



# USER MANUAL

## URS900 SERIES



**URS900**



**URS900EP2**

**UNI-RAM CORPORATION • ONTARIO • CANADA**

Revision 2009-07

**CONTENTS**

INTRODUCTION .....	3
SAFETY APPROVALS, CAUTIONS AND WARNINGS .....	3
FEATURES AND SPECIFICATIONS .....	4
SAFETY FEATURES .....	4
PREPARATION AND SETUP, INCLUDED PARTS, ADDITIONAL PARTS .....	5
LOCATION AND CONNECTION .....	5
SOLVENT REQUIREMENTS AND DEFINITIONS .....	6
INSTALLATION OF SOLVENT TRANSFER HOSES AND THE AIR SUPPLY KIT (EP2 MODELS) ...	6-8
OPERATING PROCEDURES .....	9-12
THEORY OF OPERATION .....	13
TROUBLESHOOTING GUIDE .....	14-15
TEST MODE .....	15
ERROR MESSAGES .....	16
SERVICE PROCEDURES INCLUDING 6-MONTH MAINTENANCE .....	17-18
REPLACEMENT PARTS .....	19-20
WARRANTY .....	21

## INTRODUCTION

Uni-ram holds many patents on designs used in its innovative products. Every machine is tested for compliance with Quality Assurance standards. Follow the instructions on preparation, use and operation to operate this machine safely and effectively. Ensure that this manual is readily available to the operator at all times. If you have any questions about the operation of this machine, contact:

North America:  
Uni-ram Technical Service  
1-800-417- 9133  
Other Continents:  
Contact Your Supplier

## SAFETY APPROVALS

This unit is certified under UL standards U2208 and CSA standards C22.2 No. 30 and No. 88 by ETL for use in non-hazardous locations as well as for use in hazardous locations Class 1, Division 1, Group D – T2C and and Class 1, Division 2, Group D -T2C.



## CAUTIONS AND WARNINGS

- Wear protective clothing according to local safety and environmental regulations, with a minimum of face goggles, gloves and mask.
- Disconnect from the power source before performing maintenance.
- DO NOT SMOKE OR USE THIS EQUIPMENT NEAR A POTENTIAL SOURCE OF IGNITION SUCH AS SPARKS OR AN OPEN FLAME. This unit must be located at least 6 feet (1.8 m) from all potential sources of ignition including electrical receptacles, switches, pilot lights, fixtures and contacts when installed in non - hazardous locations.
- The ambient temperature must be between 5°C (41°F) and 35°C (95°F).
- Do not distill solvents which may contain Nitrocellulose or any other unstable components.
- Do not distill solvents with an Ignition Temperature lower than 250°C (482°F).
- Do not install, operate or maintain this unit in a location where the Ignition Temperature of the hazardous atmosphere(s) is lower than 250°C (482°F).
- Solvents that are recycled can be flammable. Establish and follow safe practices to store and handle solvents. Such safety procedures will result in safely contained solvents free from spillage.
- Units must be installed by a qualified electrician.
- Install on a dedicated circuit with sufficient current capacity (see specifications section).

## FEATURES AND SPECIFICATIONS

All Uni-ram Solvent Recyclers feature **rapid-start** direct electric heating of solvent (so there is no diathermic oil to change) as well as high-efficiency condensers, air cooled with a motor driven fan. All of the Recyclers can be used with any Uni-ram Automatic Apray Gun Cleaner. The "E" models are designed to be linked directly to a Uni-ram "E" series Automatic Spray Gun Cleaner or to an external container. The direct connection creates a self-contained Recycling System allowing Timer-controlled Transfer In and Out between the Solvent Recycler and the other component.

MODEL	URS900	URS900EP2
VOLTAGE (V)	220/240	220/240
CURRENT (A)	9.2-10	9.2-10
RECOMMENDED CIRCUIT AMPS	15	15
MAX TEMPERATURE SET POINT	200°C	200°C
TIME TO RECYCLE	8-10 HOURS	8-10 HOURS
TANK CAPACITY	6.6 US GAL (25L)	6.6 US GAL (25L)
LID GASKET	NEOPRENE	NEOPRENE
SOLVENT TRANSFER SYSTEM	NO	YES
SHIPPING DIMENSIONS (WDH")	31 X 30 X 45	31 X 30 X 45
WEIGHT (LB/KG)	175/80	175/80

### Safety Features:

- **Certified** to UL standards U2208 and CSA standards C22.2 No. 30 and No. 88 by ETL. Approved for use in non hazardous locations as well as approved for use in hazardous locations Class 1, Division 1, Group D and Class 1, Division 2, Group D.
- **Explosion proof construction** and intrinsically safe electric circuitry.
- **Computer controlled** with many built-in safety programs including temperature control of all critical points including tank, condenser and fan motor. Power is cut when the temperature at any of these points rises above a pre-set level. Operation also terminates when other abnormal conditions exist (eg: boiling does not start on time or the distillation process takes too long).
- **Automatic pressure relief** lid system prevents pressure in the Distillation Tank from exceeding 0.5 to 1.0 psi. (0.035 to 0.070 kg/cm<sup>2</sup>).
- **Self Diagnostic** error messages are displayed on the Display Panel.
- **Dual lid** cover system.
- **Compact, enclosed cabinet** for safe storage of the Solvent Receiving Container inside the cabinet.

### Operating Features:

- **Rapid-start** due to direct electric heating of solvent, no diathermic oil to change.
- **Short cool-down time.** High efficiency condenser, air cooled with motor driven fan.

Warranty: 1 year on unit, 2 years on pump.

**PREPARATION AND SETUP:**

- Carefully inspect the shipping carton for any sign of transport damage.
- Carefully remove the unit from the shipping carton.
- Check the unit for damage. **Report any transport damage immediately to the carrier and your vendor. Initiate a freight claim with the carrier.** The manufacturer is not responsible for freight damage.
- A Liner Bag and Retainer Ring are already installed inside the distillation tank.
- Check the Accessory Kit for the parts listed below. If any parts are missing, contact your supplier. Additional consumables and accessories are also listed.
- Level the unit using the adjustable feet and install the Door Handle.
- For models with the Solvent Transfer System (EP2 Models), install the Solvent Transfer Hoses and the Air Supply Kit. (See instructions on Pages 7-8).

