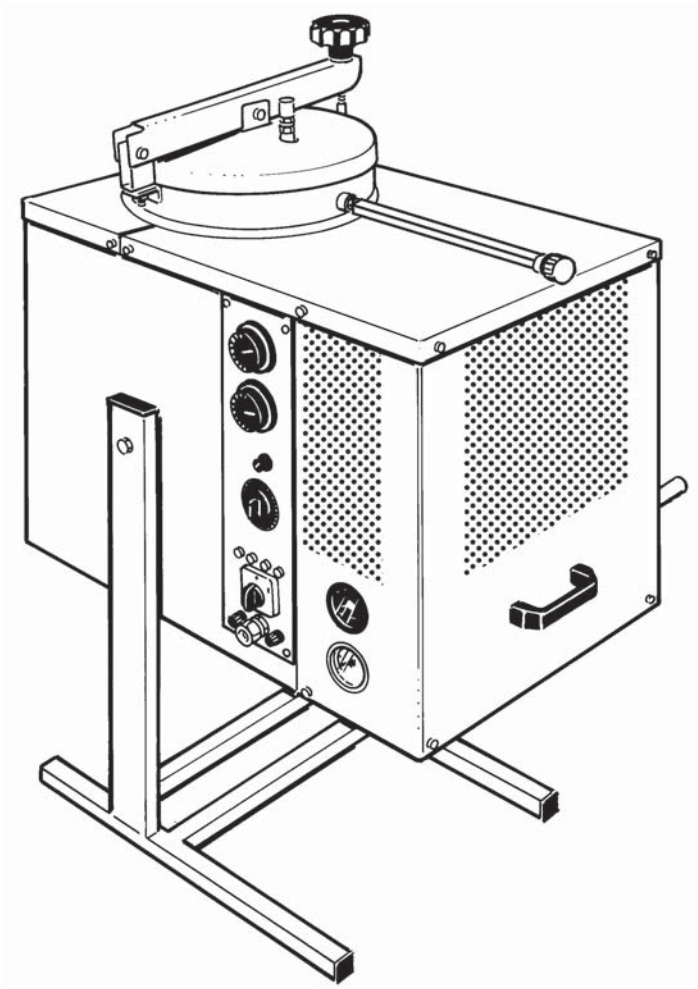
SOLVENT RECLAIMER

IST C1 - IST C2



USE AND MAINTENANCE GUIDE

EDITION: 09/2003 CODE:DSTLI00019.02

IST - ITALIA SISTEMI TECNOLOGICI S.R.L. 41100 Modena - Via S. Anna, 590/A

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CAUTION

This use and maintenance guide is to be considered as a part of the system itself. Read the notes and instructions it contains carefully, as they supply important information concerning **safe operation and maintenance**. Keep the guide in a safe place for further reference.

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1.1 HOW TO READ AND USE THE GUIDE

This use and maintenance guide is to be considered as a part of the system and it aims to supply all the information required for:

- handling the system, packed and unpacked, under safe conditions;
- installing the system correctly;
- providing detailed knowledge of the system's functioning and its limits;
- its correct functioning under safe conditions;
- changing the type of operationor carrying out maintenance correctly under safe conditions;
- de-commissioning the machine safely and in accordance with legislation concerning workers' health and safeguarding the environment.

ACCORDING TO THE EXISTING LEGISLATION, THE MANAGERS OF THE PRODUCTION DEPARTMENT IN WHICH THE SYSTEM IS TO BE INSTALLED ARE OBLIGED TO READ THE CONTENTS OF THIS GUIDE CAREFULLY AND TO ENSURE THAT ALL THE USERS AND SERVICE TECHNICIANS READ THE PARTS THAT CONCERN THEM.

The guide is divided into sections, chapters and paragraphs, so that information is structured in the clearest possible manner. The pages are progressively numbered.
Information research can be based on both key words in the section titles and by consulting the contents.

The technical instructions, drawings and documents included in this guide are confidential and are the exclusive property of I.S.T. and may not be reproduced in any manner, either completely or in part.
The customer is also responsible for ensuring that, in the event of the guide being modified, only the latest version is available in the department where the system is used .
This use and maintenance guide has been drawn up in conformity with the following instruction manual standards:

- Reference **DIRECTIVE 89/392/CEE** and subsequent modifications relative to the European Community Machinery Standards.
- Reference **STANDARDS UNI EN 292/1 AND 292/2 -1992** concerning recommendations for preparing and printing instruction manuals.

1.2 KEEPING THE GUIDE

The use and maintenance guide must be kept carefully and in the event of a change in ownership, it must be passed on to the new owner.

In the event of a change in ownership, the customer shall provide I.S.T. with all the data concerning the new owner, in order to simplify exchange of information between the parties and any updating of this use and maintenance guide .

Handle the guide with clean hands and avoid placing it on dirty surfaces to ensure that it always stays in good condition .

It must be kept in a room protected from the damp and heat and must always be available within reach, for consultation.

No part shall be removed, modified or torn out.

1.3 SYMBOLS USED IN THE GUIDE

DANGER

Indicates situations or problems that can jeopardise the users' safety due to risk of industrial accidents or death.

CAUTION

Indicates situations or problems concerning the system's efficiency of operation, which do not jeopardise the users' safety.

ATTENTION

Indicates important general information which does not jeopardise the users' safety or the correct operating of the system.

1.4 CONDITIONS FOR WARRANTY VALIDITY - RESPONSIBILITY

The conditions for warranty validity are stipulated in the contract signed during the sale of the system.

The solvent reclaimer is covered by a one year warranty starting from the delivery date. I.S.T. Srl undertakes free of charge, to carry out repairs and to replaceparts found to have manufacturing defects, at its premises in Modena, Italy.

The warranty does not cover parts subject to normal wear, including switches, relays, indicator lights, seals, etc.

Should the system need repairs under the warranty, the customer shall send the system or the part that requires replacement to I.S.T. CARRIAGE PAID, by previous agreement.
After evaluating the real warranty conditions, I.S.T. shall take steps to correct the defect and send the part/system back to the customer CARRIAGE PAID.

Should the customer expressly request repair of the reclaimer or replacement of a defective part on its own premises, I.S.T. shall send a technician and subsequently debit the travel and labour costs to the customer, on the basis of a previously written agreement.

Responsibility

The manufacturer disclaims total responsibility for:

- improper use of the reclaimer;
- the system being used by unauthorised a/o untrained personnel;
- total or partial non-observance of the instructions;
- power supply defects;
- lack of maintenance;
- unauthorised modifications or repairs;
- use of non-original spare parts;
- force majeur events such as: flooding, fire, earthquakes, etc.

2.1 DETAILS ABOUT THE SYSTEM AND THE MANUFACTURER

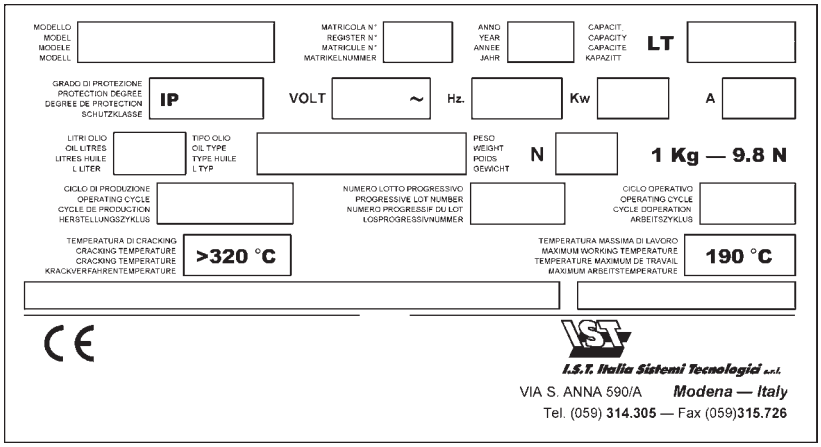
Manufacturer: I.S.T. - ITALIA SISTEMI TECNOLOGICI S.r.l.
via S. Anna, 590/A
41100 MODENA (MO) - ITALIA
Phone +39.059.314305 - Fax +39.059.315726
V.A.T. Number: 02799130360

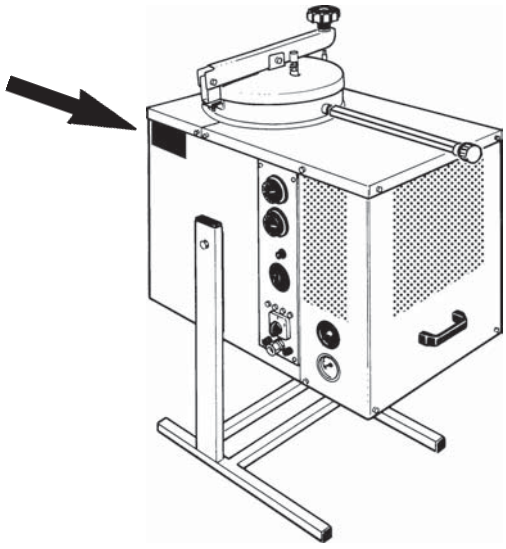
Equipment: SOLVENT RECLAIMER
model: IST C1 - IST C2

2.2 IDENTIFICATION PLATE

The identification plate is located on the side of the system.

Do not tamper with the system and/or the data engraved on the plate, under any circumstances.





2.3 PICTOGRAPHS ON THE SYSTEM

Prohibition, necessity and danger pictographs are present on the system. Follow the instructions carefully, as non-observance may cause serious personal injury.

Make sure that the pictographs are always present and legible, if not apply or replace them.

DANGER OF ELECTROCUTION
Presence of electrically powered components.

NO SMOKING AND/OR USING NAKED FLAMES

DO NOT USE WATER TO PUT OUT A FIRE
In the event of a fire use appropriate dust or CO_2 extinguishers.

GLOVES MUST BE USED FOR PROTECTING THE HANDS

A MASK MUST BE USED TO PREVENT INHALING TOXIC SUBSTANCES.

