Instruction Manual

Savant® SPD121P SpeedVac® Concentrator

197-3002-00 Rev. C

Contents

1.0 Overview of the SPD121P Unit

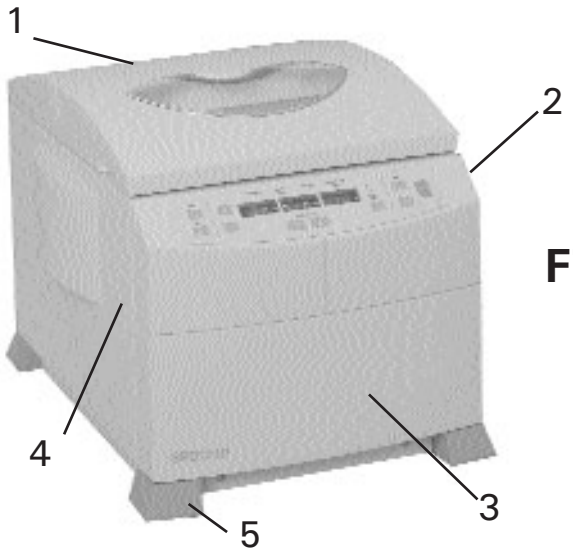


Fig. 1

Figure 1 = Front View
Figure 2 = Side View
Figure 3 = Back View

Fig. 2

1. Top Radiant Cover
2. Control Panel
3. Front Panel
4. Left Side Panel
5. Anti Skid/Vibration
6. Right Side Panel
7. Chamber View Window
8. Vacuum Port
9. Vacuum Hose
10. Main On/Off Switch
11. Manual Cover Lock Release
12. Rear Access Panel
13. AC Socket

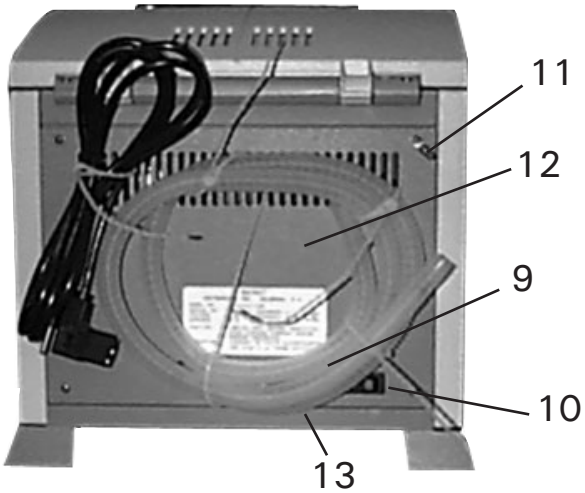
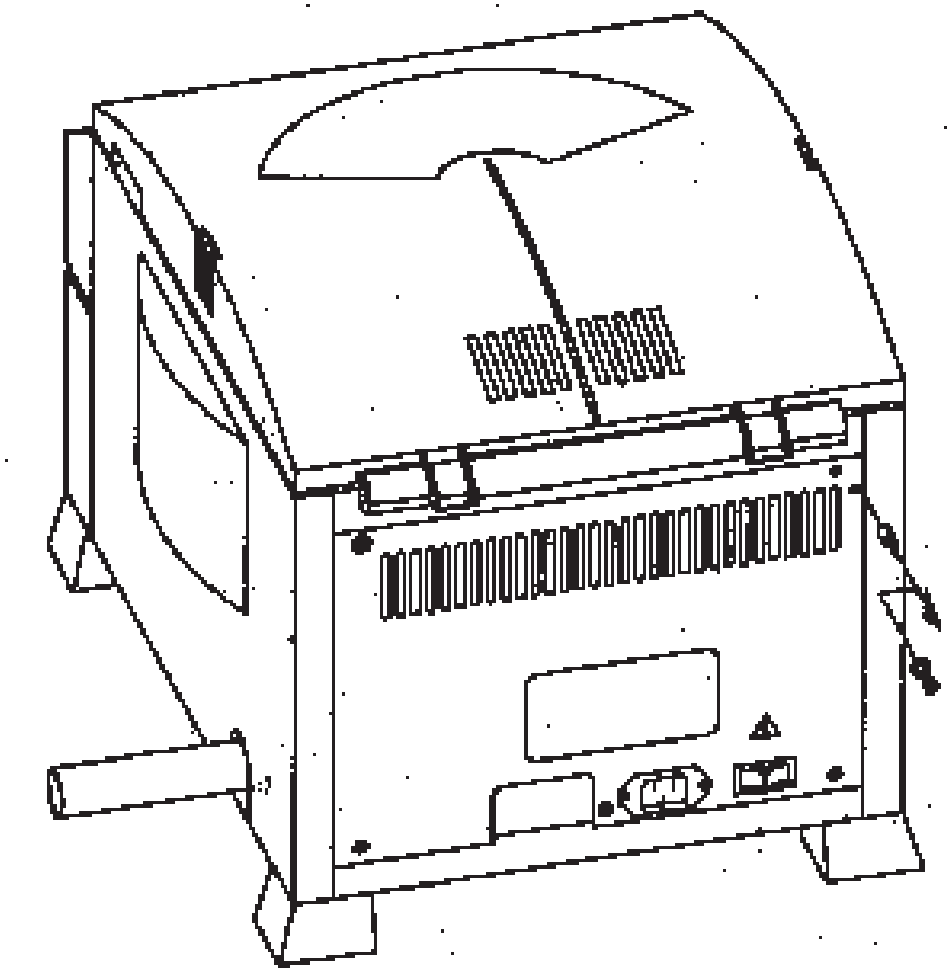


