OPERATION AND MAINTENANCE HANDBOOK

SOLVENT RECLAIMING UNIT

K16 TUV
K30 EX
K60 EX

COMPLETE MACHINE

II 2G Ex h IIB T3

EXPLOSION-PROOF BOX

2616 II 2G Ex db IIB T4 Gb

Rev.4 del 21/09/2017

CIEMME
IMPIANTI TRATTAMENTO SOLVENTI
via S. Allende 102 - 41122 Modena (MO) - Italy
Tel +39 059315101 - Fax +39 059315654
mail: ciemme@ciemmemo.it
www.ciemmemo.it

0.0 Symbology

This symbol on the unit denotes no smoking and no using free fire nearby the unit.

This symbol on the unit denotes no using water to put out fires.

This symbol on the unit denotes the possible presence of high temperature parts.

This symbol on the unit denotes the obligatory employment of protective glasses when using the reclaiming unit.

This symbol on the unit denotes that it is obligatory to protect the respiratory tract when using the reclaiming unit.

This symbol on the unit denotes the obligatory employment of protective gloves when using the reclaiming unit.

This symbol on the unit denotes the possible presence of tension inside the electrical board.

Index

Enclosures

1.0 Generality

The use and the maintenance of the reclaiming unit must always be arranged only following the instructions of this handbook and the protections and precautions steps foreseen for the solvents and related pollutants use. Should the solvents and the related pollutants be supplied with technical notes and/or safety characteristics for their use stated by the supplier, it is necessary to observe them strictly.

2.0 Use Destination

The reclaiming unit serves the purpose to recover polluted solvents that, through the distillation process, can be reused.
The distillation operation can be repeated several times.

Any use of the reclaiming unit different from the one stated in the present handbook has to be considered improper and unreasonable.
It is duty of the user to verify the compatibility of the solvents to be recovered as well as of the related pollutants with the materials constituting the reclaiming unit, for which it is referred to the following paragraph 4.0 “Description of main components composition”.

Solvent reclaiming unit is manufactured according ATEX 2014/34/UE directive.
Group II (surface industries), 2G category (zone 1 with gas presence).

The manufacturer is not accountable for improper, wrong and unreasonable uses.

	**Carry out the distillation only if the composition of the solvent and of the related pollutant is perfectly known. Otherwise do not carry out the distillation and apply to CIEMME S.r.l. or to the nearest authorized reseller.**

3.0 Securities

Our machine foresees a series of securities for protecting the operator or any other person who may come into contact with the reclaiming unit.
The main securities existing on the unit are following ones:

3.1 Protection Against Electrical Output Cutoff

In case of an electrical output cutoff, even for a few seconds, the reclaiming unit automatically goes to cycle end.
When the electric current returns the machine shows the white light (30) on. Despite the presence of tension the unit does not start working again. It has to be set at work again through the procedures of cycle start, i.e. turning the switch (34) on **Start**.

3.2 Emergency Thermostat (42) With Resetting

The emergency thermostat (42) is at fixed setting (200°C) with resetting.
In case the diathermic oil temperature exceeds 200°C the unit actuates following functions:

- The emergency red light (28) switches on;
- The distillation cycle stops;

- The cycle green light (29) switches off;
- The electric fan stops.

To restart the reclaimer proceed as follows:

- Verify the cause of temperature emergency;
- Open the control box turning first the lever of the general switch (34) to position **0** (zero) and then unscrewing the screws (64) that clamp it;
- Wait that the diathermic oil temperature drops at about 150°C (see thermometer (22));
- Unscrew the screw plug that covers the reset button;
- Push the reset button;
- Screw again the screw plug;
- Close again the control box, turn the lever of switch (34) to positon **1** and verify that the emergency red light (28) is switched off;
- Now it is possible to restart the reclaimer.

3.3 Security Valve For Overpressure (7)

This valve (7) is fitted to the lid (9) of the machine.
This device intercepts the pressure of 0,3 bar and then opens allowing the vent of the vapour in excess.

3.4 Safe Overturning System

This system allows the turning down of the machine tilting body and its stabilization in the two prearranged working positions.
In these two positions an automatic locking clamp (58) provides for fixing the machine in a steady way.
The mechanical effects of balance prevent the machine from remaining in different positions from the prearranged working positions.

	**Do not remove or modify any part of the reclaiming unit, in particular the protection nets.**

	**Carry out the distillation only if the composition of the solvent and of the related pollutant to be treated is perfectly known. Otherwise do not carry out the distillation and apply to CIEMME S.r.l. or to the nearest authorized reseller.**

4.0 Description Of Main Components Composition

The tank (26) and the lid (9) are in stainless steel AISI 304, the lid seal (10) is in EPL73 mix or in PTFE, the condenser ducts are in copper or in stainless steel and the outlet pipe for distilled solvents is in rilsan. The user has to verify the compatibility of the solvents to be recovered, as well as of the related pollutants, with the above-mentioned materials.

For chlorinated solvents it is advisable to use AISI 304 stainless steel condensers. For high-boiling solvents it is advisable to use PTFE-seals.

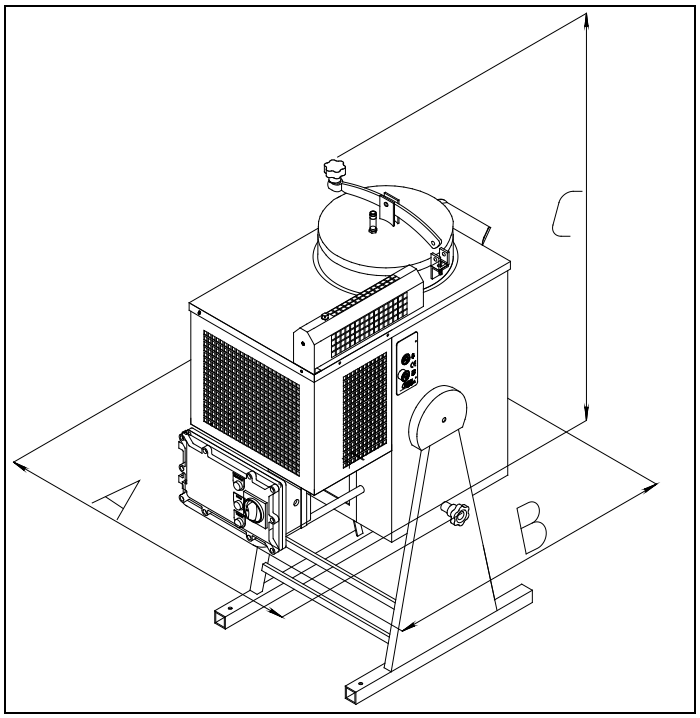
	The solvents and the related pollutants are flammable substances that could be toxic by contact or inhalation.

During the use and the maintenance of the reclaiming unit, and especially in the filling stage of the exhausted solvents and in the discharge stage of the distillation residuum, it is necessary to wear:

- working gloves,
- protection glasses,
- protection faceplate,
- fireproof clothes.

	During all operations, including those of maintenance, do not smoke and do not approach with free fire.

4.1 Overall Dimensions



MODEL	A (cm)	B (cm)	C (cm)
K16 TUV	55	80	113
K30EX	66	90	126
K60EX	66	96	126

5.0 Dangers

5.1 Fire And Explosion Risks

Fire and explosion are the main risks related to the use of the distillation units.
In effect the solvents to be distilled and their vapours are generally flammable products.
The risk of fire and explosion exists not only when the unit is working, but also during the connected operations, and generally throughout all operations where a significant quantity of flammable vapours is emitted.

Vapours escapes can happen for example because of a weak tightness of the seals or of the joints, or because of a condenser cooling defect.
These problems can occur as a consequence of wrong use and wrong or insufficient maintenance of the reclaiming unit.
During the operation the fire may be due to an overheating, the presence of static electricity or of hot points nearby the vapours.
The accidental introduction of solvent in the diathermic oil, at high temperatures, implies a risk of explosion.

The extent of fire and explosion risk depends however on the nature of the mixture components to be treated. Each of them has proper physical characteristics towards the risk of fire.

	**During all operations, including those of maintenance, do not smoke and do not approach with free fire.**

5.2 Chemical Risk: Chemical Reaction

Chemical reactions can happen in following cases:

- Degradation of solvents during the stocking; in particular formation of peroxides with some oxygenated compounds and some ketones.
- Degradation of solvents during the treatment:
  - degradation of nitrate compounds under temperature effect (nitromethane).
  - formation of corrosive compounds owing to the lack of stabilizer (hydrochloric acid).
- Decomposition of some residuums (nitrocellulose).
- Mixtures of incompatible products (presence of a strong oxidizer, such as nitric acid, in a mixture of flammable products).

5.3 Chemical Risk: Of Irritation, Poisoning

The contact with the liquids or the exposition to the vapours can cause cutaneous or ocular irritations, whereas the inhalation of solvent vapours involves intoxication risks.

6.0 General Warnings

- Do not introduce into the machine tank products coming from different working cycles.
- Do not use the tank as solvents depot.
- Fill the tank just before starting the distillation cycle.
- Do not open the lid during the working phases.
- Screw the lid knob with sufficient strenght, in order to avoid vapour leakages during the working process.
- Do not turn down the tank before the cycle end and, in any case, not before checking the positive effect of the executed working process.
- Do not touch the hot parts during the working phase.
- The reclaiming unit does not need assistance during its working. However desert the unit only at the end of the working cycle and when it is off.