GOGGLES OR SHIELDS MUST BE USED TO PROTECT THE EYES AND FACE.

DANGER OF BURNS
Presence of components subjected to high temperatures, risk of burning the hands.

DANGER OF HANDS CRUSHING
Presence of components that can be dangerous for fingers or hands.

2.4 SAFETY INSTRUCTIONS

Non-observance of the most elementary care and safety precautions is almost always the main cause of industrial injuries.

- Read this guide carefully before starting up, operating and carrying out maintenance operations on the system;
- Use the machine within the established limits defined for its technical performance;
- All operating and maintenance operations must be carried out by qualified personnel, according to the regulations concerning industrial accidents, although not specifically mentioned in the guide;
- Always keep the system's signals and protections against accidents in good condition; if they are removed during maintenance operations, they must be restored before starting the system again;
- Do not open the covers and guards while the system is in operation;
- Do not wear rings, wristwatches, jewellery and loose clothing which could get entangled in the moving parts; it is advisable to wear suitable clothing to prevent accidents. Always follow the safety instructions applicable;
- Do not tamper with the safety devices installed on the system;
- Clean the machine covers and control panels using a soft cloth soaked in a mild cleaning solution; do not use solvents such as alcohol or petrol as this may damage the system 's surfaces.
- Do not use the system if it is damaged; inform the person in charge of maintenance regarding functioning faults;
- Do not carry out any operation without previous authorisation and do not allow unauthorised persons to handle the system;
- Disconnect the power supply before carrying out any maintenance operations on the electrical components;
- The control board must always be kept closed;
- Do not open the tank lid during the distillation cycle: you run the risk of being splashed with toxic gaseous substances at very high temperatures;
- Always wear gloves to protect the hands, a mask to avoid inhaling toxic substances and goggles for protecting the eyes, when loading or unloading the tank;
- Do not wear clothing that may cause electrostatic charges as this may lead to the solvent fumes catching fire;
- Do not smoke or use a naked flame near the machine while the machine is being used or while maintenance or other operations are being carried out .
- In the event of the system catching fire, disconnect the power supply immediately and put out the fire using a dust or CO_2 fire extinguisher. Do not use water.

2.5 DANGEROUS CHEMICAL REACTIONS

The operator must have sufficient knowledge of the solvent 's characteristics and reactions, the dangers it can provoke and the precautions to be taken. This information is contained in the technical and safety data sheet which must be supplied together with the solvent .

It is advisable to keep the solvent data sheets (together with this guide if possible) within easy reach, ready for rapid consultation.

Only inflammable solvents belonging to explosive groups IIA and IIB and with self-ignition higher than 200 °C can be reclaimed.

The operator runs the risk of being exposed to dangerous chemical reactions if unsuitable solvents are introduced into the reclaimer .

2.5.1 PEROXIDES

It is essential to avoid any reaction due to the presence of peroxides which may be formed in the absence of stabilisers and in the presence of oxygen. Solvents such as:
Tetrahydrofuran (or THF or Tetramethylene Oxide, or 1.4 -Epoxybutane)
Diethyl Ether (or Ethyl Ether , or Ether or Ether Oxide or Common Ether)
Disopropyl Ether (or Isopropyl Ether, or DIPE)
1.4 Dioxane (or Dioxane, or p-Dioxane or Diethylene Oxide)
Ethyl Cellosolve (or Ethylene glycol-Monoethyl Ether, or 2-Etoxyethanol) Alcohol oxides and Ketones
Butyl Cellosolve (or Ethylene glycol-Monobutyl Etherem or 2-Butoxyethanol)

The person who uses the solvents mentioned above must be aware of the possibility of formation of peroxides in the absence of stabilisers, as danger from these solvents is not restricted to the distillation process alone, but is also present during handling phases (storage, operation, etc.).
The safety data sheet of such solvents must contain all the necessary information regarding formation of peroxides and the precautions to be taken (stabilisers, type, quantity and analysis methods).

2.5.2 NITRIC SUBSTANCES AND NITRATES

It is forbidden to use the system with substances and solvents which may cause reactions due to the heating of nitric substances (Nitromethane, Aromatic nitrates) and nitrates (Nitric Acid Ester) as there is risk of explosion.

2.5.3 NITROCELLULOSE

Special care must be exercised in the case of solvents contaminated with Nitrocellulose as a residual component, as in some types of ink or paint. The safety data sheets of products containing Nitrocellulose (paints, ink or other products) must indicate the contents.

For reclaiming solvents containing Nitrocellulose contact IST After Sales Service and take into consideration the following points:
- never allow the temperature to exceed 120°C while heating the diathermic oil;
- keep the reclaimer in an area away from the production area, from operating stations and other installations, preferably in the open, while ensuring adequate protection against atmospheric conditions;
- never set the thermostats in such a manner as to cause drying of the residue;
- in the event of long term storage of cleaning solutions, there is a possibility of formation of peroxides. Therefore it is necessary to check the solution to detect the presence of peroxides before starting the distillation process. If they are present, appropriate steps must be adopted for their elimination (for example, by adjusting the pH to an alkaline value);
- unload the distillation residue at the end of each operating cycle in order to avoid build-up of residual sludge containing Nitrocellulose, since, the higher the concentration, the greater is the risk of dangerous conditions;
- special care must be taken while disposing of distillation residue sludge containing Nitrocellulose. Use metallic containers with lids and dilute with a small amount of water to prevent the sludge from drying up completely (as this condition favours the self-ignition of Nitrocellulose).

2.5.4 EXOTHERMIC REACTIONS

Avoid recovery of solvents or mixtures and pollutants which may produceexothermic reactions (reactions followed by development of uncontrolled heat).
Read the safety chart concerned carefully.

2.5.5 PRECAUTIONS AGAINST ELECTROSTATIC CHARGES

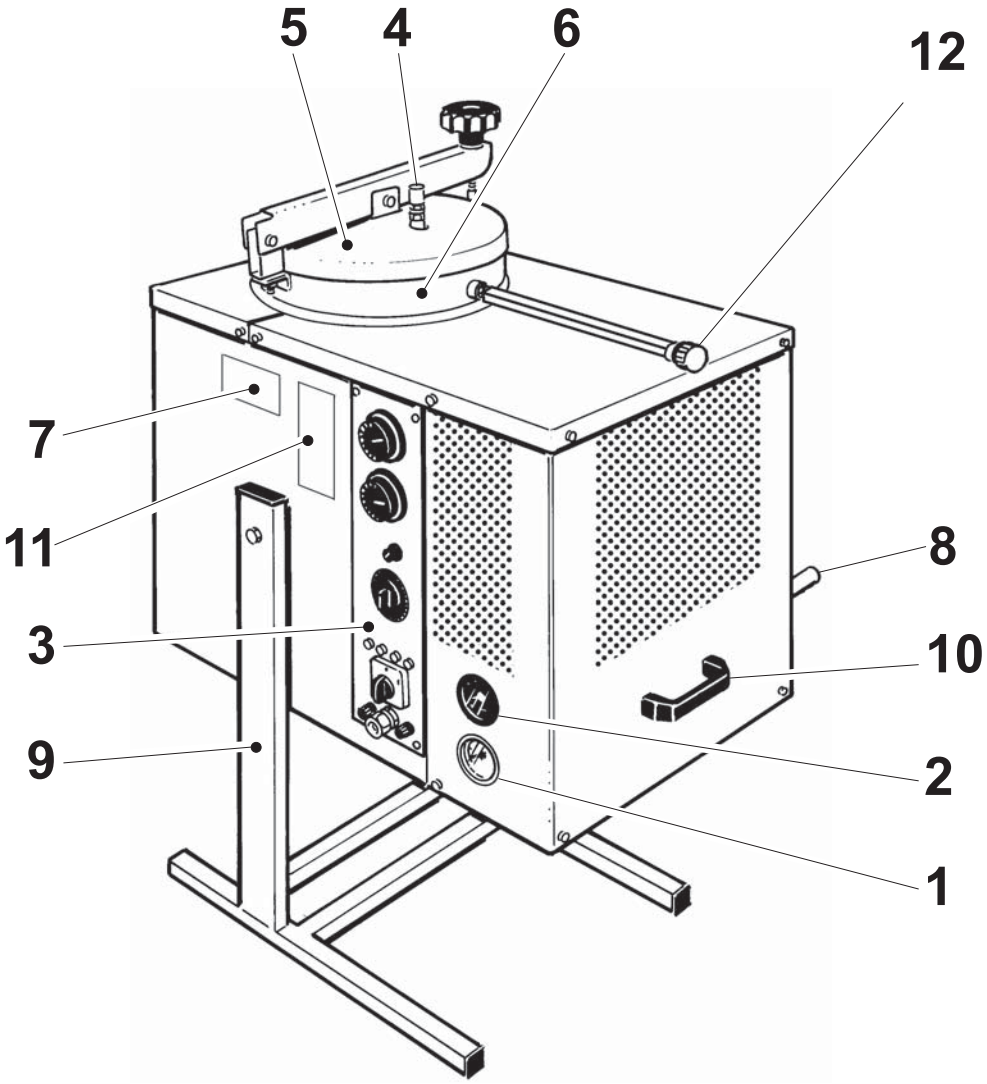
- The operator must not use clothing which could provoke electrostatic charges (for example, clothes made of synthetic fibres).
- Clean the tank and other parts of the system using a slightly damp cloth (not made of synthetic fibres).
- Ensure that the power supply system is equipped with a suitable earth lead.

2.5.6 RECLAIMED SOLVENT COLLECTION TANK (optional)

The reclaimed solvent collection tank must be suitably designed and made, using materials that are not subject to electrostatic discharges.

In order to avoid the phenomenon of an electrostatic charge, it is advisable to connect the metallic solvent collection tank to an effective earthing system. See Chapter 4.6 PREPARING THE SYSTEM.