**ACCESSORY KIT (Included Parts)**

All Models	Replacement Part Number
Manual	NA
Lid Gasket, Standard (Neoprene)*	770-2150N
Liner Bag, 2 Spares	See below for re-order numbers
Door Handle & 2 Screws	120-318 & 909-404S
Solvent Outlet Tube	770-8131
<b>EP2 Models Only</b>	
Transfer Hoses and Fittings (EP2 Series)	KIT-TRANSHOSES-A
Air supply Kit (EP2 Series)	KIT-AIRSUPPLY-E

**CAUTION:**

**USE ONLY GENUINE UNI-RAM LINER BAGS WHICH ARE 2 MIL THICK, LIGHT BLUE IN COLOUR WITH A SAWTOOTH EDGE AND A 3/16" WELD.**

**THEY ARE SPECIALLY MANUFACTURED TO BE STRONG, HEAT RESISTANT AND CHEMICAL RESISTANT.**

**USE OF A NON-UNI-RAM LINER BAG MAY VOID THE WARRANTY.**

**LOCATION AND CONNECTION:**

This unit is certified for use in non-hazardous locations and hazardous locations Class 1, Division 1 Group D and Class 1, Division 2, Group D.

• **Non-hazardous Location:**

If using a non-hazardous plug, the unit must be located outside of a hazardous location. In a non-hazardous location, we recommend that you use a receptacle located a minimum of 6 feet (185 cm) from the unit and a minimum of 30" (80 cm) from the floor. We also recommend that the unit be located at least 6 feet from any potential source of ignition such as electrical receptacles, switches, pilot lights, fixtures, contacts and similar equipment. To clarify the definition of an appropriate location, contact your local authority. This unit must be connected to the power supply only by a qualified electrician in accordance with the National Electrical Code.

- **Hazardous Location:**

In hazardous locations (Class 1, Division 1, Group D and Class 1, Division 2, Group D), the power cord must be connected to the main power supply by a qualified electrician, in accordance with the National Electrical Code. An explosion proof outlet (receptacle or hard wired) must also be used.

**Select a Location That Meets EACH AND EVERY Requirement, Described Below.**

- 1) Comply with the instructions in the section: CAUTIONS AND WARNINGS.
- 2) Position the solvent recycler in a location so that there is at least 6 inches (15 cm) of space all around the unit. Ensure that the safety lid and door freely opens fully and a container for receiving the distilled solvent can freely move in and out of the cabinet. The unit must be in a location where people or equipment cannot disturb the power cord or connection. The cord must be connected directly to the main power supply; an extension cord cannot be used.
- 3) Connect the unit to a dedicated 20A, 200/240V branch circuit.

On first power up and when the unit is ready to begin a new cycle, the Display Panel shows "READY S.P. = XXX°C".

### SOLVENT REQUIREMENTS

This unit recycles flammable solvents and combustible solvents. Flammable solvents include lacquer thinner, paint thinner, acetone and other paint diluents. Flammable Solvents have a flash point below 38.7°C (100°F). These solvents are commonly used in the industry as cleaning solvents or paint diluents.

Dirty solvent to be distilled must meet **each requirement** described below. The Material Safety Data Sheet (MSDS) provides data on the properties of the virgin solvent.

- 1) The BP (Boiling Point) of the dirty solvent must be less than 200°C (392°F). BP increases with greater contamination.
- 2) The auto-ignition temperature of the solvent to be distilled must be higher than 250°C (482°F) for safe operation. Do not recycle Nitrocellulose. The auto ignition temperature is 135°C (275°F).

#### Notes:

- Recycle recently contaminated solvent only. Standing solvent can become acidic over time.
- To avoid "FISH EYE" problems, do not recycle both paint dilutents and parts washer solvent in the same unit.

#### Definitions

##### Flash Point:

The lowest temperature at which the vapor of a solvent can be made to ignite momentarily in air.

##### Auto-ignition Temperature (often referred to as "ignition Temperature" or "Ignition Point"):

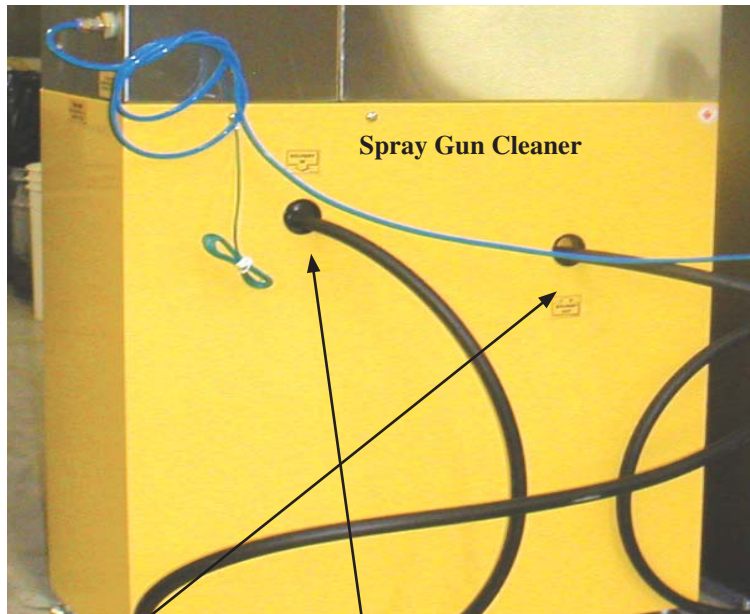
The temperature at which solvent ignites by itself.

### INSTALLATION OF SOLVENT TRANSFER HOSES AND THE AIR SUPPLY KIT (EP2 MODELS ONLY)

- 1) Transferring Solvent To and From a Spray Gun Cleaner
- 2) Transferring Solvent To and From a Drum / Container
- 3) Stand-alone Operation

**For the URS900 (Non-EP2) Models, use 3) Stand-alone Operation**

### 1) Transferring Solvent To and From a Spray Gun Cleaner



Solvent Recycler



Attach Moisture Filter (optional) to Air Input and the Tee to the Filter (if used) and the Blue Airline to Tee and Gun Cleaner. The Air Supply fitting is also not supplied.