	**Open the lid always with greatest care following the instructions given by the manufacturer and only with cold equipment. (The lid opening with hot equipment (with oil temp.more than 80°C) , could warp the lid seal)**

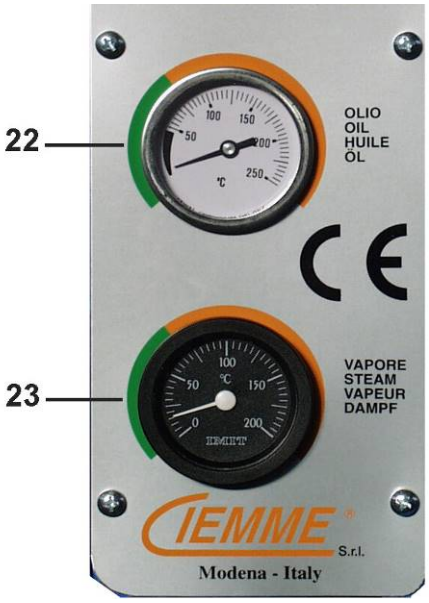
6.1 Lid Opening And Residuum Discharge

6.1.1 Presence Of Solvent Vapours

In order to avoid dangerous emissions of vapour it is necessary to open the lid only when the vapour thermometer (23) shows a lower temperature than the known boiling temperature of the treated product.

6.1.2 Temperature Of Residuum

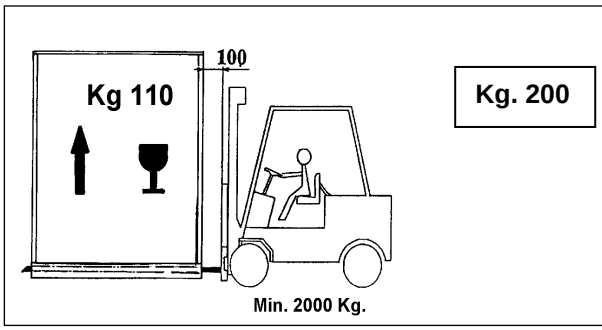
The residuum temperature is always very similar to the diathermic oil temperature. The diathermic oil temperature is readable on thermometer (22).



Always check the diathermic oil temperature before opening the lid and carrying out the discharge. Open the lid and carry out the residuum discharge with the greatest care in relation to the residuum temperature.

7.0 Packing And Transport

The unit is packed after fixing it on a wooden pallet. The wooden packing case has to be handled using a lift truck or a fork-lift, forking in the spaces foreseen for this purpose.



8.0 Unpacking

For unpacking the unit demount the case as follows:

- Take away the case lid,
- Disjoin the case bottom from the side walls,
- Take off upwards the case side walls,
- Unscrew the screws that fix the unit on the support pallet.

Then the unit appears in its definitive configuration and does not need any further preparatory treatment.

9.0 Installation

The reclaiming unit must be installed in an open place, or in any case in a well ventilated and well lighted place. The ventilation of the place can be natural or forced; the presence of a suction system is not necessary, although it is advisable.

It is necessary that every side of the unit is at least 50 cm. far from the wall, in order to allow a correct ventilation and an efficacious cooling.

Locate the unit on a flat floor, not broken, of sufficient robustness for the declared weight of the unit and of its maximum load, tiled or cemented if possible.
It is forbidden to place the reclaiming unit on wooden pallets or on non conductive floors (rubber etc.).
The floors must be conductive till at least a meter and a half of distance from the distillation unit.

The wiring of the installation place must be realized according to the local laws in force about the solvents treatment.

9.1 Unit Fixing On The Floor

For a safe working the unit must be fastened to the floor by screw anchors.

For this purpose use the holes in the unit feet (55).

The screw anchors must be of expansion metallic type with metric screw of 6 mm diameter.

10.0 Setting At Work

10.1 Electrical Connection

	**Every operation on the electrical equipment, even if easy, requires the labour of professionally skilled workers.**

The unit does not need further devices or operations to be set at work, except the execution of the electrical connection.
The connection must be executed directly at the terminals of the source of the power supply existing in the work place.

It is necessary the presence of a feeding sectioning device by manual control. This device must allow the separation of the unit electrical equipment from the feeding, when needed.

This feeding sectioning device must be one of the following types:

a) a switch knife according to the European Rule EN 60947-3; in the category of use AC-23B or DC-23B;
b) a knife switch with an auxiliary contact which in any case causes, by cutoff devices, the load circuit break before the opening of the main contacts of the knife switch;
c) an automatic switch according to the European Rule EN 60947-2 suitable for isolation according to the European Rule EN 60947-3.

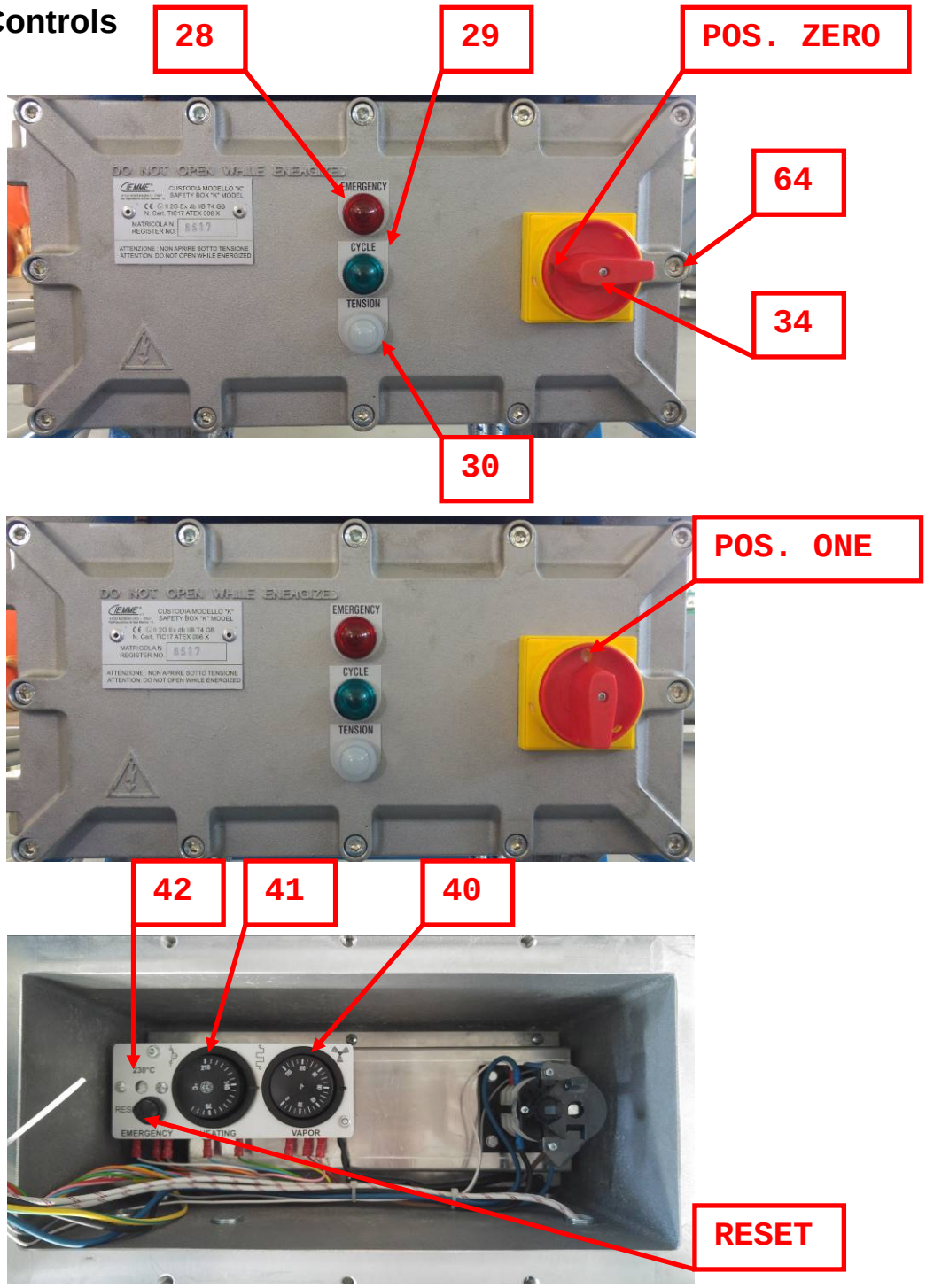
It is also necessary the presence of a safety device against leakage (earth-leakage circuit-breaker) calibrated at 30mA.

10.2 Recovered Solvent Pipe Connection

On the upper part of the unit there is a rilsan pipe, provisionally fixed to the structure by an adhesive tape.
This pipe has to be connected with the spout (45) and tightly fixed on it by the hose clamp.

	**Before providing for the set at work of the unit read the instructions handbook carefully and learn the terminology and the controls function of the unit in a correct and exhaustive way.**

11.0 Controls



28 Emergency warning light
34 Main switch with start function
29 Distillation warning light
64 Screw TCCE 88 8x20
30 Tension warning light
40 Distillation thermostat
41 Heating thermostat
42 Emergency thermostat with manual resetting

11.1 Thermostats Setting

The knobs for thermostats setting are placed inside the control box. For having access to the knobs unscrew therefore the screws (64) that fix the box cover and turn the lever of the switch (34) to position **0** (zero).

	**Before opening the control box cover turn the switch lever to position 0 (zero).** **The thermostats setting has to be executed without tension**.

The thermostats have to be set according to the solvents to be reclaimed.
It is therefore necessary to know the technical characteristics of the specific solvent to be distilled and in particular its boiling point.

	**The thermostats setting must be carried out by adequately instructed and authorized workers.**

11.2 Procedure For Thermostats Setting

- Open the control box cover unscrewing the screws (64).
- Set the distillation thermostat (40) at a temperature of 10÷15°C less than the boiling temperature of the solvent to be reclaimed.
- Set the heating thermostat (41) at a temperature of 45÷50°C more than the boiling temperature of the solvent to be reclaimed.