3.1 GENERAL DESCRIPTION



1 - OIL THERMOMETER
indicates the diathermic oil temperature

2 - SOLVENT THERMOMETER
indicates the solvent evaporation temperature

3 - CONTROL BOARD

4 - SAFETY VALVE

5 - TANK LID

6 - SOLVENT TANK

7 - DIATHERMIC OIL IDENTIFICATION PLATE

8 - RECLAIMED SOLVENT OUTLET PIPE

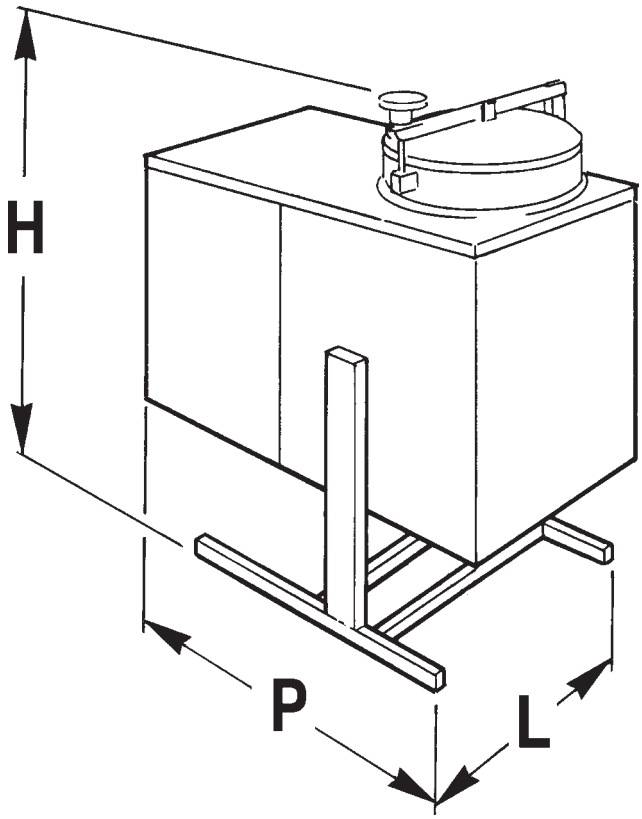
9 - BASE

10 - HANDLE

11 - WARNING SYMBOLS

12 - DIATHERMIC OIL VENT CAP

3.2 DIMENSIONS AND OVERALL SIZES



mm	L	P	H
ISTC1	450	600	1000
ISTC2	450	600	1000

3.3 TECHNICAL DATA AND FEATURES

Reclaimer C1 - C2	**ISTC1**	**ISTC2**
Tank capacity	10 litres	15 litres
Power supply	230V/1/50-60 Hz	
Rated power	W 1600	W 1600
Operating temperature	50° - 190°C	
Indirect heating through diathermic oil	ESSOTHERM 500	
Diathermic oil quantity	6 litres	7,5 litres
Cooling	Ventilated by forced air	
Electrical system standards	EN 60204-1	

3.3.1 DIATHERMIC OIL SPECIFICATIONS

If it is used a different type of diathermic oil (not ESSOTHERM 500), it must have the following specifications:

Max. Working temperature : 300C°
Self – ignition temperature : 380C°

INDICATIVE AVERAGES	ESSOTHERM 500
Sliding point	-9 C°
Thermic conductivity, W/m – °C At 100°C At 300°C	 0,128 0,114
Steam tension at 300°C mbar	106,6
Aniline point, °C	106
ASTM colour D 1500	0,5
Cubic dilatation coefficient for C°	0,00066
Volumic mass Kg/m3 At 15 °C At 300 °C	 862 674
Specific heat KJ/Kg-°C At 15 C° At 300 C°	 1,85 2,514
(g.c), KJ/m3-°C At 200 C° At 300 C°	 1885 1948
Flame point V.A., °C	224
Neutraliz. no., mg KOH/g: Starting after ossidation for 355h at 110°C	 Tracks 0,23
Kinematic viscosity at 40 °C, mm2/s 50°C, mm2/s 100°C, mm2/s	 30 19,0 5,0
Viscosity index	115

3.4 FUNCTIONING

I.S.T. solvent reclaimers make it possible to recover solvents coming from different production processes and re-utilise them.
Solvents are reclaimed by distillation, where the exhausted solvent is brought to the boil, then condensed in a heat exchanger cooled by forced air ventilation.
This type of operation makes it possible to separate the volatile part (solvent) from the pollutants (pigments, resins , oils, etc.) which remain inside the tank.
The distillation residues are removed from the tank at the end of every production cycle, by turning the reclaimer upside down or by using special bags supplied by I.S.T. on request.
The cycle is completely automatic; in fact, once the thermostats have been set at the right temperature according to the solvent to be reclaimed, the system stops automatically when all the solvent has evaporated.
I.S.T. reclaimers normally operate at atmospheric pressure; however, when a high-boiling or thermolabile solvent is used, an I.S.T. vacuum generator can be connected to lower the operating temperature considerably.

Only inflammable solvents belonging to explosive class IIA and IIB and whose self-ignition is over 200°C can be reclaimed.

I.S.T. Solvent reclaimers construction which follows rule EN 60204-1, allows the distillation of flammable products in places not classifiable like explosion risk, according to rule EN 60079-10.

3.5 IMPROPER USE OF THE SYSTEM

I.S.T. reclaimers are designed and constructed employing the best technology, in order to operate in the safest conditions, in conformity with current regulations regarding industrial accidents.
This, however, depends on the correct use of the system and careful maintenance.
Therefore, any other use of the system not referred to in this guide is to be considered improper and is not allowed.
I.S.T. therefore declines all responsibility for any damage that may be caused by improper, wrong or unreasonable use of the system.

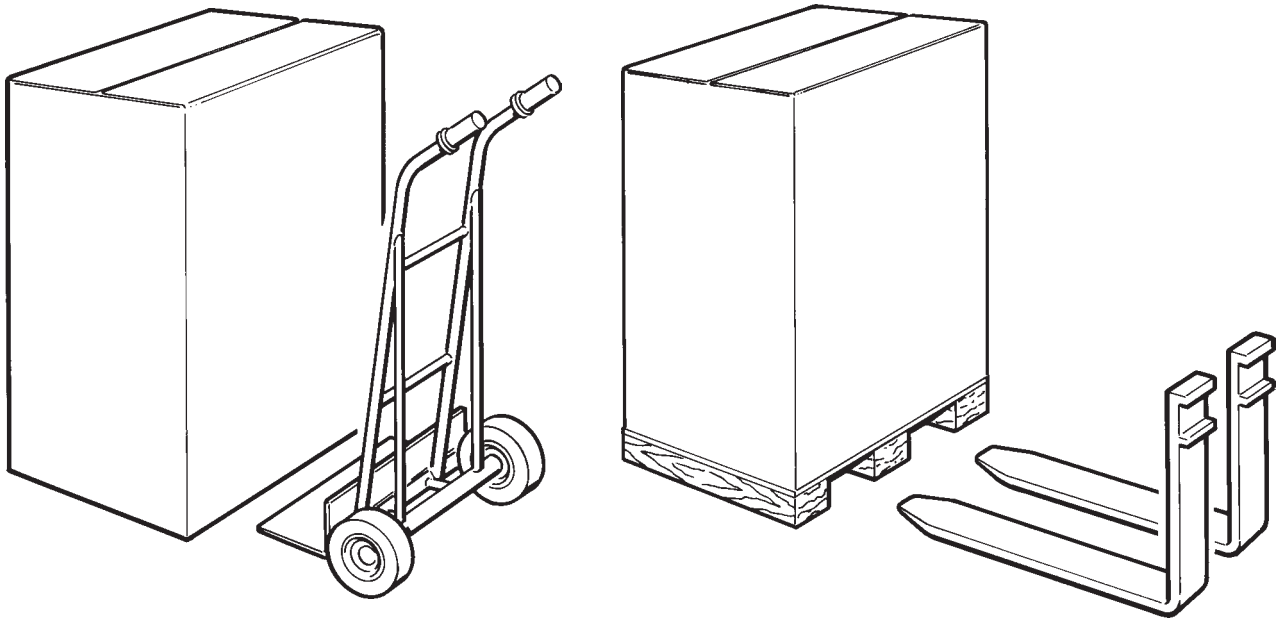
4.1 DELIVERY

The material is carefully checked before delivery to the shipping agents.
On receiving the system, make sure that it has not been damaged during transport, that the packing has not been tampered with, and that no material has been removed.
In the event of damage, or items found to be missing, inform the forwarding agent and the manufacturer immediately.
It is also advisable to check and ensure that the supplied goods are in accordance with the order.

