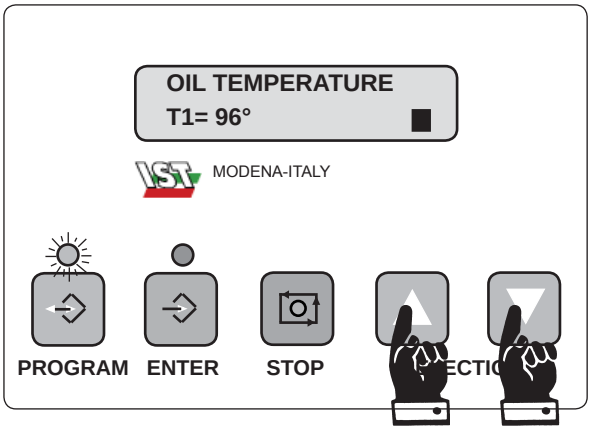
- Press the ENTER button and the words OIL TEMPERATURE appear on the display.
  If the AUTOMATIC LOAD option is activated, No. CYCLES is displayed first; in this case, after pressing PROGRAM press the SELECTION button.
  OIL TEMPERATURE T1= 100°.



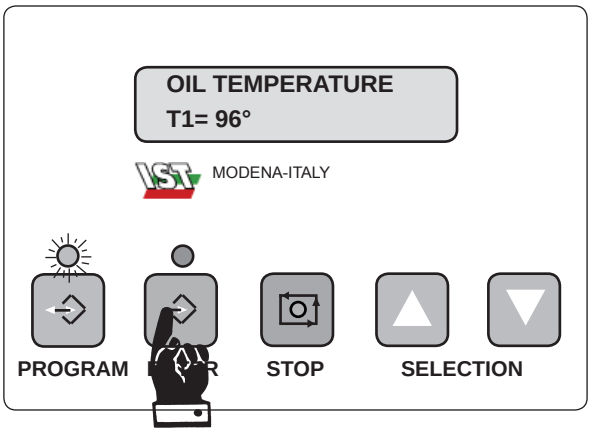
- Press the ENTER button and a flashing rectangle appears on the display.



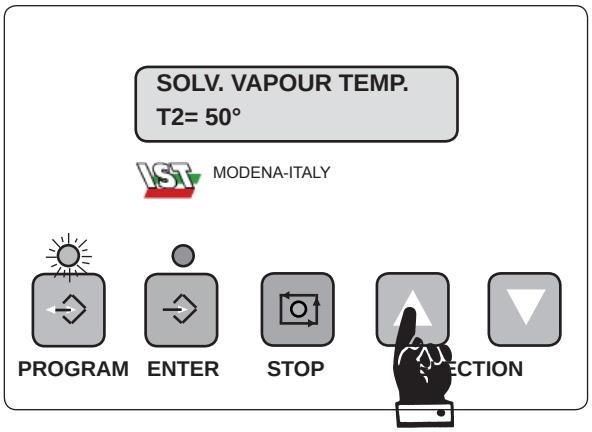
- Press the SELECTION keys to increase or decrease the T1 temperature setting.



- After setting the temperature on T1, press the ENTER button, the rectangle goes off and the temperature is stored.



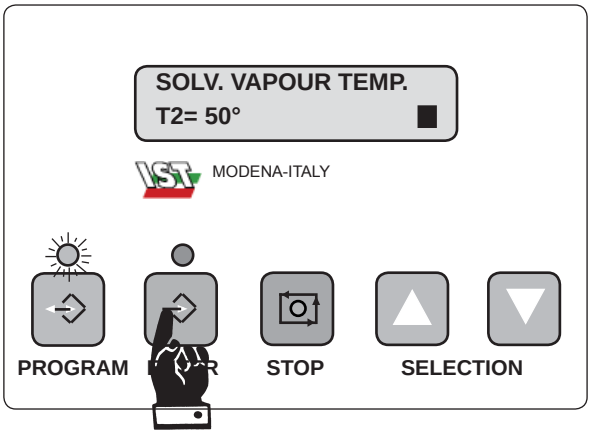
- Press the SELECTION button and the words SOLVENT TEMPERATURE T2= 50° appear on the display.



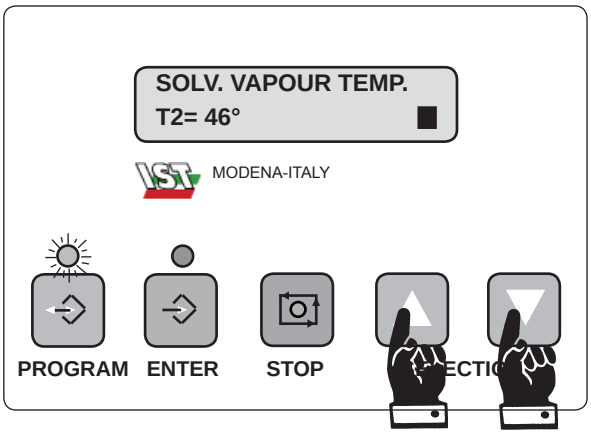
This parameter is only displayed for certain cycle types (ch. 5.3.2).

The solvent temperature must be set 10°- 15° lower than the boiling point of the solvent, e.g.: (Acetone boiling point 56°) T2 setting = 46°.

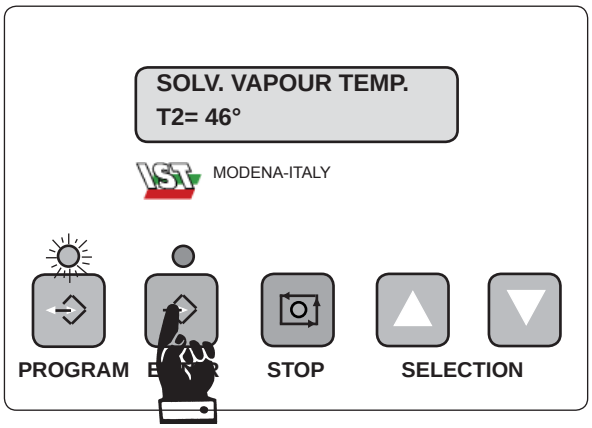
- Press the ENTER button and a flashing rectangle appears on the display.



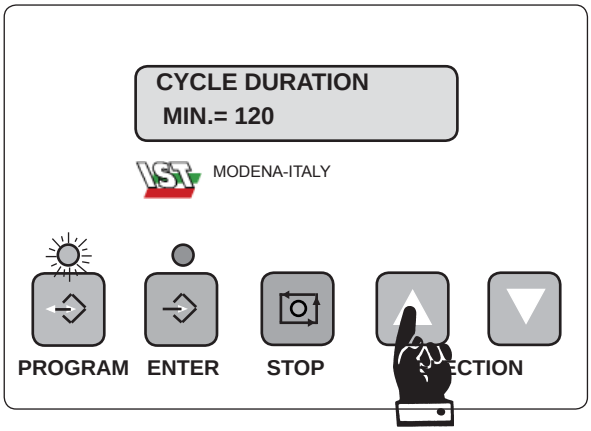
- Press the SELECTION buttons to increase or decrease the T2 temperature setting.



- After setting the temperature on T2, press the ENTER button; the rectangle goes off and the temperature is stored.

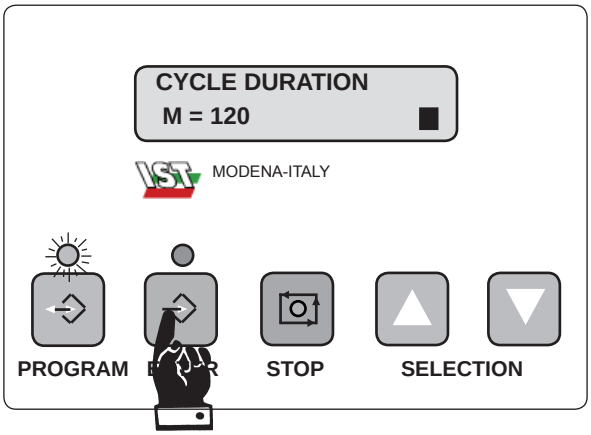


- Press the SELECTION button and the words CYCLE DURATION MIN. = 120 appear on the display.

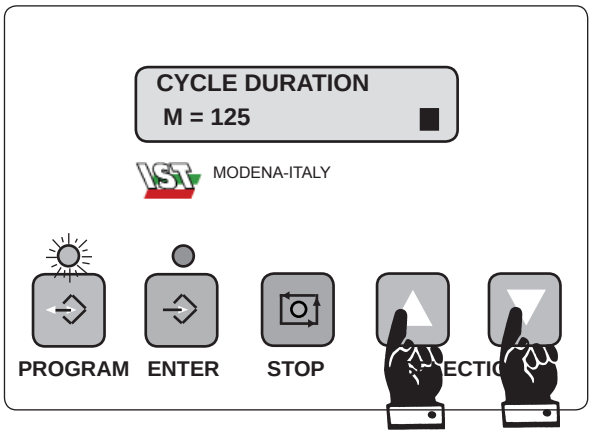


This parameter is only displayed for certain cycle types (ch. 5.3.2).

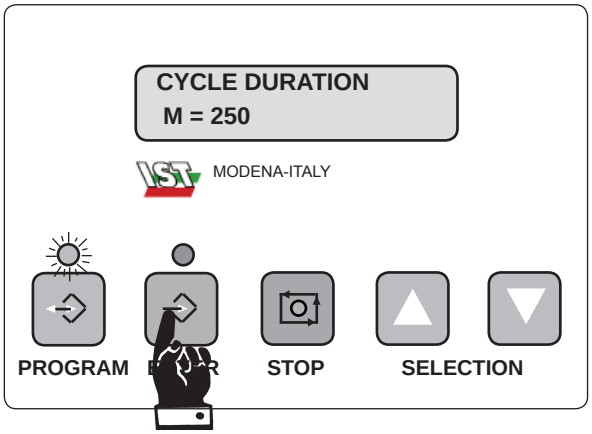
- Press the ENTER button and a flashing rectangle appears on the display.



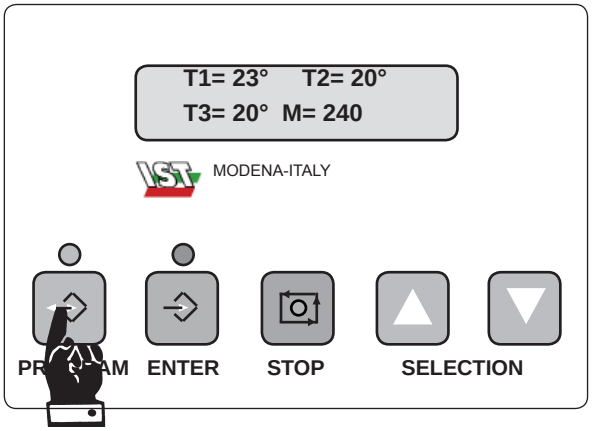
- Press the SELECTION buttons to increase or decrease the Set Cycle Time.



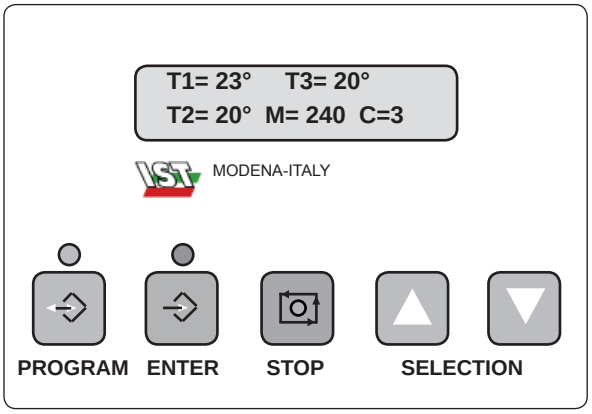
- After setting the Set Cycle Time, press the ENTER button; the rectangle goes off and the time is stored.



- To exit the program, press the PROGRAM button and the LED above it goes off.



- **NOTE** when you exit the program and the NO. CYCLES program has been selected, in addition to the temperatures and times, the display will also show C= (number of selected cycles, e.g. 3)



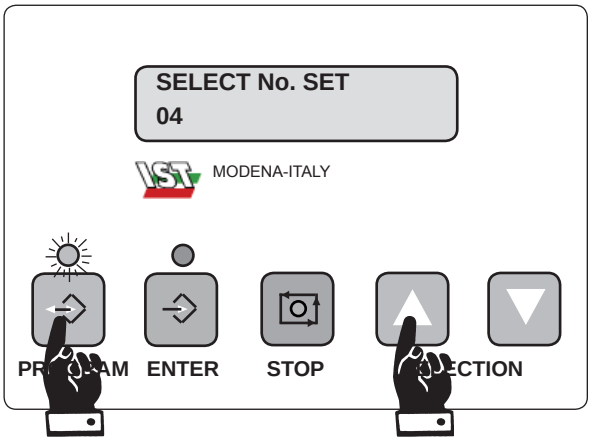
5.3.17 SETTING TEMPERATURES AND TIMES FOR THE MULTISET POINT CYCLE PROGRAM

This program allows you to regenerate mixed solvents with very different boiling points in a single purification cycle, but it is not possible to obtain separate solvents.

When you use the Multiset Point Cycle program, you must know the proportions of solvent with very different boiling points contained in the mixture in order to set the temperatures and times.

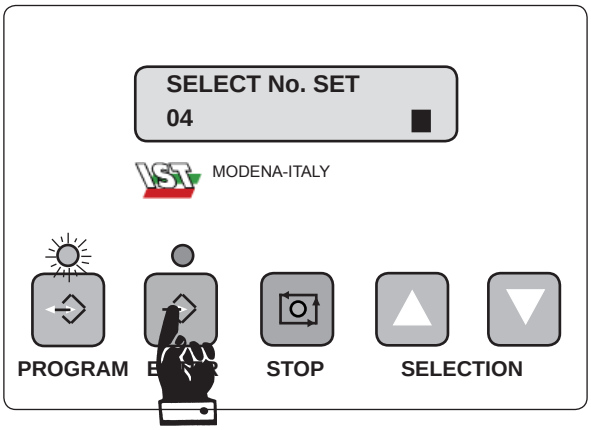
As an example for the adjustment procedure, we will use a solvent mixture composed of 75% Acetone, boiling point 56° and 25% Toluene, boiling point 110°.

- Press the PROGRAM button and the words SELECT NO. SET. appear on the display.
If the AUTOMATIC LOAD option is activated, No. CYCLES is displayed first; in this case, after pressing PROGRAM press the SELECTION button.

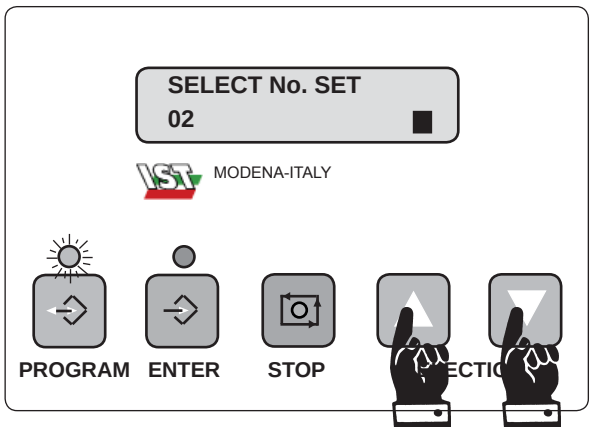


The number of set points to select is determined by the number of solvent types, mixed together, with different boiling points.
(Example: if the mixture is composed of 4 solvents with respective boiling points of 50°- 100°- 150°- 200°, 4 set points will be selected. If, however, the 4 solvents have boiling points of 50°- 65°- 90° 110°, 2 or 3 set points will be selected)

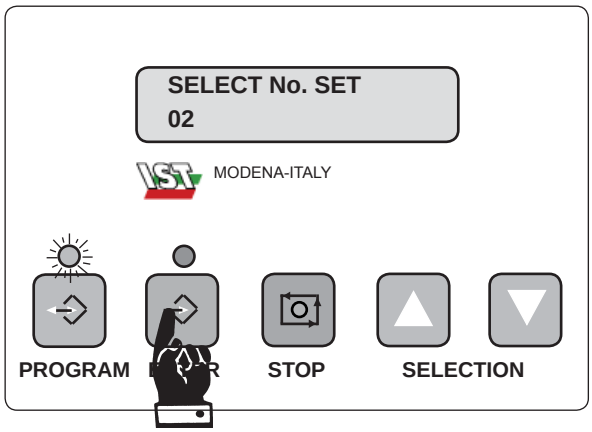
- Press the ENTER button and a flashing rectangle appears on the display.



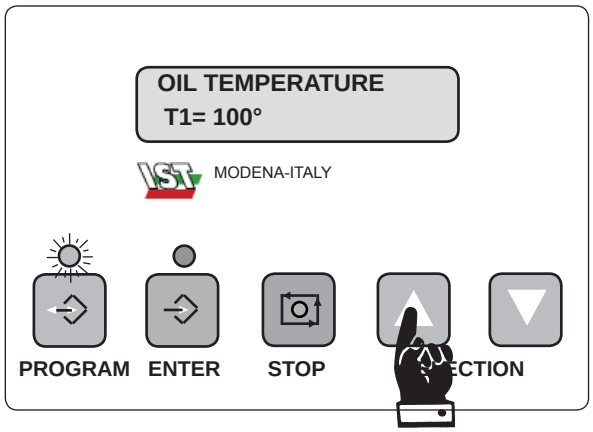
- Press the SELECTION buttons to select the required number of set points.
(2 is selected in the example)



- After selecting the number, press the ENTER button and the rectangle goes off.



- After programming the no. of set points, press the SELECTION button twice and the words OIL TEMPERATURE T1= 100° appears on the display

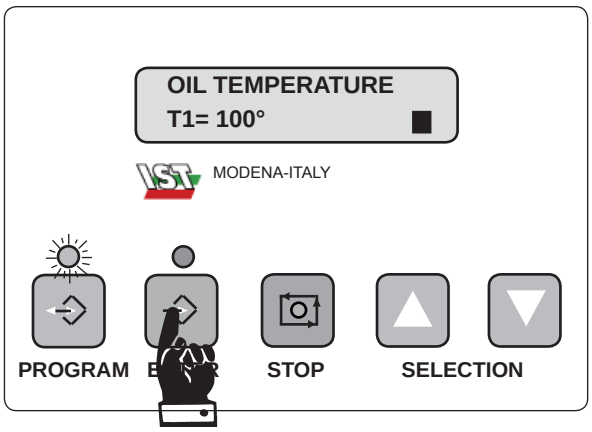


In the T1 temperature programming phase, the 1st set point selected is always the lowest and the last set point is always the highest.

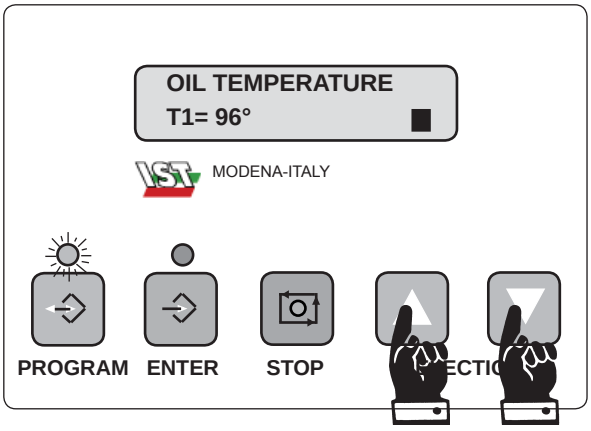
The heat transfer oil temperature must be set 30°- 40° higher than the boiling point of the solvent, e.g.: (Acetone boiling point 56°) T1 setting = 96°

Adjust the oil temperature T1 for the solvent with the lowest boiling point.

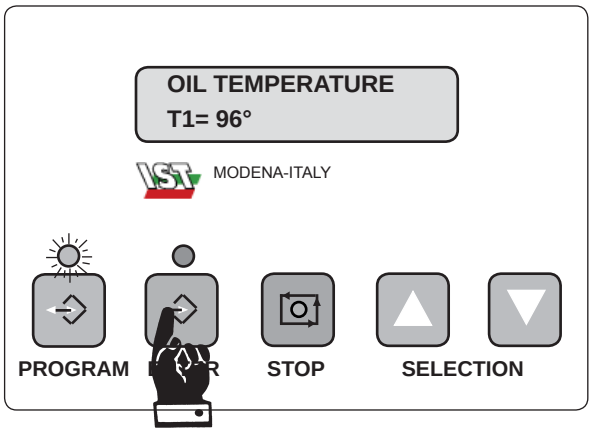
- Press the ENTER button and a flashing rectangle appears on the display.



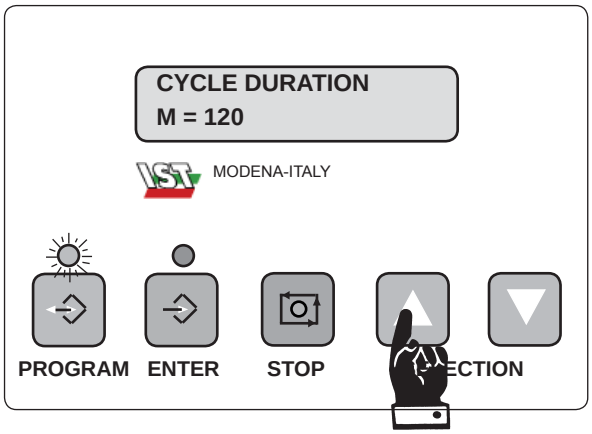
- Press the SELECTION buttons to increase or decrease the T1 temperature setting.



- After setting the temperature on T1, press the ENTER button, the rectangle goes off and the temperature is stored.

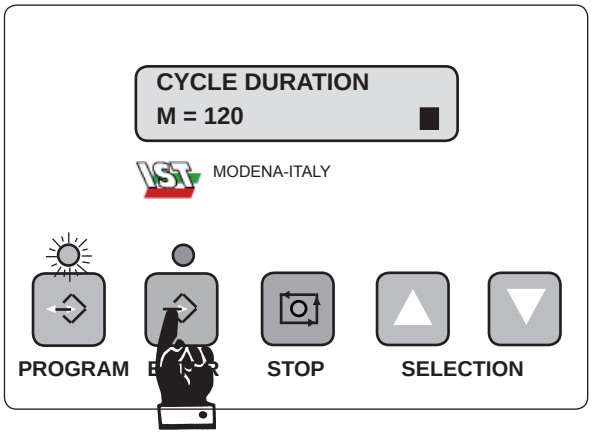


- Press the SELECTION button and the words CYCLE TIME M= 120 appears on the display.

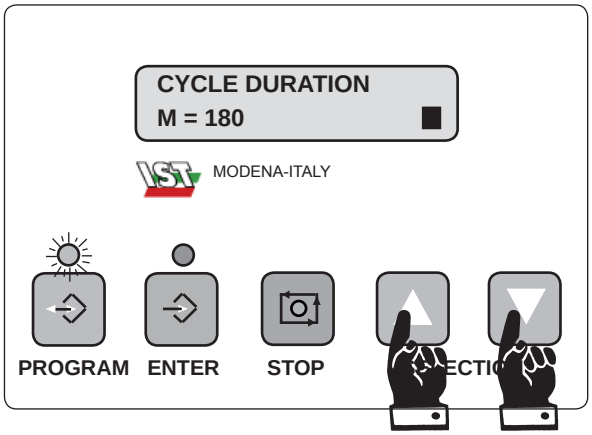


Adjust the cycle time based on the quantity of solvent and the lowest boiling point (in this example, set to MIN.= 180).

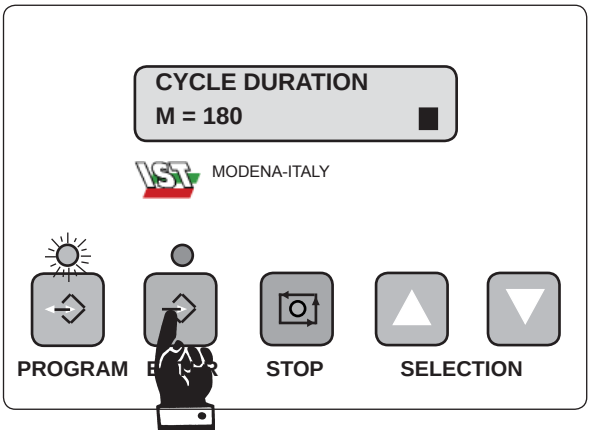
- Press the ENTER button and a flashing rectangle appears on the display.