Dirty Solvent In      Clean Solvent Out

Dirty Solvent Out      Clean Solvent In



**SOLVENT PAILS**  
Inside Gun Cleaner Cabinet

**Hoses:**

Connect the end of the hose with the "Solvent In" label to the "Solvent In" port on the recycler. Hand tighten. Pass the other end of this hose through the hole in the back of the gun cleaner that is marked "Solvent Out" and hand tighten onto the lid of the "WASH SOLVENT" pail. Connect the hose with the "Solvent Out" label to the "Solvent Out" port at the back of the recycler and pass the other end of this hose through the hole in the gun cleaner that is marked "Solvent In" and hand tighten onto the lid of the "CLEAN SOLVENT" pail. Make sure there is no leakage.

**Air Supply:**

The blue airline and Tee are for use with an "E" series spray gun cleaner to allow one air supply to feed both the spray gun cleaner and the solvent recycler. **Ensure the air supply is not connected to the spray gun cleaner or solvent recycler before installation.**

**NOTE:**

*A Flow Restrictor is provided on P2 models and is required on all models connected to a Spray Gun Cleaner. It is only provided on models shipped as part of a Combo Unit. If the Solvent Recycler has been purchased separately, please order a Flow Restrictor and install as directed.*

Remove the 2 airline connectors from the "T". Connect the male port of the "T" to Air Inlet of the recycler. Connect the Moisture Filter (optional). Connect one end of the blue airline to the "T". Connect the other end of the blue airline to the Air Input of the spray gun cleaner.

## 2) Connecting Hoses for Transferring Solvent To and From a Drum / Container



Attach Air Supply fitting (not supplied) and/or Moisture Filter (not supplied)

Dirty Solvent In

Clean Solvent Out

Connect the end of the hose with the “Solvent In” label to the “Solvent In” port on the recycler. Hand tighten. Connect the other end of the hose to the 3 ft suction pipe using the hose clamp. Insert the 3 ft suction pipe into the drum / container of dirty solvent. Connect the other hose with the 4 3/8” suction pipe to the “Solvent Out” port on the recycler and place the suction pipe into a clean drum / container large enough to receive the clean, recycled solvent.

### Air Supply:

The blue airline and Tee are for use with an “E” series spray gun cleaner to allow one air supply to feed both the spray gun cleaner and the solvent recycler. It is not used in this situation. If necessary, connect a Moisture Filter (not supplied) directly to the Air Input port of the Solvent Recycler and attach a suitable Air Supply Fitting (not supplied).

## 3) Stand-alone Operation

For the URS900, stand-alone operation is standard and this model does not have the ports shown above.

## OPERATING PROCEDURES

Wear protective clothing in accordance with local safety and environmental regulations. Use face goggles and gloves as a minimum. Use an apron and respirator if required.

### Summary of Operating Steps:

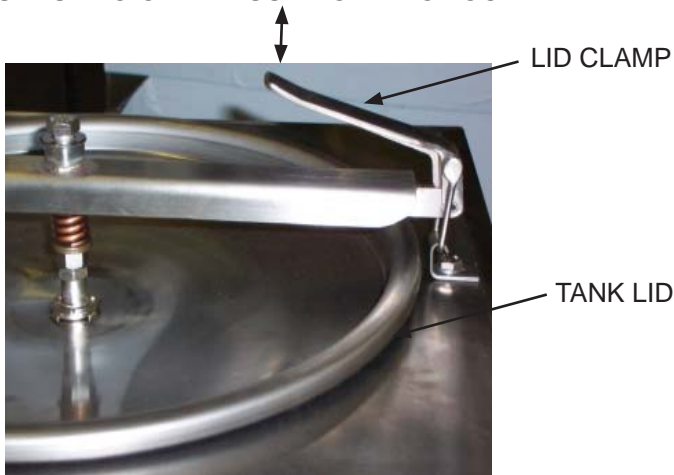
- 1) Open the Safety Cover and Tank Lid
- 2) Transfer Solvent to the Recycler Tank
- 3) Position Solvent Receiving Pail
- 4) Check distillation conditions and change, if necessary, using SETUP MODE.
- 5) Recycling
- 6) Finish Recycling
- 7) Transfer clean solvent
- 8) Remove debris
- 9) Clean Distillation Tank and Lid Surface
- 10) Install new liner bag
- 11) Inspect Lid Gasket, Remove and Replace if necessary

Each Step is described in detail below.

### 1) Open the Tank Lid and Safety Cover

- Open the safety cover.
- Open the inner lid by releasing the Lid Clamp.
- Make sure that Tank is empty and that a Liner Bag is properly installed in the Tank.

PULL UP TO OPEN. PUSH DOWN TO LOCK



### 2) Transfer Solvent To the Recycler Tank

Verify that the solvent to be recycled complies with the requirements described in the section, Solvent Requirements. Solvent can be put into the Distillation Tank by hand or by using the Transfer Hoses and built-in Transfer System (EP2 Models only).

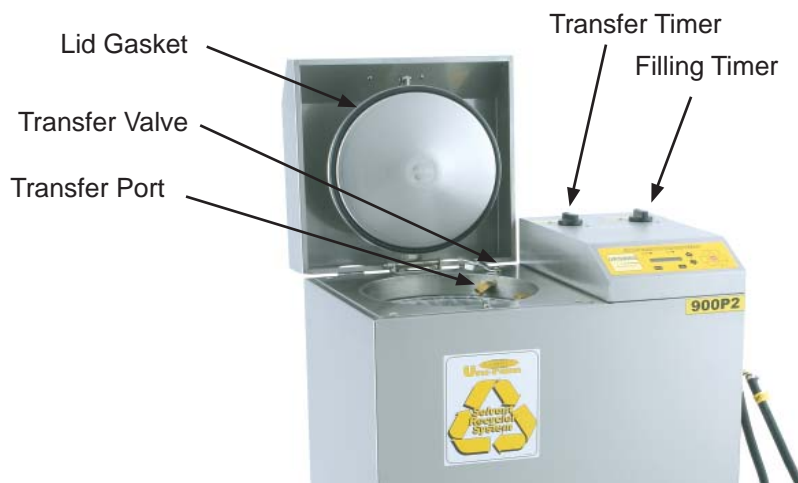
#### a) For models without the Solvent Transfer System

Pour the solvent into the Distillation Tank. Fill to 1.5 inches below the Retainer Ring.