Fig. 3

1.1 COVER LOCK OVERRIDE



To Open The Top Cover During Power Failure:

Remove the screw holding the cover lock's manual release cord and lightly pull it as shown, while lifting the cover.

1.2 INSTALLATION OF THE SPD121P

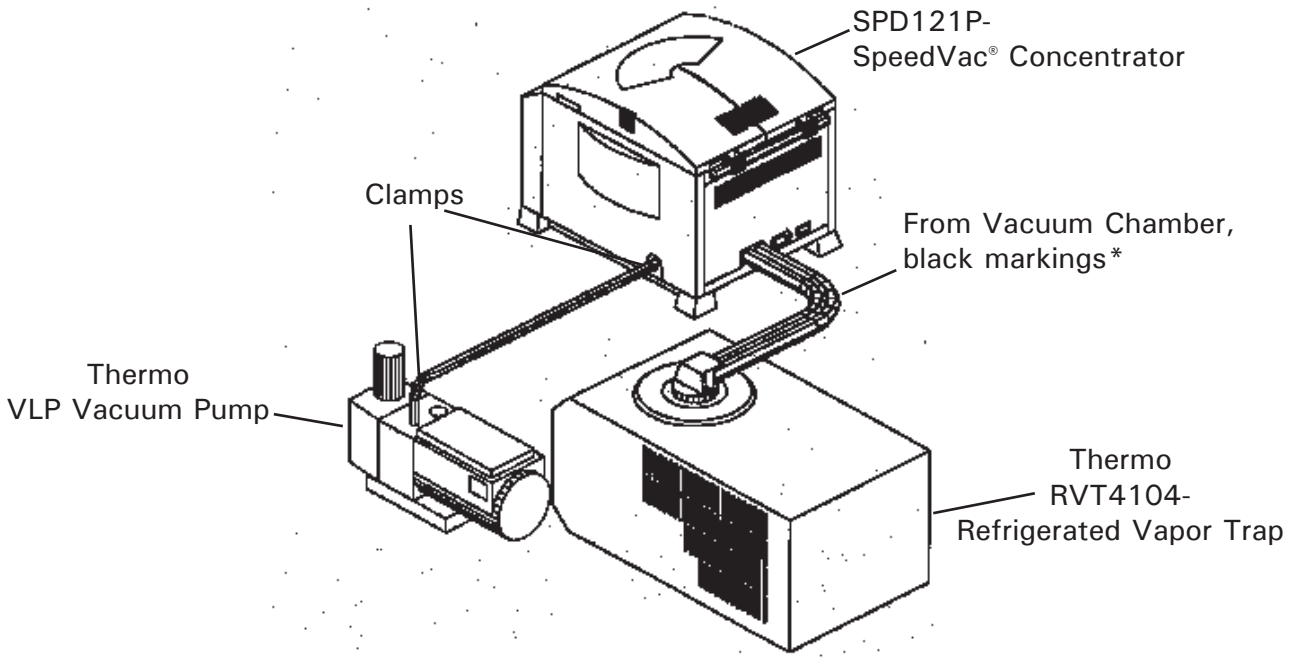


Figure 4-Rear View of System

1.3 How To Hook Up The SPD121P SpeedVac® System

1. Unpack unit from the box and verify that all the parts match packing list.

2. Read instruction manual carefully! If assistance is required, contact Thermo.

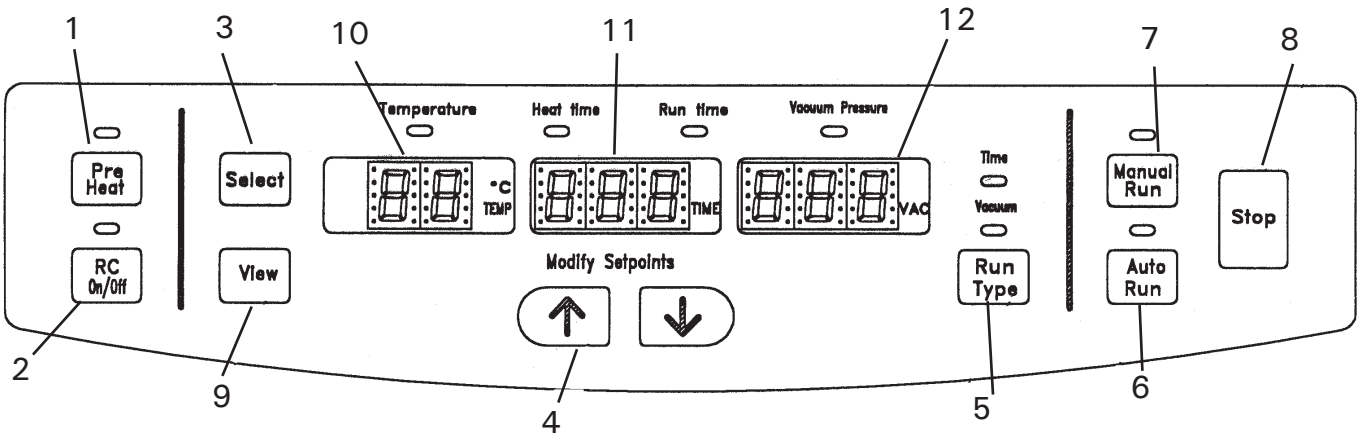
3. If the unit is part of a larger system, use the vacuum tubing supplied to hook up unit (See Figure 4).

4. If this SPD SpeedVac® is replacing an older single outlet vacuum tube SpeedVac, please see Appendix 1 on how to propely plumb the new SPD Concentraor.

5. If being hooked up to existing system, simply attach vacuum tubing to port on side of unit. (See item 8, figure 2-vacuum port).

   CAUTION - Cold trap should be in line between the vacuum source and the SPD Unit.

2.0 SPD121P Control Panel



2.1 Description of SPD121P Control Panel

1. **PRE-HEAT** - use to pre-heat chamber to 45 °C prior to or between runs. Once run is initiated the pre-heat stops.

2. **RC ON/OFF** - Use to add radiant heat to chamber. Manual activation ON/OFF at any point during run. Also will turn off at end of run.

