UNIC INTERNATIONAL
The professional's choice

Solvent Recycler Operating Instructions

USD-45XPE
USD-60XPE

What it should come with

SDB-62 - 60Ltr Recycler Bags (USD-60XPE) x 10
SDB-25 - 25Ltr Recycler Bags (USD-45XPE) x 10
SDH-62 - Bag Retaining Ring (USB-60XPE) x 1
SDH-25 - Bag Retaining Ring (USD-45XPE) x 1
SDO-140E - Diathermic Oil

Recommended Accessories:

Solvent Collection Tank

USR 25/60
Solvent Recycler Service Kit

Also available:

Vacuum Tanks

We also recommend:

New Spray Gun Cleaner Range

Paint Can Crusher

Paper Compactor

WARNING: DO NOT SMOKE OR USE OPEN FLAME NEAR CABINET.

Setting the machine up

1. Position the machine in a well ventilated area, natural or artificial. The machine is suitable for placement in hazardous areas zones 1 and 2 or for non-hazardous areas.
2. If the unit is placed in a non-hazardous area ensure there is an exclusion zone of 1m all around the unit, to prevent any problems with flammable vapours.
3. The machine should be fitted with a suitable flameproof plug and socket, for hazardous flammable atmospheres. The type of socket fitted is dependant on the atmosphere.
4. The machine should be correctly earthed.
5. It is recommended that a suitable bunding be supplied, of equal capacity to the recovery unit and resistant to the contaminants and solvents.
6. If a steel drum is used to collect the recovered solvent ensure this is earthed to the machine.

SAFETY CHECKS TO BE UNDERTAKEN BEFORE RECYCLING

1. Ensure the machine is correctly earthed.
2. If using a metal collection drum, ensure the drum is earthed to the machine.
3. The machine is set to 175ºC for standard thinners, unless requested otherwise. If alternative solvents are to be recycled always consult your supplier or manufacturer for advice on temperature setting.

WARNING:
The machine should be located in a well- ventilated explosion proof area (Zone 1/2).

PLEASE NOTE:
The handling of distillation residue can in some cases become the subject of a section 17 form and the removal by a specialist company. If in doubt check with your local waste authority.

MAINTENANCE CHECK:
Regularly check oil fluid level, it should be on the flat area of the dipstick. HEAT-TRANSFER OIL MUST BE CHANGED EVERY 500 WORKING HOURS OR EVERY 6 MONTHS.

Using the machine

OPERATION PRINCIPLE:
Clean solvent is obtained through a distillation process. Polluted solvents are heated up and brought to boiling point. The boiling starts at approximately 90°C and finishes at 150/175°C. The wide temperature range is needed because of the properties within solvent, which have different boiling points. The resulting clean and clear vapour given off by the boiling process passes through a condenser unit and cooled down by an electric fan. The vapour is converted back into a liquid and collected via an outlet pipe into a clean drum.

1. Remove aluminium plug/dipstick on top of machine and pour oil provided into dipstick hole (USD-45XPE 7.5 litres of the 10 litres provided/ USD-60XPE 14 Litres of the 20 litres provided if not already pre-installed) OIL LEVEL SHOULD BE ON THE FLAT AREA OF THE DIPSTICK.

2. Fit electrical plug to mains cable from machine and connect to a properly earthed A C supply. The Electrical connection **MUST** comply with regulations applicable to the area the machine is being used in, as a minimal precaution a flame proof plug and socket must be used.

3. Remove Lidded Cover to machine by unscrewing black knurled knob and releasing cover arm.

4. Remove stainless steel flat lid.

5. Fit plastic recycler bag inside of stainless steel drum retaining neck of bag in position with spring bag retaining ring. Fit steel ring below flange inside of drum. **Do not cover hole leading to condenser unit.**

6. Pour in 25 Litres (USD-45XPE) / 60 Litres (USD-60XPE) of solvent – fill to level indicator on bag retaining ring. **Do not under or over fill.**

7. Fit the two nylon pipes to the outlet of the machine, as you look at the end of the machine the pipe on the top is the emergency pressure relief.

8. Press the Green ON button. The green and amber LED lights will come on and the cooling fan starts operating. The amber LED light will go off and on during the cycle, but will remain off at the end of the cycle.

9. At the end of the cycle wait thirty minutes before switching off unit to allow the fan to condense the last vapour residue.

10. **Do not open the machine lid until the temperature shown by the lid thermometer has dropped below 30°C.** It is advisable to wait approximately one hour after the yellow LED lights go off. Early opening of lid can cause premature lid seal failure.