Maximum volume is 6.6 gal (25 L) and minimum volume is 1.5 gal (6 L). Do not let the container of dirty solvent touch the top of the recycler. When pouring the contaminated solvent, make sure all solvent goes into the Liner Bag, not between the Liner Bag and the wall of the Distillation Tank. Clean Lid Gasket and top of distillation tank. Close inner lid, engage lid clamp and close safety lid. **Caution:** Do not overfill Distillation Tank because contaminated solvent could flow into Condenser and block the condenser passage way. Close the Tank Lid, lock down the Lid Clamp and close the safety Cover.

**b) For models with the Solvent Transfer System (EP2 Models):**

- Open the Transfer Valve by turning the handle counter-clockwise 90°.
- Turn the Filling Timer knob clockwise fully. Dirty solvent will flow from the Transfer Port into the Liner Bag and stop when the timer runs out.
- Close the Transfer Valve by turning the handle clockwise 90°.
- Close the tank Lid, lock down the Lid Clamp and close the safety Cover.

**3) Position Solvent Receiving Pail****a) For models without the Solvent Transfer System**

Open the Door and position a Solvent Receiving Pail (not provided) with a minimum size of 5 US Gal (20 L) inside the cabinet. Insert the Solvent Outlet Tube (short and curved) into the top opening of the pail. The Solvent Outlet Tube must extend below the rim of the pail to prevent solvent spillage. If the pail is metal, connect the alligator clamp of the Ground wire to the rim of the pail. Close the door.

**b) For models with the Solvent Transfer System (EP2 Models):**

Open the Door. A special, connected, plastic Solvent Receiving Pail is provided. Check to make sure that the Solvent Outlet Tube (short and curved) is inserted into the hole in the top of the pail and that the Pick Up Tube (long and straight) is tightly attached to the Quick Connect fitting.

**4) Check distillation conditions and change, if necessary, using SETUP MODE.****Estimate Boiling Point**

Add 40°C (100°F) to the boiling point of the pure solvent as shown on the MSDS (Material Safety Data Sheet) or another reliable source.

**Recycle more often**

The boiling point of the waste solvent mixture increases as it gets dirtier. To reduce the boiling point, recycle more often.

**Minimize Temperature Set Point**

After recycling there will be a small amount of solvent, about 1/8 US gal (500 ml), remaining in the distillation tank due to condensation. Select the lowest Temperature Set Point that recycles the solvent to this level.

If all the settings are acceptable, press START to begin distillation.

**To change settings, enter Setup Mode**

**SETUP MODE**

To change settings, enter Setup Mode: while pressing SETUP, press START. "SET-UP MODE" is displayed. **To change the temperature units from °C to °F, press and hold the + and - keys together for 2 seconds.**

STEP	SETTING	ADJUST	ACCEPT	DESCRIPTION
1	SET-PT = XXX°C (°F)	+ OR -	OK	To choose a SET POINT, look up the solvent's BP (boiling point (MSDS, online etc) and add about 40°C (100°F).
2	POWER = XXX%	+ OR -	OK	If boiling is too vigorous due to one or more of the following conditions, decrease POWER by one increment or more. <ul style="list-style-type: none"> <li>• vapour leaks at the Lid Gasket</li> <li>• recycled solvent comes out too hot</li> <li>• waste material is carried into the recycled solvent</li> </ul> Otherwise, use 100%.
3	SHUT-OFF = AUTO**	+ OR -	OK	If too much solvent remains in the Distillation Tank after recycling and the problems in the Troubleshooting Guide have been ruled out, over-ride the AUTO SHUT-OFF and manually select a heating time (eg: 4 hours). The heater will stay on for this amount of time and then cooling will begin.
4	BAKE TIME = XXM	+ OR -	OK	Only available when SHUT-OFF = AUTO. Increase if residue (puck) is too wet.
<b>**WARNING: SHUT-OFF TIME MUST NOT BE SET TO MORE THAN 8 HOURS MAXIMUM</b>				

**5) Recycling**

On first power up and when the unit is ready to begin a new cycle, the Display Panel shows "READY S.P. = XXX°C" (S.P. = SET POINT). When Setup is complete and START has been pressed, the "HEAT" light comes on and the recycling process begins. During the boiling phase, 3 temperatures will alternate on the Display: "SET-PT", "TANK" and "VAPOR EX." When the boiling phase is complete, "COOLING" will be displayed. Note: the fan may still be running; this is normal as it continues to run until the temperature drops below 50°C. To cancel the cycle, press the "START/STOP" key.

**6) Finish Recycling CAUTION: DO NOT OPEN LID UNTIL COOLING IS COMPLETE**

The clean, recycled solvent is available for use when the display shows "READY S.P. = XXX°C". After the clean solvent is transferred, the unit will be ready for another cycle.

Note: during the cooling phase, the display will show "COOLING T = XXX°C" (T = TEMPERATURE) and the fan may still be running; this is normal as it continues to run until the temperature drops below 50°C.

**7) Transfer Clean Solvent**

- For models without the Solvent Transfer System: remove the pail and replace with an empty one.
- For models with the Solvent Transfer System: turn the Transfer Timer knob clockwise fully. The clean solvent will flow out of the Solvent Receiving Pail into either a free-standing, external container or the Clean Solvent Pail of a Spray Gun Cleaner. The transfer will stop when the timer runs out.

**8) Remove Debris:**

Remove the Retainer Ring and slowly pull the Liner Bag containing the debris out of the distillation tank in a way that the Liner Bag does not break. Dispose of the debris in accordance with local regulations.