Approx. examples: at 22°C room temperature with nonpolluted products

Solvent: Trichloroethylene — Boiling temperature: 87°C

Distillation thermostat (40): 75°C
Heating thermostat (41): 135°C

Solvent: Acetone — Boiling temperature: 56°C

Distillation thermostat (40): 45°C
Heating thermostat (41): 105°C

	**After thermostats setting close the control box cover screwing all screws (64).**

Do not modify or replace, for any reason, the control box, the control box cover or the components that constitute the electrical equipment of the reclaiming unit. In effect the electrical equipment of the unit is constructed following the principles and the rules that regulate the construction of electrical equipments in potentially explosive places, and any modification or tampering might cause a decrease of the safety degree of the reclaiming unit.

12.0 Technical Data

MODEL K16TUV	
Charge capacity	18 Liters
Tank volume	24 Liters
Feeding tension	220 Volt/1/50 Hertz
Controls	low tension (24 Volt)
Heating element power	1,6 kW
Electric fan power	15 W
Max. installed power	1,71 kW
Max. input	8 A
Working temperature	50÷170°C
Heating	indirect, by diathermic oil
Diathermic oil capacity	13,3 Liters
Length	55 cm
Width	80 cm
Height	113 cm
Weight	84 Kg
Noise	65 dB
Ideal room temperature	5÷30°C

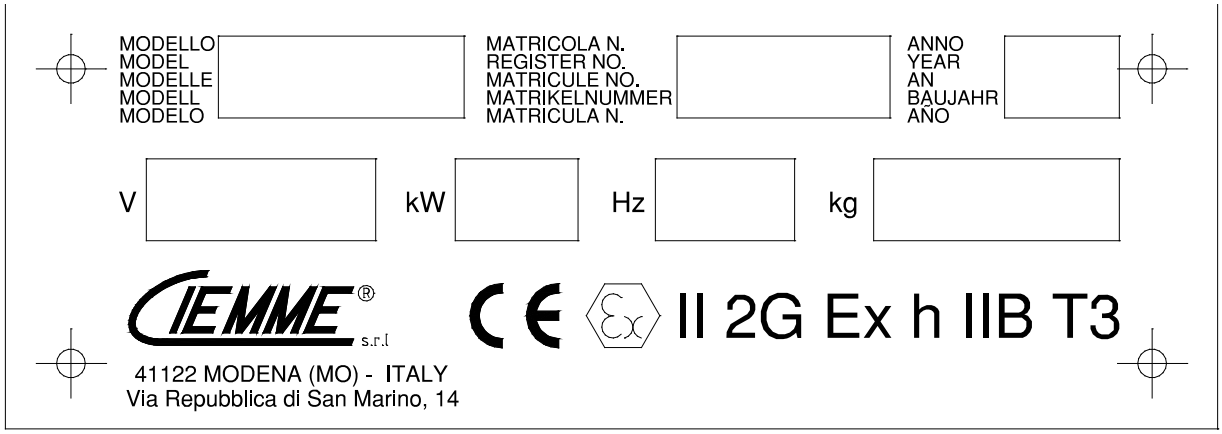
MODEL K30EX	
Charge capacity	37 Liters
Tank volume	49 Liters
Feeding tension	220 Volt/1/50 Hertz
Controls	low tension (24 Volt)
Heating element power	2,5 kW
Electric fan power	15 W
Max. installed power	2,61 kW
Max. input	12 A
Working temperature	50÷200°C
Heating	indirect, by diathermic oil
Diathermic oil capacity	15,4 Liters
Length	66 cm
Width	90 cm
Height	126 cm
Weight	100 Kg
Noise	65 dB
Ideal room temperature	5÷30°C

MODEL K60EX	
Charge capacity	67 Liters
Charge capacity with Vacuum	52 Litres
Tank volume	87 Liters
Feeding tension	220 Volt/1/50 Hertz
Controls	low tension (24 Volt)
Heating element power	3,2 kW
Electric fan power	15 W
Max. installed power	3,31 kW
Max. input	15 A
Working temperature	50÷200°C
Heating	indirect, by diathermic oil
Diathermic oil capacity	23,4 Liters
Length	66 cm
Width	96 cm
Height	126 cm
Weight	118 Kg
Noise	65 dB
Ideal room temperature	5÷30°C

CIEMME S.r.l. reserves the right to make on their own units all the improving modifications considered suitable, without altering the achieved safety standard.

12.1 Rating

COMPLETE MACHINE



EXPLOSION-PROOF BOX

Where:

CE	European Community Mark
Ex	Conformity Mark with reference to Directive 2014/34/UE and relative technical rules
II	Group II (equipment for surface Industries)
2	Equipment of Category 2
G	Equipment for use with GAS zone 1 and 2
Ex db	Type of protection applied i.e.construction safety -EN 60079-1 Level 1
IIB	Gas Group
T4	Temperature Class
Gb	Category 2 Gas

13.0 Use

13.1 Setting

It is necessary to have a container with a capacity of at least:

18 liters for the model K16TUV,
37 liters for the model K30EX,
67 liters for the model K60EX,

to be used for the distilled solvent collection. The material of this container must be compatible with the nature of the solvent to be distilled and of the related pollutants and must be provided with a sufficient conductivity.

It must be provided with two openings, the one for the distilled solvent inlet and the other one as breather of the solvent vapours.
The breather pipe must be taken outside.

The grounding must be executed before use.

	**The container of the distilled solvent must have two openings, the one for distilled solvent inlet and the other one as breather of the solvent vapours. The breather pipe must be taken outside. The grounding of the container must be executed.**

These operations must be executed before every distillation cycle and are necessary to assure that solvent vapours do not spread in closed places and to prevent from the creation of electrostatic charges bunching.

13.2 Check Of Vapour Pipes And Lid Seal

This check must be executed before every distillation cycle and is necessary to make sure of the absence of obstructions and leaks in the vapour pipes. It is also useful for ascertaining the good condition of the lid seal.
It is necessary to use a manometer to execute this check.

	**The lid seal is made of high temperatures and solvents resistant special material.** **Never replace this seal with another one, which does not come directly from CIEMME S.r.l. or from an authorized reseller.**

13.3 Check Procedure

- Cut out the electrical feeding of the unit by means of the general knife switch.
- Unscrew the knob (1).
- Open the lid (9).
- Blow compressed air at a pressure of 0,2 bar into the outlet pipe for the distilled solvent.
- Make sure that the blown air goes out freely from the inlet pipe of the vapour inside the tank.
- Close the lid (9).
- Screw the knob (1).
- Let open the compressed air until the manometer shows a pressure of 0,2 bar.
- Wait for 1 minute.
- Check that the manometer still shows a pressure of 0,2 bar.
- In case that the pressure on the manometer is lower than 0,2 bar do not carry out the distillation and apply to CIEMME S.r.l. or to the nearest authorized reseller.

14.0 Filling

Considering the generally dangerous nature of the solvents it is necessary to pay great attention during the stages of containers handling and reclaiming unit tank filling. It is advisable to execute the pouring-off from the container with care to avoid sprays that could be harmful by touch and/or smell.

Before filling the tank be sure that:

- The previous cycle is over.
- The unit is cool (room temperature).
- The tank (26) is empty and clean.

14.1 Filling Procedure

- Cut out the electrical feeding of the unit.
- Unscrew the knob (1).
- Open the lid (9).
- Fill the tank (26) with the solvent to be reclaimed without overshooting the level marked in its inside.
- Close the lid (9).
- Screw strongly the knob (1) again making sure that the lid seal adheres on the tank and on the lid edges.
- Place an empty and clean container for the distilled solvent collection, following the instructions of the paragraph 13.1 "Setting".

15.0 Working

Having made sure that the machine lid is closed efficaciously and the electric box is closed tightly, proceed with the working phase.

15.1 Cycle Starting Procedure

- Turn the switch (34) to position **1**.
- The white warning light (30), which indicates the presence of the mains voltage on the control board, switches on.
- Turn the switch (34) to position **START**.
- The switch (34), being unsteady, returns to position **1**.
- The green warning light (29), which shows the cycle carrying out, switches on.
- The electric fan starts working.

The reclaiming unit starts working automatically.
After a preheating time of the diathermic oil, varying according to the temperature set on the heating thermostat (41), the distilled product will start coming out.

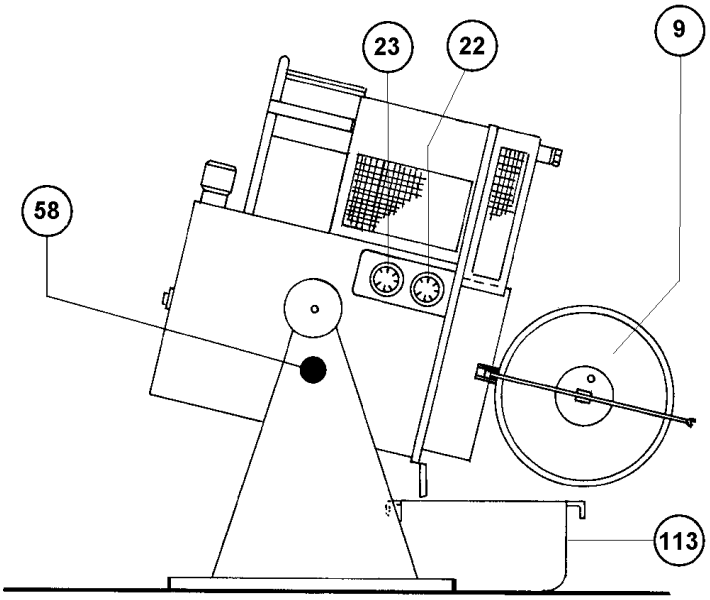
At the end of the cycle the unit cuts out automatically: the green warning light (29) switches off, the electric fan stops and the tension white warning light (30) keeps switching on.