4.2 UNPACKING THE SYSTEM

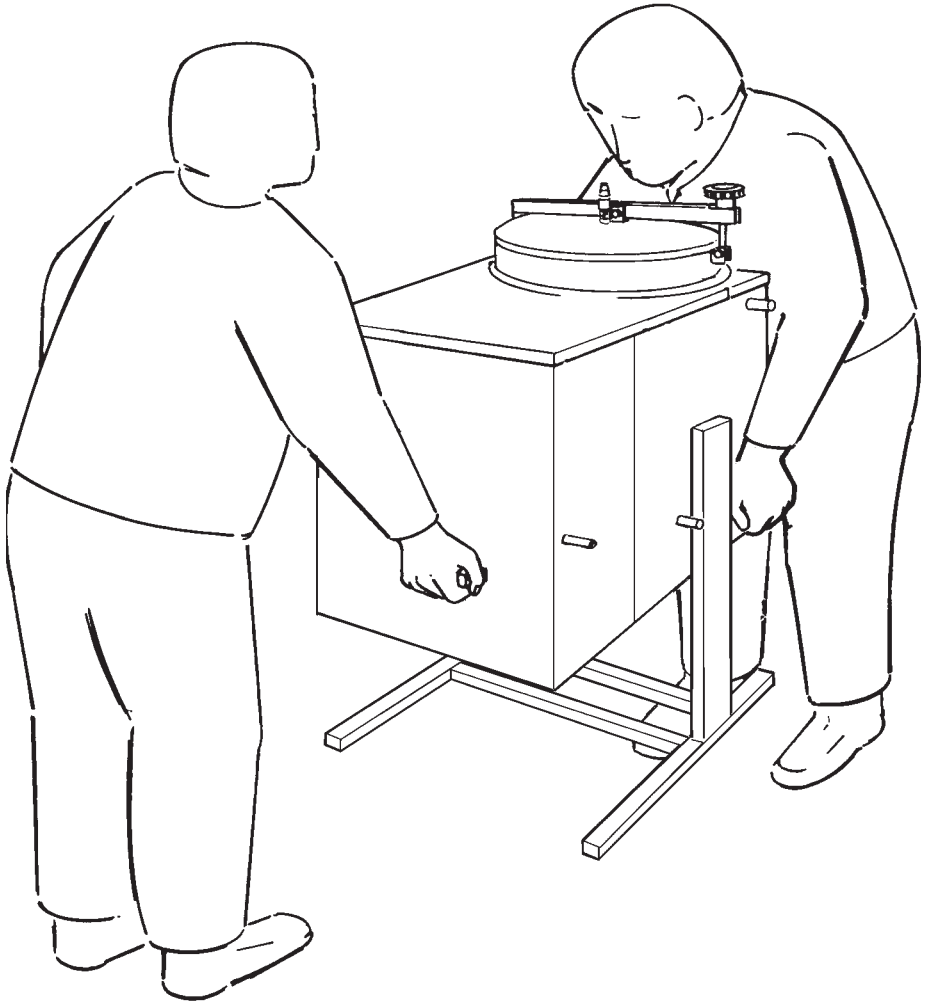
The type of packing differs depending on the distance and the type of transport.
The system is usually shipped wrapped in a plastic film and placed inside a cardboard box fitted on to a wooden pallet.
Lift the system using the “transpallet” trolley and bring it as close as possible to the area where it is to be installed; then take it out of the packing by following the instructions given on the packing itself.

The packing materials (plastic bags, polythene, pluriball, nails, staples etc.) must be put into special containers depending on the type and pollution regulations. Do not burn or dump them.
The packing consists of a wooden pallet case (CER150103) and a plastic sheet (CER200104). This material is assimilable as an urban garbage and practically it’s possible to put it into the different containers of the public collection.
View the dimensions, it’s necessary to make a preventive consultation of the premises.



4.3 LIFTING THE SYSTEM

No special equipment is required for lifting the system. In view of its limited weight (see 3.3 TECHNICAL DATA AND FEATURES) two people can lift it; while one person holds the handle fitted on the front, the other places his/her hands under the machine body.

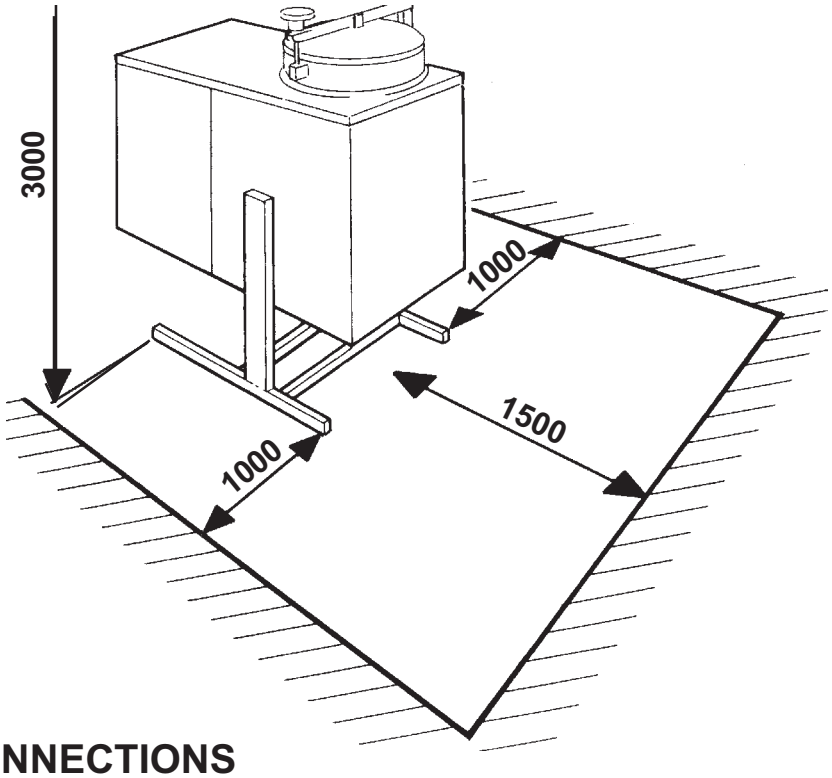


4.4 INSTALLING THE SYSTEM

Install the system in a spacious well-ventilated room, away from other working stations and installations.

If installed in the open, the system must be suitably protected against the atmospheric conditions and guarded to prevent tampering or interference by unauthorised persons.

In order to ensure correct functioning and use of the system, it is advisable to leave a free space of 1000 mm on the sides , 2500-3000 mm in width to allow proper ventilation and 1500 mm at the rear for unloading the residues.



4.5 ELECTRICAL CONNECTIONS

Any operation on the electrical system, even minor ones, must be carried out by professionally qualified persons.

- While connecting the system, it is necessary to respect the standards defined by the competent Institutions and follow the accident prevention specifications defined by the Insurance Institute against accidents and respect the CEI Standards.
- The suitability of the type of power and line voltage must correspond to the data engraved on the system identification plate (2.2 IDENTIFICATION PLATE) and/or given in the table under 3.3 TECHNICAL DATA AND FEATURES.
- Connect the power cable to a plug corresponding to European Standards or standards applicable in the country where the system is to be installed.
- The plug must be equipped with an earthing contact.
- Ensure that the supply line is equipped with an appropriate earthing device.
- The system must be connected to the power supply through a magnetothermal differential wall switch conforming to CEI explosion prevention standards or a 16A single-phase interlocked outlet.
- Make the electrical connections with great care, with the power supply disconnected and by following the safety instructions.
- It is forbidden to use multiple sockets, converters or extensions.
- Do not use the system if the power cable or a plug is damaged.
- Once the system is connected, set the switch (11) in position “I” and check that the GREEN INDICATOR LIGHT (7) switches on.

Feeding cable shouldn't touch anything or have a ground way, be tensioned or be crushed.

The manufacturer declines all responsibility for non-observance of the above-mentioned safety instructions.

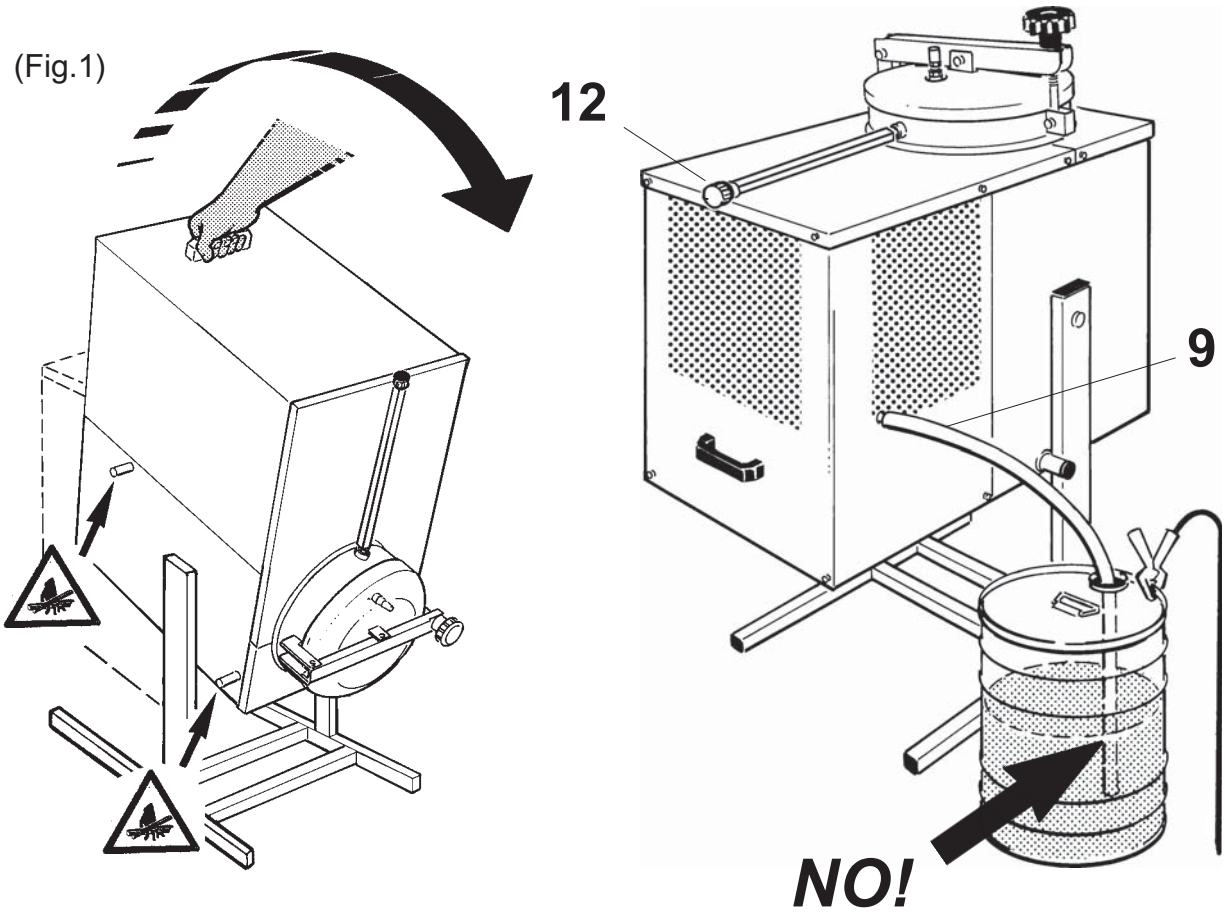
4.6 PREPARING THE SYSTEM

Turn the reclaimer until the end of the run, **accompanying it with the hand, taking care not to grasp the latch pins during the overturning moves to avoid fingers crushing (Fig.1)**, take away the plastic cap placed on the oil escape pipe, screw the ESCAPE PIPE (12), place again the reclaimer in vertical position.