NOTE: If the bag sticks to the bottom of the tank, turn the recycler on for 5 minutes to loosen the bag from the bottom of the tank, then lift the bag out while the bag is warm.

### 9) Clean Distillation Tank and Lid Surface

Distillation Tank:

Wipe inside the Tank with a cloth.

Remove any remaining debris from the Distillation Tank using if necessary, plastic or wooden tools (not supplied). Do not clean with abrasive or hard metal instruments that can damage the tank. The warranty does not cover such damage.

**Note:** There will be about 1/8 Gal (500 ml) of solvent remaining in the Distillation Tank after recycling due to condensation. This solvent, if left in the tank, can cause corrosion. Dirt and debris left in the tank can prevent full heat from reaching the dirty solvent during recycling.

**Caution:** Acidic or chlorinated solvents typically cause corrosion on an aluminum tank. It appears as black pitting spots on the tank. Excessive pitting leads to an unsafe condition of holes in the walls of the tank and solvent leakage. Inspect your tank after each batch. If there is excessive pitting, call a Service Technician and replace the tank with a corrosive resistant, stainless steel one.

Lid Surface:

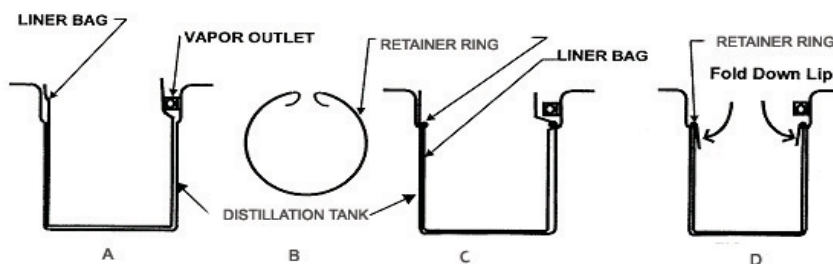
Use a cloth. Dry and clean the lid and the top of tank where the Lid Gasket sits to extend the life of the Lid Gasket and prevent leakage. Avoid rotating the lid during cleaning. The lid gasket is a wear item.

### 10) Install a new Liner Bag

Lift Recycler Safety Cover and Tank Lid fully; lids will stay in the open position.

- Install the Liner Bag so that the bottom of the Bag sits flat on the bottom of the Distillation Tank as shown.
- With thumb and index finger, squeeze the Retainer Ring and insert into inside of the Liner Bag. Let go and make sure it fits securely in the groove.
- Fold the flap of the liner bag over the retainer ring.

**Caution: Ensure that the bag material does not block the Vapor Outlet.**



NOTE: This is a schematic drawing only; not all components are exactly as shown.

### 11) Inspect Lid Gasket, Remove and Replace if necessary as required

Inspect the Lid Gasket for shrinking, hardness and cuts. The Lid Gasket is a wear item as it is exposed to high temperature and solvent vapor during distillation. Damage to the lid gasket will cause solvent to leak.

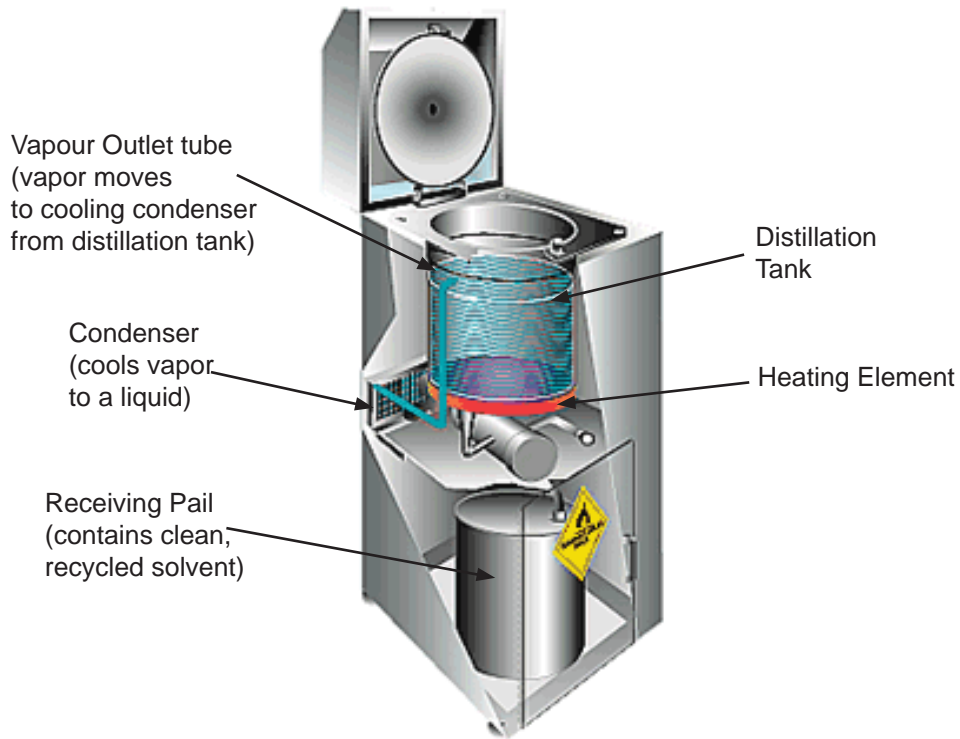
To remove, open the Safety Cover and Tank Lid. Lift out the old gasket by hand and clean the cavity with a cloth. To Install, place the new gasket in the cavity, rub solvent or soapy water on the gasket to make insertion easier. Press the gasket firmly into the cavity all around.

Note: Keep a spare in stock. One extra is included with the unit.