	Never touch the upper part of the tank (26) during the distillation cycle. **Never open, for any reason, the lid (9) before the end of the distillation cycle.** **Never unscrew, for any reason, the lid knob (1) before the end of the distillation cycle.** **Never turn down, for any reason, the machine before the end of the distillation cycle.**

16.0 Residuum Discharge And Unit Cleaning

The tank (26) must be cleaned from residuum at the end of every distillation cycle.

	When cycle is over, check the diathermic oil temperature on thermometer (22), before opening lid (9) and carrying out the residuum discharge. **Open the lid to discharge the residuum with greatest care in relation to residuum temperature.**



16.1 Tank Cleaning Procedure

- Turn the lever of switch (34) to position **0** (zero).
- Cut out the electrical feeding of the machine by the general knife switch.
- Check the diatermic oil temperature, which is similar to the residuum temperature, on thermometer (22).
- Place a metallic container (113) of adequate capacity under the reclaiming unit.
- Open the lid (9) to carry out the residuum discharge with the greatest care in relation to the residuum temperature.

- Unscrew the knob (1).
- Open the lid (9).
- Pull the knob (58) to release the lateral stop.
- Turn down the reclaiming unit by the frontal handle placed at the base of the control box.
- Make sure that the automatic locking stop is completely inserted.
- Let flow all the residuum into the container (113), using, if necessary, a non metallic and not sharpened tool.
- Clean the interior of tank (26) from distillation residuum, using, if necessary, a non-metallic and not sharpened tool.
- Clean the tank upper edge and the lid seal from distillation residuum in order to guarantee a longer lifetime of the seal.
- Pull the knob (58) to release the lateral stop.
- Bring the unit again in work position acting on the frontal handle.
- Make sure that the automatic locking stop is completely inserted.

It is necessary to check the distillation residuum nature. The residuum, according to its chemical composition, can be classified as reusable material, special waste and toxic harmful waste or otherwise.
According to the kind of obtained residuum it is necessary to provide for reuse, stocking or elimination in observance of the laws in force in user's country.

17.0 Routine Maintenance

All maintenance operations must be carried out when the unit is cool (room temperature).

Before carrying out any check or maintenance operation it is obligatory to take following precautions:

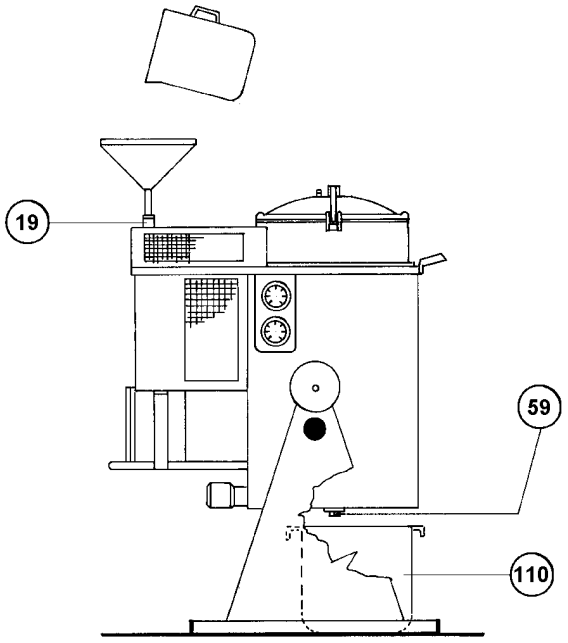
- Wear working gloves, protective glasses, protective faceplate and fireproof clothes.
- Make sure the tank is empty.
- Cut out the electrical feeding of the machine.

	**Every operation on the electrical equipment, even if easy, requires the labour of professionally skilled workers.**

18.0 Cleaning

At least once a month carry out the cleaning of condenser protective grid and wings keeping them free from dust and/or fouling to avoid the efficiency decrease of the vapour cooling system.
For cleaning it is sufficient to use compressed air.

19.0 Diathermic Oil Replacement



The diathermic oil must be changed every 1000 working hours, and in any case every year.
The used diathermic oil is **Diatherm Oil 80** or, anyhow, an oil with equivalent characteristics (for example Essotherm 550).
It is necessary to make sure that the oil does not have a humidity rate higher than 2%. In fact the presence of water in the diathermic oil, at higher temperatures than the water boiling temperature, causes the formation of steam inside the oil tank thus prejudicing the working of the machine.

19.1 Diathermic Oil Replacement Procedure

- Place under the reclaiming unit a container (110) with at least a capacity of:
  14 liters for the model K16TUV.
  16 liters for the model K30EX.
  25 liters for the model K60EX.
- Unscrew the drain plug (59).
- Unscrew and take off the breather plug (19).
- Let drain all the exhausted diathermic oil into the container.
- Screw the drain plug (59) again.
- Using a funnel pour through the filling opening of the breather plug (19):
  13,3 liters (11,7 Kg) new diathermic oil for the model K16TUV.
  15,4 liters (13,5 Kg) new diathermic oil for the model K30EX.
  23,4 liters (20,6 Kg) new diathermic oil for the model K60EX.
- Screw the breather plug (19) again.

Diathermic oil in excess may possibly come out from the diathermic oil breather plug (19) during the distillations following the replacement, especially if the heating thermostat (41) is set at higher temperatures than 160°C.
In this case clean the breather plug (19) from the come out diathermic oil.

20.0 Warranty

The reclaiming unit has 12 (twelve) months warranty, starting from delivery date.

In case of reclaiming unit or its components being faulty, this/these have to be sent FREE OF CHARGE to CIEMME S.r.l. or to its local reseller.
If the contested object appears faulty, not for wrong use, it will be repaired or replaced under warranty and sent back by CIEMME S.r.l. or its local reseller CARRIAGE FORWARD.

The warranty lapses in case of wrong use of the unit and non-observance of the operating and maintenance instructions, careless, non-payment.

The PTFE lining is never included in the warranty.

The warranty does not cover the wearing parts, such as switches, remote control switches, warning lights, seals, etc.

21.0 Troubles, Causes And Remedies

Operations on the electrical equipment, even if easy, require the labour of professionally skilled workers.

PROBLEMS	POSSIBLE SOLUTIONS
a) The white warning light (30) does not switch on and the reclaiming unit does not start working.	1) Verify the effective presence of electric power in the power grid. 2) Check if the general knife switch of the electrical system is on. 3) Check the state of the fuses. 4) Check the state of the fuse, which is placed inside the control box, on the right-bottom of the transformer inside a black fuse carrier with pressure-cap.
b) The unit switches on, works, but does not heat.	1) Check if the thermostats' setting is correct (see paragraph 11.1 "Thermo-stats setting"). 2) Verify the functionality of the heating element, checking the reclaiming unit inputs by means of an amperometric measurer.
c) The percentage composition of the mixture solvent-pollutant is not known exactly.	1) Set the heating thermostat (41) at 160°C. 2) Set the distillation thermostat (40) at about 90°C. 3) Wait for the outcoming of the distilled solvent. After about ten minutes from distillation beginning turn the distilla-tion thermostat (40) knob anticlock-wise to "0", then turn it slowly clock-wise until the green warning light (29) and the electric fan switch off simulta-neously.

	4) Read on the knob of the distillation thermostat (40) the switching off temperature, which corresponds to the solvent boiling temperature. 5) Execute the setting of the thermostats (see paragraph 11.1 “Thermostats setting”) using the taken temperature to obtain the perfect working of the reclaiming unit and the automatic switching off at the end of the cycle.
d) The unit does not distill all polluted solvent content.	1) Check if the thermostats’ setting is correct (see paragraph 11.1 “Thermo-stats setting”).
e) The solvent comes out hot.	1) Check if the electric fan works correctly. 2) Check if the condenser protective grid and wings are obstructed by dust, fouling etc. 3) Check whether the thermostats’ setting is correct (see paragraph 11.1 "Thermostats setting").
f) The reclaiming unit works but no reclaimed solvent comes out.	1) Check if the condensing coil is ob-structed because of solvent tank overfilling. For checking it is necessary to: a) Open the lid (9); b) Blow air at a pressure of 0,2 bar inside the outlet pipe for the reclai-med solvent checking if there is an adequate air passage. If not, apply to CIEMME S.r.l. or to the nearest authorized reseller for the vapour duct disassembly and the obstructions removal. 2) Check the lid seal tightness. For checking, it is necessary to: a) Close the lid (9); b) Blow air at a pressure of 0,2 bar inside the outlet pipe for the reclai-med solvent checking if the lid seal leaks. In this case apply to CIEMME S.r.l. or to the nearest authorized reseller for the lid seal replacement.
g) The reclaimed solvent comes out dirty.	1) The solvent tank (26) has been filled over the level. 2) The dirty solvent is mixed with particularly foamy products thus making necessary a lower filling of the tank. 3) The condensing coil is partially

	obstructed. It is possible to clean it carrying out a distillation with about 5 litres of clean solvent.
h) The reclaiming unit goes in emergency.	1) See paragraph 11.1. “Thermostats setting”.
i) Vapour comes out from the lid.	1) Check the gripping of the lid. 2) Check the state of the seal. 3) Check if the vapour passages are free. 4) Check that the outlet pipe for the distilled solvent is not dipped in the distilled solvent.