- Press the SELECTION buttons to increase or decrease the setting.

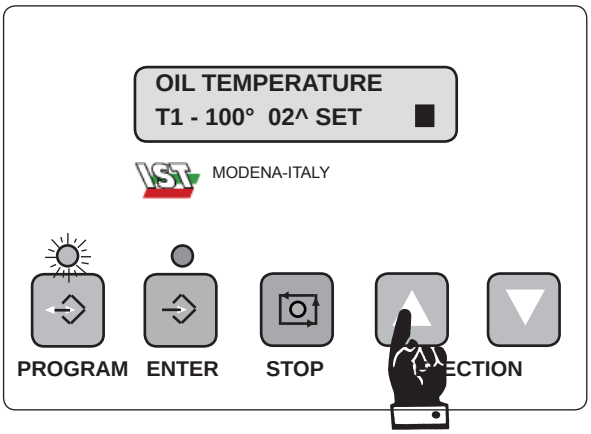


- Press the ENTER button on the display; the rectangle goes off and the time is stored.

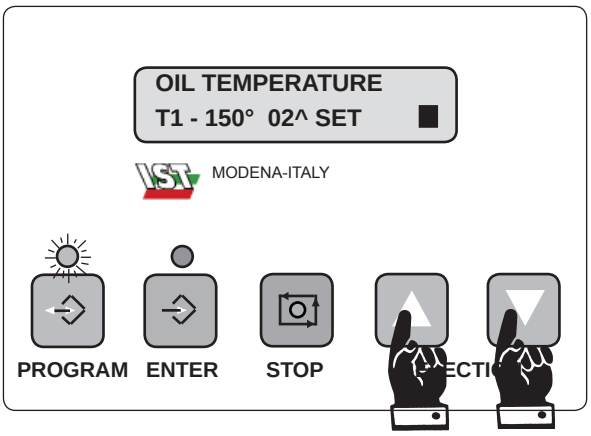


- Press the SELECTION button and the words OIL TEMP. 02^ SET T1 = 100° appear on the display.

The heat transfer oil temperature must be set 30°- 40° higher than the boiling point of the solvent, e.g.: (Toluene boiling point 110°) setting 02^Set T1= 150°

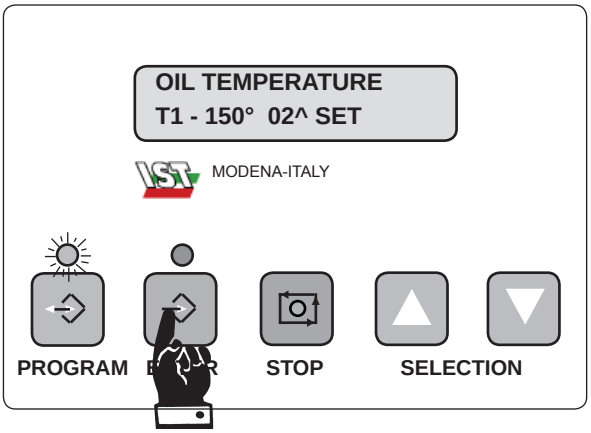


- Press the SELECTION buttons to increase or decrease the temperature T1 02^ SET.



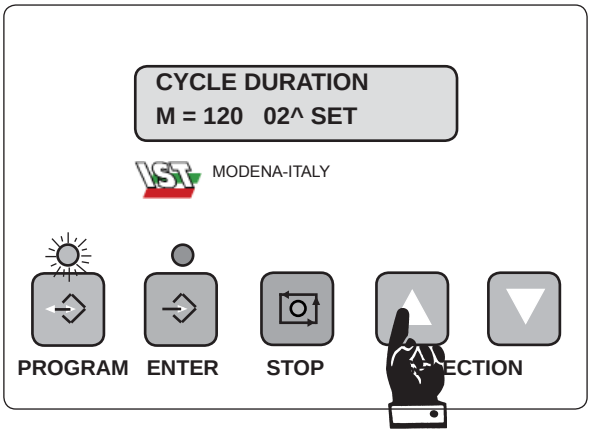
- Press the ENTER button; the rectangle goes off and the temperature is stored.

If more than 2 set points have been selected, you can press the SELECTION button to display the next set point, which will be programmed in the same way as the 02^Set.

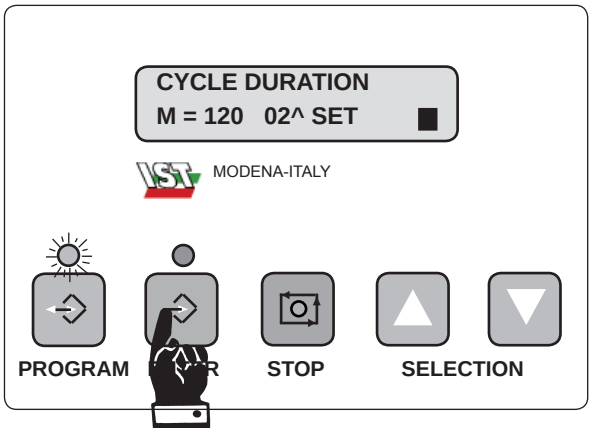


- Press the SELECTION button and the words CYCLE DURATION 02^SET MIN= 120 appear on the display.

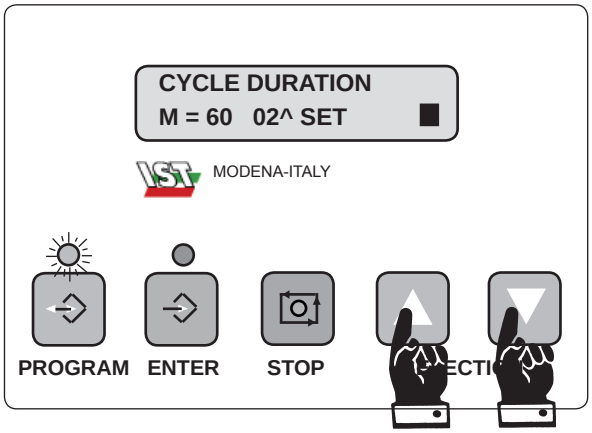
Adjust the 02^ Set Cycle Time based on the quantity of solvent with the highest boiling point (in this example it is set to 60 min.)



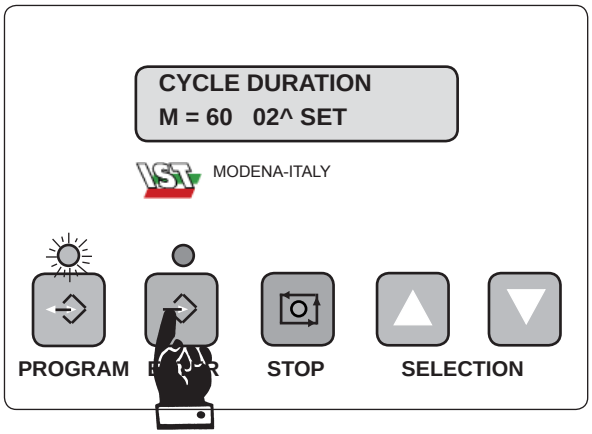
- Press the ENTER button and a flashing rectangle appears on the display.



- Press the SELECTION buttons to increase or decrease the 02^SET CYCLE TIME.

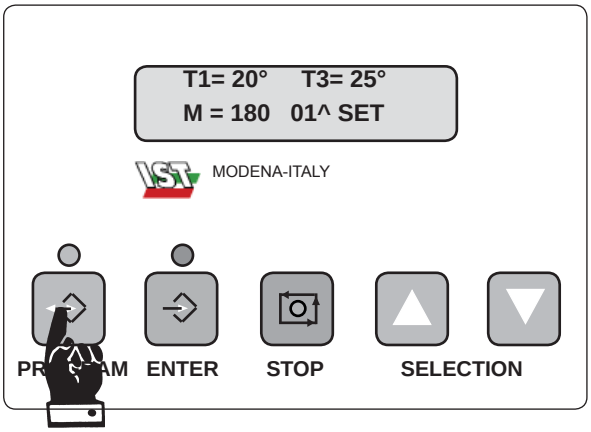


- Press the ENTER button; the rectangle goes off and the 02^SET CYCLE TIME is stored.



If more than 2 set points have been selected, you can press the SELECTION button to display the next set point, which will be programmed in the same way as the 02^Set.

- To exit the program, press the PROGRAM button and the LED above it turns off.

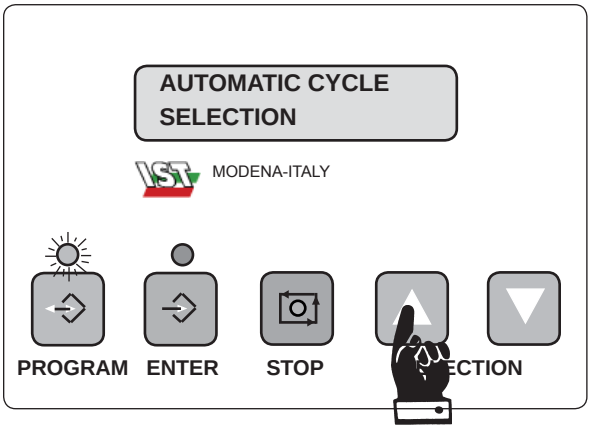


5.3.18 CLEANING RESIDUES

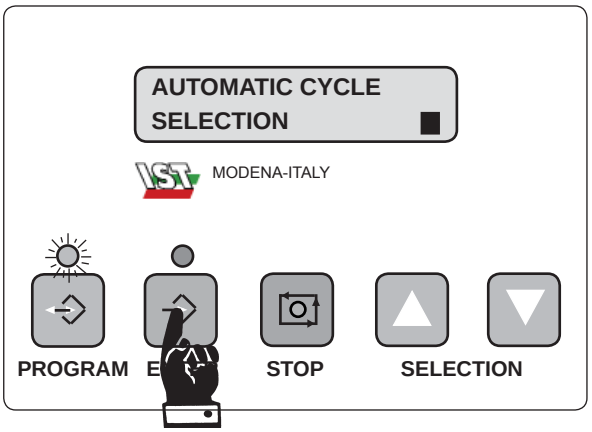
This program allows the distillation residues to be cleaned from the inside of the tank if the residue is not discharged from the discharge valve (A) during the residue discharge phase (ch. 5.6)

This program should not be used if the residue contains NITROCELLULOSE.

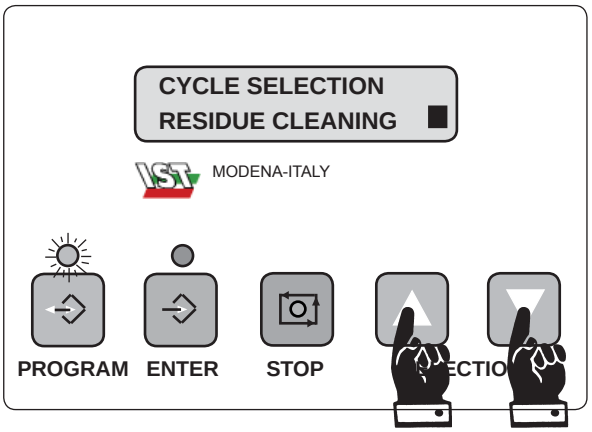
- Press the SELECTION button until the selected cycle appears on the display.
  E.g. : “AUTOMATIC CYCLE SELECTION”.



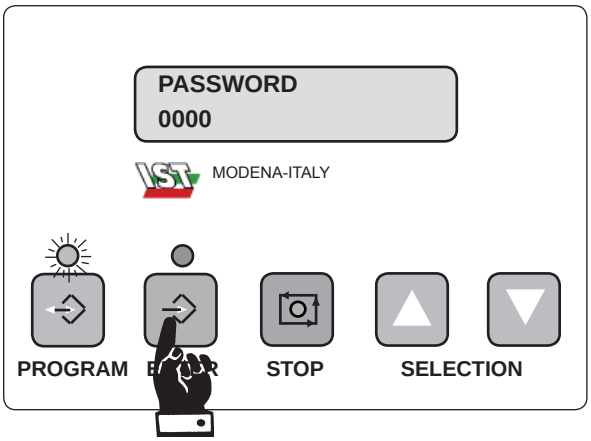
- Press the ENTER button and a flashing rectangle appears on the display beside the lower line of writing.



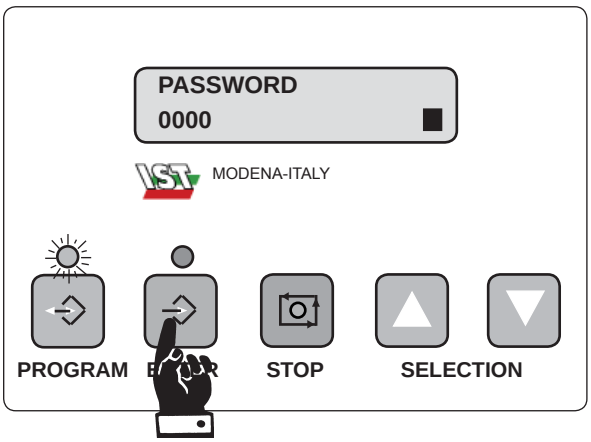
- Press the SELECTION buttons twice until CYCLE SELECTION RESIDUE CLEANING appears on the display



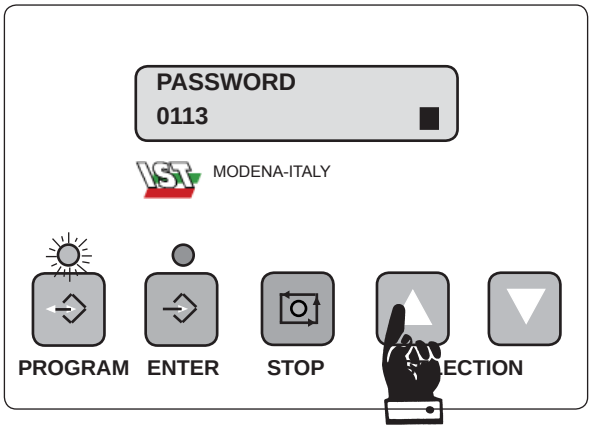
- Press the ENTER button; the rectangle goes off and the display shows:
  PASSWORD 0000



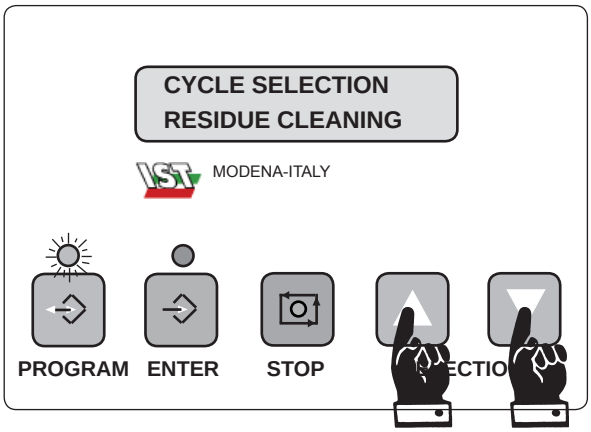
- Press the ENTER button and a flashing rectangle appears on the display.



- Use the SELECTION button to set the parameter to 0113



- Press the ENTER button; the rectangle goes off and the display shows:
CYCLE SELECTION RESIDUE CLEANING



Press the start button (3) ch. 5.1.1 and the cleaning cycle starts, the discharge valve will remain open and the scraper will begin to rotate.
At the end of the set time, or when the STOP button is pressed, the regenerator goes to the end of the cycle.
Follow the instructions in 5.3.2 to enter the distillation cycle used once more.

5.4 PURIFICATION CYCLE

After carrying out the instructions in chapters 5.3, 5.4 and 5.5, pressing the Start button (3) starts the programmed distillation cycle. If the regenerator has automatic loading, pressing the Start button (3) together with the programmed distillation cycle activates the pneumatic pump for loading the dirty solvent and the pneumatic valve opens to allow dirty solvent to enter the regenerator tank.

When the dirty solvent reaches the maximum level in the regenerator tank, the level switch (C) is activated, which stops the pneumatic pump and closes the pneumatic valve.

When the distillation cycle starts, the electrical heating elements and electric fans turn on:

The electric heating elements increase the temperature of the heat transfer oil in the regenerator tank wall cavities to the set temperature **T1** (E.G. 150°C) and when the set temperature is reached, the heating elements are switched off. The heating elements will turn back on again when the temperature of the heat transfer oil goes down by 1°C and will stay on until the set temperature **T1** is reached.

The electric fans, on the other hand, will stay on for the whole of the programmed distillation cycle to cool the condenser.

The heat transfer oil will heat the dirty solvent inside the tank until the **T1** temperature is reached.

After around 40-60 minutes, the dirty solvent in the tank reaches boiling point and starts to evaporate.

The solvent vapours will separate from the contaminated parts (paint, ink, oil, etc.), move into the condenser, return to a liquid state and discharge from the clean solvent outlet pipe.

The **T2** sensor on the condenser reads the vapour temperature and stops the distillation cycle when no more solvent evaporates, while the **T3** sensor measures the condenser output temperature and only has the safety function described on p. 98 of the manual.

The end of the distillation cycle is determined by the type of program selected during programming.

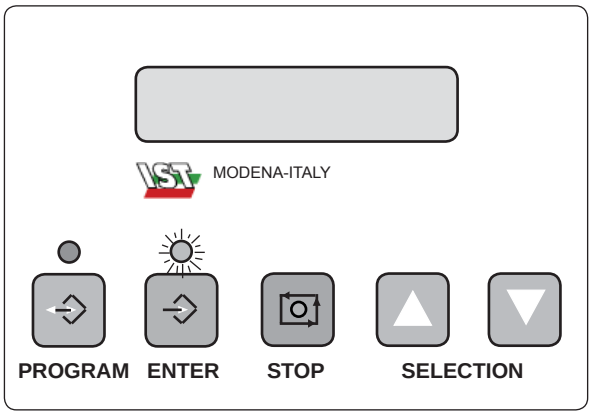
For example, if the automatic cycle is selected, the end of the cycle is determined by the **T2** sensor, as described above.

If, however, the timed cycle is selected, the end of the cycle is determined by the time set in paragraph (5.3.16).

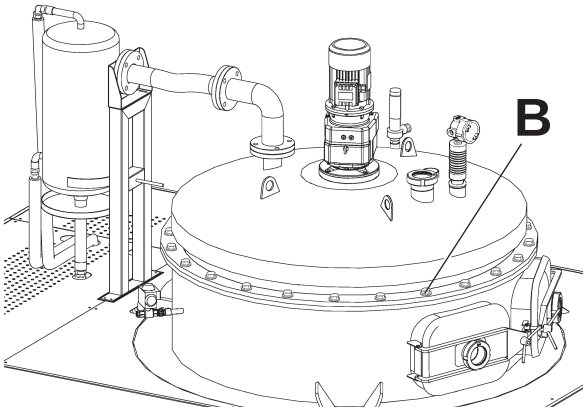
5.4.1 CYCLE START

Before starting the first purification cycle, check the direction of rotation of the vacuum pump or scraper - (4.8 ELECTRICAL CONNECTION).

Press the START BUTTON (3) I. The INDICATOR LIGHT above the ENTER button will come on and the solvent vapour cooling fan will start operating.
This starts the distillation cycle and when boiling point is reached, distilled solvent will start coming out from the pipe.

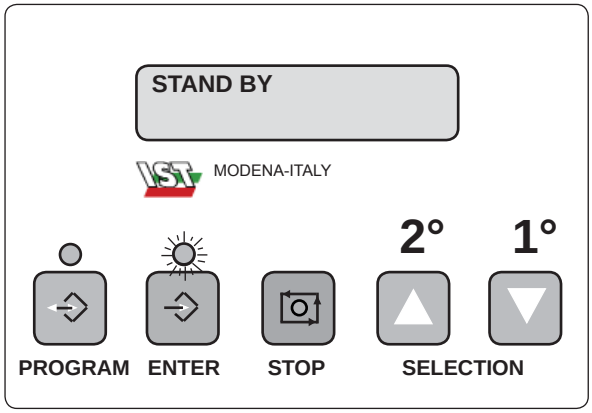


After 2 or 3 distillation cycles, tighten the bolts (B) by ¼ of a turn to restore the lid closures.



5.4.2 END OF CYCLE

The words STAND BY on the display, with the indicator light off on the ENTER button, indicate that the regenerator has completed all the distillation cycles programmed in NO. CYCLES.



When the regenerator is programmed for NO. CYCLES or CONTINUOUS, to stop the distillation cycle without the next one starting, press and hold the SELECTION button ▼ and press the SELECTION button ▲. The green indicator light on the ENTER button will flash until the end of the cycle.

If a power failure occurs during the distillation cycle, the cycle must be restarted when the power returns by pressing the START BUTTON (3) ch. 5.1.1.

If the purifier does not restart automatically, it enables a safety program that prevents the purified solvent from coming out hot.

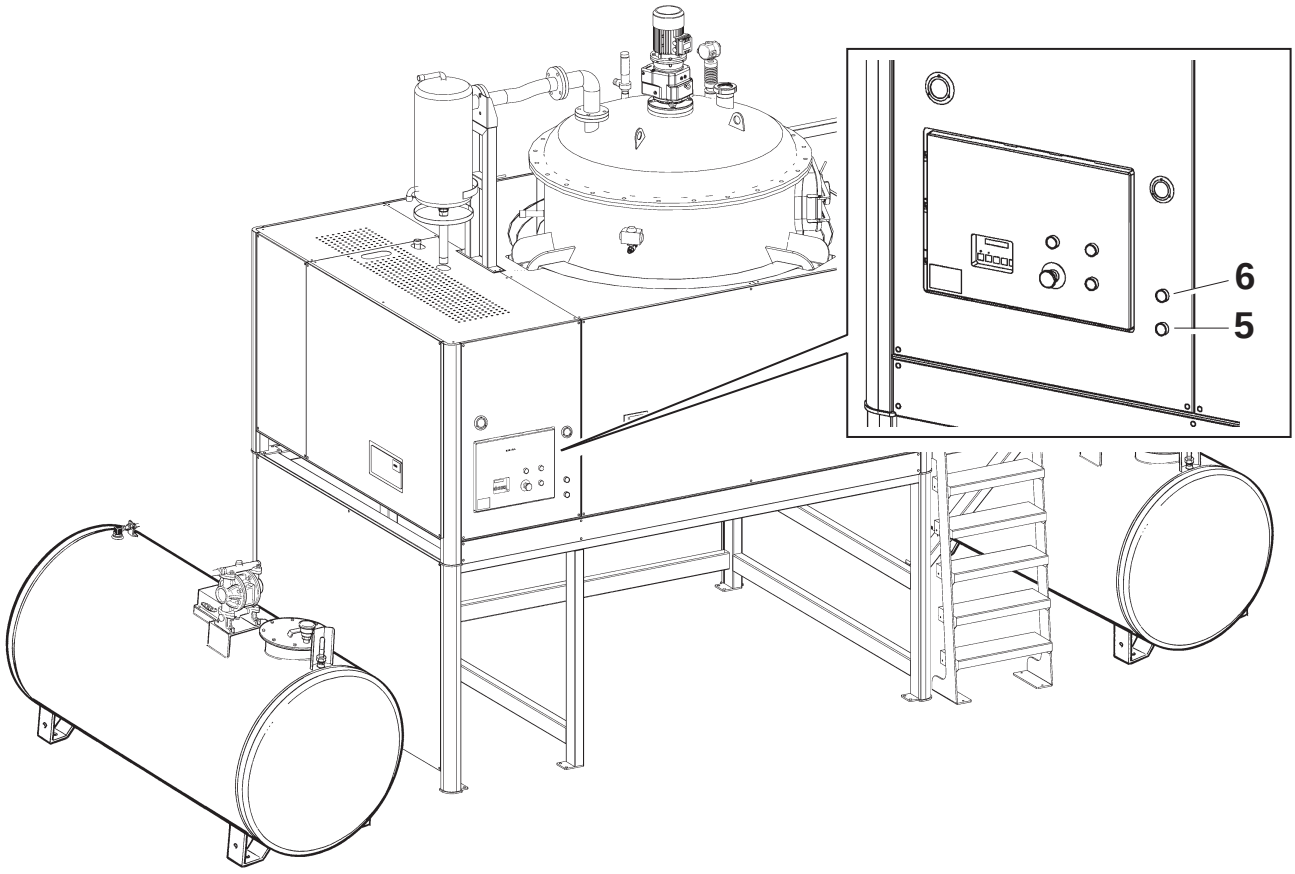
5.5 RESIDUE DISCHARGE

The residues are discharged automatically, but in the event of failure or activation of the safety devices (see ch. 7.1), discharge them manually, as described in ch. 5.5.1.