**THEORY OF OPERATION - DISTILLATION PROCESS**

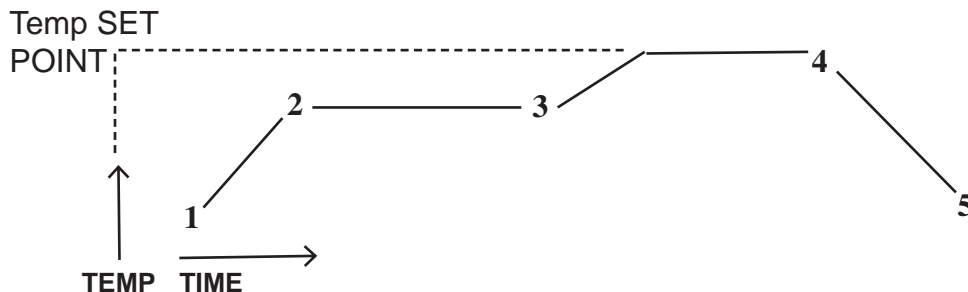
Waste solvent consists of the original solvent plus liquid and solid materials picked up during use of the solvent. Recycling separates the original solvent from the waste materials. During the recycling process, the distillation tank fills with dirty solvent and the heating element heats the mixture. The solvent mixture boils and the vapour passes through a cooling condenser where purified, clean solvent, ready for use condenses out. Waste materials in the dirty solvent boil at a temperature substantially above the Temperature Set Point so they remain in the distillation tank for disposal.

**Solvent Recycling**



**Distillation Cycle**

1. Heating starts, temperature rises
2. Vapourization starts
3. Vapourization ends, AUTO SHUT-OFF / BAKE TIME starts (see SETUP)
4. Baking finishes, cooling begins
5. Cooling is complete



**TROUBLE SHOOTING GUIDE**

Carry out each action step until a solution is found. If the recommended actions do not solve the problem call Uni-ram Service in North America or contact a qualified Service Technician.

**Caution: Disconnect the power supply before conducting maintenance or service.**

<b>PROBLEM</b>	<b>CAUSE</b>	<b>ACTION STEPS</b>
Unit is plugged in, power light is off, Display Panel is not working.	Power is not getting to the unit.	Reset breaker or replace fuse. If power is still not getting to the unit, call a Qualified Service Technician. Ensure that the unit is the only device on a circuit with sufficient capacity.
Unit is plugged in, power light is on, Display Panel is not working.	Power board or computer board not functioning.	Call Uni-ram Service
Recycled solvent is not clear	1) The solvent is reacting chemically.	1) Run SETUP and lower the Temperature Set Point.
	2) The solvent flow path is dirty. One cause is overfilling the distillation tank.	2) To clean the path, follow Service Procedure 2 and then recycle 3 gal of clean solvent.
	3) Orange colour due to rust in receiving pail.	3) Place a jar under outlet tube and capture some solvent. If the solvent is clear, replace the pail with a non-corrosive one.
	4) Milky colour due to presence of water.	4) Eliminate source of water in solvent.
Dirty solvent remains in Distillation Tank after recycling  <b>Note:</b> 1/8 Gal (500 ml) of recycled solvent is expected due to condensation.	1) Poor heat transfer due to dirt and debris left in the tank.	1) Clean the tank, replace the Liner Bag, recycle with pure solvent to test. If successful, the problem is due to a dirty tank, debris left in the tank or the solvent is too contaminated. Adjust accordingly. Follow Operating Procedures closely. If the level of contamination is too high, recycle more often.
	2) Boiling point of solvent is above Temperature Set Point.	2) Run SETUP, raise the Temperature Set Point and repeat the recycling operation. The Temperature Set Point should be the BP of pure solvent (as determined from the MSDS or other source) plus 45°C (113°F) to allow for contamination. If the boiling point is above the maximum Temperature Set Point for your model (either 200°C or 240°C), dirty solvent cannot be recycled in this unit.
	3) The Auto Shut Off system is shutting the unit off too soon.	3) Run SETUP and over-ride the auto SHUT-OFF. Select a time period long enough to recycle the solvent. The heater will stay on for this duration. Repeat the recycling operation.
Liner Bag sticks		Turn unit on for 5 minutes and lift out bag while it is still warm.

PROBLEM	CAUSE	ACTION STEPS
Solvent vapor leaks from the Lid Gasket	1) The Lid Gasket has excessive wear as indicated by cracks, shrinkage, hardness etc	1) Replace the Lid Gasket (See Operating Procedure 11).
	2) The Solvent flow path is blocked.	2) Follow Service Procedure 2.
	3) Lid Tension is not adequate	3) Follow Service Procedure 4.
	3) The Lid is not seated correctly.	3) Follow Service Procedure 5.
	4) The temperature SET-PT is too high, resulting in excessively high solvent vapour pressure	4) Run SETUP, reduce the Temperature Set Point and repeat the recycling operation. If successful, continue to recycle using the lower Temperature Set Point. If not, reduce the POWER %.
Sections on Bag are brown and thin due to High Temperature	1) Use of inferior low temperature bag.	1) Use new genuine Uni-ram high temperature Liner Bag and recycle.
	2) The temperature SET-PT is too high.	2) Run SETUP, reduce the Temperature Set Point and repeat the recycling operation. If successful, continue to recycle using the lower Temperature Set Point.
The computer appears to be operating erratically.	The computer may require re-booting.	Disconnect the power supply for 30 seconds. Restore power and operate unit.
Residue (puck) in Tank is too wet.	1) BAKE TIME is not long enough.	1) Run SETUP and increase the BAKE TIME.
	2) Residue cannot be dried completely due to its composition.	2) None.

## TEST MODE

Use this mode as part of your troubleshooting procedures.

1. Make sure Display Panel shows "READY SP = XXX °C".
2. Press and hold the OK key while pressing the "-" key for about 3 seconds or until the display shows the Model No. and software version followed by "TEST MODE". The testing cycle will begin.

### TESTING CYCLE

- The Display shows "TC#1 = XXX °C, TC#2 = XXX°C".
  - Press "OK" to proceed to the next step.
  - The Display shows "FAN ON" for 5 seconds while the Cooling Fan runs.
  - The Display changes to "DO NOT TOUCH KEYS" for 5 seconds while a key check is performed.
  - If the keys are ok, the Display shows "NO KEYS STUCK" for 5 seconds.
  - The Display changes to "HEATER TEST ON" for 10 minutes or until the computer detects a 3°C increase in temperature at TC#1, then the Display should change to "HEATER TEST OK".
3. If the display does not show "HEATER TEST OK", there is a problem in the heater circuit such as a defective Heater TRIAC, Heater Element or Fuse.
  4. Press "STOP" to end the test. The Display will return to "READY SP = XXX °C".