Fit the flexible tube (supplied with the machine) to the SOLVENT OUTLET PIPE (9) and insert it into a clean container having a capacity greater than the quantity of solvent to be reclaimed.

The opening of the pipe oulet must never be dipped into the solvent since this will directly connect the two tanks having different temperatures, thus leading to rapid fall in pressure in the hotter tank, resulting in its deformation.

(Fig.1)



5.1 CONTROLS

5.1.1 EXTERNAL CONTROL BOARD

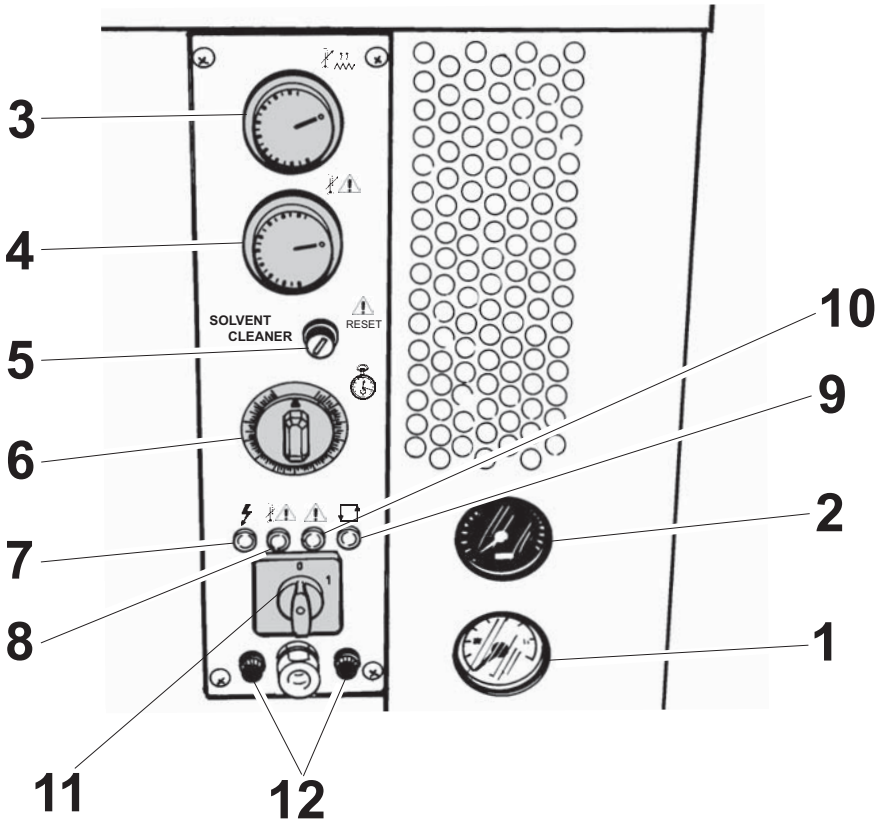


Fig. 5.1.1

1 - OIL THERMOMETER: indicates the diathermic oil temperature.

GREEN ZONE: low temperature, lid opening.
RED ZONE: danger, do not open the tank lid.

2 - SOLVENT THERMOMETER: indicates the solvent evaporation temperature.

3 - HEATING THERMOSTAT: diathermic oil heating temperature setting.

4 - SAFETY THERMOSTAT: diathermic oil heating MAX temperature setting.

RESET

5 - SAFETY THERMOSTAT: MAX temperature setting of reclaimed solvent outlet (40 °C).

6 - TIMER

7 - GREEN INDICATOR LIGHT: when switched on, it indicates that the system is powered.

8 - RED INDICATOR LIGHT: when switched on, it indicates that the safety thermostat (4) has started operating.

9 - YELLOW INDICATOR LIGHT: when switched on, it indicates the start of a reclaiming cycle.

10 - RED INDICATOR LIGHT: when switched on, it indicates that the safety thermostat (5) has started operating.

11 - MAIN SWITCH

12 - FUSES

5.2 OPERATING AND FUNCTIONING

Before starting up the system, make sure that the contents of this guide have been fully understood. For further clarification, contact the manufacturer.
The equipment can be started up only if it conforms to the protection standards defined for the use of solvents.
Only inflammable solvents belonging to explosive classes IIA and IIB and whose self-ignition exceed 200 °C can be reclaimed.

5.3 TEMPERATURE SETTING

Before proceeding with this operation, the user must check the safety data sheet of the solvent to be reclaimed and ensure that the mixture formed with pollutants does not create the conditions for triggering off chemical reactions (formation of peroxides, heating of nitric substances, nitrates, nitrocellulose, etc.).

The data concerning the solvent boiling point are contained in the technical and safety sheets and must be supplied together with the solvent .
It is advisable to keep the solvent data sheets (possibly together with this guide) in an easily accessible place for rapid consultation.

- Turn the HEATING THERMOSTAT knob (3) to 30 - 40 °C HIGHER than the boiling point maximum temperature of the solvent to be reclaimed.
- Turn the SAFETY THERMOSTAT knob (4) to about 20 °C HIGHER than the THERMOSTAT (10) temperature.
- Turn the TIMER (6) knob to a time of indicatively 2 hours for acetone and 3 hours for toluene.

Example:	BOILING POINT			
PURE ACETONE °C	56	106	86	2
TOLUENE °C	110	160	140	3

5.4 FILLING UP THE TANK

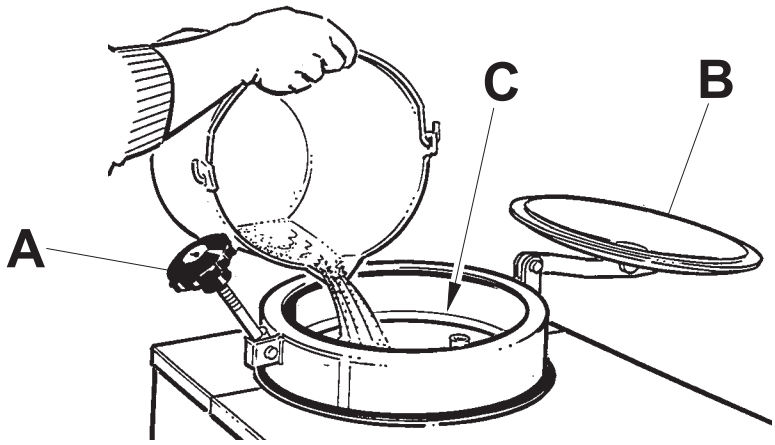
Do not smoke or use naked flames during use, maintenance or other operations on the system.

Always wear gloves for protecting the hands, a mask to avoid inhaling toxic substances and wear goggles to protect the eyes.

Filling the tank:

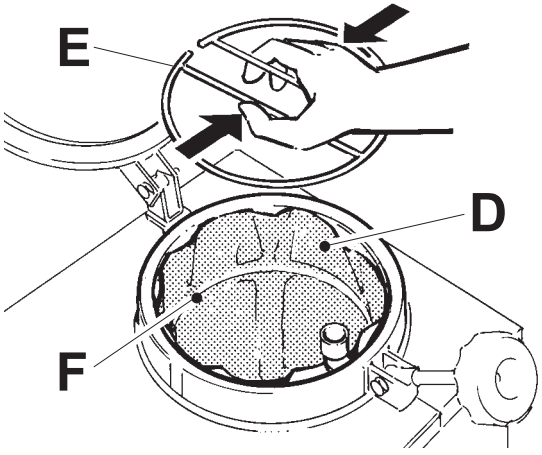
- loosen the locking knob (A) and turn back the tank lid (B) completely.

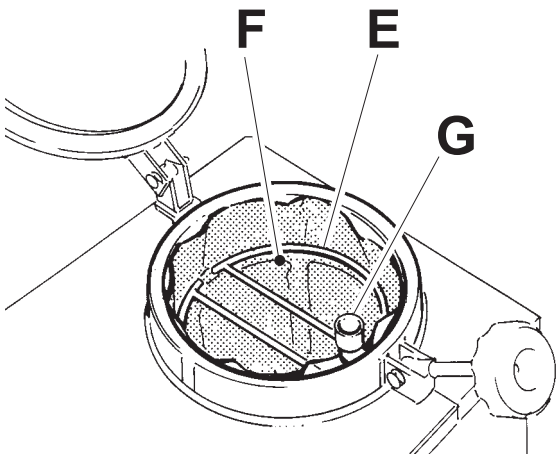
- pour the solvent to be reclaimed into the tank. Do not exceed the maximum level indicated by the inside rim (C).



If special bags (supplied by I.S.T. on request) are used for solvent collection, proceed as follows:
- insert the bag in the tank (D) making sure it adheres to the walls
- block the upper edge of the bag by positioning the holding ring (E) inside the tank, above the internal rim (F).
- pour the solvent to be reclaimed into the bag (D). Do not exceed the maximum level indicated by the internal rim.
- Close the tank, locking the lid with the locking knob (A).

Make sure that the bag edge does not obstruct the evaporated solvent outlet hole (G).
Do not tighten the knob excessively (A) not to bend the lid arm and damage the seal.