Do not perform any operations while the display shows the wordsAWAITING OPENING OK

5.5.1 MANUAL RESIDUE DISCHARGE

At the end of the cycle, open the doors of the residue discharge zone, press and hold the residue discharge valve open button (5) for a few seconds and wait a few minutes. Check that no more residue comes out of the valve. Press and hold the discharge valve close button for a few seconds (6).



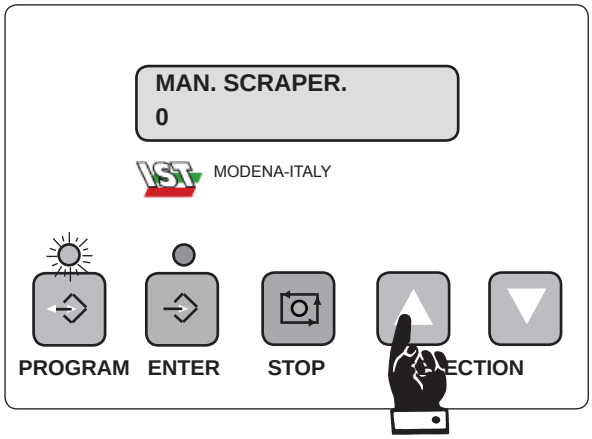
5.5.2 CONTINUOUS CYCLE RESIDUE DISCHARGE

When the regenerator is operating in continuous cycle, check the residue collection tank periodically and empty it at least once a day.

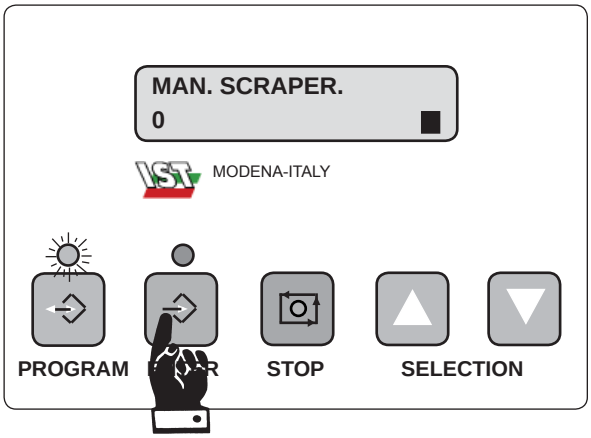
5.5.3 MANUAL SCRAPER

This parameter is used to activate the scraper without starting the distillation cycle.
Enter password-protected programming (see chapter 5.3.2)

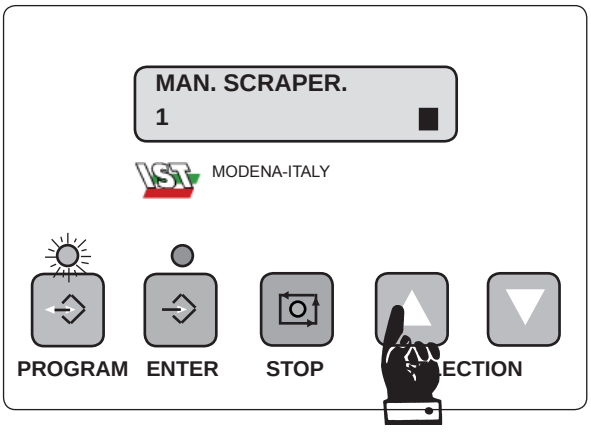
- Press the SELECTION button and the display will show:
  MAN. SCRAPER
  0



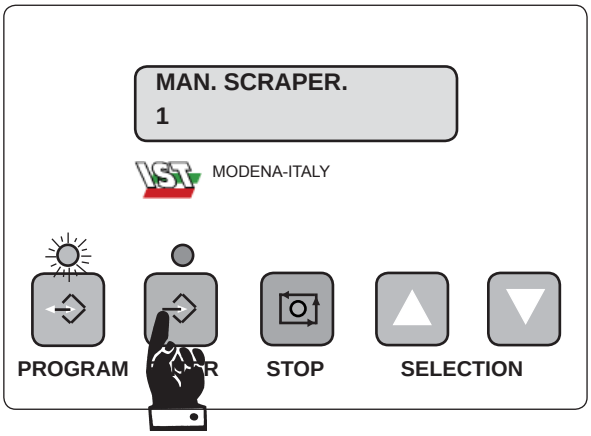
- When you press the ENTER button on the display beside the lower line of writing, a rectangle starts to flash.

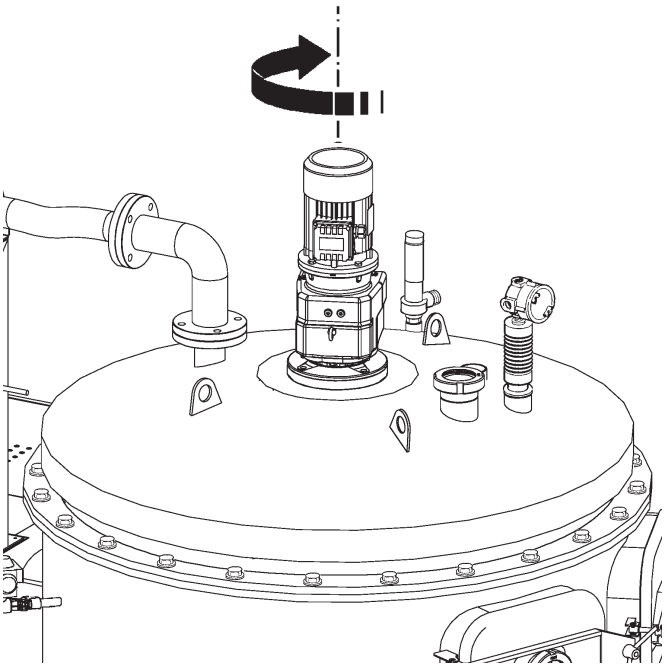


- Use the SELECTION button to set the parameter to 1.

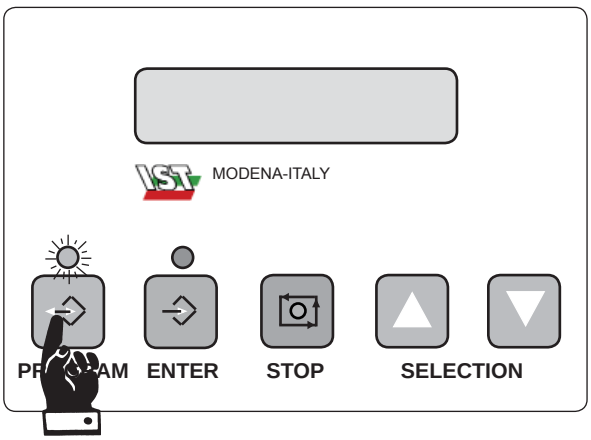


- Press the ENTER button again; the rectangle goes off and the scraper starts to rotate.





- When you press the PROGRAM button, the scraper stops and automatically returns to the previously programmed distillation cycle.



5.6 CHECKING RESIDUES

If the residues are liquid, meaning they still contain solvent, this indicates that the solvent has a higher boiling point than that which was set; therefore you must:

- gradually increase the T1 heating temperature setting (paragraph 5.3);
- or: the time set is not sufficient to allow all the solvent to evaporate; therefore, the time must be increased by 15 minutes (paragraph 5.3).
- close the lid;
- start the purifier once again (paragraph 5.4.1).

Remove the residues from the tank after each distillation. See 6.3 CLEANING THE TANK.

5.7 SWITCHING OFF AFTER USE

After use, disconnect the electrical power to the purifier by turning the switch to “0”.

5.8 HAZARDS CAUSED BY MODES OF USE

Based on our experience, IMPROPER use of the IST regenerator can expose the operator to:
- explosion hazards
- cutting hazards
- crushing hazards

6.1 SAFETY INSTRUCTIONS

All maintenance operations must be carried out with the regenerator NOT in operation, after switching off the wall-mounted electrical mains connection switch (if there is no switch, remove the plug from the power socket).

All electrical work must be carried out by qualified persons with the required skills.

Before starting any work, check that the temperature T1 on the display is below 50°C.

6.2 MAINTENANCE

The purifier does not require particular maintenance; however, the following points should be noted:

- it is a good practice to keep the casing and the condenser of the purifier free from dust or encrustations in order to allow a proper flow of cooling air.

- to ensure optimal machine operation and avoid forfeiture of the warranty, all replacements must be made exclusively with “genuine parts”.

- to facilitate maintenance operations, follow the schedule indicated in the table below:

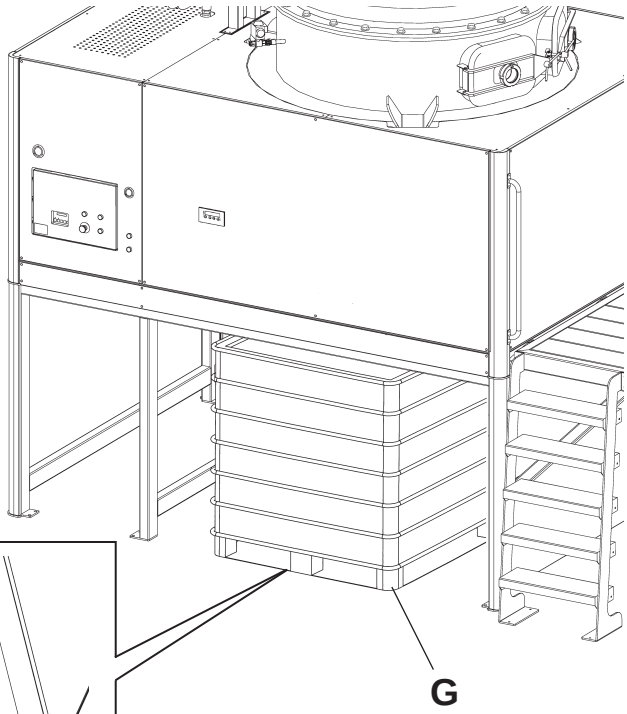
Period	Operation	See:
EVERY MONTH	Check the gasket on the tank - lid	6.6 TANK LID GASKET
EVERY WEEK	Check the safety valve and oil breather valve	6.7 SAFETY VALVE 3.1 GENERAL DESCRIPTION
EVERY 1000 HOURS NOT MORE THAN ONE YEAR	Replace the heat transfer oil	6.3 REPLACING THE HEAT TRANSFER OIL
1st CHANGE 2nd CHANGE 3rd CHANGE	Signature..... Signature..... Signature.....	Date..... Date..... Date.....

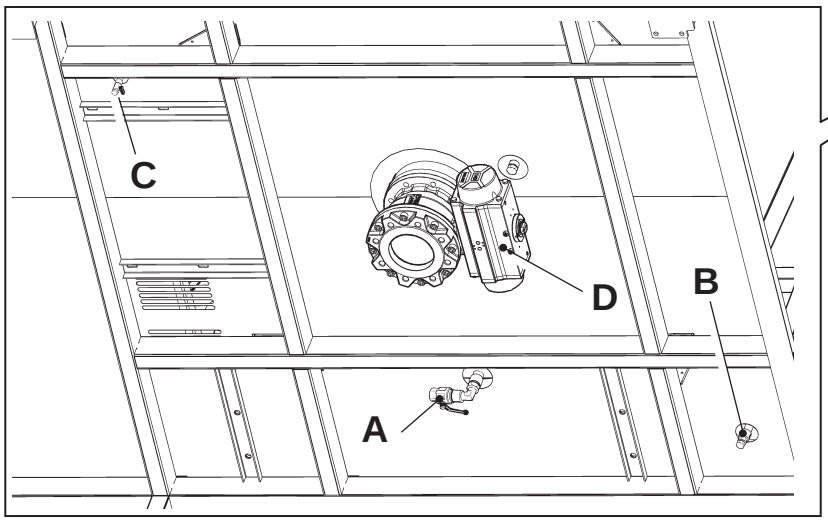
6.3 REPLACING THE HEAT TRANSFER OIL

his procedure must be carried out by qualified maintenance personnel with the machine switched off and the oil temperature below 50°.

After 1000 hours of activity, the distiller shuts down and OIL SERVICE ALR. appears on the display. See chapter 7.1.

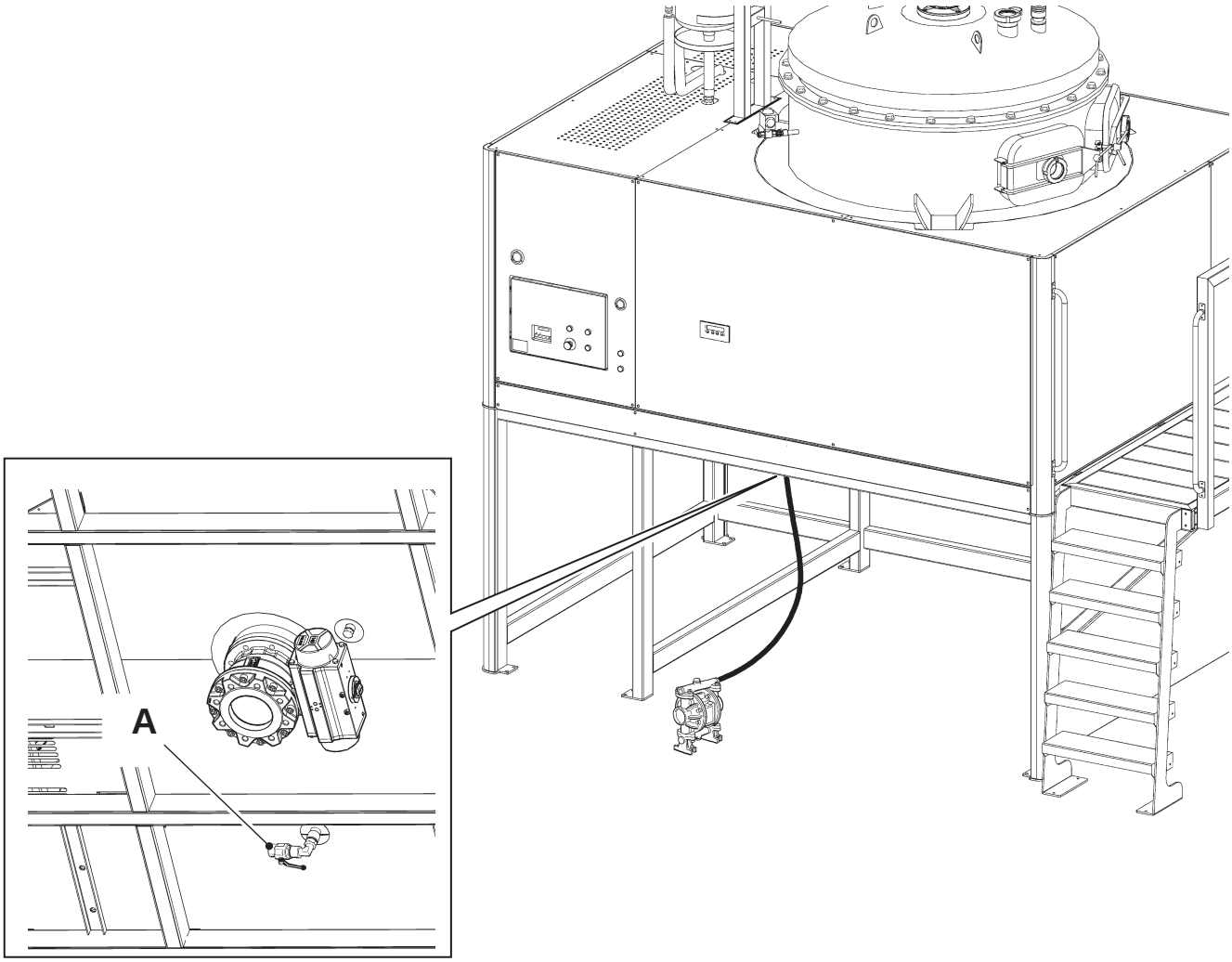
Remove the residue collection tank (G).
Check that the valves (A) - (B) - (C) and (D) are closed and remove the caps from them.
Screw a hose connection to the valves and connect a hose for draining the heat transfer oil.
Make sure that the container for the used oil is large enough to hold the quantity of oil contained in the machine (see par. 3.3).
Open valve (D) to facilitate the outflow of the oil.
Open valves (A) - (B) and (C) to start the draining.





Do not disperse used oil in the environment, but dispose of it properly, in accordance with current laws.

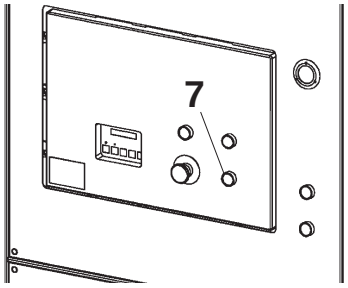
When all the oil has been completely drained from the machine, close valves (B) and (C), remove the hose connection from the valves and screw on the caps.
Connect a pump to the hose on valve (A) and position it in the right-hand corner of the residue discharge area.
Operate the pneumatic pump and load the oil, see the nameplate for the required quantity.
When oil starts coming out of valve (D), stop the pneumatic pump and wait a few minutes for all excess oil to flow out.
Finally, close valves (A) and (D), remove the hoses and hose connections and screw on the caps.

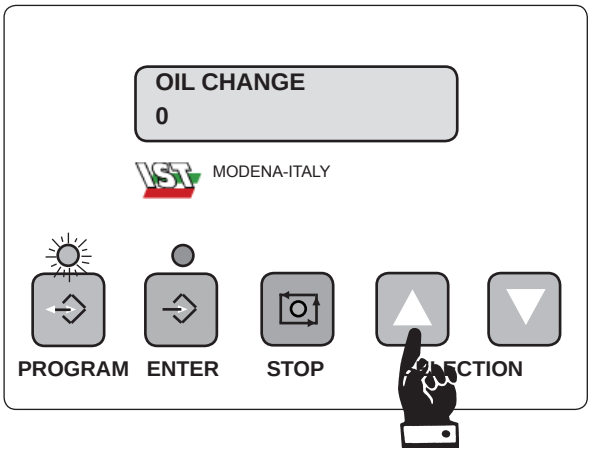


Continue as follows to restore the operating cycle:

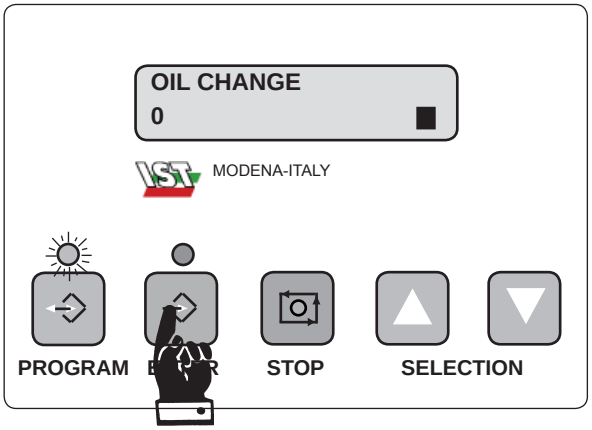
Before performing the recovery procedure outlined below, make sure that the oil temperature is below 50° and press the STOP button if the green indicator light on the ENTER button is flashing.

- Follow the instructions in paragraph 5.3.2 to enter the PASSWORD-protected parameters; press the reset button (7) and press the SELECTION button repeatedly until the display reads:
  OIL CHANGE
  0

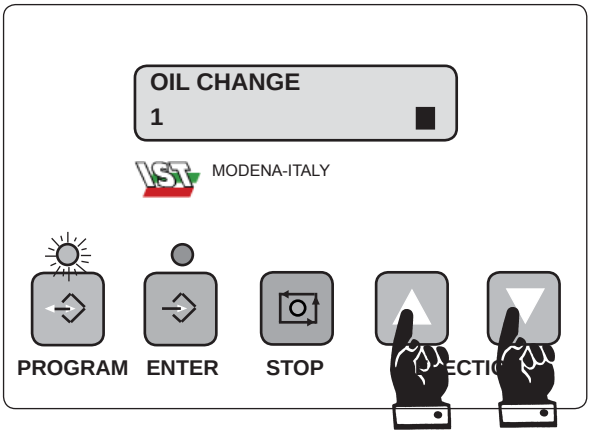




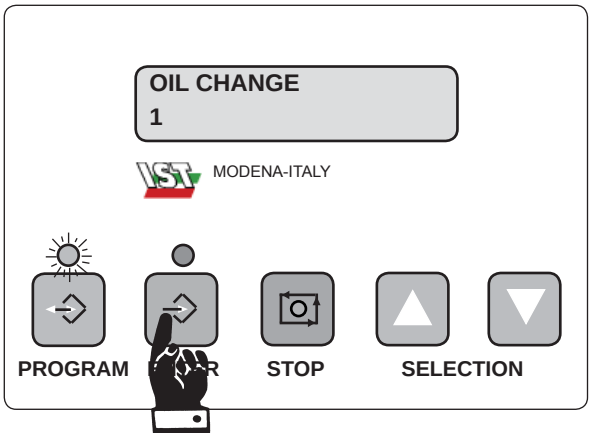
- Press the ENTER button and a flashing rectangle appears on the display.



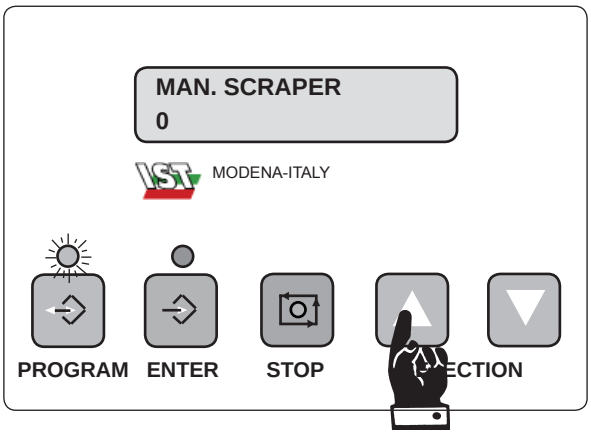
- Press the SELECTION buttons▲ and change the setting from 0 to 1.



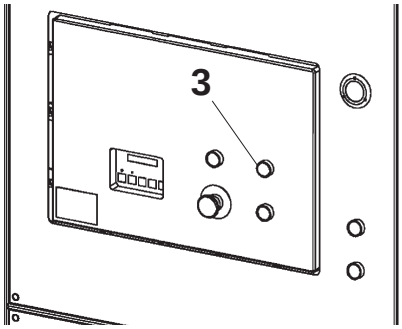
- Press the ENTER button to confirm.

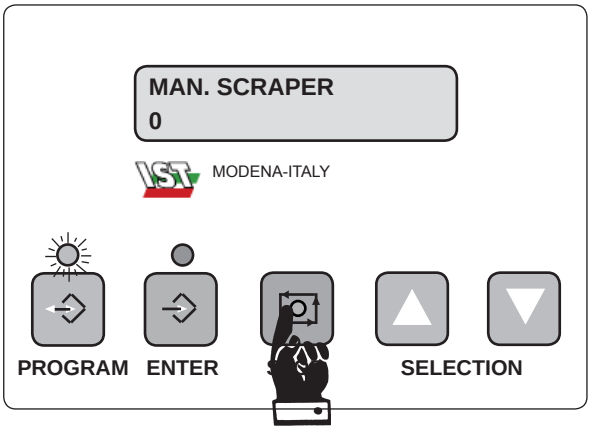


- Press the SELECTION button.

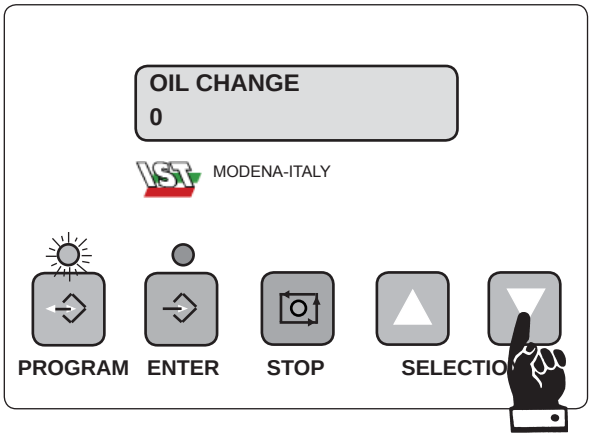


- Press the START button (3) and then press STOP.