3. **SELECT** - Press this button to select the parameters to be modified. Selection is from left to right. GREEN light indicates the parameter to be modified.
   NOTE: To select "VACUUM PRESURE", "RUN TYPE" light should light under "VACUUM".

4. **MODIFY SETPOINTS UP/DOWN** - Modifies selected parameter.

5. **RUN TYPE** - Selects a "Time" or "Vacuum" run.

6. **AUTO RUN** - Starts an automated "TIME" or "VACUUM" run (See page 5).

7. **MANUAL RUN** - Starts a "Manual" run (See page 4).

8. **STOP** - Terminates "Manual" or "Auto" run.

9. **VIEW** - Press to view. Displays preset parameters all at once.

10. **TEMPERATURE DISPLAY (RED DISPLAY)** - Indicates set temperature or actual temperature during a run in °C.

11. **TIME DISPLAYS (GREEN DISPLAY)** - Indicates heat timer or run timer set-points. In the process of a run it indicates elapsed time or time left.

12. **VACUUM PRESSURE DISPLAY (AMBER DISPLAY)** - Displays chamber vacuum in torrs or microns by shifting a decimal point. "Hpr." represents atmospheric pressure. No decimal point indicates microns.

3.0 THE MANUAL RUN SPD121P

1. Connect the unit to its required voltage.

2. Turn the power switch to ON, located on the back of the unit. The cover lock, disengages, allowing the top cover to be opened.