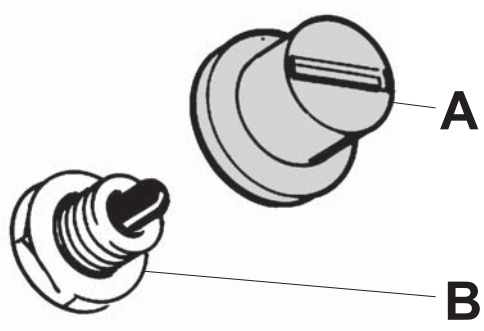


5.5 RECLAIMING CYCLE

5.5.1 CYCLE START

- Turn the switch (11) to position “I”.
  Ensure that the GREEN INDICATOR LIGHT (7) and the YELLOW INDICATOR LIGHT (9) light up and that the electric fan for cooling the solvent steam starts operating.
  If the indicators lights don’t light up, check the line to see if it is powered.
  The automatic reclaiming cycle thus starts and when the boiling point is reached, the reclaimed solvent starts flowing out of the outlet pipe.

If the RED INDICATOR LIGHT (10) lights up during the operation, the SAFETY THERMOSTAT (5) RESET has started operating.
To reset it, unscrew the black cap (A) with a screwdriver and press thebutton (B).



If the red indicator light (8) lights up during the operation, check the correct THERMOSTAT (4) setting (the thermostat knob must show a value of 20°C higher than that of the THERMOSTAT (3) (see 5.3 TEMPERATURE SETTING).
To reset, turn the switch (11) first to position “0” and then to position “I”.

DURING THE OPERATION IS DANGEROUS TO STOP RECLAIMING CYCLE, BECAUSE IT COULD CAUSE FLAMMABLE STEAM LEAK FROM THE SOLVENT-EXIT PIPE.

DURING THE RECLAIMING CYCLE, IT IS EXTREMELY DANGEROUS TO OPEN THE TANK LID; THERE IS RISK OF BEING EXPOSED TO GASSEOUS SUBSTANCES AT HIGH TEMPERATURES. TO PREVENT SUCH DANGER THE OPERATOR MUST TAKE AWAY THE LOCKING KNOB (A) PAGE 5.4 DURING THE CYCLE, THIS PREVENTING ANY UNAUTHORISED PERSON FROM TAKING IT AWAY INTENTIONALLY.

Check the efficiency of the SAFETY VALVE (4) on the tank lid If the valve is blocked or steam leak out through it, do not use the reclaimer and replace the valve immediately.
If the reclaimer does not switch on, check the FUSES (12).
Make sure that the lateral vents of the electric fan are not blocked by foreign matters.

5.5.2 CYCLE END

Switching off the YELLOW INDICATOR LIGHT (9) indicates the end of the heating and stopping the electric fan indicates the end of the reclaiming cycle, since, depending on the thermostat settings, all the polluted solvent inside the tank is purified.

If there is a power failure while the reclaiming cycle is in operation, the reclaimer automatically goes to the end of the cycle . When the power supply is restored, restart the reclaiming cycle, see 5.5.1.

5.6 UNLOADING RESIDUES

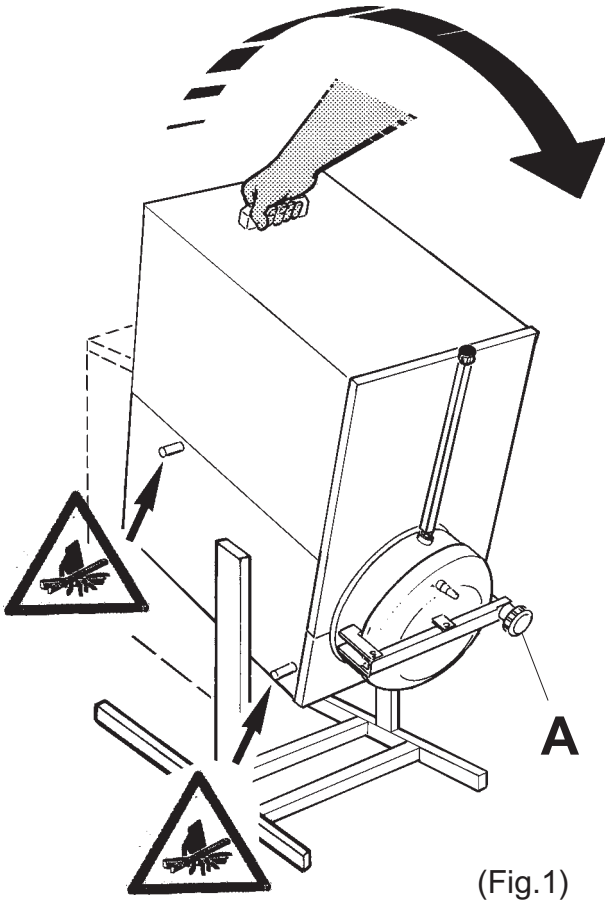
Before opening the tank lid, wait until the diathermic oil temperature falls below 50°C, then verify on the THERMOMETER (1) that the pointer is on the GREEN zone.

When the pointer is on the RED zone, do not carry out any operations by open lid.

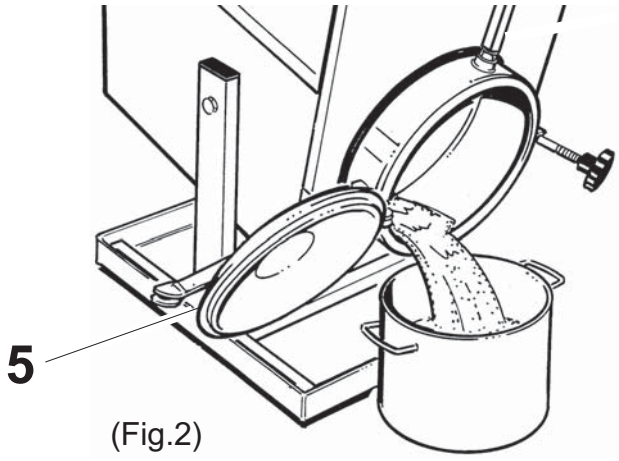
The tank lid and rim are subject to very high temperatures, so take care you don't burn your hands.

Open the tank cover (5) (fig.2), inserting the locking knob (A) (fig.1), place an adequate collect container under the reclaimer, unscrew the locking knob (8) (fig2), turn the reclaimer body on his support accompanying it with the hand (fig.1) and make flow down the residuals in the container.

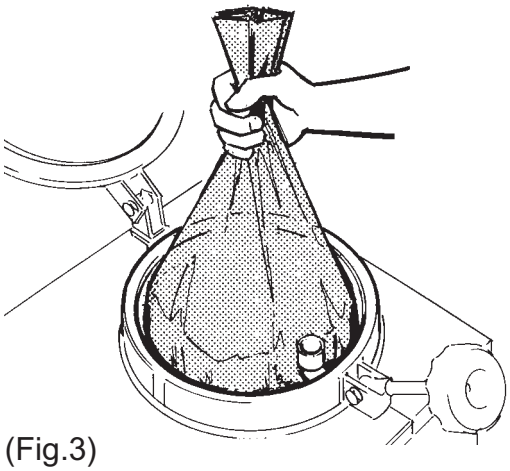
Ifresidue collecting bags have been used, the residues remain inside the bag, so it is necessary to:
- remove the bag holding ring;
- take the bag containing the residue out of the tank (fig. 3).



(Fig.1)



(Fig.2)


(Fig.3)

After emptying the tank, clean the upper rim carefully to ensure proper sealing and longer lid seal life.

The distillation residues are polluting products, so do not throw them away, but have them sent to the special collecting centres.

5.7 CHECKING RESIDUES

If the residues are liquid and still contain solvent, we are dealing with a solvent having a higher boiling point than that set; it is therefore necessary to:

- gradually increase the heating temperature setting or the time set on the TIMER (6) (5.3 TEMPERATURE SETTING);
- replace the cover;
- restart the reclaimer (5.5 RECLAIMING CYCLE).

Remove the residues from the tank after every reclaiming cycle. See 6.3 CLEANING THE TANK.

5.8 SWITCHING THE SYSTEM OFF AFTER USE

When you have finished using the reclaimer, switch off the power supply by turning the switch to “0”.

6.1 SAFETY INSTRUCTIONS

All maintenance operations must be carried out with the system switched OFF, after disconnecting the electric power line wall switch; (if there is no wall switch, take the plug out of the power socket).

All operations on the electric system must be carried out by qualified, experienced personnel.

Before carrying out any operation on the system make sure that the OIL THERMOMETER (1) (5.1.CONTROLS) shows a temperature below 50°C (GREEN ZONE).

6.2 MAINTENANCE

The system does not require special maintenance; however, remember that:

- it is advisable to keep the system casing and condenser free of dust or scale, in order to allow correct flow of the cooling air.

- in order to ensure optimum performance of the system and prevent the warranty from lapsing, only “original spare parts” must be used as replacements.

- to facilitate maintenance operations, follow the programme shown in the table below:

Period	Operation	Reference:
AFTER EACH CYLE	Clean the tank	6.3 CLEANING THE TANK
EVERY WEEK	Check the safety valve	6.5 SAFETY VALVE
EVERY MONTH	Check the diathermic oil vent	6.6 OIL VENT
EVERY MONTH	Check and clean the radiator	6.7 RADIATOR-CONDENSER
EVERY MONTH	Check the tank lid seal	6.8 TANK LID SEAL
EVERY 1000 HOURS NOT LATER THAN ONE YEAR	Verify the fuctioning of the SAFETY THERMOSTAT (9)	6.9 SAFETY THERMOSTAT
EVERY 1000 HOURS NOT LATER THAN ONE YEAR	Replace diathermic oil	6.4 REPLACING DIATHERMIC OIL
1° CHANGE 2° CHANGE 3° CHANGE	Signature..... Signature..... Signature.....	Date..... Date..... Date.....