22.0 Putting Aside For A Long Period

If the machine is not going to be used for a longer period than 60 days execute the following operations:

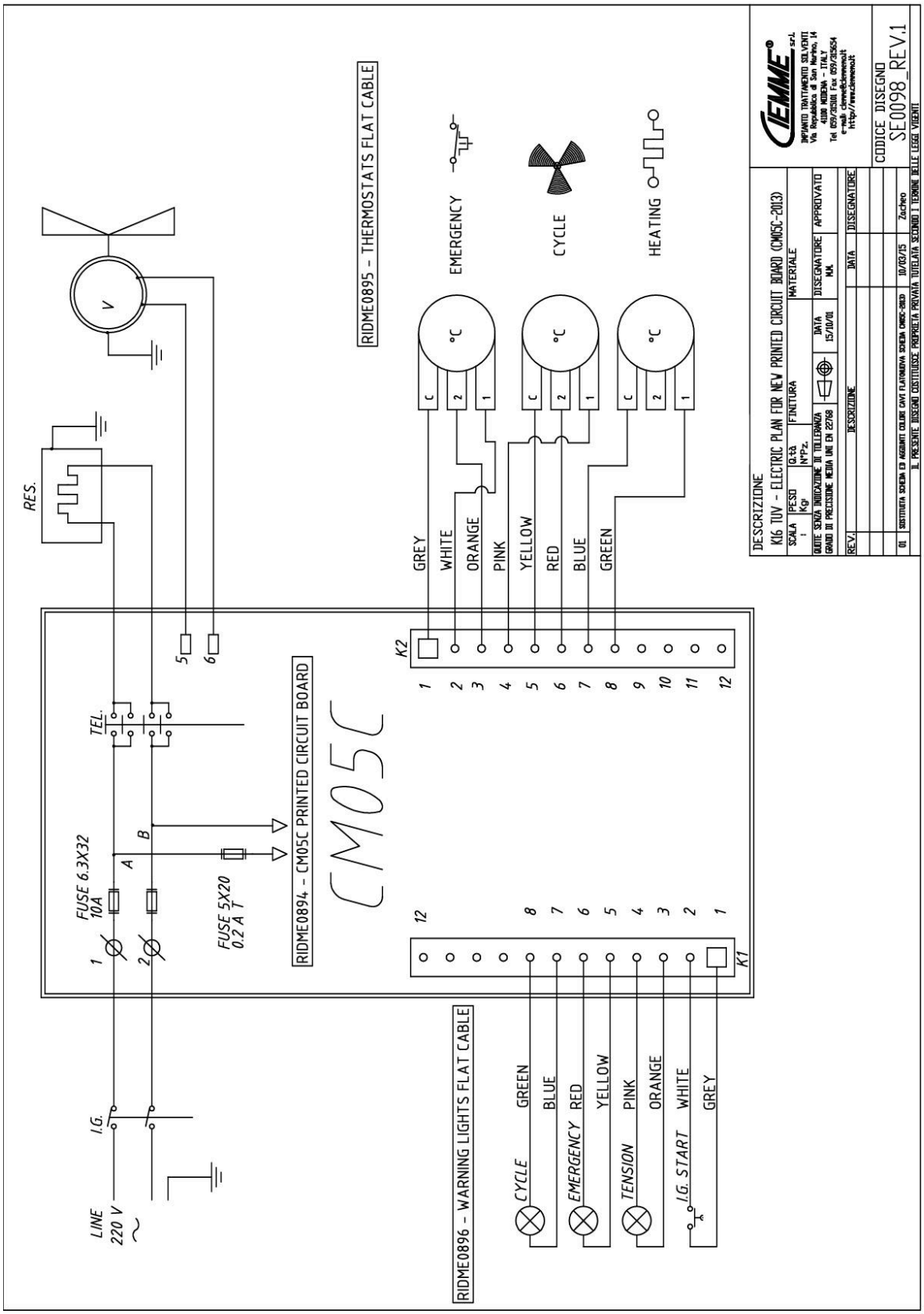
- Cut off the unit from the electrical connection and protect the cable properly.
- Drain off and clean thoroughly the reclaiming unit tank.
- Take off the solvent outlet pipe after loosening the hose clamp.
- Do not leave the unit exposed to heat sources or to the sun, since these conditions could dry seals and pipes.

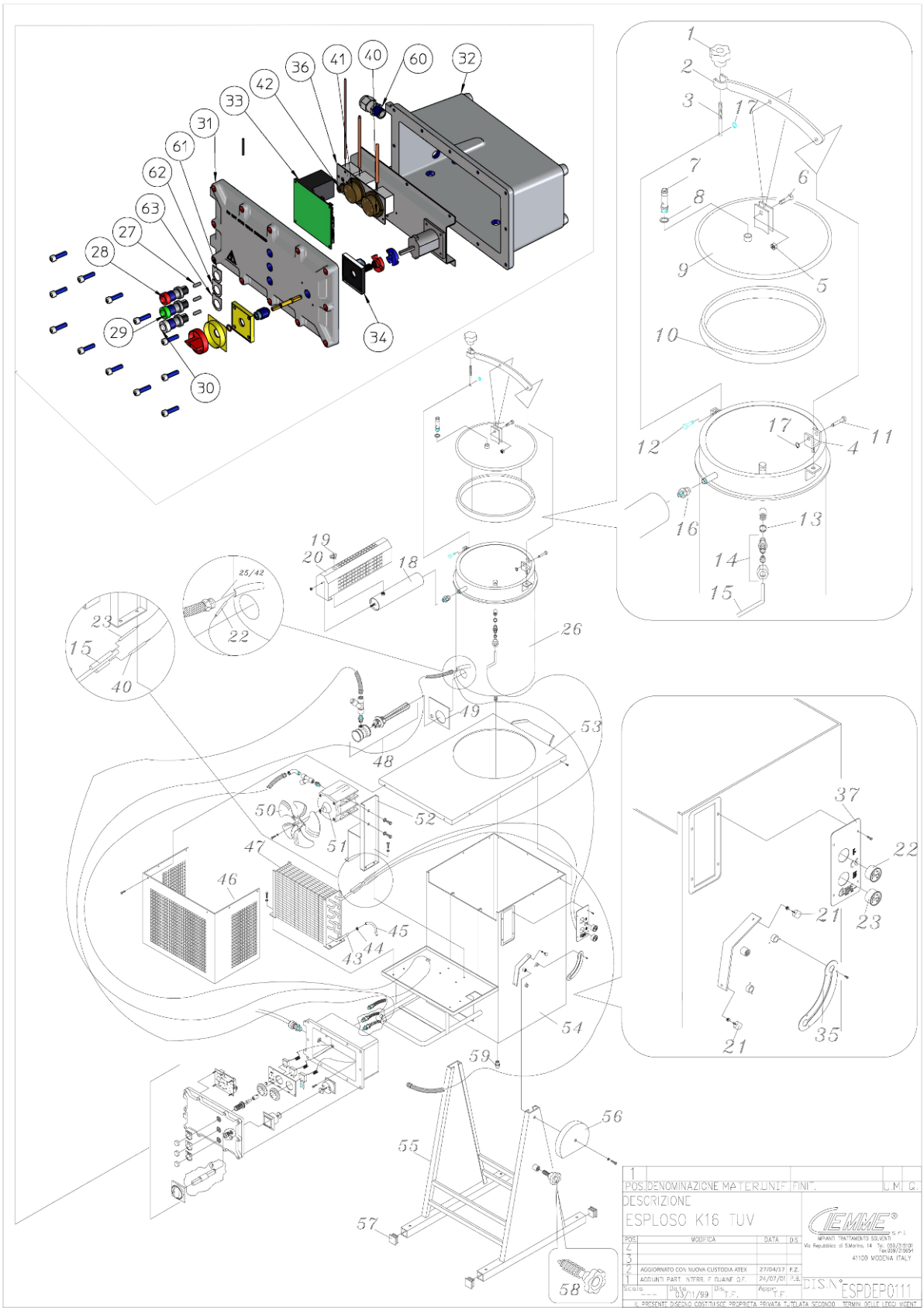
23.0 Scrapping

Having to cast off the machine and wishing to eliminate it, it will be necessary to consider it as special waste, separate it in homogeneous parts and dispose off according to effective local laws.

MODEL K16TUV

PART RESERVED FOR SKILLED WORKERS OR TECHNICAL SERVICE


RIDME0895 - THERMOSTATS FLAT CABLE
EMERGENCY
CYCLE
HEATING
GREY
WHITE
ORANGE
PINK
YELLOW
RED
BLUE
GREEN
K2
K1
RES.
TEL.
I.G.
FUSE 6.3X32 10A
FUSE 5X20 0.2 A T
RIDME0894 - CM05C PRINTED CIRCUIT BOARD
CM05C
RIDME0896 - WARNING LIGHTS FLAT CABLE
CYCLE
EMERGENCY
TENSION
I.G. START
LINE 220 V
DESCRIZIONE
K16 TUV - ELECTRIC PLAN FOR NEW PRINTED CIRCUIT BOARD (CM05C-2013)
CODICE DISEGNO
SE0098_REV.1