   The display lights up, showing the following default values:

Temperature:	35 °C in RED
Run Time:	2.00 HRS. in GREEN
Vacuum Pressure:	01.0 in AMBER

   Press "SELECT" to "HEAT TIME": 1.00 HR default in GREEN.

3. Place sample tubes in rotor so load is balanced. Secure rotor with the supplied knob (hand tight). Close cover.

4. Using the "SELECT" button and the up/down keys, set temperature between 35 °C-80 °C, or "no", for no heat.

5. Using the "SELECT" button and the up/down keys select and modify "TEMPERATURE", and "HEAT TIME" to between 0.01 and 9.59 hours or CCC (for continual heating).

   When the heat timer expires, the heater will shut off no matter what the temperature setpoint reads (except if CCC).

6. Close cover.

7. Press the "MANUAL RUN" button. The cover locks and rotor starts turning. The decimal point blinks and the time display is counting up. The temperature rises to the set temperature. The "HEAT TIME" wil count down and the SAV valves will both actuate, applying vacuum to the chamber.

   NOTE: If the cover is not closed, the display will show "Lid" and the run will not start.

8. Press R/C for radiant cover heat. Press at any time to turn OFF and ON.

9. To end the manual run, press "STOP" button. The display will show "End", the SAV valves will click, isolating the chamber from the vacuum pump and also allowing air to bleed into the chamber.

10. After the rotor stops spinning, the cover lock disengages and the display reverts to last set parameters.

11. Open the cover and remove samples.

3.1 THE AUTO RUN TIME OR VACUUM SPD121P TIME

1. Refer to the “MANUAL RUN” section for start up.

2. Place the sample tubes in rotor so load is balanced. Secure rotor with supplied knob (hand tight). Close cover.

3. To execute an AUTO ” TIMED” RUN, execute the following steps:

   a) Press “RUN TYPE” to select “TIME” run

   b) Use “SELECT” button and the up/down keys to select and modify “TEMPERATURE, “HEAT TIME, “RUN TIME” parameters ONLY, (The unit will not allow setting of vacuum pressure). RUN and HEAT TIME can be set from 0.01 to 9.59 hours (HEAT TIME also has “CCC”).

   c) Press “AUTO RUN” button to start the run. The cover locks and the rotor starts spinning. The time display is counting down in 1 minute intervals and the decimal point blinks. The heat time is counting down (use select button to view “HEAT TIME”). The temperature rises in 1 °C increments to set temperature. The vacuum pressur begins decrementing down from “HPr” (atmospheric pressure), after both SAV valves actuate, applying vacuum to the chamber.

   d) The vacuum display will indicate vacuum pressure in the chamber.

   NOTE: If the cover is not closed, the display will show “Lid” and the run will not start.

   e) Press R/C for radiant cover heat. Press at any time to turn OFF and ON.

   f) Once the time decrements to 0.00 HRS. the run will automatically stop, the display will show “End”, the SAV valves will click, also allowing air to bleed into the chamber.

   g) After the rotor stops spinning, the cover unlocks and the display reverts to last set parameters.

   h) Open the cover and remove samples.

VACUUM

1. Executing an AUTO "VACUUM" RUN type:
   (GREEN light ON above vacuum).

   a) Press "RUN TYPE" to select "VACUUM" RUN.

   b) Using "SELECT" button and the up/down keys set "VACUUM" pressure at which the run should end. (Ex. 500 Microns), would be entered as 00.5 torr.

   c) Close cover.

   d) Press "AUTO RUN" button to start the run. The cover locks and the rotor starts turning. The display will count up in 1 minute intervals and the decimal point blinks. The heat time will count down in 1 minute intervals. The temperature rises in 1 °C increments from 35 °C to set temperature. The vacuum pressure is declining from Hpr. (Atmospheric Pressure), after both SAV valves actuate, allowing vacuum into the chamber.

   e) Press R/C for radiant cover heat. Press at any time to turn OFF and ON.

   f) Once the unit senses the set vacuum pressure in the chamber has been achieved (< 500 Microns) it ends the run and the display will show "End", the SAV valves will click, also allowing air to bleed into the chamber.

   g) After the rotor stops spinning, the cover unlocks and the display reverts to last parameters.

   h) Open the cover and remove samples.

GENERAL: During the run, display shows actual parameters.
To check set parameters press "VIEW" button and "SELECT".
The display will revert temporarily to set points.