**ERROR MESSAGES**

If an abnormal condition is detected by the unit's Self-diagnostic System, the Display Panel shows one of the following error messages:

MESSAGE	POSSIBLE CAUSE	ACTION
BOILING TIME OUT (No change in vapour temperature was detected within the set time limit, usually 45 minutes)	<ul style="list-style-type: none"> <li>• Boiling did not occur within the set time limit because the dirty solvent mixture is too contaminated</li> <li>• Blockage in the solvent flow path, most likely with leakage of solvent at the lid</li> </ul>	<ul style="list-style-type: none"> <li>• Run SETUP, raise the Temperature Set Point and repeat the recycling operation. See Troubleshooting Guide ("Dirty solvent remains in Distillation Tank after recycling").</li> <li>• Follow Service Procedure 2</li> </ul>
READY TIME OUT	Recycling was not completed within 9 hours and/or dirty solvent remains in the Tank.	If dirty solvent remains in the Tank, see the Troubleshooting Guide.
RESET OCCURRED	The computer has been reset due to a power interruption or drop in voltage during the recycling operation.	Press the "SET-UP" key twice to restore the message: "READY-SP = XXX° C".
CONDSR OVER-HEAT	Over-heating occurred at the Condenser.	The Condenser is dirty or the Fan stopped for another reason (see below). Clean the Condenser. When the Fan Motor has recovered (4-5 min), this message will disappear and normal operation will resume.
CHECK FAN	Appears 10 min after the message above if the problem is a loose fan blade, blown fuse (F3 or F4) or other fan-related problem. Also appears if the condenser is dirty.	Clean the Condenser. Run TEST MODE to check for defective fan motor. If necessary, check for a loose fan blade or blown fuse (see next section).
CHK HEATER FUSES	Appears if the computer does not detect a rise in tank temperature after 15 minutes.	There may be a short circuit in the Heater circuit causing fuse F3 and/or F4 to blow or poor electrical contact in the Heater circuit. Check circuit condition with a tester. Correct as required.
<b>WARNING! VERY IMPORTANT! IF TRIAC IS FAULTY, DISCONTINUE USE IMMEDIATELY!</b>		
CHK HEATER TRIAC	Short circuit in the TRIAC (a switching transistor that controls heater power, located on the Power Control Board).	To confirm, first disconnect and re-connect the power supply. If the Distillation Tank becomes hot to the touch and both the Heat Light and the Fan Light are off, the TRIAC is defective. <b>Disconnect the power supply immediately and do not use again until the Power Control Board has been replaced.</b>

## SERVICE PROCEDURES

### 1) CLEAN CONDENSER

Remove the screen at the back of the unit that covers the condenser and vacuum the condenser using a brush attachment. Re-install the screen.

### 2) CLEAR BLOCKED SOLVENT FLOW PATH

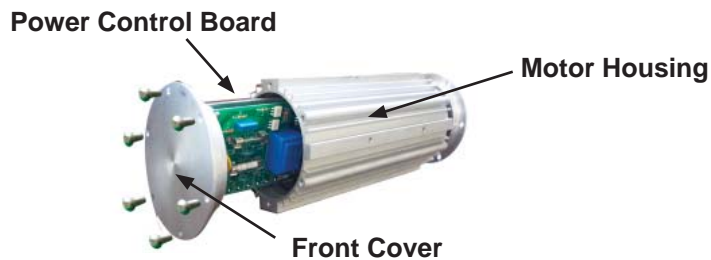
#### **CAUTION:** WEAR SAFETY GOGGLES.

A blockage in the solvent flow path (Vapour Outlet - Condenser - Solvent Outlet Tube) can cause solvent to leak. To determine the location of the blockage, first check the Solvent Outlet Tube and the Vapour Outlet Fitting for visible signs of blockage or damage. If the problem is not in either of these locations, the Condenser is probably blocked. To clear the condenser, pour some clean solvent into the Vapour Outlet and check if it comes out of the Solvent Outlet Tube. If the blockage persists, blow air at about 30 PSI (2 kg/cm<sup>2</sup>) into the Vapour Outlet. If the air comes out of the Solvent Outlet Tube, the blockage has been cleared. If not, call for service.

### 3) REPLACE FUSES

Fuses are located on the Power Control Board inside the Motor Housing.

- Disconnect power supply.
- Remove the Guard Screen by unscrewing two metal screws to get access to the Motor Housing



- Unscrew the 6 screws from the Front Cover and pull it gently from the motor housing to expose the fuses. **Note: Care should be taken not to pull the Front Cover too far as some wires may disconnect.**

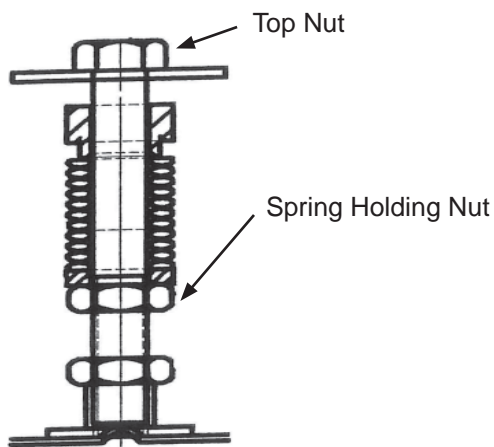
Fuses F1 & F2: 240 VAC, 20.0 A, 3AG, fast action, for Heater  
 Fuses F3 & F4: 25 VDC, 2.0 A, 3AG, slow action, for Fan Motor  
 Fuse F5: 240 VAC, 0.0625 A, 3AG, fast action, for Computer Board

- Remove the fuses from the board and, using a meter, test each one and replace as needed.
- Carefully push the Power Control Board back into the Motor Housing.
- Ensure that the wire to the computer board is secure.
- Re-install the Front Cover using all 6 screws..
- Install the Guard Screen using two metal screws.
- Close the Door and re-connect the power supply.