DESCRIZIONE
ESPLOSO K16 TUV
DISN° ESPDEP0111

Exploded view key for Solvent Reclaiming Unit Model K16 TUV

Pos.	DESCRIPTION	CODE	Q.ty
1	Knob diam.75 M12 with s/s washer D.12	RIDMV0002	1
2	Lid kingbolt	RIDLX0060	1
3	Knob screw M12x145	RIDVV0006	1
4	Lid kingbolt support	RIDLX0013	1
5	Self-locking nut	RIDVD0012	1
6	Screw TE	RIDVM0024	1
7	Safety valve 3/8”	RIDRF0425	1
8	Copper gasket 3/8”	RIDRF0020	1
9	Lid diam. 250 complete	RIDGR0034	1
*10	Rubber lid seal diam. 250	RIDMI0012	1
*10	PTFE lid seal diam. 250	RIDMI0019	1
11	Pin diam. 8x35	RIDVV0004	1
12	Pin diam. 8x26	RIDVV0042	1
13	Copper gasket 1/2” G	RIDRF0021	1
14	Straight fitting 1/2” diam. 16	RIDRF0030	1
15	Condenser inlet pipe	----------	----------
16	Brass union 1/2” MF straight	RIV0033RF	1
17	Snap ring diam. 8	RIDVV0054	2
18	Oil expansion tank	RIDSR0457	1
19	Breather plug 1/2” G dipstick L=80	RIDMV0034	1
20	Expansion tank protection	RIDSR0458	1
21	Vibration damper type P3020	RIDOM0263	2
22	Thermometer T52MS 50-250°C	RIDME0430	1
23	Thermometer T56 C. 0-200°C	RIDME0135	1
24	Knob for thermostat 0-120°C	RIDMV0027	1
25	Knob for thermostat 0-210°C	RIDMV0026	1
26	Tank K16TUV-95	RIDSR0488	1
27	Bulb BA9 30V 3W	RIDME0013	3
28	Red warning light	RIDME0011	1
29	Green warning light	RIDME0010	1
30	White warning light	RIDME0012	1
31	Control box cover EX-TUV	RIDDS1480	1
32	Control box K30-60	RIDDS1481	1
33	Printed circuit board CM05C	RIDME0115	1
34	Main switch 4G16-15-OU	RIDME0426	1
35	Slide track K30/60-95	RIDDS0167	1
36	Thermostat plate CE 97	RIDTC0055	1
37	Thermometers side plate-95	RIDTC0039	1
38	Cone-shaped nipple 1/2”	RIDRF0103	3
39	Flame trap union 1/2” EYS 1	RIDME0022	3
40	Body thermostat 0-120°C	RIDME0335	1
41	Body thermostat 0-210°C	RIDME0334	1
42	Thermostat 230°C LS1	RIDME0428	1
43	Distilled solvent outlet pipe	----------	----------
44	Hose clamp 8-19	RIDVV0009	1
45	RILSAN pipe 10-12	RIDTG0009	1
46	Condensing coil protective grid K16TUV-95	RIDSR0454	1
*47	Complete copper condensing coil K16TUV ‘95	RIDGM0118	1
*47	Complete stainless steel condensing coil K16TUV	RIDGM0073	1

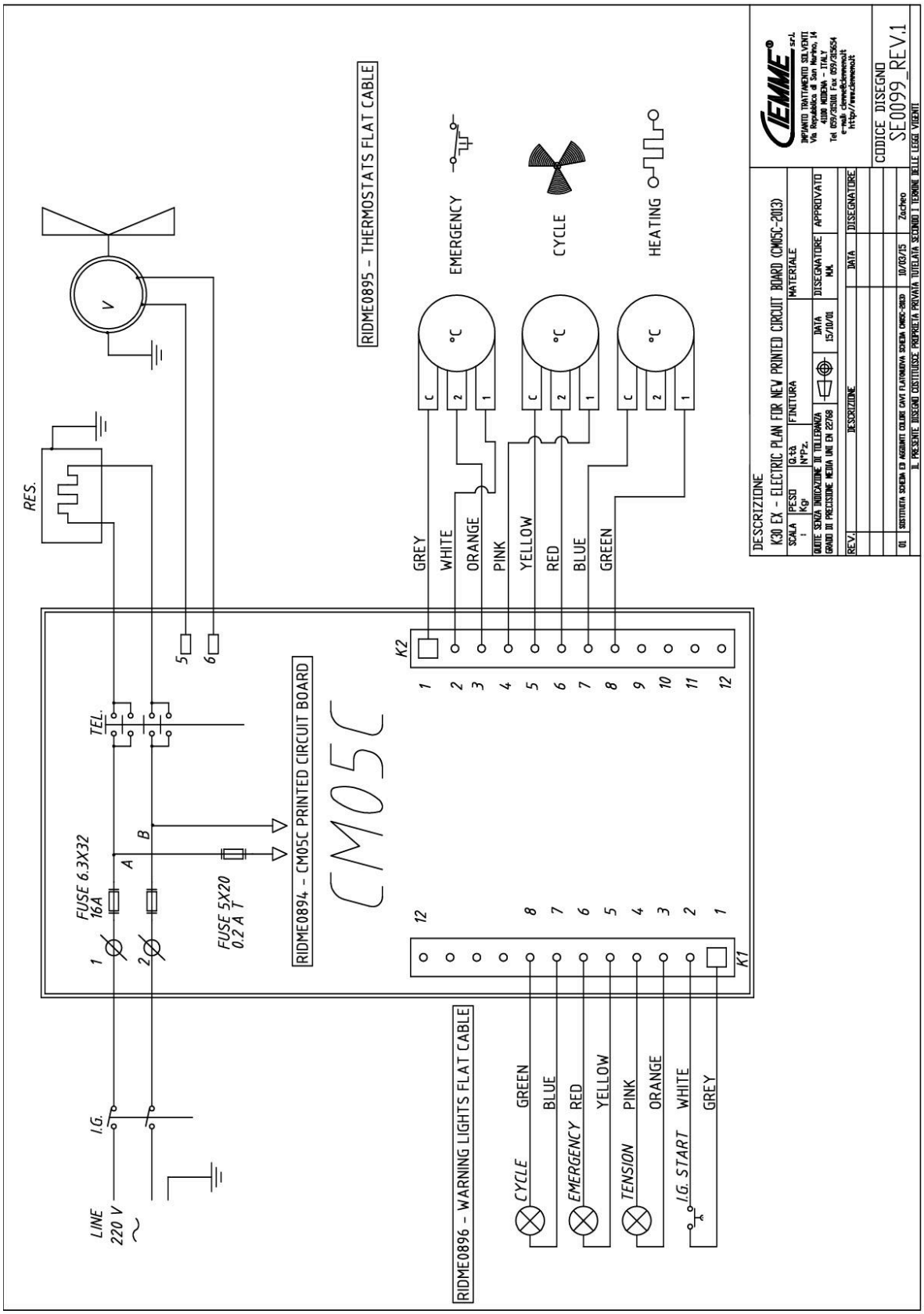
Exploded view key for Solvent Reclaiming Unit Model K16 TUV

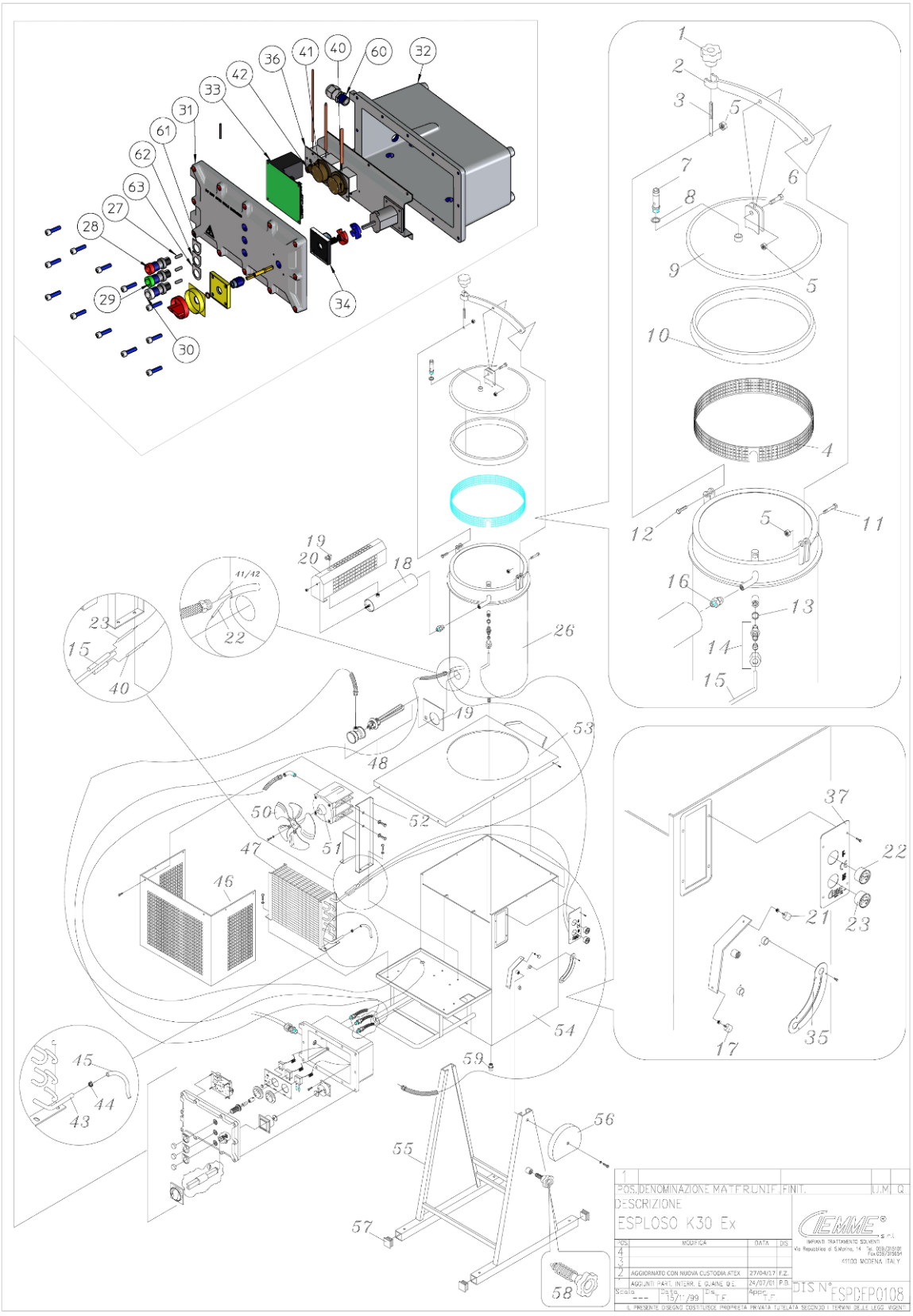
Pos.	DESCRIPTION	CODE	Q.ty
48	Heating element 1600W 220V Ex single-phase	RIDME0217	1
49	Heating element cover K16TUV	RIDLF0094	1
50	Fan diam. 300-22	RIDME0018	1
51	Motor type ADPE 40 220V 50Hz	RIDME0016	1
52	Electric fan support	RIDSR0004	1
53	Complete cover K16TUV-95	RIDSR0455	1
54	Machine casing K16TUV-95	RIDSR0502	1
55	Basement K16TUV-95	RIDSR0501	1
56	Vibration dampers protection casing K16TUV	RIDLF0104	1
57	PVC plug 40x40	RIDMV0016	4
58	Basement complete knob	RIDSR0448	1
59	Drain plug 3/8” F.	RIDRF0028	1
60	Cable clamp PNA1 1/2” G	RIDME0388	1
61	Plate K/EV “EMERGENCY”	RIDTC0086	1
62	Plate K/EV “CYCLE”	RIDTC0087	1
63	Plate K/EV “TENSION”	RIDTC0088	1