4.0 Rotor Selection Guide

	Working Volume (ml)	Number of Tubes	Description	Rotor Model
MICROCENTRIFUGE TUBES 	1.2 - 1.6	40	1.5 - 2.0 ml	RH40-11
	1.2 - 1.6	64	1.5 - 2.0 ml	RH64-11
	1.2 - 1.6	120	1.5 - 2.0 ml	RH120-11
GLASS AND PLASTIC TUBES 	0.3	100	0.5ml (8 x 29mm)	RH100-8
	0.3	40	0.4ml (6x 50mm)	RH40-6
	0.3	100	0.4ml (6 x 50mm)	RH100-6
	4	20	12 x 75mm	RH20-12
	4	40	1.5 - 2.0 (12 x 75mm)	RH40-12
	4	72	12 x 75mm	RH72-12
	8	10	13 x 100mm	RH20-12
	8	32	13 x 100mm	RH32-13
	10	8	18 x 100mm, 17 x 95, 16 x 100	RH8-18
	25	6	18 x 150 mm	RH6-18-150
CENTRIFUGE TUBES 	12	10	15ml conical (16 x 120mm)	RH10-15
	40	6	50ml conical (28 x 115mm)	RH6-50
FLASKS 	35	8	50ml pear shaped flask	RH8-50
	80	4	100ml pear shaped flask	RH4-100
VIALS 	2	60	12 x 32mm	RH60-12-40
	2.0	60	12 x 40mm vials	RH60-12-40
	2.4	12	20 x 47mm v-vials	RH12-20
	3	24	1 dram vials (15 x 45mm), 4ml	RH24-15
	4	12	20 x 60mm v-vials	RH12-20
	5.6	24	18 x 52mm mini-scintillation vials	RH24-18
	16	12	28 x 60mm scintillation vials	RH12-28
MICROTITER PLATES(Shallow) 	0.3	2 plates	Microplates	RH2MP
	0.3	6 plates	Microplates	RHSW6M6
DEEPWELL PLATES 	2.0	2 plates	Deepwell Microplates	RHDW2MP

5.0 GUIDELINES FOR SOLVENT CHOICE

Part I Solvents suited for the SPD121P unit

- Ethanol
- Methanol
- Formic Acid
- Water
- Acetonitrile
- Methylene Chloride
- Chloroform
- Ethyl Acetate
- Hydrochloric Acid
- Trifluoroacetic Acid
- Dimethyl Sulfoxide (DMSO)

Part II All other solvents not listed above

Contact a Thermo Application Scientist
to see if your solvent can be used with the SPD121P concentrator.

6.0 MAINTENANCE/SERVICE

1. Maintenance: The SpeedVac® SPD121P requires no scheduled maintenance.

2. Cleaning: The SpeedVac® SPD121P should be cleaned if solvents spill on or inside the unit. Always clean up any spills immediately using absorbent towels.

   Always wear gloves when cleaning and dispose of paper towel in appropriate designated refuse containers.