## 4) INCREASE LID TENSION (BY ADJUSTING THE SPRING BOLT)

**CAUTION:**

SHOULD BE DONE ONLY AS A LAST RESORT - FIRST CHECK FOR A WORN LID GASKET, A BLOCKAGE IN THE SOLVENT FLOW PATH, LOOSE HINGE BOLTS OR A SET POINT THAT IS TOO HIGH FOR THE SOLVENT BEING RECYCLED.



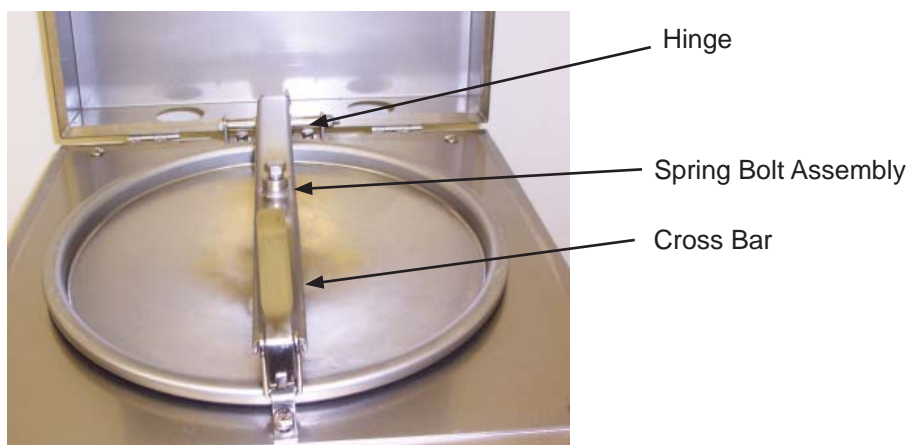
Spring Bolt Assembly

This procedure tightens the Lid by increasing the tension on the spring attached to the Lid Bar Spring Bolt Assembly. The Lid and Bolt Assembly is carefully designed as a Safety Pressure Relief system to prevent a dangerous build up of pressure inside the closed tank. **Do not adjust the Spring Holding Nut by more than 2 full turns maximum.** If 2 full turns do not solve the problem, call for service.

- While holding the top nut with a wrench, turn the Spring Holding Nut no more than a 1/2 turn at a time. Turn in a counter-clockwise direction (as you look down on it).
- After each 1/2 turn, operate the unit normally and check for leaks.

## 5) REPOSITION LID and TIGHTEN HINGE BOLTS

The Hinge bolts can loosen over time, causing the lid to shift off center. This can lead to an inadequate seal and leaking around the Gasket. Loosen the bolts, reposition the lid and re-tighten the bolts.



## 6) RECOMMENDED 6-MONTH MAINTENANCE

- Vacuum the condenser (see Service Procedure 1).
- Clean the solvent flow path by recycling 3 Gal of clean solvent.
- Inspect Distillation Tank for debris, pitting and/or other damage.
- Inspect Lid Gasket for wear or damage (see Operating Procedure 11).

**REPLACEMENT PARTS**

<b>DESCRIPTION</b>	<b>PART NO.</b>
SAFETY COVER	770-3311
KEYPAD	900-3461
DIAPHRAGM PUMP	UDP4TA
DOOR HANDLE & 2 SCREWS	120-318F & 99-404S
TRANSFER HOSE KIT (E MODELS ONLY)	KIT-TRANSHOSES-A
AIR SUPPLY KIT (E MODELS ONLY)	KIT-AIRSUPPLY-E
LID GASKET, NEOPRENE	770-2150N
SOLVENT RECEIVING PAIL	750-710C
TIMER WITH KNOB	115-200/K
LINER BAG. PKG OF 10	LB900C-10
RETAINER RING	770-9110

### **Full Product Warranty**

These Uni-ram products have been engineered and manufactured to high performance standards. Each unit has been subjected to detailed factory testing before shipment.

This product comes with a one-year full warranty from the date of purchase. Uni-ram Corporation reserves the right to repair or replace the unit, free of charge, to the original purchaser if a part is found to be defective in material or workmanship as determined by factory service personnel. The items listed below under "Conditions of Warranty" as consumables are not covered.

Uni-ram reserves the right to direct the customer to ship the unit collect to the Uni-ram factory or to an approved Service Center for repair using the Uni-ram Return Goods Procedure or to repair the unit on-site. To prevent damage in transport, the purchaser must ship the unit in the original packaging or use alternate adequate packaging. All units must be shipped clean and free of solvent.

#### Conditions of Warranty:

As Uni-ram Corporation has no control over the working conditions or circumstances under which the purchaser stores, handles or uses the product, Uni-ram makes no warranty or claim, either expressed or implied with respect to this product's fitness for any purpose or the result to be obtained from its use. This condition applies to the sale of all products and no representative or distributor of Uni-ram Corporation has the authority to waive or change these conditions.

This warranty applies only to the original purchaser and does not apply if the unit has been misused, overloaded, neglected, altered or used for any purpose other than those specified in the operating and installation instructions. Deterioration due to normal wear is not covered by this warranty. Damage due to accident, transportation, fire, floods or acts of God is also not covered. Units whose serial numbers have been altered or removed are not covered. The warranty is invalid if unauthorized abrasives are used in this unit. Unauthorized attempts at self-repair or alterations by the owner also invalidate this warranty. Interior or exterior finishes are not covered by this warranty.

Consumable Items are not covered by this warranty.

This warranty replaces all other warranties expressed or implied by statute or otherwise.

To make a claim, call Uni-ram Service at 1-800-417-9133 and quote the serial number of the unit.

**USE ONLY GENUINE UNI-RAM LINER BAGS WHICH ARE 2 MIL THICK, LIGHT BLUE IN COLOUR WITH A SAWTOOTH EDGE AND A 3/16" WELD.**

**THEY ARE SPECIALLY MANUFACTURED TO BE STRONG, HEAT RESISTANT AND CHEMICAL RESISTANT.**

**USE OF A NON-UNI-RAM LINER BAG MAY VOID THE WARRANTY.**