* = Alternative depending on the model

MODEL K30EX

PART RESERVED FOR SKILLED WORKERS OR TECHNICAL SERVICE


RIDME0895 - THERMOSTATS FLAT CABLE
EMERGENCY
CYCLE
HEATING
GREY
WHITE
ORANGE
PINK
YELLOW
RED
BLUE
GREEN
K2
K1
RES.
TEL.
I.G.
FUSE 6.3X32 16A
FUSE 5X20 0.2 A T
RIDME0894 - CM05C PRINTED CIRCUIT BOARD
CM05C
RIDME0896 - WARNING LIGHTS FLAT CABLE
CYCLE
EMERGENCY
TENSION
I.G. START
LINE 220 V
DESCRIZIONE
K30 EX - ELECTRIC PLAN FOR NEW PRINTED CIRCUIT BOARD (CM05C-2013)
CODICE DISEGNO
SE0099_REV.1


POS. DENOMINAZIONE MATERIALI FINITI U.M. Q.
DESCRIZIONE
ESPLOSO K30 Ex
DIS N° ESPDEP0108

Exploded view key for Solvent Reclaiming Unit Model K30 EX

Pos.	DESCRIPTION	CODE	Q.ty
1	Knob V1/70/BFP-M10	RIDMV0001	1
2	Lid kingbolt	RIDLX0029	1
3	Knob screw cm. 8,5	RIDVV0013	1
4	Tank protection K30	RIDSR0419	1
5	Self-locking nut	RIDVD0012	3
6	Screw TE	RIDVM0024	1
7	Safety valve 3/8”	RIDRF0425	1
8	Copper gasket 3/8”	RIDRF0020	1
9	Lid diam. 300 complete	RIDGR0011	1
*10	Rubber lid seal diam. 300	RIDMI0010	1
*10	PTFE lid seal diam. 300	RIDMI0020	1
11	Pin 8x25	RIDVM0024	1
12	Pin 8x30	RIDVM0021	1
13	Copper gasket 1/2” G	RIDRF0021	1
14	Straight fitting 3/4” diam. 20	RIDRF0300	1
15	Condenser inlet pipe	----------	--------
16	Brass union 1/2” MF straight	RIV0033RF	1
17	Vibration damper type FF 2520	RIDOM0334	1
18	Oil expansion tank	RIDSR0422	1
19	Breather plug 1/2” G dipstick L=80	RIDMV0034	1
20	Expansion tank protection	RIDSR0417	1
21	Vibration damper type P2520	RIDOM0314	1
22	Thermometer T52MS 50-250°C	RIDME0430	1
23	Thermometer T56 C. 0-200°C	RIDME0135	1
24	Knob for thermostat 0-120°C	RIDMV0027	1
25	Knob for thermostat 0-210°C	RIDMV0026	1
26	Tank K30	RIDSR0424	1
27	Bulb BA9 30V 3W	RIDME0013	3
28	Red warning light	RIDME0011	1
29	Green warning light	RIDME0010	1
30	White warning light	RIDME0012	1
31	Control box cover EX-TUV	RIDDS1480	1
32	Control box K30-60	RIDDS1481	1
33	Printed circuit board CM05C	RIDME0115	1
34	Main switch 4G16-15-OU	RIDME0426	1
35	Slide track K30/60	RIDDS0167	1
36	Thermostat plate CE 97	RIDTC0055	1
37	Thermometers side plate-95	RIDTC0039	1
38	----------	----------	--------
39	----------	----------	--------
40	Body thermostat 0-120°C	RIDME0335	1
41	Body thermostat 0-210°C	RIDME0334	1
42	Thermostat 230°C LS1	RIDME0428	1
43	Distilled solvent outlet pipe	----------	--------
44	Hose clamp 8-19	RIDVV0009	1
45	RILSAN pipe 10-12	RIDTG0009	1
46	Condensing coil protective grid K30	RIDLF0037	1
*47	Complete copper condensing coil K30	RIDGM0263	1
*47	Complete stainless steel condensing coil K30	RIDGM0264	1

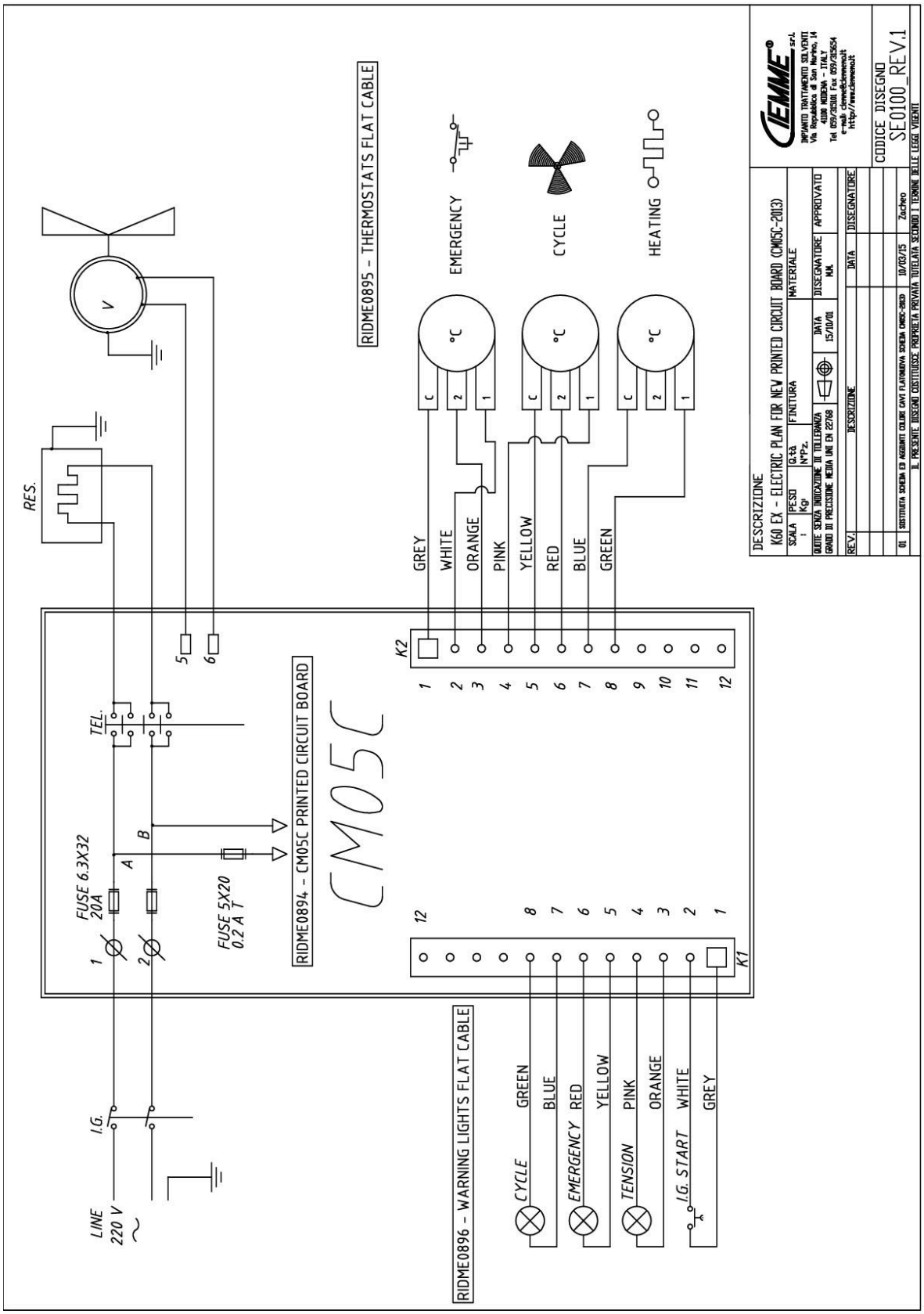
Exploded view key for Solvent Reclaiming Unit Model K30 EX