3. Replace chamber seal if cracked (Part number is 197-6020-00).

4. Outside of unit can be cleaned with dilute solution of soap and water.

5. For any other maintenance or service issues or service problems, please contact Thermo.

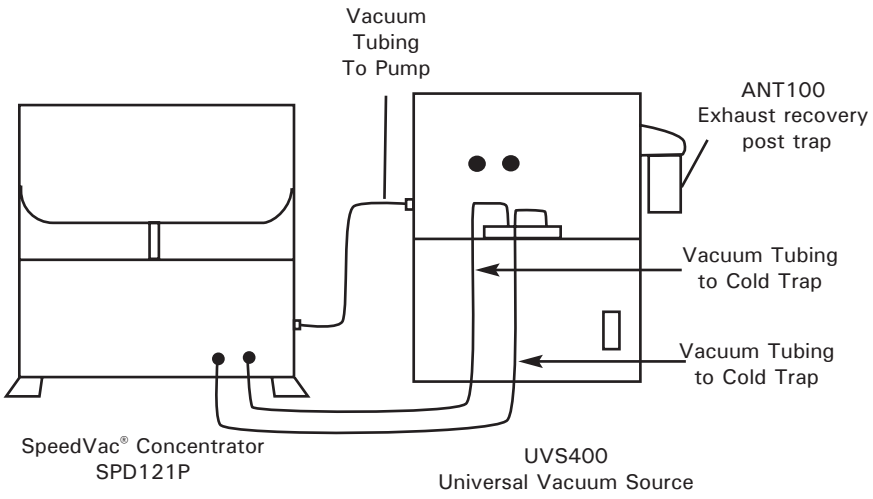
7.0 SPECIFICATIONS/WARRANTY

Model:	SPD121P
Bleeder Valve:	Integrated Automatic Bleeder Valve
Temperature Range:	35 °C-80 °C
Maximum Tube Size:	18 x 150 mm
Maximum Tube Capacity:	6
Maximum Carrier Capacity:	2 (96-deepwell plates) see chart on page 6
Dimensions: (W x D x H) in.:	14 x 18 x 13
cm:	36 x 45 x 33
Weight: lbs. (kg)	31 (14)
Power requirements:	115 VAC/60Hz, 5.0 A (Part number SPD121P-115) or 230 VAC/50Hz, 3.0 A (Part number SPD121P-230)

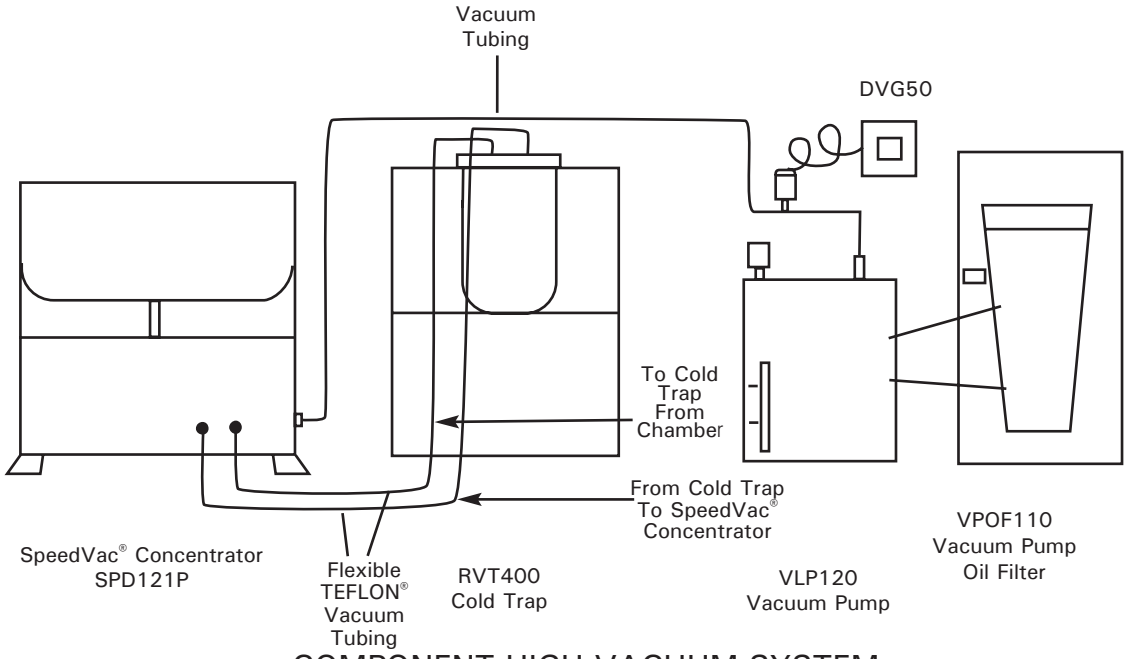
All Thermo products mentioned in this manual (except glassware) are warranted against defects in material and workmanship for one year after the date of delivery to the original purchaser. Thermo's warranty is limited to defective materials and workmanship, and does not cover incidental or consequential damages. Warranty work is subject to our inspection of the unit. No instruments, equipment, or accessories will be accepted without a Return Material Authorization (RMA) number issued by Thermo. Costs of shipping the unit are not covered under warranty. The warranty obliges you to follow the precautions in this manual. It is the responsibility of the user to dispose of ALL materials in a manner in accordance with all federal, state and local regulations. ALL RETURNED UNITS MUST BE DECONTAMINATED AND FREE OF RADIOACTIVITY AND SHOULD BE ACCOMPANIED WITH A DECONTAMINATION FORM. PLEASE CALL THERMO TO HAVE THIS FORM FAXED TO YOU! Under no circumstances shall Thermo be liable for damages due to the improper handling or use of its products. Thermo assumes no liability, express or implied, for your use of this equipment.

APPENDIX 1

Additional SPD121P System Set-ups



SEMI-INTEGRATED SYSTEM



COMPONENT HIGH VACUUM SYSTEM

SPD-SERIES SPEEDVAC® FAMILY

SPD101B

SPD111V

SPD121P

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