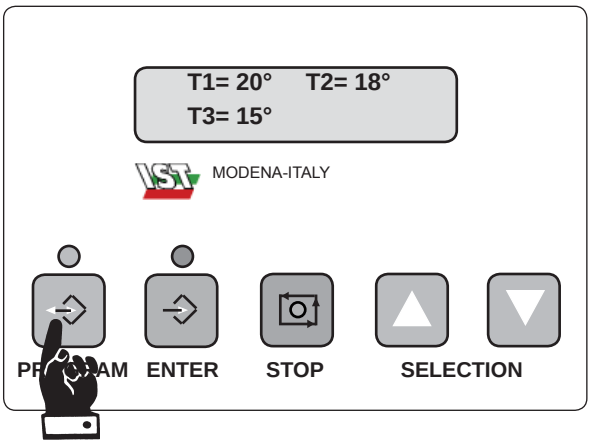




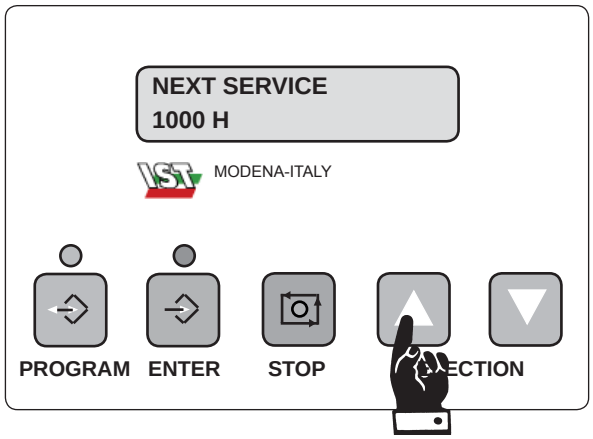
- Press the SELECTION button ▼ and the display will show:
  OIL CHANGE
  0



- Press the PROGRAM button to exit programming.



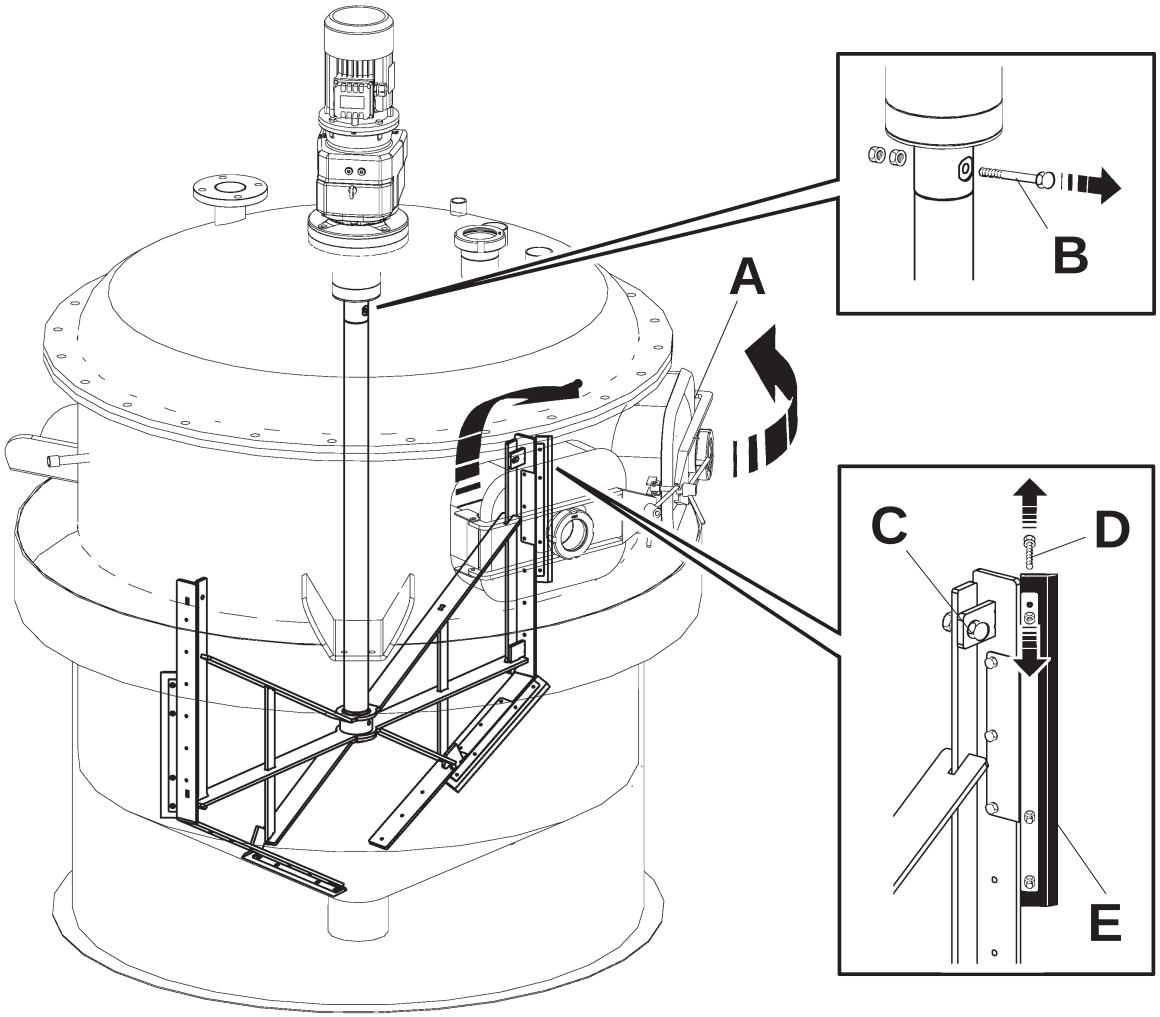
- Press the SELECTION buttons repeatedly until you see:
  NEXT SERVICE



If NEXT SERVICE 1000H is displayed, the RESET procedure has been successful.

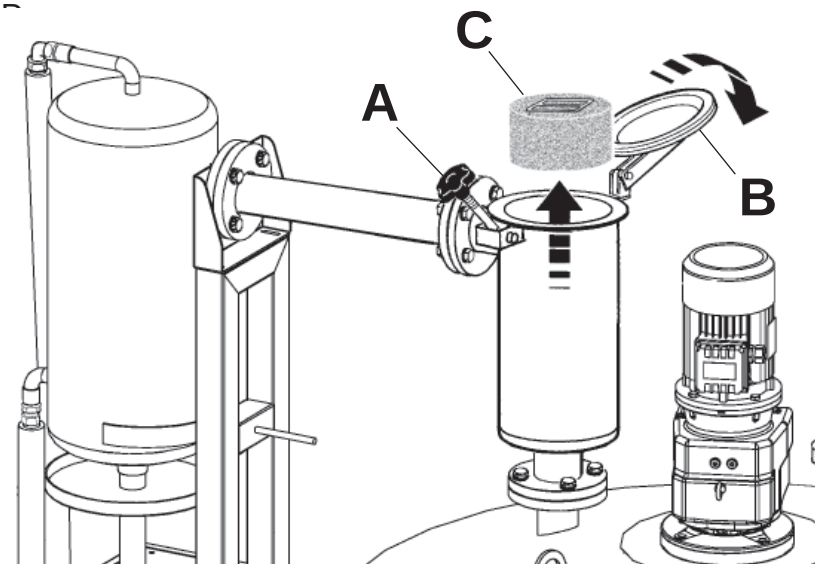
6.4 REPLACING THE TEFLON BLADE

Open the hatch (A) and remove the screws (B) fixing the motor shaft to the paddles.
Rotate the paddle until it is beside the manhole. Remove screw (C) that holds the paddle to the frame. Extract the paddle through the hatch.
Repeat the same operation for the second paddle.
Remove the screws (D) holding the teflon blade (E), remove the blade and replace it with a new one. Follow the instructions in reverse order to reassemble the scraper system.



6.5 DEMISTER MAINTENANCE

Unscrew the knob (A), open the lid (B) and remove the filter (C), wash it with clean solvent and put it back into the demister.



6.6 WATER CONDENSER

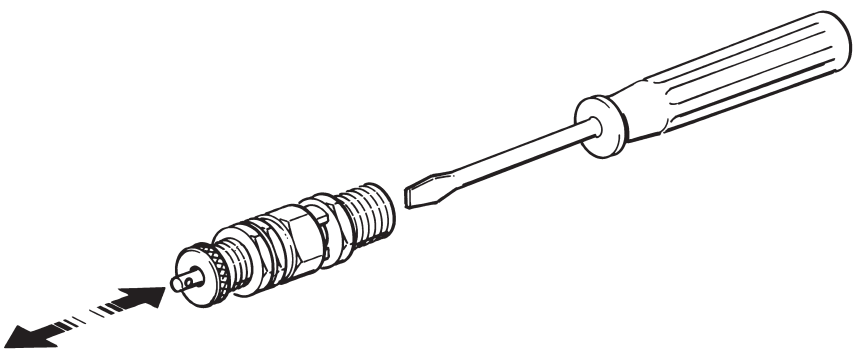
Periodically check the purification filter in the water system.

6.7 TANK LID GASKET

Periodically check (at least once a month) the condition of the gasket on the lid: check that it is clean, intact and free from cracks.

6.8 SAFETY VALVE

Check once a week that the SAFETY VALVE IS WORKING PROPERLY (3) - (3.1 GENERAL DESCRIPTION), unscrewing it from the tank lid (4), because if deteriorated it will allow the vapour to escape. In this case, the distiller should not be used until it is replaced.

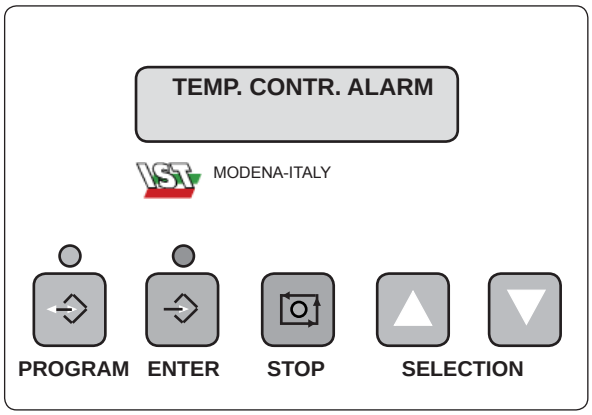


7.1 ALARM MESSAGES ON THE DISPLAY

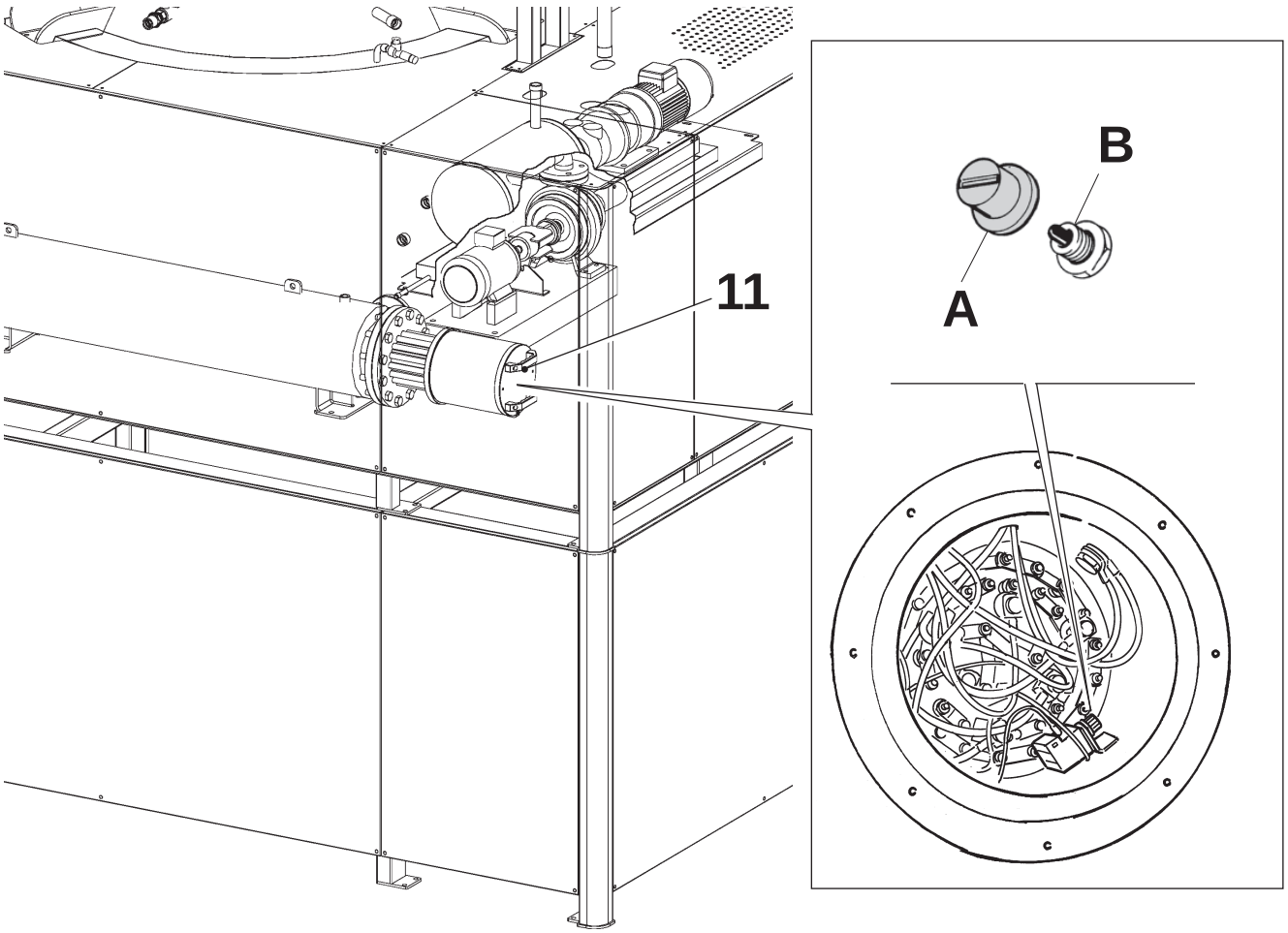
In the event of failure or maintenance, the following words appear on the display:

To reset the alarms, remove the cause and press the STOP button on the Display.

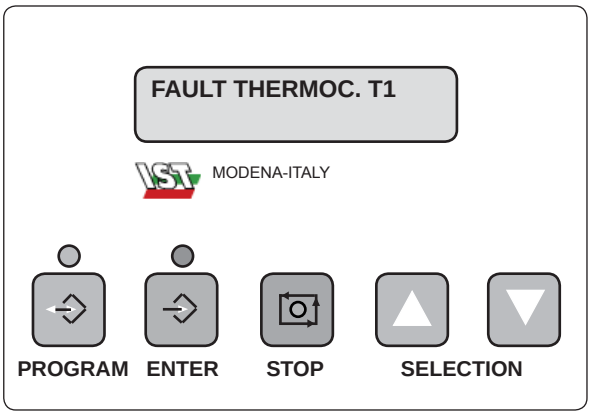
Meaning	Consequences
TEMPERATURE CONTROL ALARM Indicates malfunction of the contactors that control the heating element. Or else the heating element safety thermostat has intervened.	Operation stopped. Contact support. Remove the guard (fig.1) and unscrew the casing on the heating element (11), unscrew the cap (A) and press the reset (B) button.



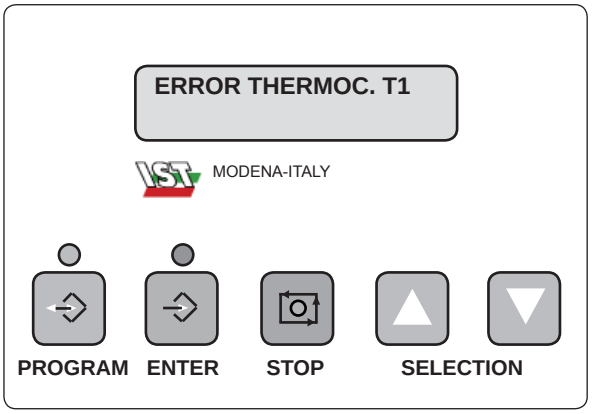
(Fig.1)



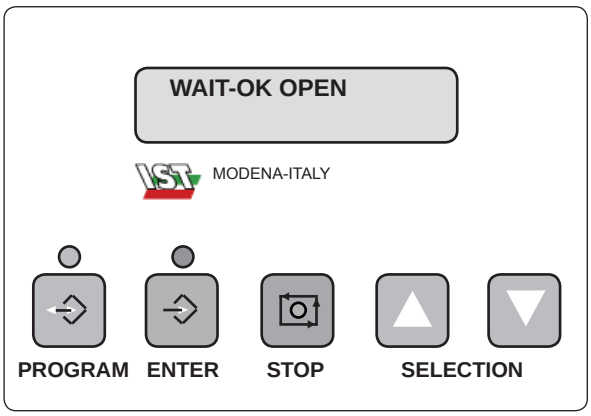
Meaning	Consequences
THERMOCOUPLE FAULT T1 or T2 or T3 Thermocouple malfunction indicated by faulty reading.	Sensor interrupted. Contact support.



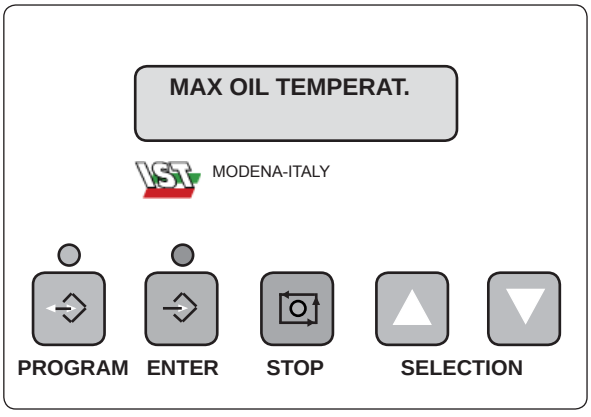
Meaning	Consequences
THERMOCOUPLE FAULT T1 or T2 or T3 Thermocouple malfunction indicated by faulty reading. **STAND BY**	Sensor unscrewed from its housing. Contact support.



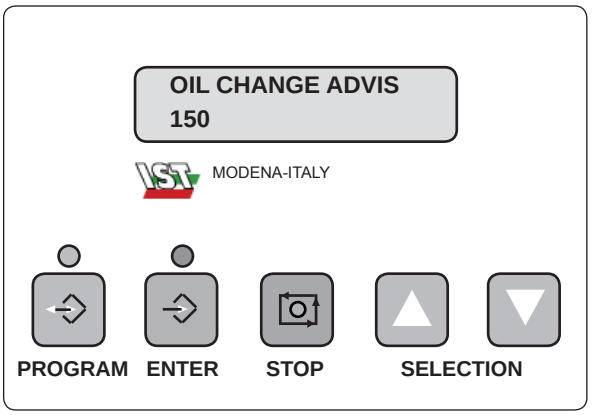
Meaning	Consequences
TANK OPENING OIL TEMPERATURE ALARM Indicates that the oil temperature is too high to open the tank or perform maintenance.	Wait for the temperature to cool. (However, the residue discharge valve can be opened)



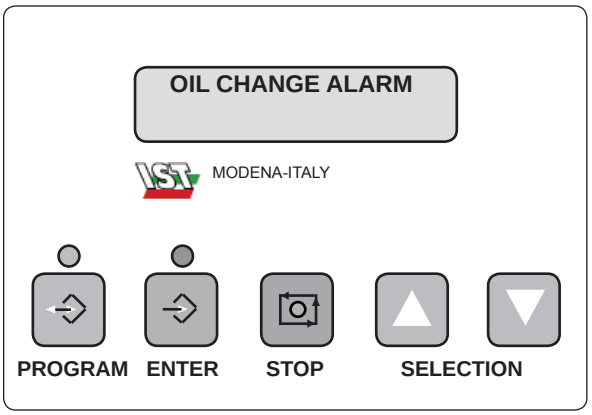
Meaning	Consequences
MAXIMUM OIL TEMPERATURE ALARM During the cycle, the oil temperature has surpassed the set temperature by 20°.	Low internal oil level. Contact support. Only with Multi Set Point Cycle. Incorrect T1 2°SET setting



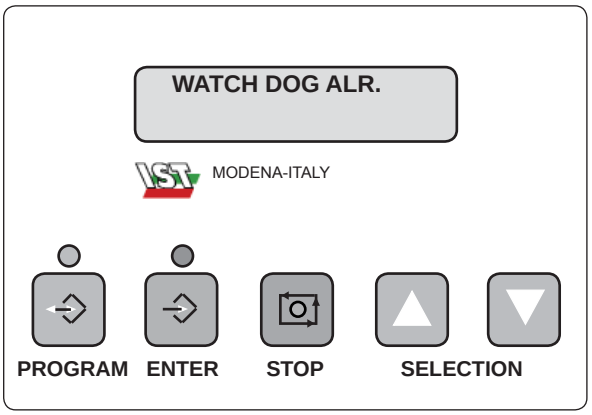
Meaning	Consequences
SERVICE DUE REMINDER ALARM Indicates at the end of each cycle that the service deadline is imminent.	Press the stop button to deactivate the alarm.



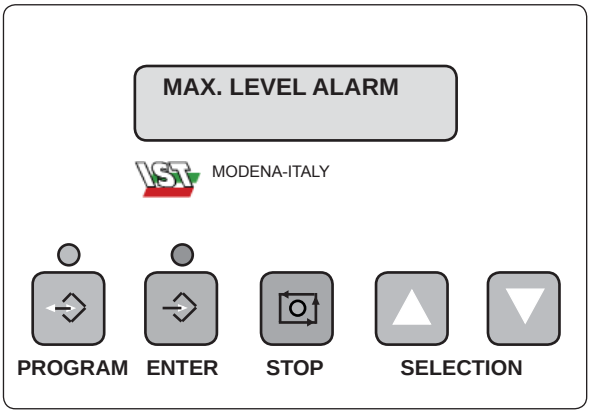
Meaning	Consequences
OIL CHANGE SERVICE ALARM Shuts down operation for the oil to be changed.	See chapter on changing the oil.



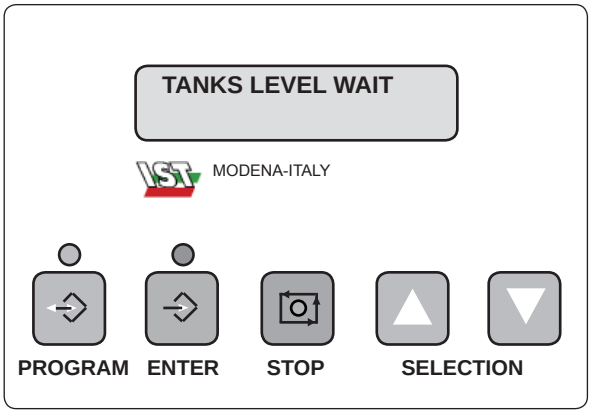
Meaning	Consequences
WATCHDOG ALARM Microprocessor malfunction.	The regenerator has stopped. Wait a few seconds, then turn the main switch (1) to 0 (off) and then to 1 (on). Retry various times; if the problems persist, contact support.



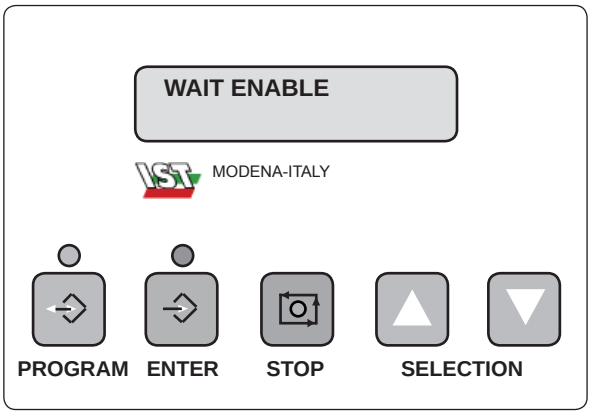
Meaning	Consequences
MAXIMUM LOAD LEVEL ALARM (only with the automatic load function) Stops the distiller from operating. Indicates that the maximum level control did not intervene within the set safety interval. (see password-protected programming parameters)	- The load pump is not working. - The load pump is operating at a lower speed than normal: check the flow control on the compressed air input. - The bottom of the tank from which the solvent is being taken is full of residues. - The solvent input valve has not opened. - There is not enough dirty solvent to distil. - Safety interval set incorrectly (see password-protected programming parameters). - The compressed air supply has stopped. - The quantity of paraffin oil in the container is low (only with optional paraffin loading). - The float is detached from the arm. - The float is weighed down due to insufficient cleaning. - The level control is not working properly.