11. Remove plastic recycler bag from stainless steel drum. If the residue is hard it can in most cases be disposed of with your solid waste. (Please always check with your local authority. If residue is in liquid form this must be stored in a container for removal by a licensed authorised company).

12. Any spilt waste must be cleaned from the top of the machine before use as this can cause premature failure of the lid seal.

PLEASE NOTE: If the cycle ends before the expected time, the material to be distilled either contains a high amount of residue or un-distillable components.

WARNING: This equipment produces flammable vapour and the area in which it is located must be subject to classification of hazardous areas for potentially explosive atmospheres, in the UK this will be in accordance with the DSEAR and ATEX 94/9/EC Directive regulations.

The Unic range of machines are Category 2 equipment that is suitable for Apparatus Groups (Gas groups) IIA, IIB and IIC, with a temperature class of T4. Certified to ATEX 94/9/EC and IECEx Directives.

ELECTRICAL CONTROL BOX:
The control box is an explosion proof type box with main switch. The main switch has a single position, which switches the current on and starts the cycle.

There are three LED-warning lights. Green for mains on, yellow for cycle operation, and red for emergencies. The box also contains a 220/240/24 volt transformer for the control circuit, three electro mechanical thermostats, one is factory set at 175°C to stop an automatic cycle, the other a safety thermostat which acts in case of failure of the first thermostat. The third thermostat controls the fan and condenser unit. In cases of fan failure the unit is automatically switched off. If a thermostat fails the cycle stops and the red light comes on. A power relay supplies the heating element, which is contained in an explosion proof casing.

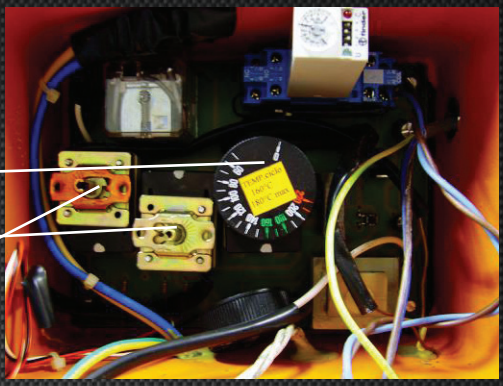
These controls are inside the control box.

Controls
On/Off Switch
OFF
ON

Heating Element
Maximum Setting 175°C

Safety Control
for cooling fan & condenser set at 50°C

Emergency Thermostat
Set at maximum 220°C. The reset button is a green button marked reset on circuit board.



Premature Lid Seal Failure

1. Failure of Lid Seal can be caused by a number of factors.
2. When filling machine solvent splashes are left on top surface, all solvent must be wiped away before closing lid and the top surface kept as new.
3. On opening the lid after cooking cycle the condensation formed by solvent must be wiped away with a dry cloth to prevent it running down lid and collecting on rubber lid seal.
4. If the lid is not tightened sufficiently solvent can be escaping around the lid cover. Lid must be tightened sufficient to stop leaking but not over tightened.
5. Incorrect seal adhesive. Adhesive is supplied with each new lid seal but if more is required we recommend Loctite Super glue.
6. Opening the lid when machine is hot. Do not open lid before lid temperature gauge is below 30°C

Fitting Lid Seal

a. Clean Lid groove thoroughly removing all traces of glue.
b. Using a small brush coat the bottom & sides of lid groove with the super glue provided. For the seal adhesion to be affective the sides of the groove must be coated in super glue.
c. Fit Rubber Seal to cover and close lid tight for 1 hour to allow glue to set. If further glue is required, use Loctite Super glue.

Chemical Information

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. The information is contained in the technical and safety data sheet that 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 explosives groups IIA and IIB and with a flash point temperature 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.

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 (if 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 the peroxides in the absence if 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).

Nitric Substances & Nitrates

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

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 if products contain Nitrocellulose (paints, ink or other products) must indicate the contents.

For reclaiming solvents containing Nitrocellulose contact UNIC 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 manor as to cause drying of the residue;
- In the event on 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 the risk of dangerous conditions;
- Special care must be taken when 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).

Chemical Information cont.

Exothermic Reactions

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

Precaution Against Electrostatic Charges

- The operator must not use clothing that could provide 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.

Reclaimed Solvent Collection Tank

The reclaimed solvent collection tank must be suitably designed and made, using materials that are not subject to electrostatic discharges. Alternatively a metal container can be used providing it is earthed with the machine.
In order to avoid the phenomenon of an electrostatic charge, it is advisable to connect the metal solvent collection tank to an effective earthing system.