6.3 CLEANING THE TANK

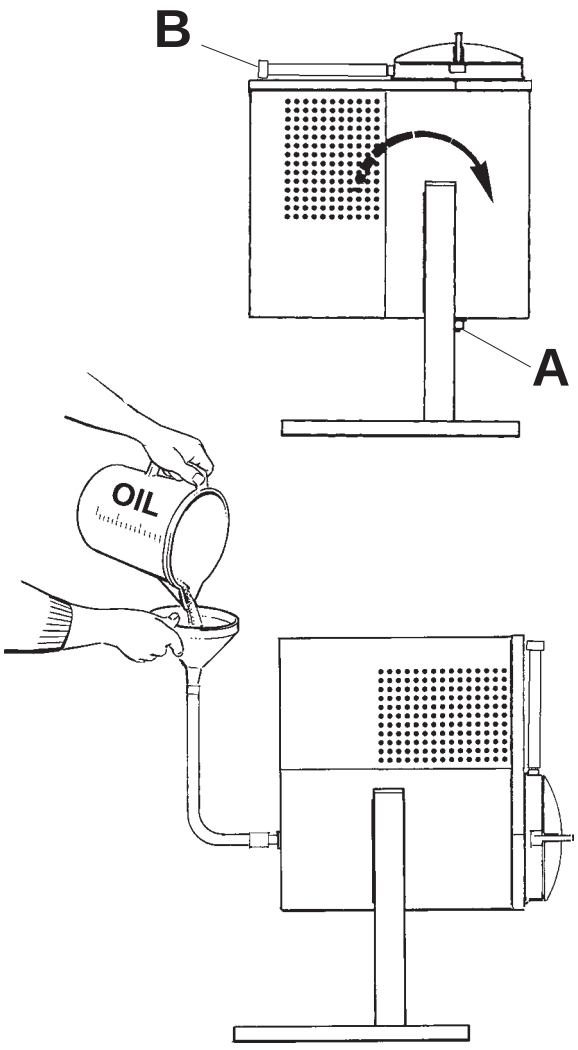
It is important to remove the residue deposited on the tank bottom and walls, as this acts as an insulating material, thus lowering the system yield.
- AISI 304 18/8 stainless steel tank
Avoid using metal or sharp tools for cleaning the tank.
- Teflon P.T.F.E. Dupont coated tank
On request, the reclaimer system can be supplied with an AISI 304 stainless steel tank with Teflon P.T.F.E. Dupont coating.
To keep the coating in good condition, use only plastic or wooden tools; avoid sharp tools for cleaning the tank.

Always keep the tank's upper rim clean, as scales will affect the proper sealing and durability of the lid seal.

6.4 REPLACING DIATHERMIC OIL

Replace the diathermic oil after 1000 operating hours, and in any case, NOT later than one operating year.
For oil replacement, proceed as follows :

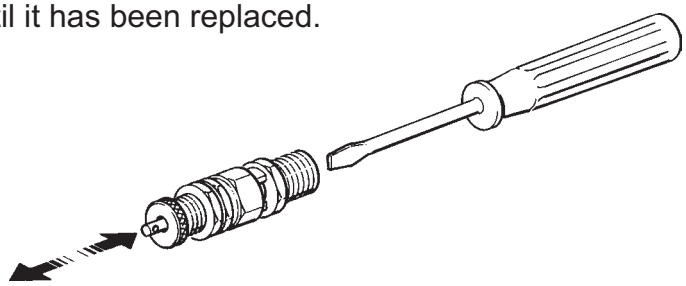
- place a container under the reclaimer under the outlet cap (A).
- unscrew the outlet cap (A) and oil vent (B), allowing used oil to flow out.
- turn the reclaimer to horizontal position
- fit a rubber tube having suitable diameter to the outlet connection (A) and using a funnel, pour in the required quantity of diathermic oil (3.3 TECHNICAL DATA AND FEATURES).
- turn the reclaimer upside down to end of cycle in the same way as for the residue unloading, retighten the cap (A) and replace the reclaimer to vertical position, then retighten the oil vent (B).
- take the used oil to a specialised collection centre for disposal.



Do not throw the used oil away; dispose off in accordance with the existing regulations.

6.5 SAFETY VALVE

Check every week the efficiency of the SAFETY VALVE (4) placed on the tank lid, verify that foreign matters have not clogged the valve. Restore it with compressed air and a suitable screwdriver, verify the spring functioning, because, if it is worn or lets out steam, the reclaimer must not be used until it has been replaced.



6.6 DIATHERMIC OIL VENT

Check the OIL VENT (14) periodically (at least once a month); if scales are deposited, it does not release the excess air caused by the increase in volume due to heating of the diathermic oil, consequently leading to tank implosion.

6.7 RADIATOR - CONDENSER

Check the condition of the condenser (at least once a month), and if necessary, clean the fins using compressed air.

If the system is installed in a very dusty room, check the condenser more frequently.

6.8 TANK LID SEAL

Check the tank lid seal periodically (at least once a month): make sure that it is clean, intact and not cracked.

6.9 SAFETY THERMOSTAT

Check the correct functioning of the SAFETY THERMOSTAT (4) at least once a year:
- turn the thermostat knob to 0 °C;
- check that the RED INDICATOR LIGHT (8) switches on.

Should it not be the case, the thermostat must be replaced. This operation must be carried out by skilled personnel, thus it is necessary to consult the I.S.T. service.

7.1 TROUBLE SHOOTING

TROUBLE	SOLUTION
The GREEN INDICATOR LIGHT (7) does not switch on and the reclaimer does not start working. (5.1 CONTROLS).	- Check that the electric plug is correctly inserted in its socket. - Verify the effective electric power presence at the intake. - Check that the eventual main switch of the electric installation is connected. - Verify the electric plug functionality - Verify the fuse conductivity.
The reclaimer starts, works but does not heat.	- Verify the heating element is functioning. - Verify the HEATING THERMOSTAT (3) setting. (5.3 TEMPERATURE SETTING).
The system does not reclaim the whole polluted solvent content.	- Verify the correct temperature setting. (5.3 TEMPERATURE SETTING).
The reclaimed solvent flowing out is hot. The RED INDICATOR LIGHT(10) switch on.	- Ensure that the electric fan works correctly. - Ensure that the electric fan guard and condenser are not blocked by dust, scales, etc. - Ensure that the temperature setting is right for the solvent to be reclaimed (5.3 TEMPERATURE SETTING). (Temperature set is probably too high) - Reclaimer is installed near a hot air source.
The reclaimer operates, but the reclaimed solvent does not flow out. The reclaimed solvent does not flow out and damages the lid seal or the safety valve.	- Check the correct temperature setting (the temperature set is probably too low). - Make sure the condenser is not blocked because of over filling of the tank. Proceed as follows: - disconnect the power supply, wait until the OIL THERMOMETER pointer (1) is on the green zone. - open the tank lid - blow air into the solvent outlet pipe (9), making sure that the air passage is clear. Otherwise contact the IST After Sales Service. - Check the tank lid seal.
The reclaimed solvent flowing out is dirty.	- The tank has been filled beyond the level. - The dirty solvent is mixed with foamy products, thus making it necessary to fill the tank with a smaller quantity of liquid. - The condenser is partially blocked: blow air into the solvent outlet pipe (9), or carry out a reclaiming cycle with 5 litres of clean solvent. - Check the THERMOSTAT setting (the temperature set is probably too high).
The RED INDICATOR LIGHT (10) - (8) ⚠ switches on	- See 5.5.1 CYCLE START

8.1 DIS-ASSEMBLY / SCRAPPING

The user shall handle the dismantling and scrapping of the materials comprising the machine, in accordance with the EU standards or the legislation applicable in the country where the system is installed.

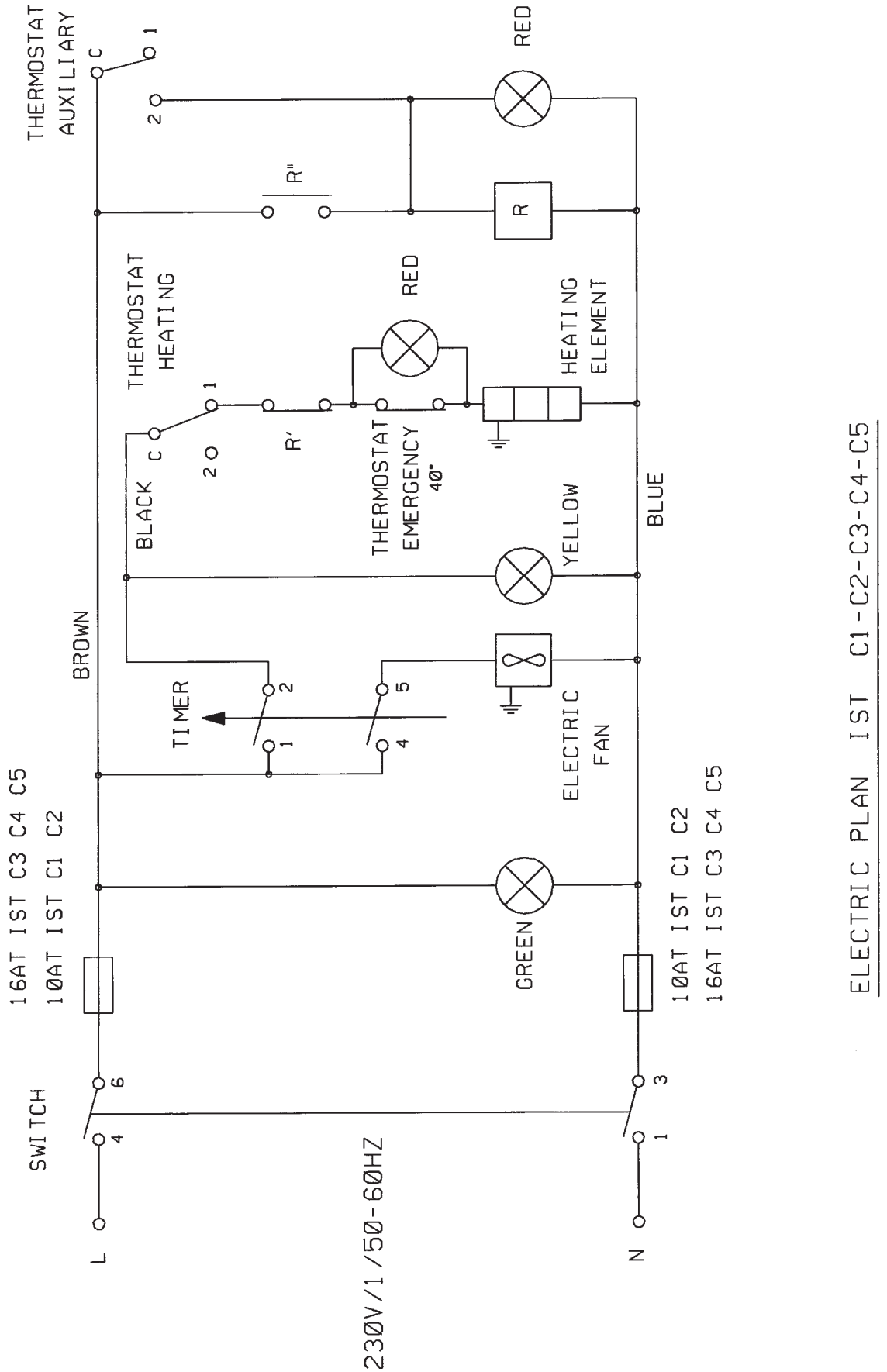
Before scrapping the system, the user shall inform the manufacturer of all the data engraved on the system identification plate.