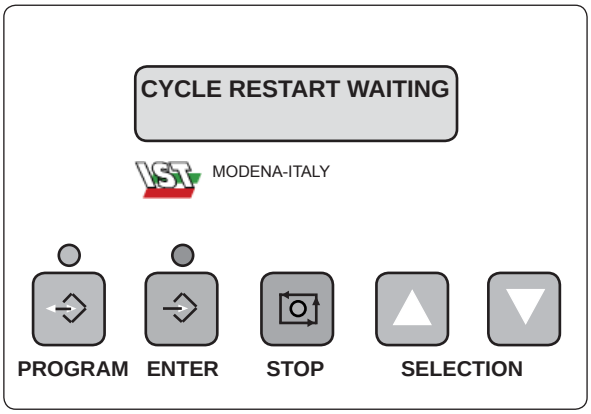
Meaning	Consequences
AWAITING TANK LEVELS (displayed at the start of the first cycle) The level switch stops the distiller operation. The levels inside the tanks are insufficient for the start of a distillation cycle.	Wait until the required working conditions are restored. If the levels are correct, check that the level control is working properly.



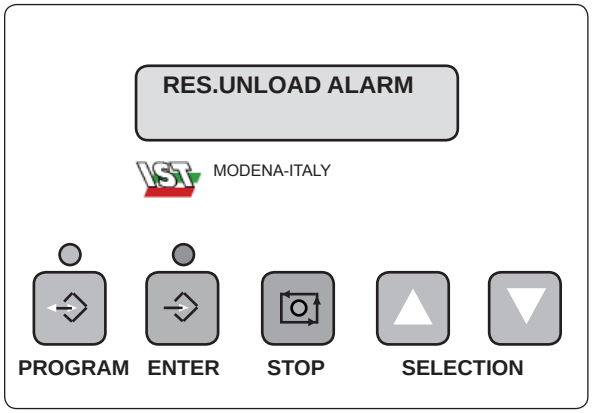
Meaning	Consequences
WAIT ENABLE (only with continuous cycle option) Interrupts the continuous operation of the distiller. The collection tank level conditions were lacking in the transition from one cycle to the next during continuous operation.	As soon as these conditions are restored, the system will resume operating automatically.



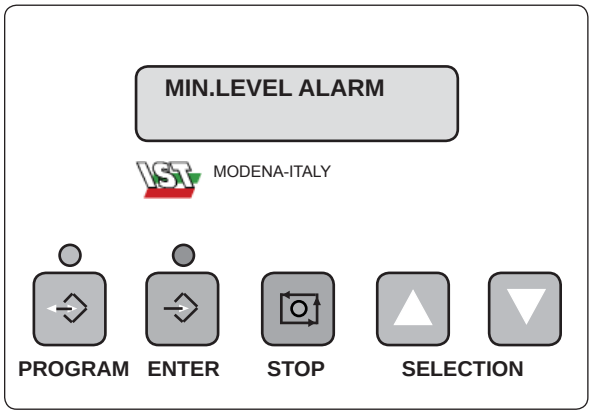
Meaning	Consequences
CYCLE RESTART DELAY (only with continuous cycle option) The system had an electrical power failure during the work cycle.	The machine awaits the intervention of the operator to continue the cycle from the point at which it stopped.



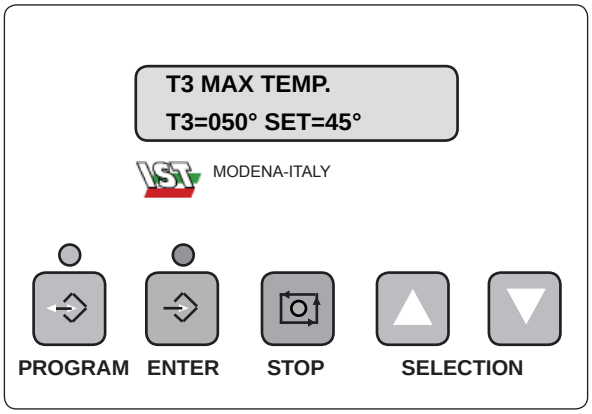
Meaning	Consequences
RESIDUE DISCHARGE SOLENOID VALVE LIMIT SWITCH ALARM (only with continuous cycle option) Interrupts the operation of the distiller. The automatic opening or closing of the residue discharge valve was not completed within the set safety interval.	- Erroneous limit switch positioning on the discharge valve actuator. - Valve obstruction. - The compressed air supply has stopped. - Residue waste bin not positioned correctly.



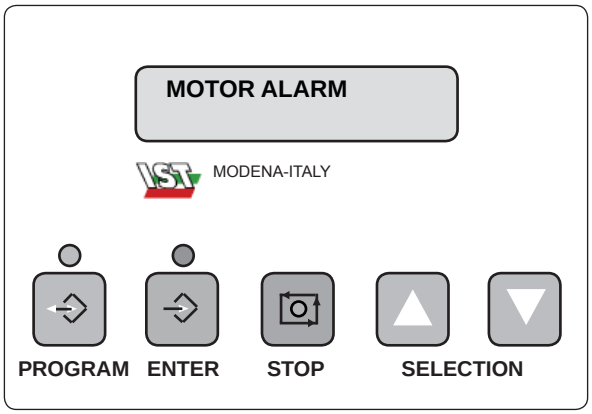
Meaning	Consequences
MINIMUM TANK LEVEL ALARM (only with continuous cycle option) Interrupts the operation of the distiller. the distillation cycle was not properly completed and an excessive amount of residue was detected during the automatic discharge phase.	see: PROBLEMS AND SOLUTIONS LOSS OF PRODUCTIVITY.



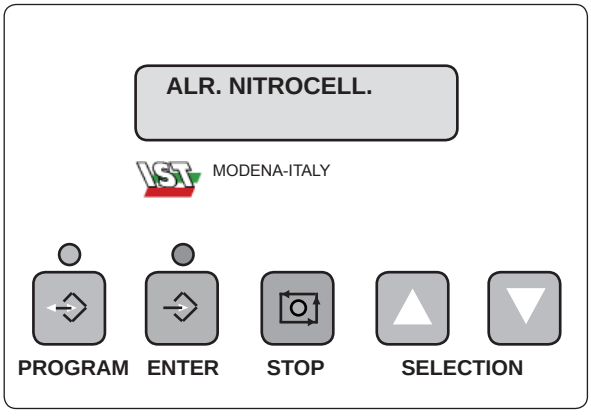
Meaning	Consequences
SOLVENT OUTLET TEMPERATURE T3 ALARM Interrupts the operation of the distiller. During the cycle, the temperature of the regenerated solvent surpassed the set temperature T3.	- The electric fans are not working properly. - The ambient temperature is the same as the set temperature T3. - The radiator is dirty/dusty. - The cooling water system is blocked or not working (for water cooling only).



Meaning	Consequences
THERMAL TRIP Thermal trip on one of the relays, stops the distiller from operating. Indicates that one of the thermal relays has activated the protection on the assigned component.	- Thermal trip on the scraper motor. - Thermal trip on the liquid ring vacuum pump. - Thermal trip on the oil pump.



Meaning	Consequences
NITROCELLULOSE ALARM the nitrocellulose safety control has intervened	- The residue ignited and the tank was filled with water. - Contact support..



IT IS DANGEROUS TO STOP THE DISTILLATION CYCLE DURING OPERATION BY TURNING THE SWITCH (1) TO "0" AS FLAMMABLE VAPOUR MAY BE RELEASED FROM THE SOLVENT OUTLET HOSE.

7.2 PROBLEMS AND SOLUTIONS

PROBLEM	SOLUTION
The display does not switch on and the regenerator does not start operating.	- Check the electricity supply. - Check that the main switch on the electrical supply is turned on. - Open the control panel and check the conductivity of the fuses.
The regenerator switches on and starts operating but does not heat up.	- Check the temperature settings T1. - Check that the heating element is working.
The regenerator does not distil all the polluted solvent content	- Check that the programming is correct (5.3).
The distilled solvent comes out hot.	- Check that the temperature settings are correct for the type of solvent to be purified. (5.3). (Temperature setting too high). - Check the circulation and flow rate of the cooling water (optional water condenser).
The regenerator is working but the distilled solvent does not come out.	- Check that the programming is correct (T1 temperature setting may be too low).
The distilled solvent does not come out and the gasket on the lid or the safety valve is venting.	- Check that the condenser is not blocked. Take the following steps: - lower the solvent tank. - open the access doors to the residue discharge zone. - blow compressed air into the solvent outlet hose (8), ensuring that there is an adequate flow of air. Otherwise, contact the IST support service.
The distilled solvent comes out dirty.	- The maximum level indicator float is dirty and weighed down by distillation residues, causing the dirty solvent to be loaded beyond the maximum filling level. Clean or replace the float. - The dirty solvent is mixed with particularly frothy products, which convey pollutant; the tank should be filled to a lower level. - Check the programming (T1 temperature setting may be too high).

PROBLEM	SOLUTION
The machine no longer has the same productivity.	- The vapour collection pipe inside the tank is clogged and is blocking the natural flow. Check the conditions of the pipe. - The distillation tank is too dirty and the residue deposits on the walls do not allow the necessary thermal exchange. - If the machine has a vacuum, check the level reached and check for any leaks. - The solvent mixture has been changed. - The operating parameters have been changed. - The heating elements are not working properly. Check the power consumption in Amperes during the heating phase. - The oil was not changed during routine maintenance, leading to the formation of carbon residues inside the heating circuit, which compromise the exchange of heat.
Solvent comes out from the breather valve.	- The vapour collection pipe is blocked and does not allow the flow towards the condenser. - The oil temperature T1 is set too high.
The vacuum level does not increase.	- Check the correct positioning of the tank. - Check that the compressed air valves are properly closed. - In the case of a pneumatic vacuum, check the condition of the pump and check the chemical compatibility of the solvent with the gasket. - In the case of an electrical vacuum or liquid ring vacuum, check the rotation direction of the motor.

8.1 DISMANTLING/ SCRAPPING

The user must dismantle and dispose of the materials comprising the machine, in accordance with the EC Directives or in accordance with the legislation in force in the country of use.

In the European Union, before disposing of the regenerator, contact the retailer or branch where it was purchased.

Before demolishing the machine, the user must report the machine's nameplate data to the manufacturer.

8.2 DISPOSING OF THE MATERIAL

When scrapping the machine the user, as required by local law, must take the required precautions for the disposal of environmentally significant materials, such as heat transfer oil and distillation residues.
Once decommissioned and completely drained of heat transfer oil and solvent, the device is classified (in the EU) as non-hazardous special waste, in accordance with Legislative Decree 22/97, code CER160205.

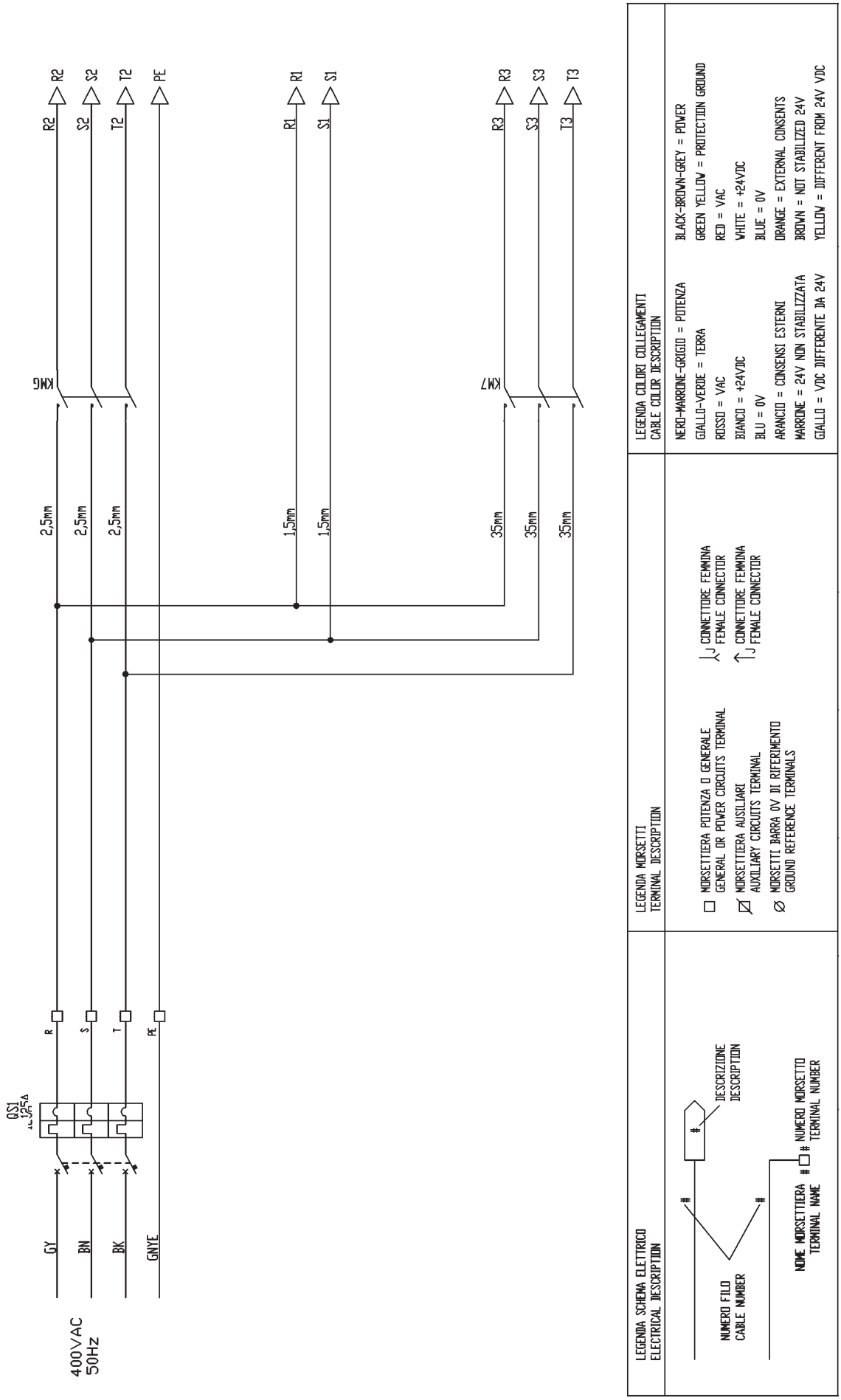
8.3 FISCAL REQUIREMENTS (ITALY)

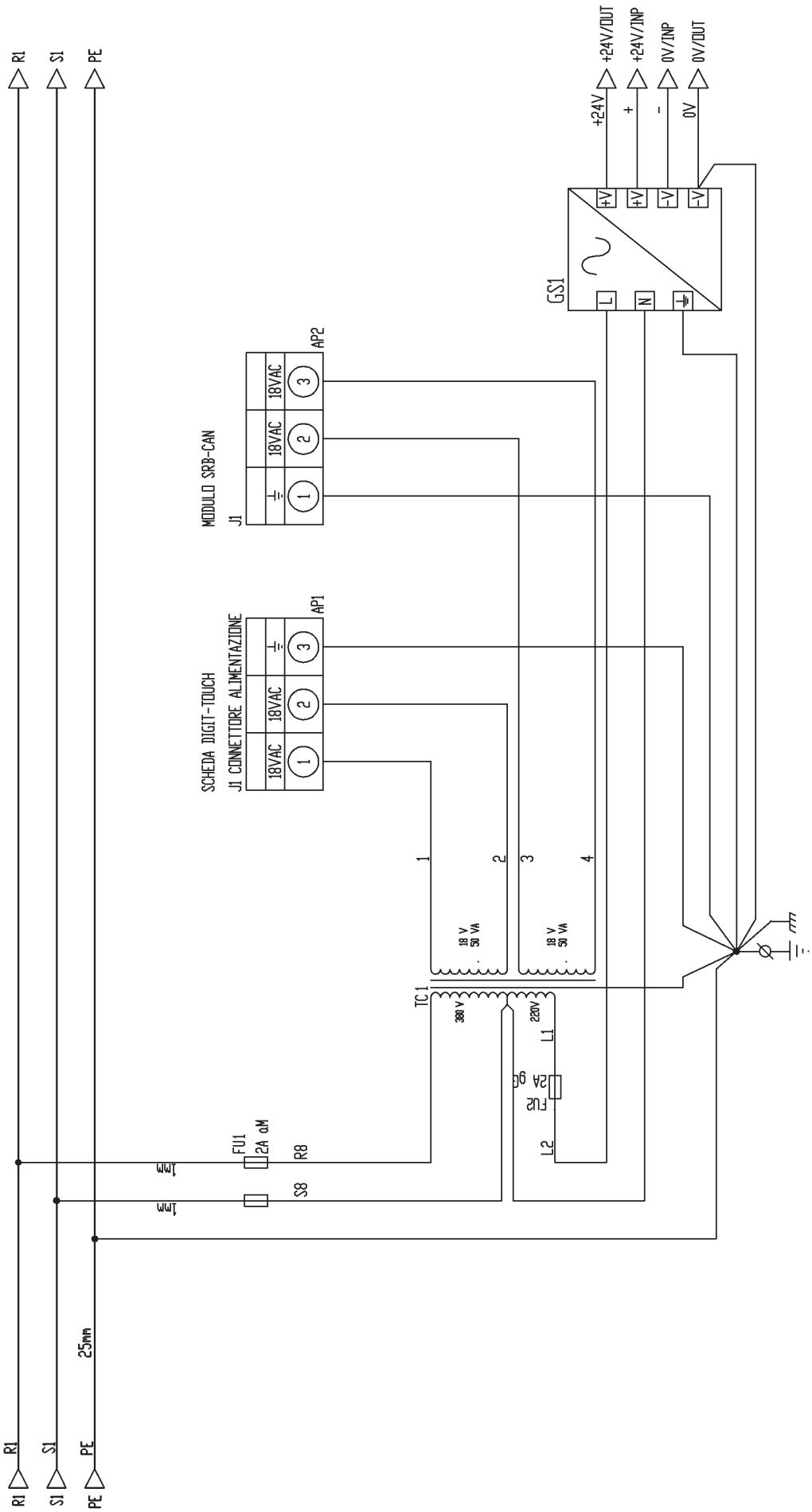
If the machine is to be scrapped, the user must inform the U.T.F (UFFICIO TECNICO DI FINANZA) of the decommissioning by registered letter with advice of receipt.

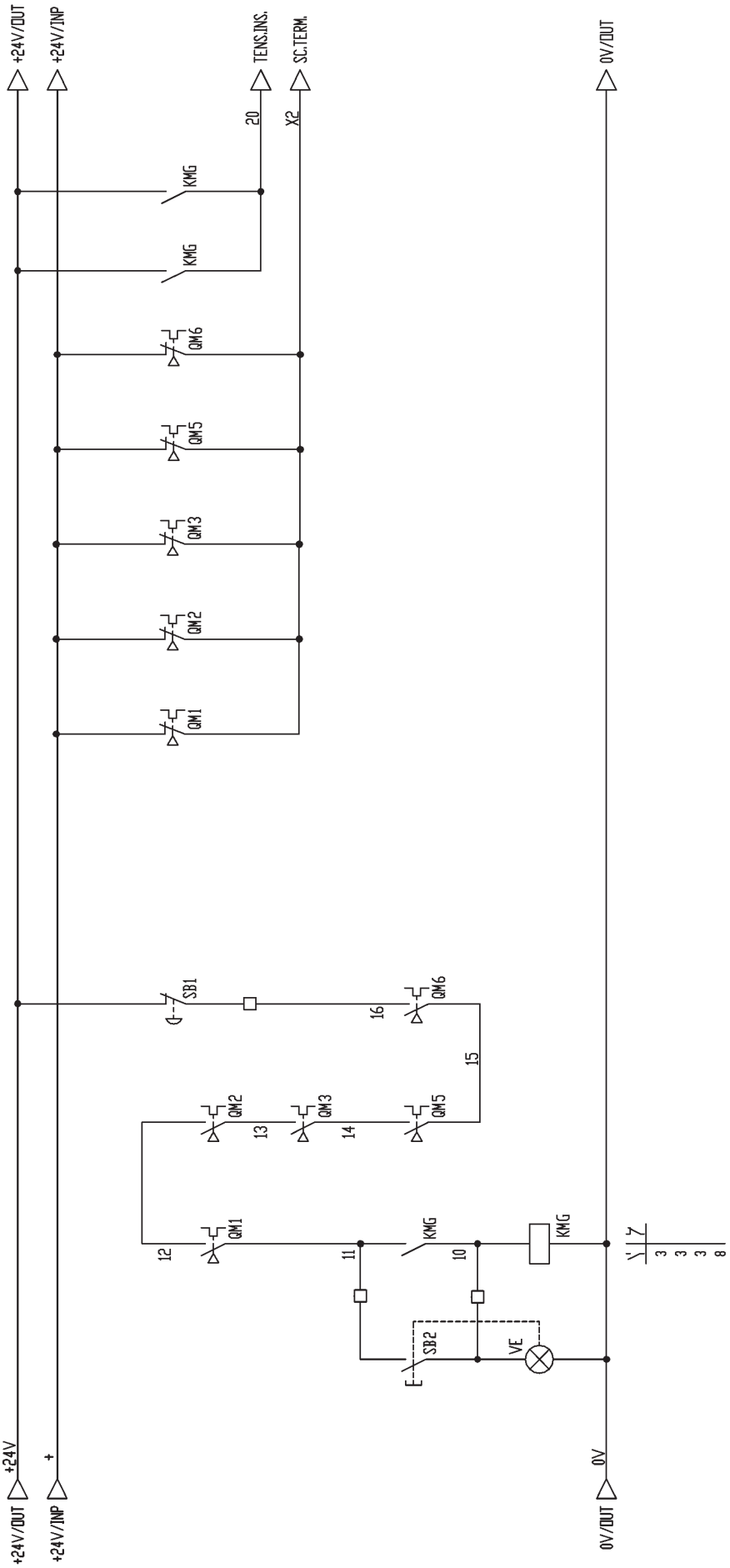
EXAMPLE

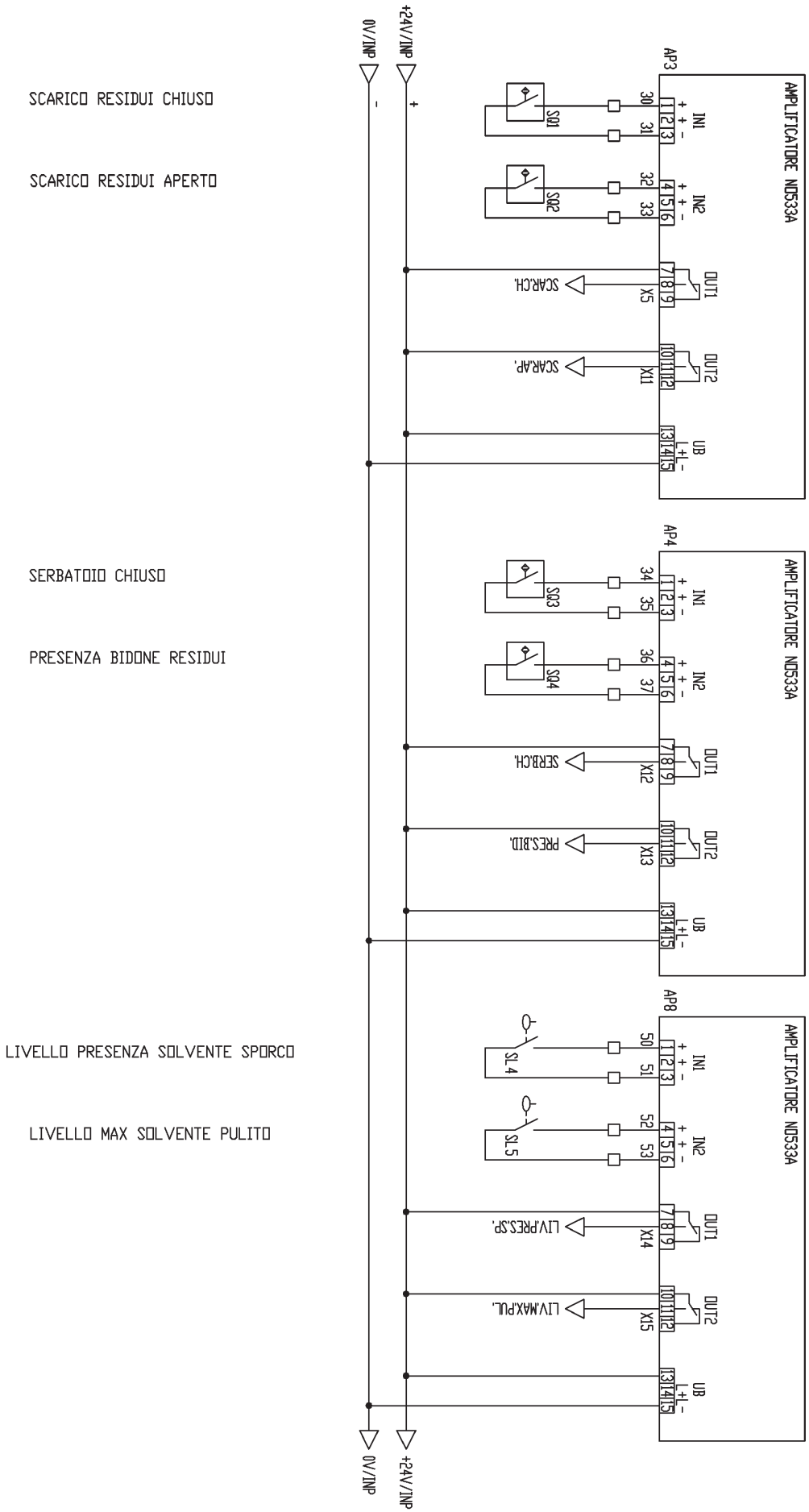
We hereby inform you that we intend to scrap the regenerator in our possession: model IST XXXX serial no. XXXX year XXXX