Heat Transfer Oil

Main Applications

Enclosed circulated heat transfer systems
For industrial applications such as process industry, chemical plants, textile producers etc., and in house hold equipment such as oil filled radiators.
Heat Transfer Oil can be used in high temperature continuous heat transfer equipment with the following application limits:
Max. film temperature 340ºC
Max. bulk temperature 320ºC

Handling & Storage

General Precautions; Use local exhaust ventilation if there is risk of inhalation of vapours, mists or aerosols. Properly dispose of any contaminated rags or cleaning materials in order to prevent fires. Use the information in this data sheet as input to a risk assessment of local circumstances to help determine appropriate controls for safe handling, storage and disposal of this material.

Handling; Avoid prolonged or repeated contact with skin. Avoid inhaling vapour and/or mists. When handling product in drums, safety footwear should be worn and proper handling equipment should be used. Storage; Keep container tightly closed and in a cool, well-ventilated place. Use properly labelled and closable containers. Storage Temperature; 0 - 50ºC/32 - 122ºF.
The storage of this product may be subject to the Control of Pollution (Oil Storage) (England) Regulations. Further guidance maybe obtained from the local environmental agency office.
Unsuitable Materials; PVC.

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The storage of this product may be subject to the Control of Pollution (Oil Storage) (England) Regulations. Further guidance maybe obtained from the local environmental agency office.
Unsuitable Materials; PVC.

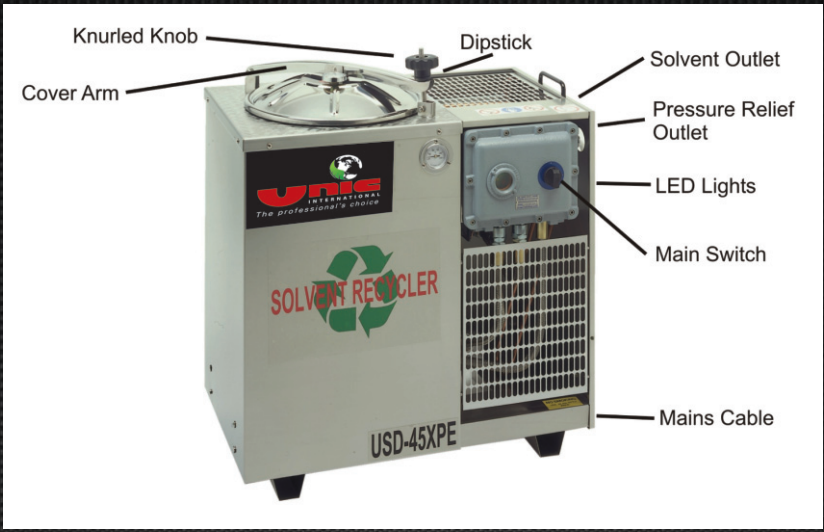
Additional Information; Polyethylene containers should not be exposed to high temperatures because of possible risk of distortion. Exposure to this product should be reduced as low as reasonably practicable. Reference should be made to the Health and Safety Executive's publication "COSHH Essentials".

Typical Characteristics

Specific Density @ 15ºC/59ºF, kg/m3	0.868
Kinematic viscosity @ 40ºC/104ºF, mm2/S	25
Flash point, Typical	230ºC/446ºF (COC)
Pour point, Typical	-12ºC/10ºF

For full MSDS Sheet please contact the office.

Unic Solvent Recycler Layout (USD-45XPE pictured)



Consumable Items

Item Description	Item Number	Min Order Qty
Plastic Solvent Recycler Bags	SDB-25/ SDB- 62	25
Rubber Lid Seal	SDS-25/ SDS-62	1
Replacement Oil	SDO-140E	5Ltrs

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Information Request Form

FAX BACK: +44 (0)115 950 6666

Please send information on:
(please tick appropriate box)

Spray Gun Cleaners	☐	Mini Spray Gun Cleaners	☐
Can Crushers	☐	Paint Can Washers	☐
Paint Can Shakers	☐	Brake Washer	☐
Parts Washer	☐		
Spares	☐	Service Information	☐

Other Comments:

Please send this information to:

Name: .....
Address: .....
Email: .....
Telephone: .....
Fax: .....

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Model:	USD-45XPE
Electrical:	240v. One Phase. 1.5 KW
Operating Temperature:	60-200°C
Year of manufacturing:	2013/14
Height:	790mm
Depth:	450mm
Width:	750mm
Weight:	70kg
ATEX:	Certified

Model:	USD-60XPE
Electrical:	240v. One Phase. 3 KW
Operating Temperature:	60-200°C
Year of manufacturing:	2013/14
Height:	900mm
Depth:	630mm
Width:	970mm
Weight:	100kg
ATEX:	Certified

Manufactured By:

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