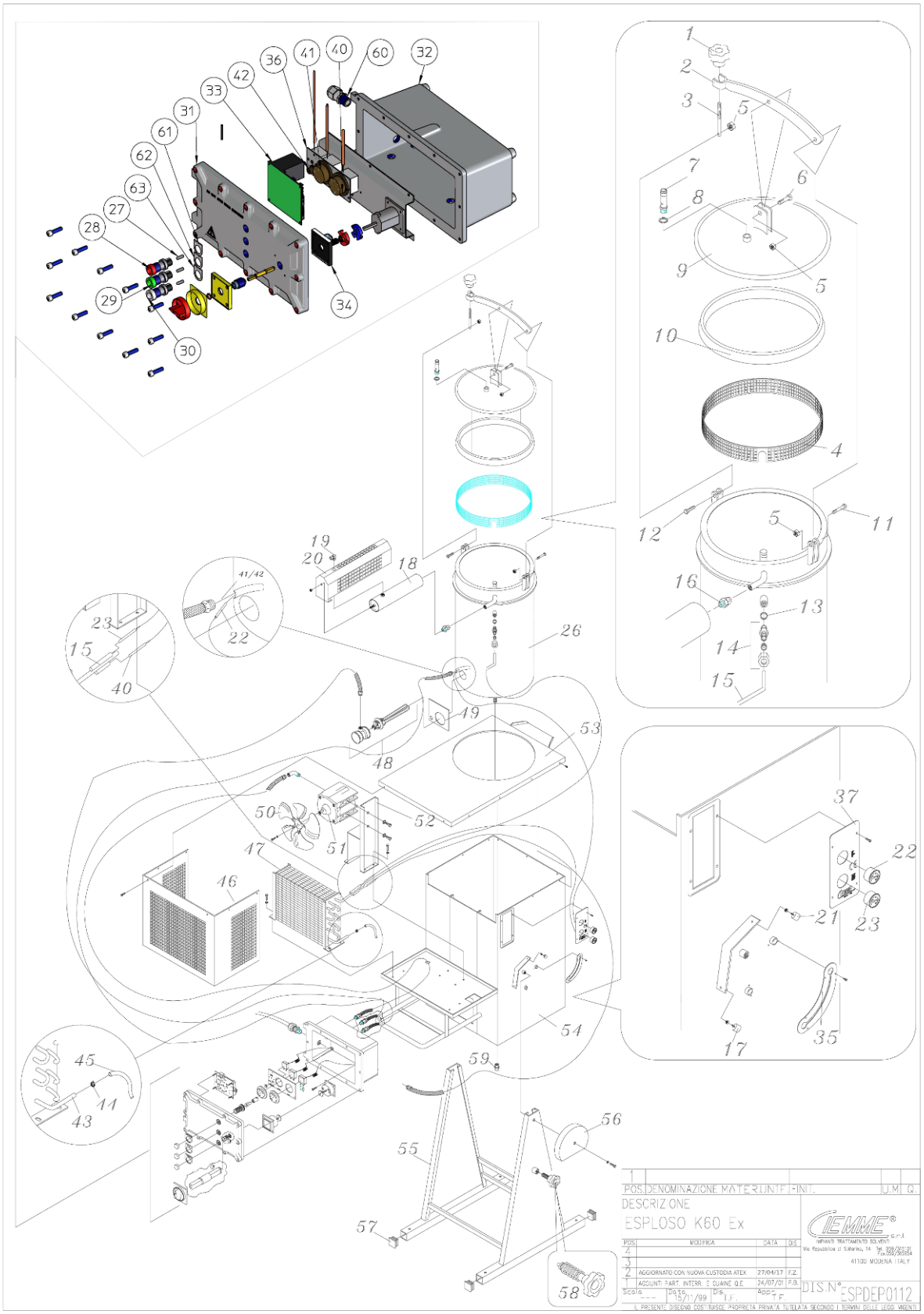
Pos.	DESCRIPTION	CODE	Q.ty
48	Heating element 2500W 220V Ex single-phase	RIDME0132	1
49	Heating element cover K30	RIDLF0055	1
50	Fan diam. 300-22	RIDME0018	1
51	Motor type ADPE 40 220V 50Hz	RIDME0016	1
52	Electric fan support	RIDSR0004	1
53	Complete cover K30	RIDSR0018	1
54	Machine casing K30-95	RIDSR0421	1
55	Basement K30	RIDSR0416	1
56	Vibration dampers protection casing K30	RIDLF0100	1
57	PVC plug 40x40	RIDMV0016	4
58	Basement complete knob	RIDSR0448	1
59	Drain plug 3/8” F.	RIDRF0028	1
60	Cable clamp PNA1 1/2” G	RIDME0388	1
61	Plate K/EV “EMERGENCY”	RIDTC0086	1
62	Plate K/EV “CYCLE”	RIDTC0087	1
63	Plate K/EV “TENSION”	RIDTC0088	1

* = Alternative depending on the model

MODEL K60EX

PART RESERVED FOR SKILLED WORKERS OR TECHNICAL SERVICE


RIDME0895 – THERMOSTATS FLAT CABLE
EMERGENCY
CYCLE
HEATING
GREY
WHITE
ORANGE
PINK
YELLOW
RED
BLUE
GREEN
K2
K1
RES.
TEL.
I.G.
FUSE 6.3X32 20A
FUSE 5X20 0.2 A T
RIDME0894 – CM05C PRINTED CIRCUIT BOARD
CM05C
LINE 220 V
RIDME0896 – WARNING LIGHTS FLAT CABLE
CYCLE
EMERGENCY
TENSION
I.G. START
DESCRIZIONE
K60 EX – ELECTRIC PLAN FOR NEW PRINTED CIRCUIT BOARD (CM05C-2013)
CODICE DISEGNO
SE0100_REV.1


POS. DENOMINAZIONE MATER. UNITÀ FINIT. U.M. Q.
DESCRIZIONE
ESPLOSO K60 Ex
DIS.N° ESPDEP0112

Exploded view key for Solvent Reclaiming Unit Model K60 EX

Pos.	DESCRIPTION	CODE	Q.ty
1	Knob V1/70/BFP-M10	RIDMV0001	1
2	Lid kingbolt	RIDLX0036	1
3	Knob screw CM. 8,5	RIDVV0013	1
4	Tank protection K60	RIDSR0418	1
5	Self-locking nut	RIDVD0012	3
6	Screw TE	RIDVM0024	1
7	Safety valve 3/8”	RIDRF0425	1
8	Copper gasket 3/8”	RIDRF0020	1
9	Lid diam. 400 complete	RIDGR0014	1
*10	Rubber lid seal diam. 400	RIDMI0013	1
*10	PTFE lid seal diam. 400	RIDMI0021	1
11	Pin diam. 8x25	RIDVM0024	1
12	Pin diam. 8x30	RIDVM0021	1
13	Copper gasket 1/2” G	RIDRF0021	1
14	Straight fitting 3/4” diam. 20	RIDRF0300	1
15	Condenser inlet pipe	----------	--------
16	Brass union 1/2” MF straight	RIV0033RF	1
17	Vibration damper type FF 2520	RIDOM0334	1
18	Oil expansion tank K60	RIDSR0422	1
19	Breather plug 1/2” G dipstick L=80	RIDMV0034	1
20	Expansion tank protection K60	RIDSR0417	1
21	Vibration damper type P2520	RIDOM0314	1
22	Thermometer T52MS 50-250°C	RIDME0430	1
23	Thermometer T56 C. 0-200°C	RIDME0135	1
24	Knob for thermostat 0-120°C	RIDMV0027	1
25	Knob for thermostat 0-210°C	RIDMV0026	1
26	Tank K60/95 H=790	RIDSR0423	1
27	Bulb BA9 30V 3W	RIDME0013	3
28	Red warning light	RIDME0011	1
29	Green warning light	RIDME0010	1
30	White warning light	RIDME0012	1
31	Control box cover EX-TUV	RIDDS1480	1
32	Control box K30-60	RIDDS1481	1
33	Printed circuit board CM05C	RIDME0115	1
34	Main switch 4G16-15-OU	RIDME0426	1
35	Slide track K30/60-95	RIDDS0167	1
36	Thermostat plate CE 97	RIDTC0055	1
37	Thermometers side plate-95	RIDTC0039	1
38	----------	----------	--------
39	----------	----------	--------
40	Body thermostat 0-120°C	RIDME0335	1
41	Body thermostat 0-210°C	RIDME0334	1
42	Thermostat 230°C LS1	RIDME0428	1
43	Distilled solvent outlet pipe	----------	--------
44	Hose clamp 8-19	RIDVV0009	1
45	RILSAN pipe 10-12	RIDTG0009	1
46	Condensing coil protective grid K60	RIDLF0037	1
*47	Complete copper condensing coil K60	RIDGM0094	1
*47	Complete stainless steel condensing coil K60	RIDGM0110	1

Exploded view key for Solvent Reclaiming Unit Model K60 EX

Pos.	DESCRIPTION	CODE	Q.ty
48	Heating element 3200W 220V Ex single-phase	RIDME0131	1
49	Heating element cover K60	RIDLF0055	1
50	Fan diam. 300-22	RIDME0018	1
51	Motor type ADPE 40 220V 50Hz	RIDME0016	1
52	Electric fan support	RIDSR0004	1
53	Complete cover K60	RIDSR0021	1
54	Machine casing K60-95	RIDSR0415	1
55	Basement K60-95	RIDSR0416	1
56	Vibration dampers protection casing K60-95	RIDLF0100	1
57	PVC plug 40x40	RIDMV0016	4
58	Basement complete knob	RIDSR0448	1
59	Drain plug 3/8” F.	RIDRF0028	1
60	Cable clamp PNA1 1/2” G	RIDME0388	1
61	Plate K/EV “EMERGENCY”	RIDTC0086	1
62	Plate K/EV “CYCLE”	RIDTC0087	1
63	Plate K/EV “TENSION”	RIDTC0088	1

* = Alternative depending on the model