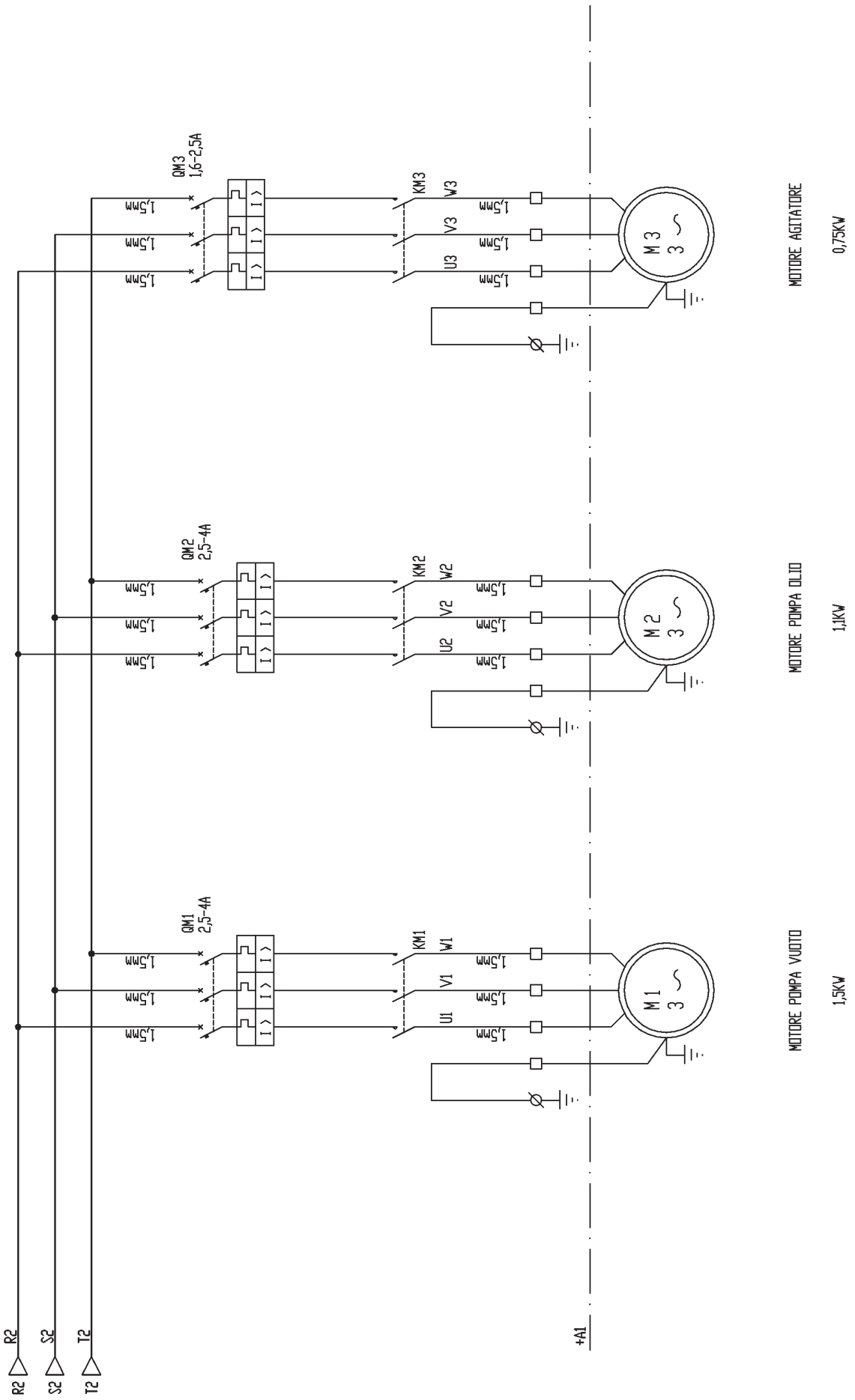
We await your reply and extend our best wishes,

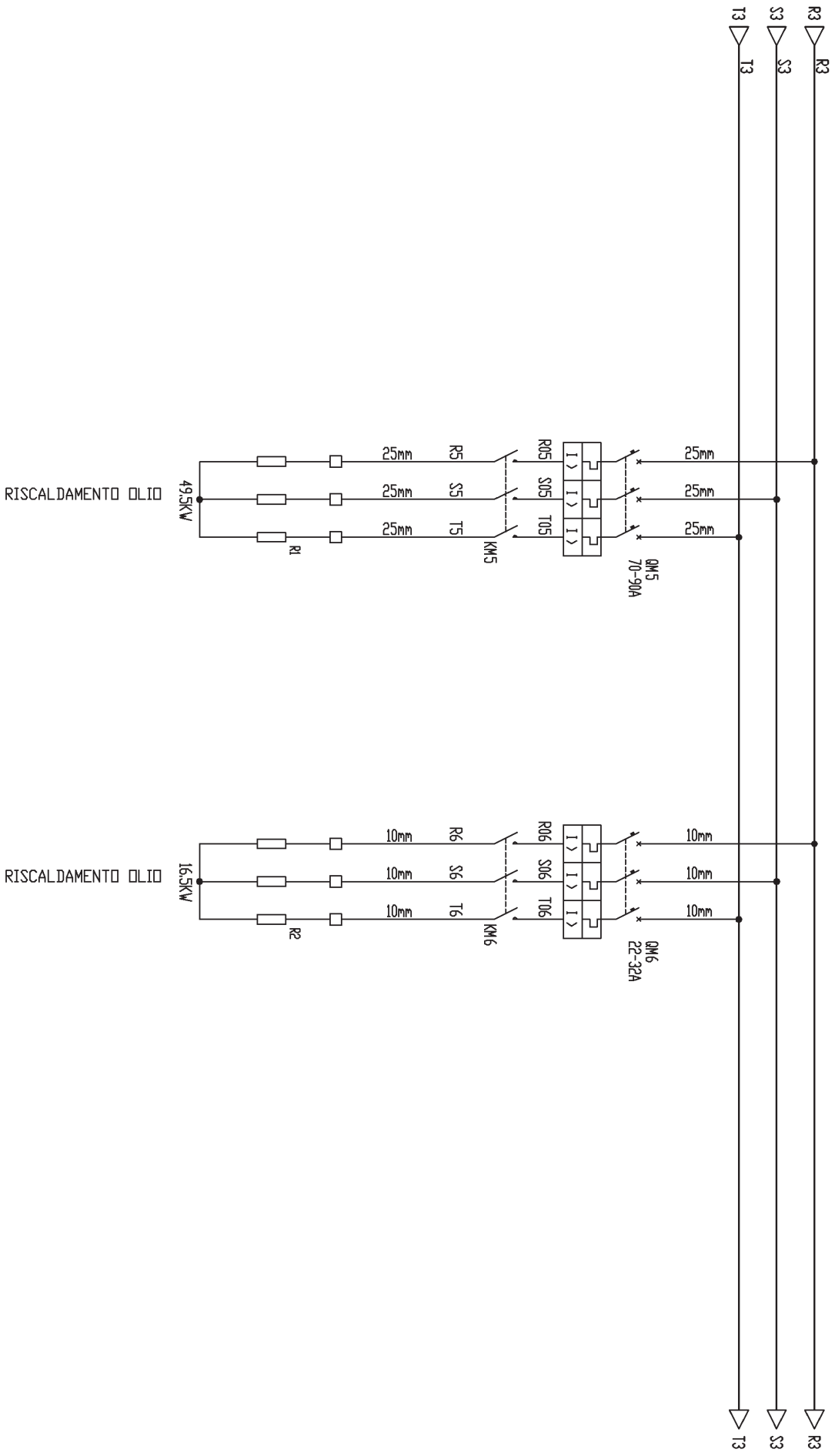

400VAC
50Hz
GY
BN
BK
GNYE
R
S
T
PE
QS1
125A
2,5mm
2,5mm
2,5mm
1,5mm
1,5mm
35mm
35mm
35mm
KM6
KM7
R2
S2
T2
PE
R1
S1
R3
S3
T3
LEGENDA SCHEMA ELETTRICO
ELECTRICAL DESCRIPTION
NUMERO FILO
CABLE NUMBER
DESCRIZIONE
DESCRIPTION
NOME MORSETTIERA
TERMINAL NAME
NUMERO MORSETTO
TERMINAL NUMBER
LEGENDA MORSETTI
TERMINAL DESCRIPTION
MORSETTIERA POTENZA O GENERALE
GENERAL OR POWER CIRCUITS TERMINAL
MORSETTIERA AUSILIARI
AUXILIARY CIRCUITS TERMINAL
MORSETTI BARRA 0V DI RIFERIMENTO
GROUND REFERENCE TERMINALS
CONNETTORE FEMMINA
FEMALE CONNECTOR
CONNETTORE FEMMINA
FEMALE CONNECTOR
LEGENDA COLORI COLLEGAMENTI
CABLE COLOR DESCRIPTION
NERO-MARRONE-GRIGIO = POTENZA
GIALLO-VERDE = TERRA
ROSSO = VAC
BIANCO = +24VDC
BLU = 0V
ARANCIO = CONSENSI ESTERNI
MARRONE = 24V NON STABILIZZATA
GIALLO = VDC DIFFERENTE DA 24V
BLACK-BROWN-GREY = POWER
GREEN YELLOW = PROTECTION GROUND
RED = VAC
WHITE = +24VDC
BLUE = 0V
ORANGE = EXTERNAL CONSENTS
BROWN = NOT STABILIZED 24V
YELLOW = DIFFERENT FROM 24V VDC


R1
S1
PE
+24V/OUT
+24V/INP
0V/INP
0V/OUT
+24V
+
-
0V
GS1
L
N
MODULO SRB-CAN
J1
AP2
18VAC
SCHEDA DIGIT-TOUCH
J1 CONNETTORE ALIMENTAZIONE
AP1
TC1
380 V
230V
18 V
50 VA
L1
L2
2A gG
FU1
2A aM
R8
S8
1mm
25mm


+24V/OUT
+24V/INP
TENS.INS.
SC.TERM.
0V/OUT
20
X2
KMG
KMG
QM6
QM5
QM3
QM2
QM1
SB1
16
15
QM2
QM3
QM5
13
14
12
QM1
KMG
KMG
11
10
SB2
VE
3
3
3
8
+24V
+
0V
+24V/OUT
+24V/INP
0V/OUT


SCARICO RESIDUI CHIUSO
SCARICO RESIDUI APERTO
SERBATOIO CHIUSO
PRESENZA BIDONE RESIDUI
LIVELLO PRESENZA SOLVENTE SPORCO
LIVELLO MAX SOLVENTE PULITO
0V/INP
+24V/INP
AP3
AMPLIFICATORE ND533A
IN1
IN2
OUT1
OUT2
UB
SQ1
SQ2
SCAR.CH.
SCAR.AP.
AP4
SQ3
SQ4
SERB.CH.
PRES.BID.
AP8
SL4
SL5
LIV.PRES.SP.
LIV.MAX.PUL.

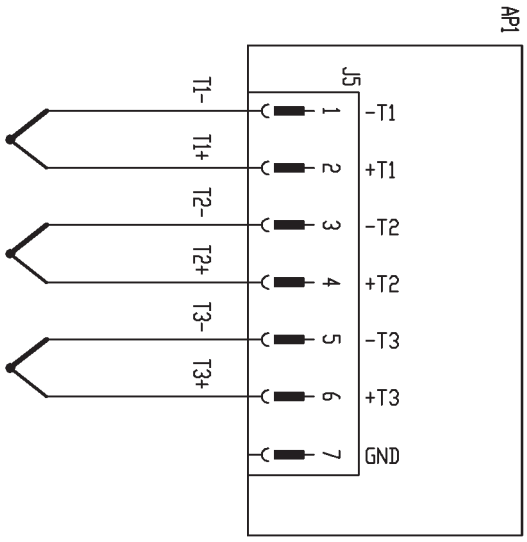

QM3
1,6-2,5A
KM3
V3
V3
U3
1,5mm
M 3
3 ~
MOTORE AGITATORE
0,75KW
QM2
2,5-4A
KM2
W2
V2
U2
M 2
3 ~
MOTORE POMPA OLIO
1,1KW
QM1
2,5-4A
KM1
W1
V1
U1
M 1
3 ~
MOTORE POMPA VUOTO
1,5KW
R2
S2
T2
+A1

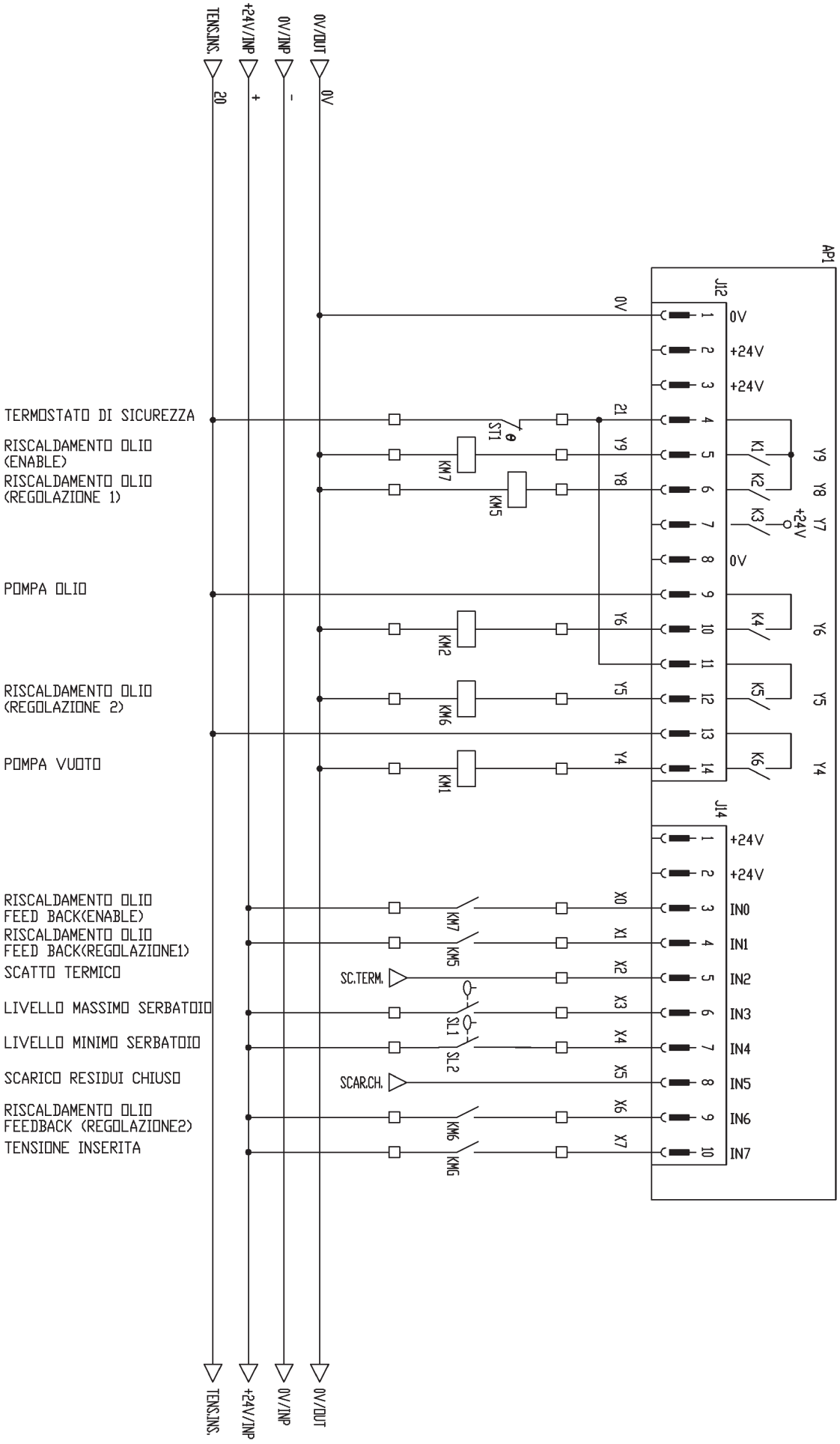

T3
S3
R3
RISCALDAMENTO OLIO
49.5KW
25mm
R5
S5
T5
R1
KM5
R05
S05
T05
QM5
70-90A
RISCALDAMENTO OLIO
16.5KW
10mm
R6
S6
T6
R2
KM6
R06
S06
T06
QM6
22-32A