8.2 DISPOSAL OF SCRAP

In the event of scrapping, the user shall adopt special precautionary measures in accordance with local legislation regarding disposal of materials harmful for the environment, such as diathermic oil and distillation residues.

When the material is de-commissioned and the machine is emptied out of diathermic oil and solvents, the unit becomes an EU special waste not dangerous in accordance with DLgs22/97, code CER 160205.

9 WIRING DIAGRAM

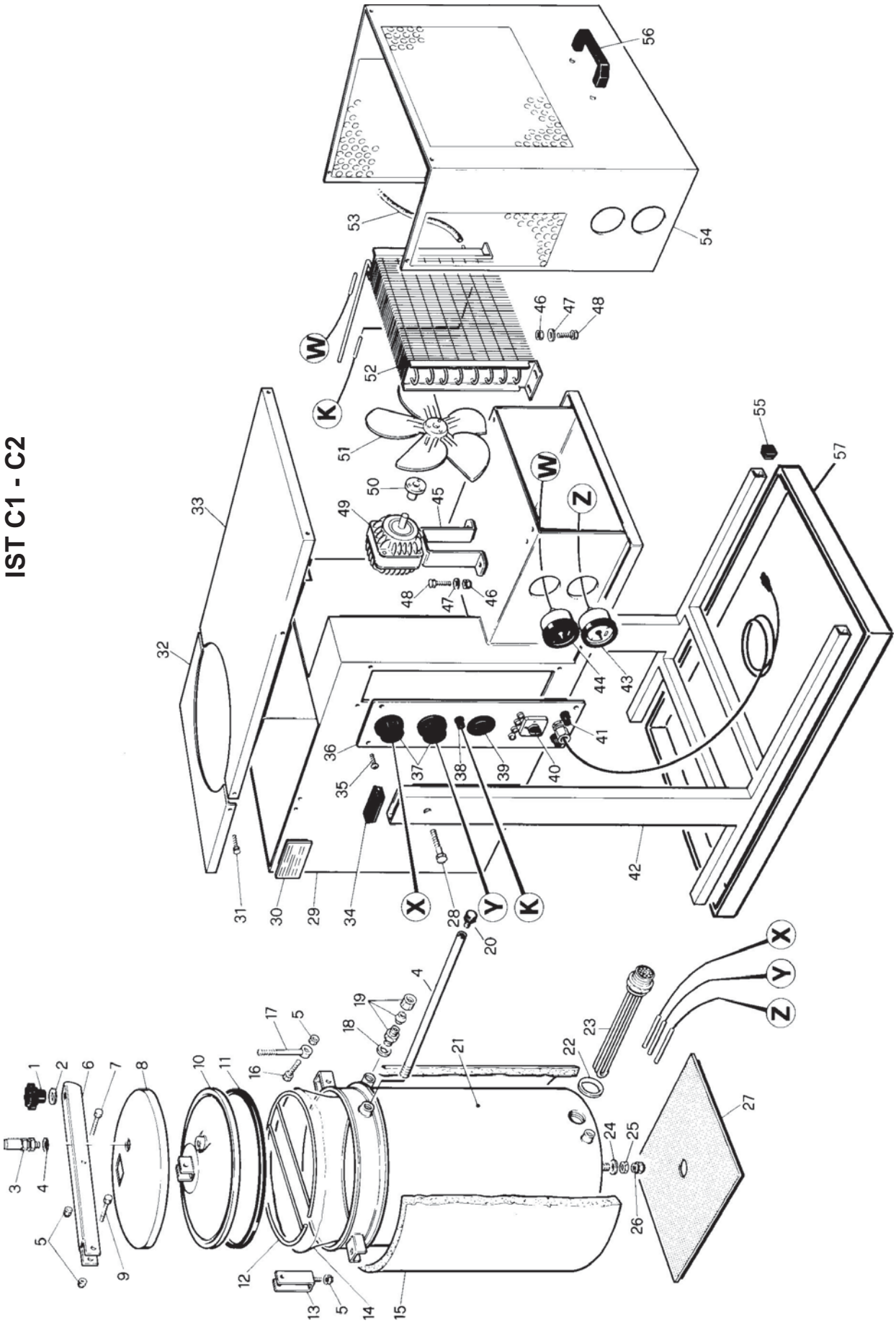


ELECTRIC PLAN IST C1-C2-C3-C4-C5

DSTSE00005.01

DSTDE00013.00

IST C1 - C2



10 SPARE PARTS

Pos.	Description	Q.ty	ISTC1 Code	ISTC2 Code
1	Handwheel	1	DSTMV00003	DSTMV00003
2	Washer	1	VROX000000	VROX000000
3	Valve	1	DSTSG00217	DSTSG00217
4	Oil vent pipe	2	DSTSG00183	DSTSG00183
5	Nut	4	VDOX000000	VDOX000000
6	Arm	1	DSTLX00022	DSTLX00037
7	Screw	1	VMOX000011	VMOX000011
8	Protection	1	DSTMI00079	DSTMI00080
9	Screw	1	VMOX000000	VMOX000000
10	Lid	1	DSTLX00021	DSTLX00030
11	Neoprene Seal	1	DSTMI00008	DSTMI00007
11	Acetone Seal	1	DSTMI00044	DSTMI00043
11	Teflon Seal	1	DSTMI00050	DSTMI00049
11	Viton Seal	1	DSTMI00056	DSTMI00055
12	Ring	1	DSTLX00070	DSTLX00071
13	Support	1	DSTLX00170	DSTLX00170
14	Bag	1	DSTMI00071	DSTMI00057
15	Tank Insulation	mq	MPISO00002	MPISO00002
16	Screw	1	VMOX000010	VMOX000010
17	Tie Rod	1	VMOX000001	VMOX000001
18	Washer	2	DSTRF00018	DSTRF00018
19	Connection	1	DSTRF00015	DSTRF00015
20	Oil cap	1	DSTRF00097	DSTRF00097
21	Tank	1	DSTGR00116	DSTGR00118
21	Teflon coated tank	1	DSTGR00117	DSTGR00119
22	Washer	1	DSTRF00024	DSTRF00024
23	Heating element	1	DSTME00072	DSTME00072
24	Washer	1	VRFE000002	VRFE000002
25	Lock nut	1	VDFE000004	VDFE000004
26	Cap	1	DSTRF00007	DSTRF00007
27	Lower insulation	mq	MPISO00013	MPISO00013
28	Screw	2	DSTRF00026	DSTRF00026
29	Body	1	DSTSG00112	DSTSG00112
30	Name plate	1	DSTTC00016	DSTTC00016
31	Screw	18	VAFE000000	VAFE000000
32	Lid	1	DSTLX00217	DSTLX00215
33	Lid	1	DSTLX00218	DSTLX00216
34	Cap	2	DSTMI00012	DSTMI00012
35	Screw	4	VAFE000001	VAFE000001
36	Panel	1	DSTSG00125	DSTSG00125
37	Thermostat	2	DSTME00323	DSTME00323
38	Thermostat	1	DSTME00325	DSTME00325
39	Timer	1	DSTME00328	DSTME00328
40	Switch	1	DSTME00376	DSTME00376
41	Fuse	2	DSTME00061	DSTME00061
42	Base	1	DSTSG00007	DSTSG00007
43	Thermometer	1	DSTME00335	DSTME00335
44	Thermometer	1	DSTME00042	DSTME00042
45	Bracket	1	DSTME00312	DSTME00312
46	Nut	6	VDFE000005	VDFE000005
47	Washer	6	VRFE000005	VRFE000005
48	Screw	6	VMFE000002	VMFE000002
49	Motor	1	DSTME00056	DSTME00056

Pos.	Description	Q.ty	ISTC1 Code	ISTC2 Code
50	Hub	1	DSTME00326	DSTME00326
51	Fan	1	DSTME00365	DSTME00365
52	Copper condenser	1	DSTGM00032	DSTGM00032
52	Stainless st. Condenser	1	DSTGM00033	DSTGM00033
53	Pipe	m	MPISO00015	MPISO00015
54	Guard	1	DSTLF00188	DSTLF00188
55	Cap	1	DSTMI00013	DSTMI00013
56	Handle	1	DSTMV00001	DSTMV00001
57	Tray	1	DSTLX00146	DSTLX00146

Spare Parts			
valid from	**Italiy**	**3749**	**3616**
Serial Number	**Abroad**	**9029**	**8060**
Nr			