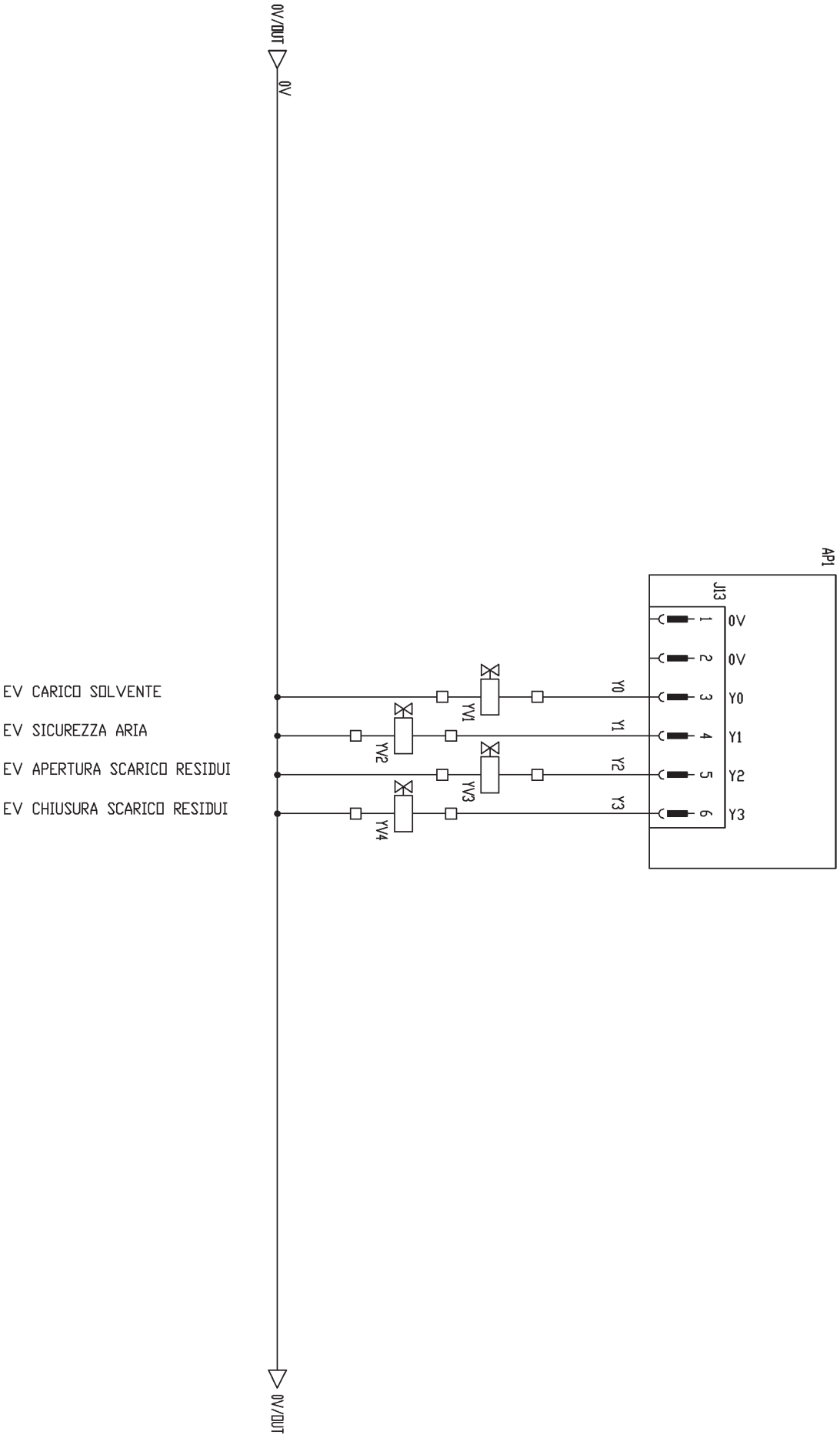
TEMPERATURA OLIO

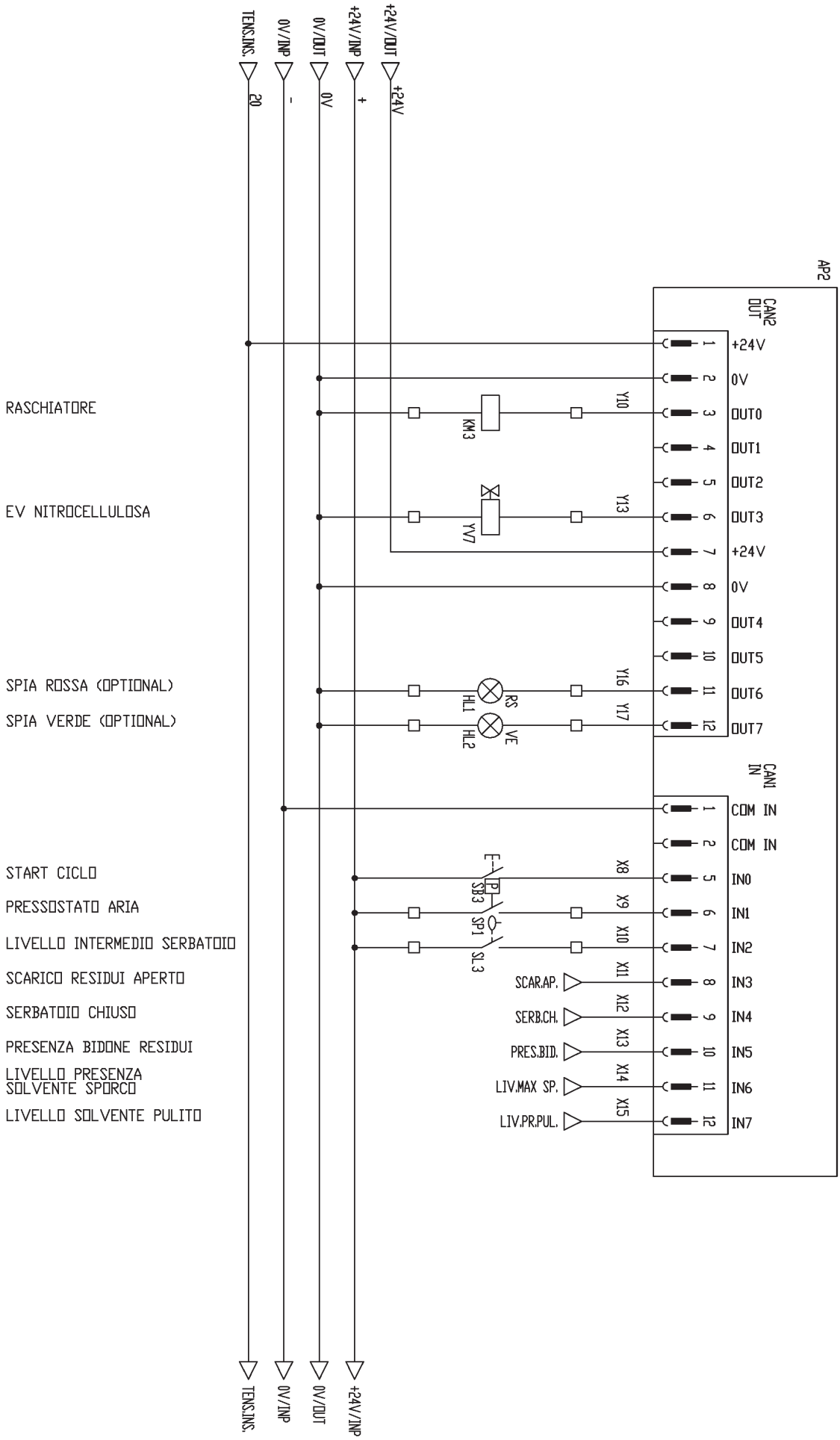
TEMPERATURA VAPORI SOLVENTE

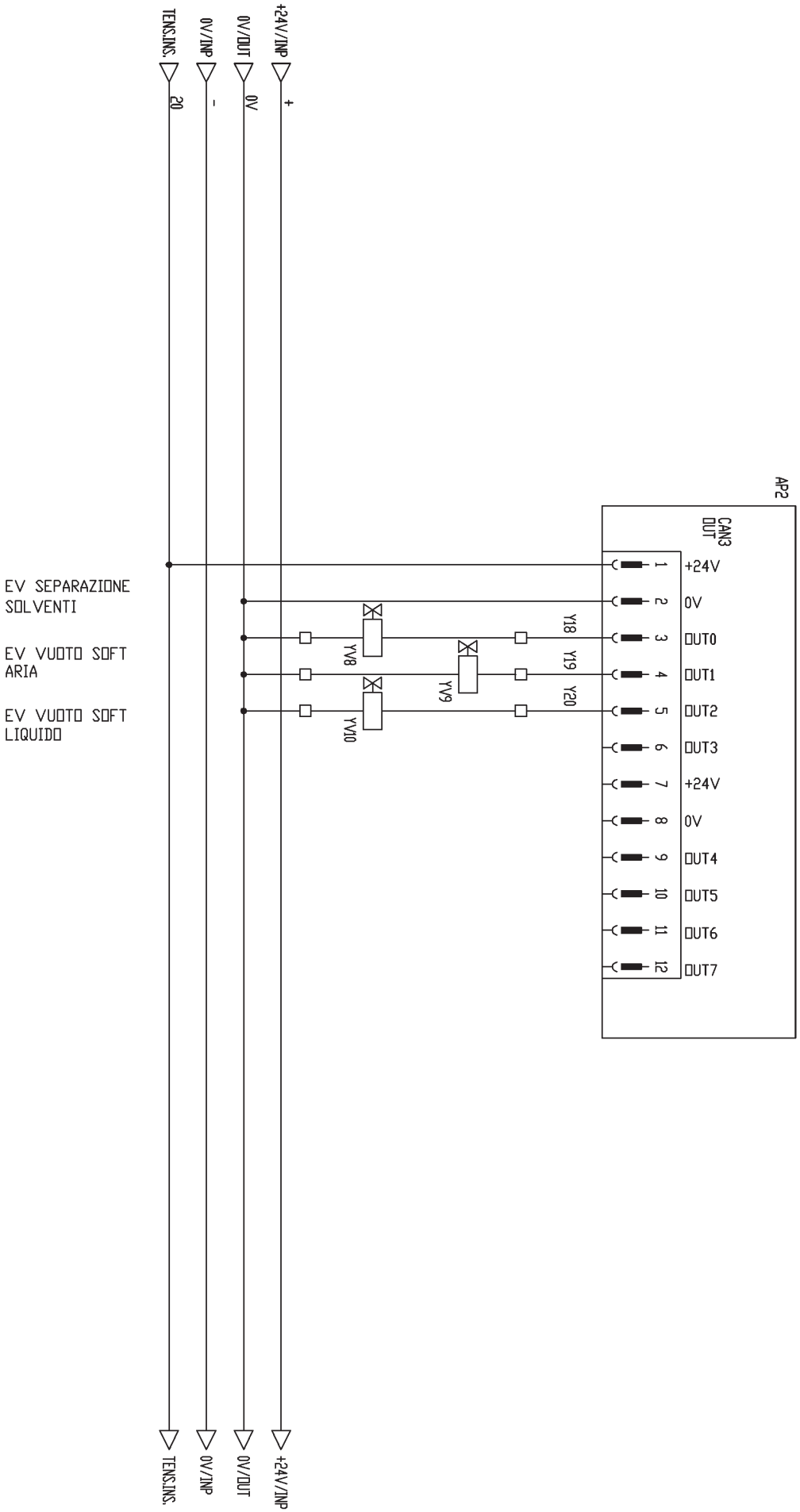
TEMPERATURA USCITA SOLVENTE

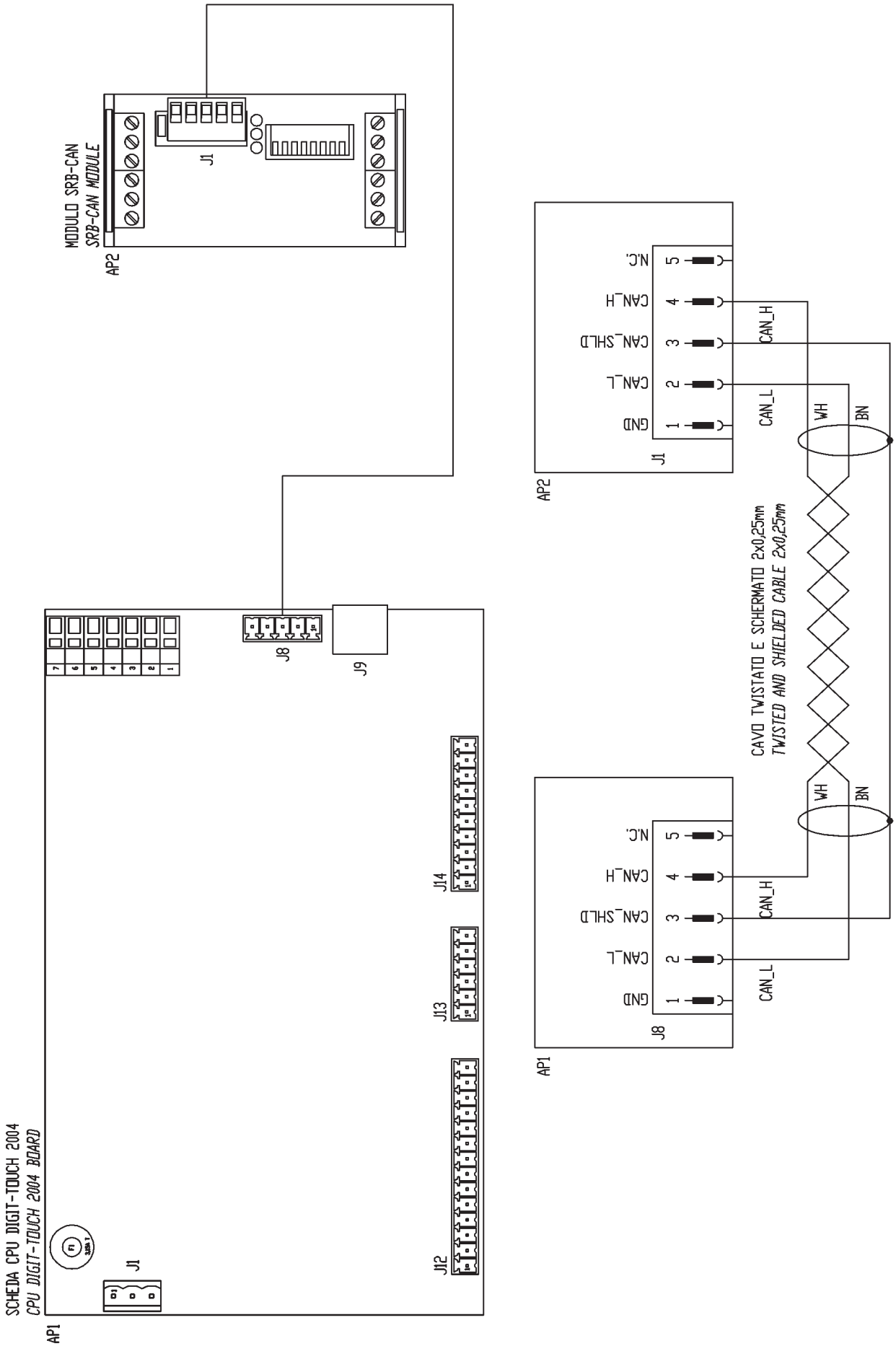


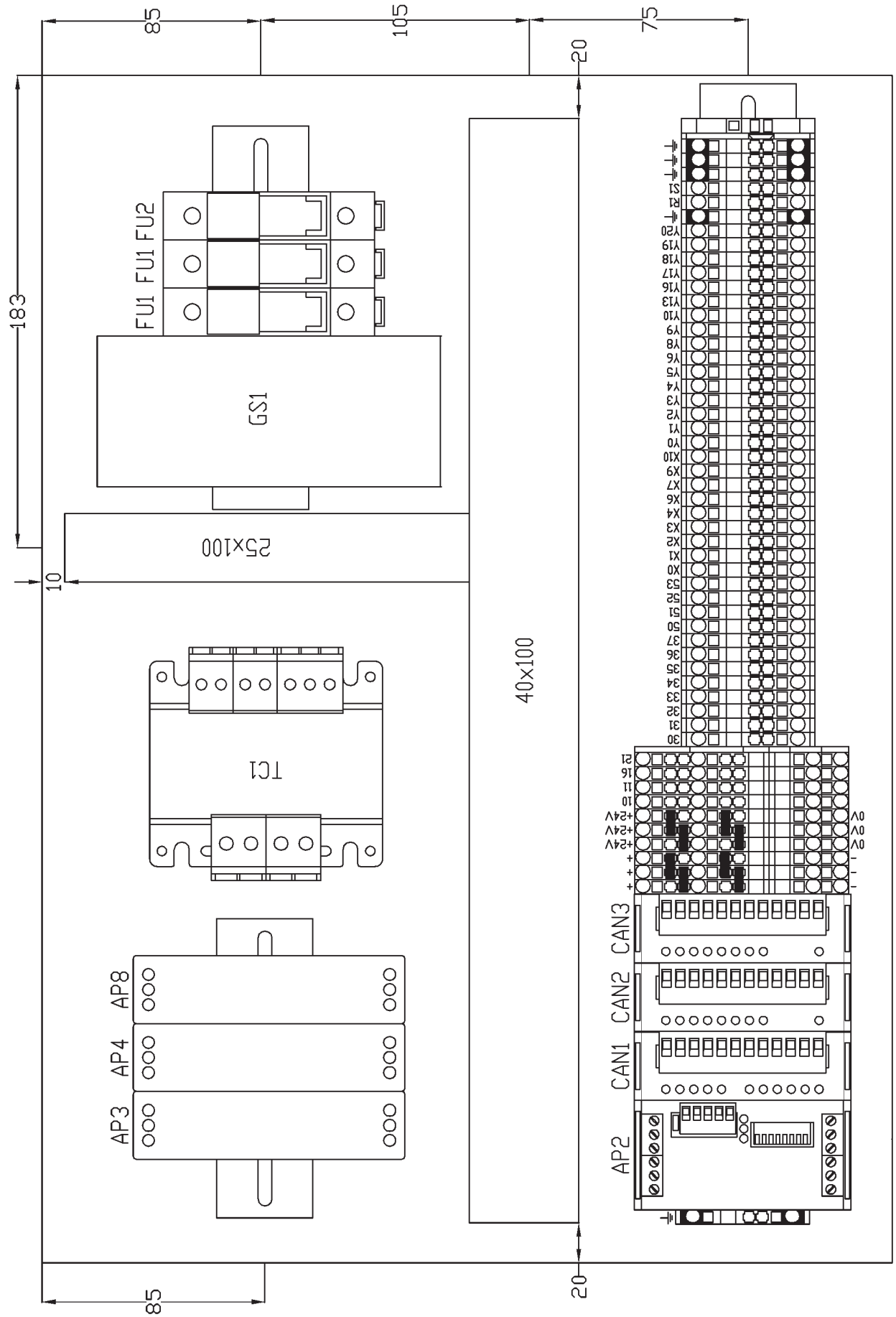

TENSINS.
+24V/INP
0V/INP
0V/OUT
20
+
-
0V
TERMOSTATO DI SICUREZZA
RISCALDAMENTO OLIO (ENABLE)
RISCALDAMENTO OLIO (REGOLAZIONE 1)
POMPA OLIO
RISCALDAMENTO OLIO (REGOLAZIONE 2)
POMPA VUOTO
RISCALDAMENTO OLIO FEED BACK(ENABLE)
RISCALDAMENTO OLIO FEED BACK(REGOLAZIONE1)
SCATTO TERMICO
LIVELLO MASSIMO SERBATOIO
LIVELLO MINIMO SERBATOIO
SCARICO RESIDUI CHIUSO
RISCALDAMENTO OLIO FEEDBACK (REGOLAZIONE2)
TENSIONE INSERITA
ST1
KM7
KM5
KM2
KM6
KM1
KM4
SC.TERM.
SL1
SL2
SCAR.CH.
AP1
J12
J14
0V
+24V
K1
K2
K3
K4
K5
K6
Y9
Y8
Y7
Y6
Y5
Y4
IN0
IN1
IN2
IN3
IN4
IN5
IN6
IN7
X0
X1
X2
X3
X4
X5
X6
X7

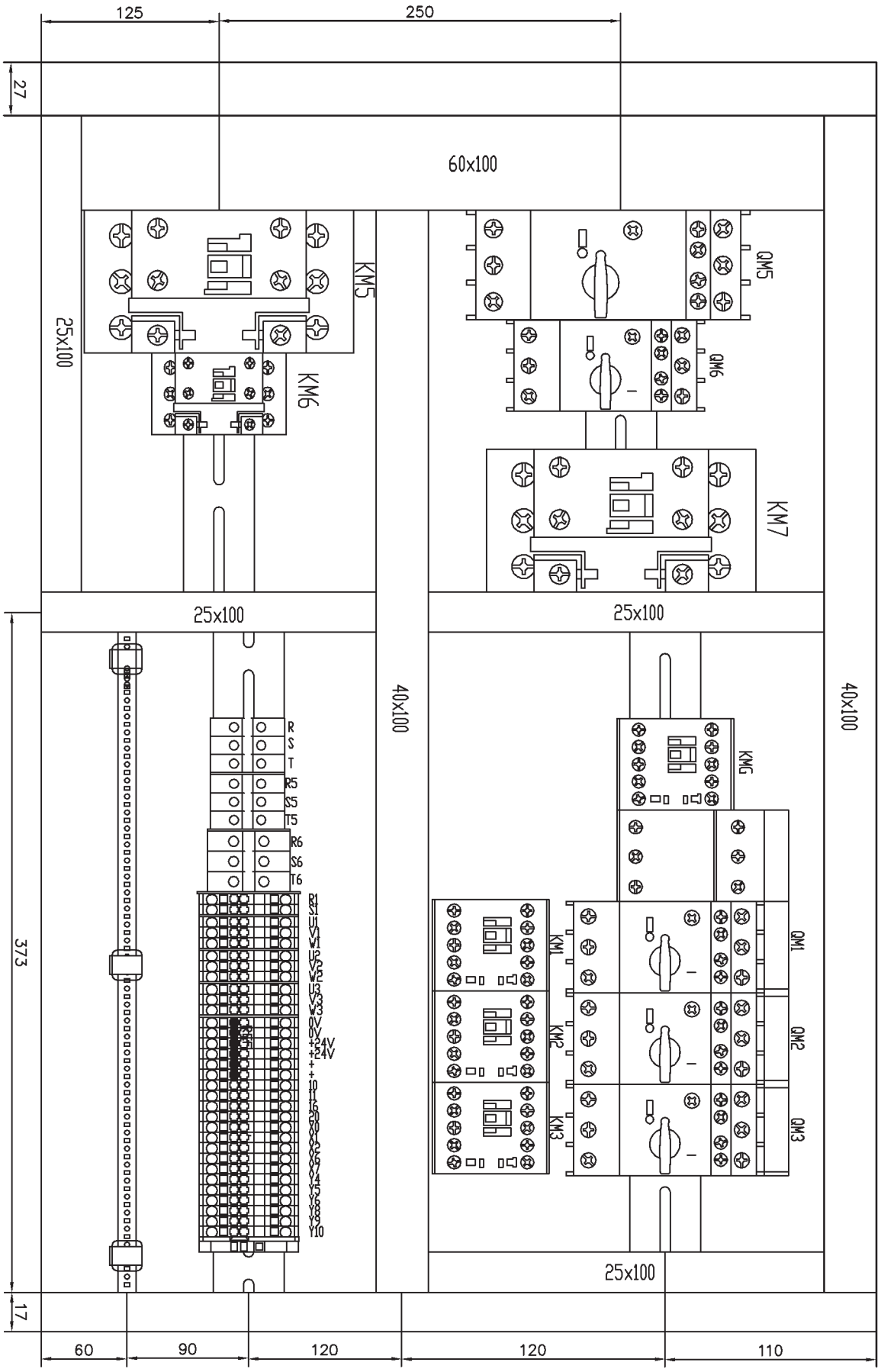

0V/OUT
0V
AP1
J13
1
2
3
4
5
6
0V
0V
Y0
Y1
Y2
Y3
YV1
YV2
YV3
YV4
EV CARICO SOLVENTE
EV SICUREZZA ARIA
EV APERTURA SCARICO RESIDUI
EV CHIUSURA SCARICO RESIDUI
0V/OUT


TENS.INS.
0V/INP
0V/OUT
+24V/INP
+24V/OUT
20
-
0V
+
+24V
AP2
CAN2 OUT
+24V
0V
OUT0
OUT1
OUT2
OUT3
+24V
0V
OUT4
OUT5
OUT6
OUT7
CAN1 IN
COM IN
COM IN
IN0
IN1
IN2
IN3
IN4
IN5
IN6
IN7
RASCHIATORE
KM3
Y10
EV NITROCELLULOSA
YV7
Y13
SPIA ROSSA (OPTIONAL)
HL1
RS
Y16
SPIA VERDE (OPTIONAL)
HL2
VE
Y17
START CICLO
SB3
X8
PRESSOSTATO ARIA
SP1
X9
LIVELLO INTERMEDIO SERBATOIO
SL3
X10
SCARICO RESIDUI APERTO
SCAR.AP.
X11
SERBATOIO CHIUSO
SERB.CH.
X12
PRESENZA BIDONE RESIDUI
PRES.BID.
X13
LIVELLO PRESENZA SOLVENTE SPORCO
LIV.MAX SP.
X14
LIVELLO SOLVENTE PULITO
LIV.PR.PUL.
X15
TENS.INS.
0V/INP
0V/OUT
+24V/INP

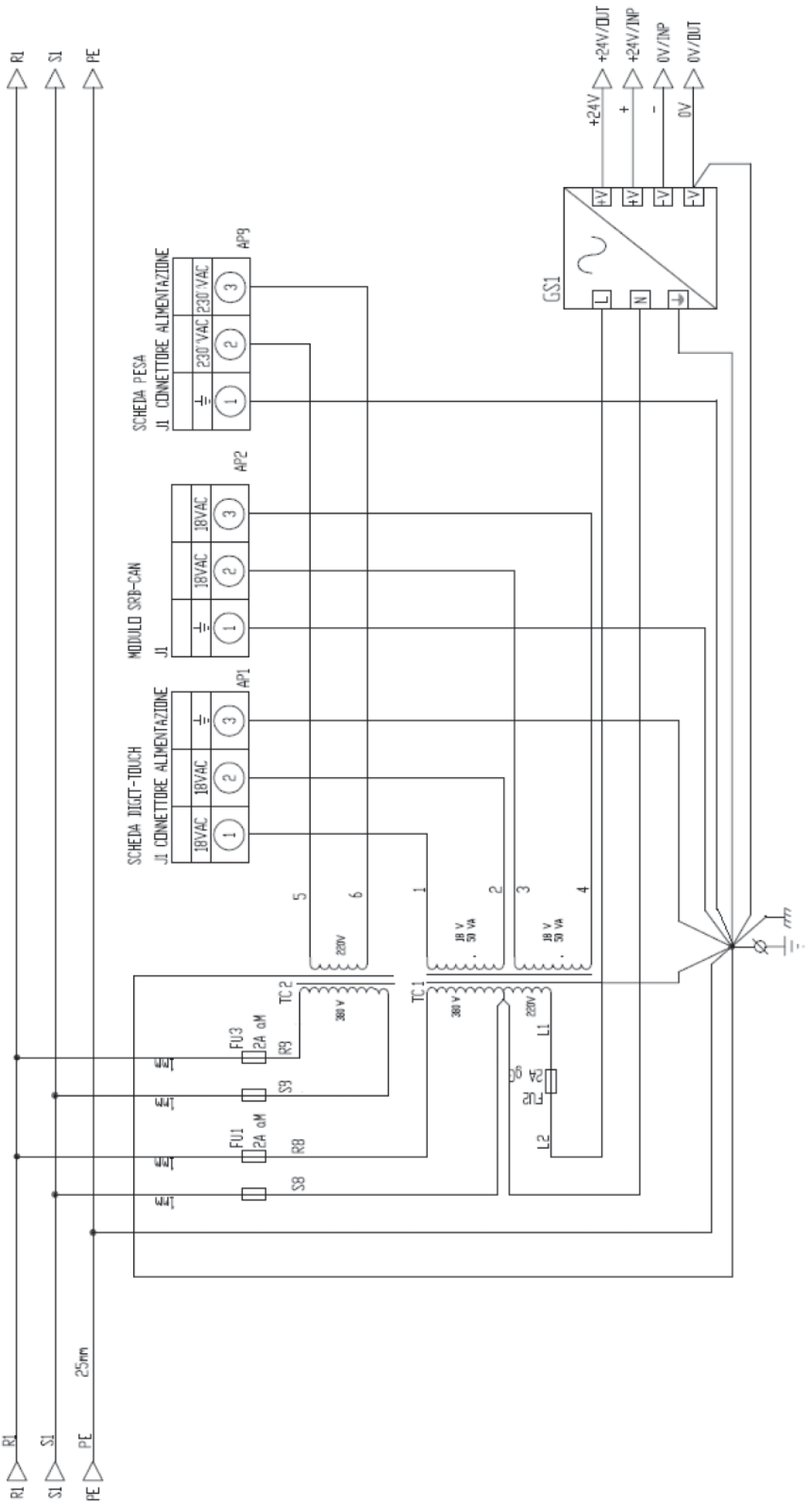

TENS.INS.
0V/INP
0V/OUT
+24V/INP
20
-
0V
+
AP2
CAN3 OUT
+24V
0V
OUT0
OUT1
OUT2
OUT3
+24V
0V
OUT4
OUT5
OUT6
OUT7
EV SEPARAZIONE SOLVENTI
EV VUOTO SOFT ARIA
EV VUOTO SOFT LIQUIDO
YV8
YV9
YV10
Y18
Y19
Y20
TENS.INS.
0V/INP
0V/OUT
+24V/INP


MODULO SRB-CAN
SRB-CAN MODULE
AP2
J1
SCHEDA CPU DIGIT-TOUCH 2004
CPU DIGIT-TOUCH 2004 BOARD
AP1
J1
J2
J3
J4
J8
J9
CAVO TWISTATO E SCHERMATO 2x0,25mm
TWISTED AND SHIELDED CABLE 2x0,25mm
WH
BN
CAN_H
CAN_L
GND
CAN_L
CAN_SHLD
CAN_H
N.C.
1
2
3
4
5

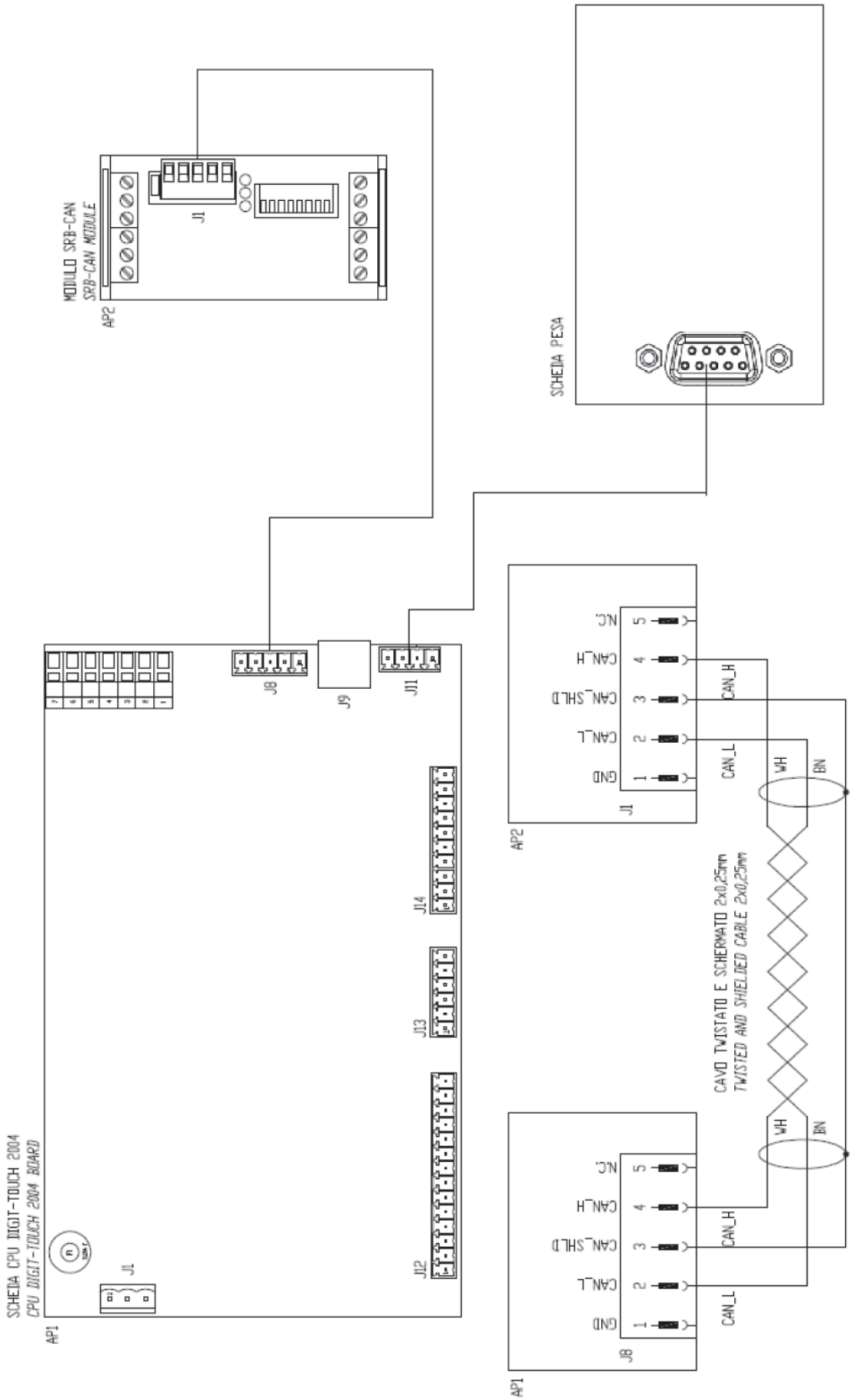

85
105
75
20
183
FU1 FU1 FU2
GS1
25x100
10
TC1
40x100
AP8
AP4
AP3
CAN3
CAN2
CAN1
AP2
85
20

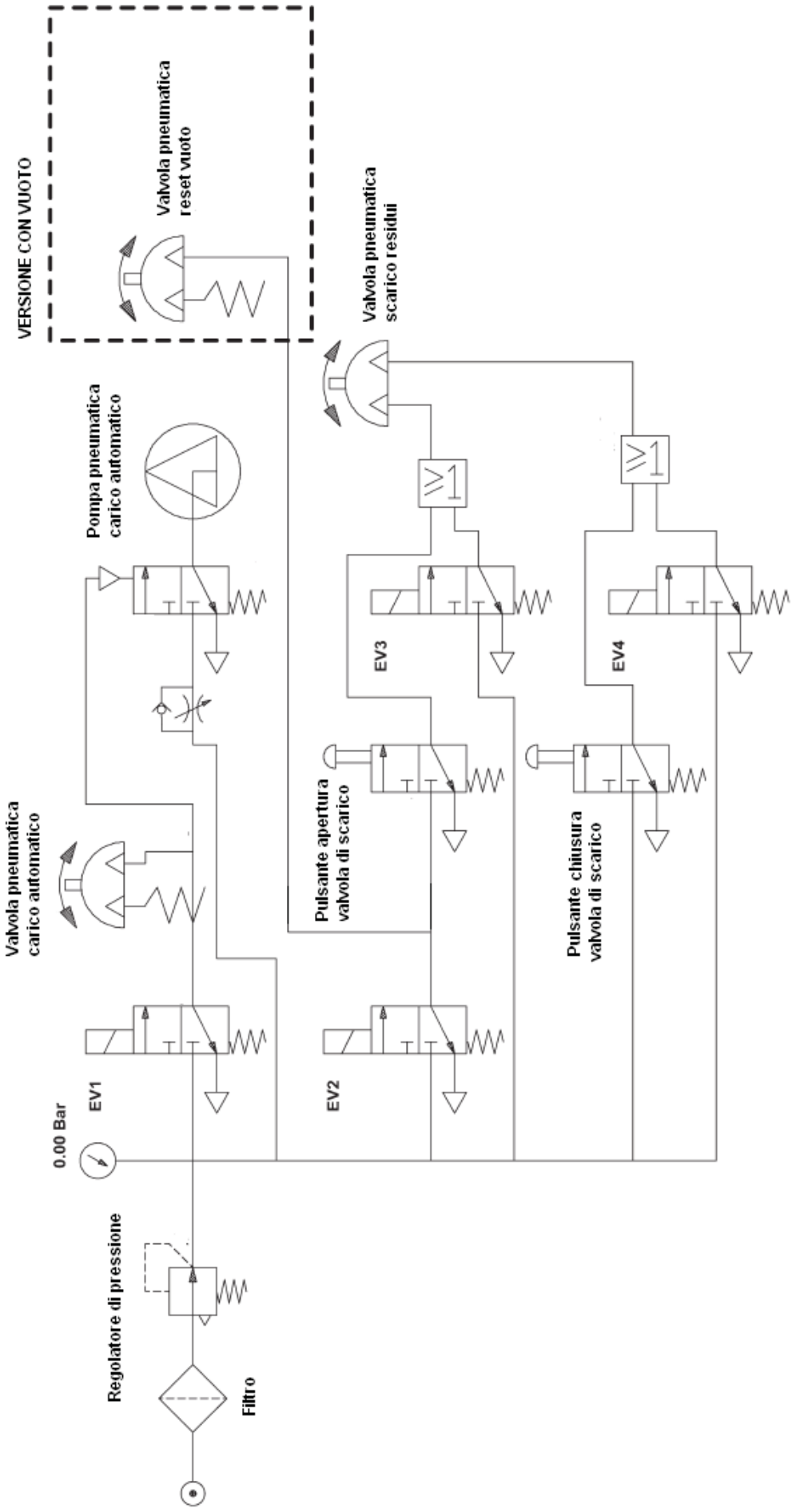

125
250
27
60x100
KM5
KM6
QM5
QM6
KM7
25x100
25x100
25x100
40x100
40x100
373
R
S
T
R5
S5
T5
R6
S6
T6
KM4
KM1
KM2
KM3
QM1
QM2
QM3
25x100
17
60
90
120
120
110

OPTIONAL WEIGHING



OPTIONAL WEIGHING




VERSIONE CON VUOTO
Valvola pneumatica reset vuoto
Valvola pneumatica scarico residui
Pompa pneumatica carico automatico
EV3
EV4
Valvola pneumatica carico automatico
Pulsante apertura valvola di scarico
Pulsante chiusura valvola di scarico
EV1
EV2
0.00 Bar
Regolatore di pressione
Filtro

SAFETY DATA SHEET

SECTION 1 IDENTIFICATION OF THE PRODUCT AND THE COMPANY

This SDS complies with current Italian and European legislation.

PRODUCT

Product name: ..... MOBILTHERM 605
Product description:..... Severely treated base oils
Product code: 201560802020, 400411, 680538-60
Intended use: ..... Heat transmission

IDENTIFICATION OF THE COMPANY

Supplier: **EXXONMOBIL LUBRIFICANTS & SPECIALTIES EUROPE, A DIVISION OF EXXONMOBIL PETROLEUM & CHEM., BVBA (EMPC)**
POLDERDIJKWEG
B-2030 Antwerpen
Belgium

24-hour Emergency Service	National Toxicological Information Centre (Pavia) 39 0382 24444
Request (M)SDS	39 02 8803 286
Request for technical/commercial information on the products	39 800 929014
General information	39 800 929014
e-mail	SDS-ITALY@EXXONMOBIL.COM

SECTION 2 IDENTIFICATION OF HAZARDS

This material is not considered hazardous according to the legislative guidelines (see Section 15).

HEALTH HAZARDS

Low order of toxicity. Excessive exposure may cause eye, skin or respiratory irritation.

Note: *This material should not be used for any other use than that described in section 1, without consulting an expert. Health studies have shown that chemical exposure can cause potential risks to human health, which can vary from individual to individual.*

SECTION 3 COMPOSITION / INFORMATION ON COMPONENTS

No hazardous or complex substance to declare.

SECTION 4 FIRST AID INTERVENTIONS

INHALATION

Remove to avoid further exposure. First-aid providers must avoid exposure themselves and that of others. Use suitable respiratory protection. In the case of respiratory irritation, dizziness, nausea or loss of consciousness, seek immediate medical attention. If a person stops breathing, give assisted ventilation with a mechanical device or use mouth-to-mouth resuscitation.

CONTACT WITH SKIN

Wash the areas affected with soap and water.

CONTACT WITH EYES

Rinse with plenty of water. In the case of irritation, seek medical assistance.

INGESTION

As a rule, first aid measures are not necessary. Nevertheless, medical attention should be sought in the case of persistent discomfort.

SECTION 5 FIRE-PREVENTION MEASURES

EXTINGUISHERS

uitable extinguishers

Inappropriate types of extinguishers: Direct water spray

FIRE-PREVENTION

Fire-prevention instructions: Water or foam may cause boiling oil to explode. Evacuate the area. Avoid the dispersal or leakage of fire extinguishing materials into waterways, sewers, or drinking water supplies. Firefighters must use standard protective equipment and SCBA apparatus in enclosed spaces. Use water sprays to cool exposed surfaces and to protect personnel.

Unusual fire hazards: Water used on boiling oil can cause explosions, due to the production of steam. Saturated oils heated for long periods may have lower auto-ignition temperatures.

Hazardous combustion products: Aldehydes, incomplete combustion products, carbon oxides, smoke, fumes, sulphur oxides

FLAMMABILITY DATA

Flashpoint [method]: ..... >180C (356F) [ASTM D-93]
Flammability limits (Approximate % volume in air): ..... LEL: 0.9 UEL: 7.0
Auto-ignition temperature: ..... N/D

SECTION 6 MEASURES IN THE EVENT OF ACCIDENTAL SPILLAGE

NOTIFICATION PROCEDURES

In the event of a spill or accidental release, notify the relevant authorities, in accordance with all applicable regulations.

MANAGING SPILLS

Dispersion on the ground: Stop the leak if this can be done without risk. Recover the spill by pumping or with a suitable absorbent material.

Dispersion on water: Stop the leak if this can be done without risk. Confine the spill immediately with booms. Notify other vessels. Remove the spill from the surface by skimming or with suitable absorbents. Consult a specialist before using dispersants.

The recommendations for accidental spills on land and in water are based on the most likely spillage scenarios for this product; however, geographical conditions, winds, temperature (and in the case of leakages in water) current speed and direction can considerably affect the appropriate actions to be taken. For this reason, local experts should be consulted.
Note: Local regulations may prohibit or limit certain possible actions.

ENVIRONMENTAL PRECAUTIONS

Large spills: remotely contain accidentally spilled liquid for subsequent retrieval and disposal. Avoid dispersal into waterways, sewer systems, basements or confined areas.

SECTION 7 HANDLING AND STORAGE

HANDLING

Avoid small spills and leaks to prevent slip hazards.

Static accumulator: This material is a static accumulator.

STORAGE

Do not store in open or unlabelled containers.

SECTION 8 EXPOSURE CONTROL / INDIVIDUAL PROTECTION

Exposure standards/limits for the materials may be relevant during handling of this product:
In the presences of mists/aerosols, the following limits are recommended: 5 mg/m³ - TLV ACGIH, 10 mg/m³ STEL ACGIH.

Information on recommended monitoring procedures can be obtained from the following bodies/ organisations:
France: Institut National de Recherche et de Sécurité (INRS)
Germany: Berufsgenossenschaftliches Institut für Arbeitssicherheit (BIA) UK: Health and Safety Executive (HSE)

EXPOSURE CONTROL

The necessary level of protection and types of controls vary depending on the potential exposure conditions. Control measures to consider:

No special requirements under normal conditions of use and with adequate ventilation.

PERSONAL PROTECTION

The choice of appropriate personal protection varies based on the conditions of exposure, such as use, handling practices, concentration and ventilation. The information on the choice of protective equipment provided below is based on normal and defined use.

Respiratory protection: If the technical control measures do not keep airborne contaminant concentrations at an appropriate level to protect the workers' health, appropriate respiratory protection should be used. Respirators must be selected, used and maintained in accordance with regulatory requirements, where relevant. The types of respirators to be used for this material include:

No special requirements under normal conditions of use and with adequate ventilation.

For high airborne concentrations, wear an approved air-supplied respirator with a positive operating pressure. Air-supplied respirators, with a discharge bottle, may be appropriate when oxygen levels are insufficient, if the risks of gases/vapours are low, and if the capacity/ limits of air purification filters may be exceeded.

Hand protection: The information provided on specific types of gloves is based on published documentation and data from glove manufacturers. The working conditions can greatly affect the life of the gloves; inspect and replace worn or damaged gloves. The types of gloves to be used for this material include:

No protection is ordinarily required under normal conditions of use.

Eye protection: If contact is likely, the use of safety glasses with side shields is recommended.

Skin and body protection: The information provided on specific types of clothing is based on published documentation or data from the manufacturers. The types of clothing to be used for this material include:

No skin protection is ordinarily required under normal conditions of use. Take the necessary precautions to avoid contact with the skin, in accordance with standard industrial hygiene practices.

Specific hygiene measures: Always observe good personal hygiene measures, such as washing hands after handling the material and before eating, drinking and/or smoking. Wash work clothing and protective equipment regularly to remove contaminants. Discard contaminated clothing and footwear that cannot be washed. Practice thorough general cleaning.

ENVIRONMENTAL PRECAUTIONS

See Sections 6, 7, 12 and 13.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

The typical physical and chemical properties are given below. For more information, see the Supplier in Section 1.

GENERAL INFORMATION

Physical state: ..... Liquid
Colour: ..... Amber
Odour: ..... Typical
Odour threshold: ..... N/D

IMPORTANT INFORMATION ON HEALTH, SAFETY AND THE ENVIRONMENT

Relative density (at 15 C): 0.9
Flashpoint [method]: ..... >180C (356F) [ASTM D-93]
Flammability limits (Approximate % volume in air): ..... LEL: 0.9 UEL: 7.0
Auto-ignition temperature: ..... N/D
Boiling Point / Range: ..... > 316C (600F)
Vapour density (air = 1): ..... > 2 at 101 kPa
Vapour pressure: ..... < 0.013 kPa (0.1 mm Hg) at 20 C.
Evaporation rate (n-butyl acetate = 1): ..... N/D
pH: ..... N/A
Log Pow (Partition coefficient n-octanol/water): ..... > 3.5
Water solubility: ..... Negligible
Viscosity: ..... 30.6 Cst. (30.6 mm²/sec) at 40 C. | 5.2 Cst. (5.2 mm²/sec) at 100 C
Oxidizing properties: ..... See Sections 3, 15, 16

OTHER INFORMATION

Freezing point: ..... N/D
Melting point: ..... N/A
Pour point: ..... -6° C. (21° F)
DMSO Extract (mineral oil only), IP - 346: ..... < 3% weight

SECTION 10 STABIILITY AND REACTIVITY

Stability: The material is stable under normal conditions.
Conditions to avoid: Excessive heat. High energy ignition sources
Material to avoid: Strong oxidants
HAZARDOUS DECOMPOSITION PRODUCTS: The material does not decompose at ambient temperature.
Hazardous polymerisation: Does not occur.

SECTION 11 TOXOLOGICAL INFORMATION

Acute toxicity

Means of exposure	Conclusion / Remarks
INHALATION Toxicity (Rat): LC 50 > 5000 mg/m³	Minimally toxic. Based on test data for structurally similar materials.
Irritation: Final figures not available.	Negligible hazard at room temperature or with normal handling. Based on assessment of the components.
INGESTION Toxicity (Rat): LD 50 > 2000 mg/kg	Minimally toxic. Based on test data for structurally similar materials.
Skin Toxicity (Rabbit): LD 50 > 2000 mg/kg	Minimally toxic. Based on test data for structurally similar materials.
Irritation (Rabbit): Data available.	Negligible irritation to skin at ambient temperature. Based on test data for structurally similar materials.
Eyes Irritation (Rabbit): Data available.	May cause mild, brief discomfort to the eyes. Based on test data for structurally similar materials.

CHRONIC/OTHER EFFECTS

With unique regard to the product:

Severely refined base oil. Non-carcinogenic in studies on animals. Representative material passes IP-346, the modified Ames test and/or other screening tests. Dermatological and inhalation studies showed minimal effects, non-specific infiltration in the lungs of immune cells, oil deposition and minimal formation of granuloma. Non-sensitising in animals.

Additional information is available on request.

SECTION 12 ECOLOGICAL INFORMATION

The information provided is based on data available for the material in question, the components of the material and similar materials.

Ecotoxicity

Material - Not considered harmful to aquatic organisms

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Mobility

Material - This material has low solubility and is presumed to float and migrate from water to land. It is expected to divide into sediment and suspended solids in wastewater.

PERSISTENCE AND DEGRADABILITY

Biodegradation:

Material - Presumed to be inherently biodegradable.

BIOACCUMULATION POTENTIAL

Material - Has the potential to bioaccumulate, however metabolism or the physical properties may reduce the bioconcentration or limit bioavailability.

SECTION 13 CONSIDERATIONS ON DISPOSAL

The disposal recommendations are based on the material as supplied. Dispose of in accordance with current laws and regulations and the characteristics of the material at time of disposal.

DISPOSAL RECOMMENDATIONS

The product is suitable for burning in a closed and controlled system used for fuels or for disposal by incineration under controlled conditions at very high temperatures, to prevent the formation of undesirable combustion products.

INFORMATION ON DISPOSAL IN ACCORDANCE WITH THE LAW

European Waste Code: 13 03 07

NOTE: these codes are assigned based upon the most common uses for this material and may not take into account any contaminants resulting from its actual use. Waste producers need to assess the actual process used when generating the waste and its contaminants in order to assign the most appropriate waste code.

This product is considered as hazardous waste in accordance with Directive 91/689/EEC on hazardous waste is and subject to the provisions of this Directive, unless article 1 (5) of the Directive is applicable.

Empty container warning Warning on empty containers (when appropriate): Empty containers may contain residues and can be dangerous. Do not attempt to refill or clean containers without appropriate instructions. Empty drums should be completely drained and safely stored for appropriate treatment or disposal. Empty containers should be recycled, recovered or disposed of by a qualified or licensed contractor and in accordance with government regulations. DO NOT PLACE UNDER PRESSURE, CUT, WELD, DRILL, GRIND OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY OR OTHER SOURCES OF IGNITION. THEY MAY EXPLODE AND CAUSE INJURY OR DEATH.

SECTION 14 TRASPORT INFORMATION

LAND (ADR/RID) : Not regulated for land transport.

INLAND WATERWAYS (ADNR) : Not regulated for transport on inland waterways.

SEA (IMDG) : Not regulated for sea transport, in accordance with the IMDG code

AIR TRAFFIC (IATA): Not regulated for air transport

SECTION 15 REGULATORY INFORMATION

The material is not hazardous as defined by European Union directives for dangerous substances and preparations.

EU Labelling: Not regulated in accordance with EC directives.

INFORMATION ON CURRENT LEGISLATION, LAWS AND REGULATIONS

Complies with the following requirements of the national/regional chemical inventory:
AICS, KECI, ENCS, TSCA, EINECS, PICCS, DSL

National laws and regulations: Refer to the following legislation:
Legislative Decree 52/97, Ministerial Decree (Min. of Health) 14/6/2002 and 7/9/2002, Directive 1999/45/EC, 2001/60/EC and related legislation on the classification, packaging and labelling of dangerous substances and preparations
Presidential Decree 303/56 “General guidelines on occupational hygiene”
Presidential Decree 547/55 “Regulations for the prevention of accidents in the workplace”
Presidential Decree 336/94 “Table of occupational diseases in industry”
Presidential Decree 626/94 and “Implementation of Directives 89/391/CEE, 89/654/CEE 242/96 and 25/02 89/655/CEE, 89/656/CEE, 90/269/CEE, 90/270/CEE, 90/394/CEE, 90/679/CEE, 93/88/CEE, 95/63/CE, 97/42/CE, 98/24/CE, 99/38/CE,
for improvements in the safety and health of workers in the workplace"

SECTION 16 OTHER INFORMATION

N/D = Not determined, N/A = not applicable

THIS SAFETY DATA SHEET CONTAINS THE FOLLOWING REVISIONS:
Revision changes:
Section 05: Fire-fighting measures - Appropriate extinguishers changed.
Section 05 : Fire-Fighting Measures - Fire Fighting instructions changed.
Section 15: Regulatory Information - Title changed.
Section 2: Composition/information on Components changed.
Section 13 : Advice on empty containers changed.
Section 9: Boiling point changed.
Section 8: Respiratory protection changed.
Section 9: Vapour pressure changed.
Section 6 : Accidental Release - Spill Management - Waters changed.
Section 9: Relative density - Title changed.
Section 9: Flammability Limit changed.
Section 9: Viscosity change.
Section 9: Viscosity change.
Section 15: EU Hazardous/non-hazardous changed.
Section 15: Applicable EU Directives and Regulations changed.

Section 08 : Exposure control - Notes changed.
Section 15: National Chemical Inventories changed.
Section 12 : Ecological information - Mobility changed.
Section 01 : Methods of Contact with Society, in order of priority changed.
Section 01: Postal address of supplier changed.
Section 05: Fire prevention measures - unusual fire hazard added.
Section 05: Fire prevention measures - unusual fire hazard - Title added.

CE DECLARATION OF CONFORMITY

No.	

We, ***ITALIA SISTEMI TECNOLOGICI S.p.a.*** with offices in
Strada S. Anna, 590
41122 Modena, ITALY
in the person of Mr. Palmiro Debbia, authorised to draw up the technical file, at Strada S. Anna, 590
41122 Modena, ITALY

declare, under our sole responsibility, that:

the **SOLVENT REGENERATOR**

(for regenerating solvents in groups II A and II B)

Model	
Serial number	
CE 1131 Ex II 2 G c Ex d/e/ia IIB T 230°C	Certified 14 ATEX 187

to which this declaration refers,

is conforming with the provisions of Directives

2006/42/EC - MAC	94/9/CE - ATEX	2004/108/CE - EMC	2006/95/CE - LVD

as required by the following harmonised standards:

ATEX Electrical	EN IEC 60079-0	EN IEC 60079-1	EN IEC 60079-11	EN IEC 60079-14	EN IEC 60079-25
ATEX NON-Electrical	EN 1127-1	EN 13463-1	EN 13463-5	EN 13463-6	
EMC	EN 61000				
MAC	EN 626-1	EN 626-2	EN 60204	EN 12100-1	EN 12100-2
	EN13857	EN 60947-5	EN 894-1	EN 13478	EN 13732-1
	EN 1037	EN 14986	EN 953		

Modena,

The legal representative
Palmiro Debbia

Legible signature