Instruction Manual

Thermo Scientific Savant®

SPD131DDA SpeedVac Concentrator

Part of Thermo Fisher Scientific

Thermo SCIENTIFIC

Contents

Overview of the SPD131 DDA 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 Tubing
10.	Main On/Off Switch
11.	Manual Cover Lock Release
12.	Rear Access Panel
13.	RS232 Port
14.	AC Receptacle

*Tubing that carries vapors to cold trap is larger in diameter.

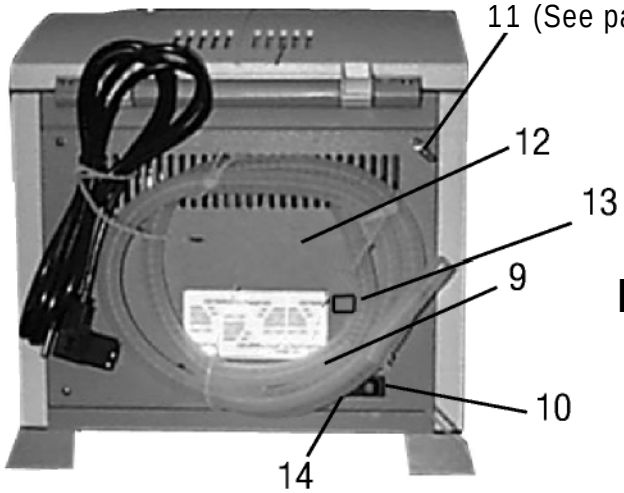
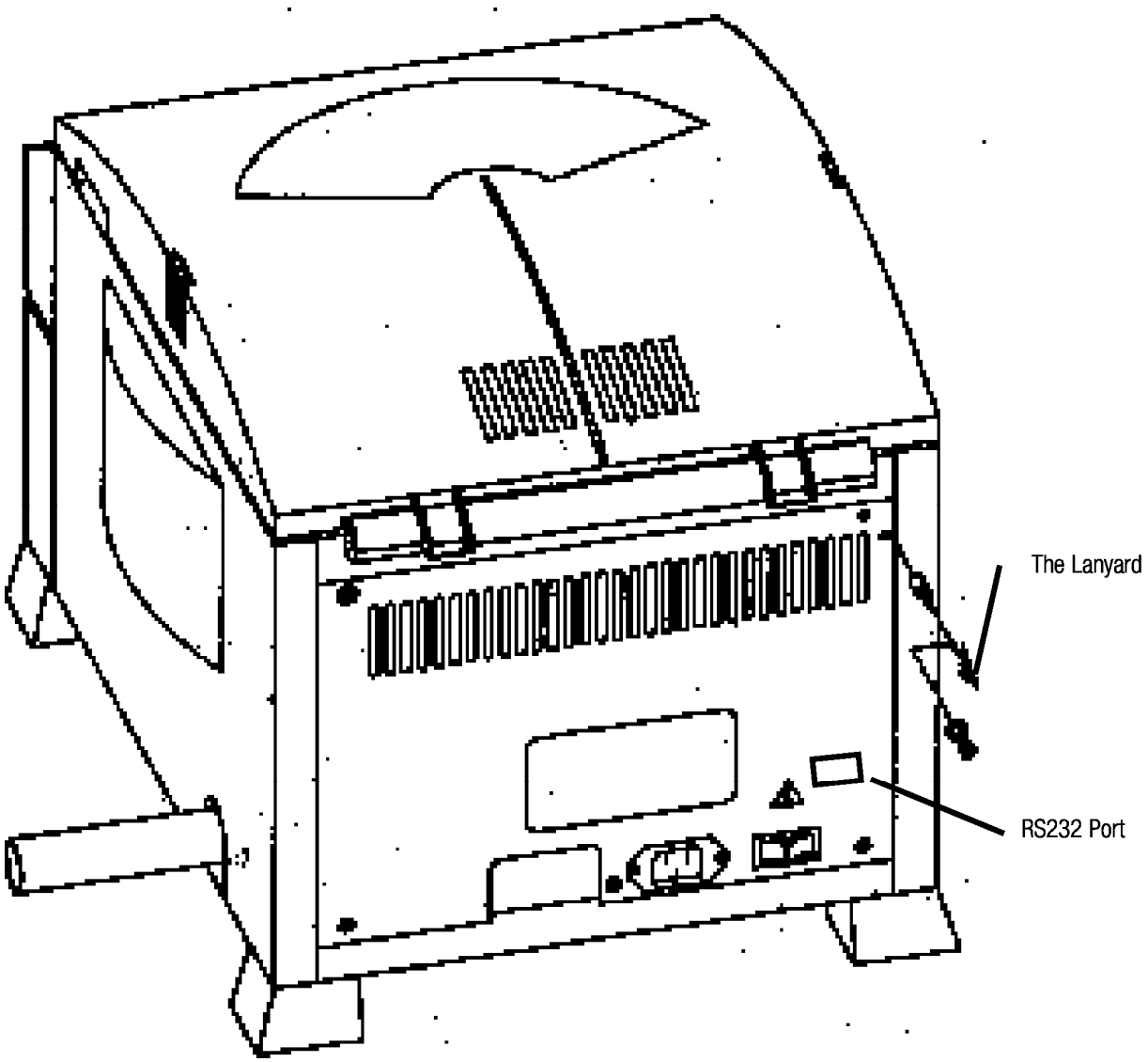


Fig. 3

COVER LOCK OVERRIDE

REAR VIEW OF SPD131DDA

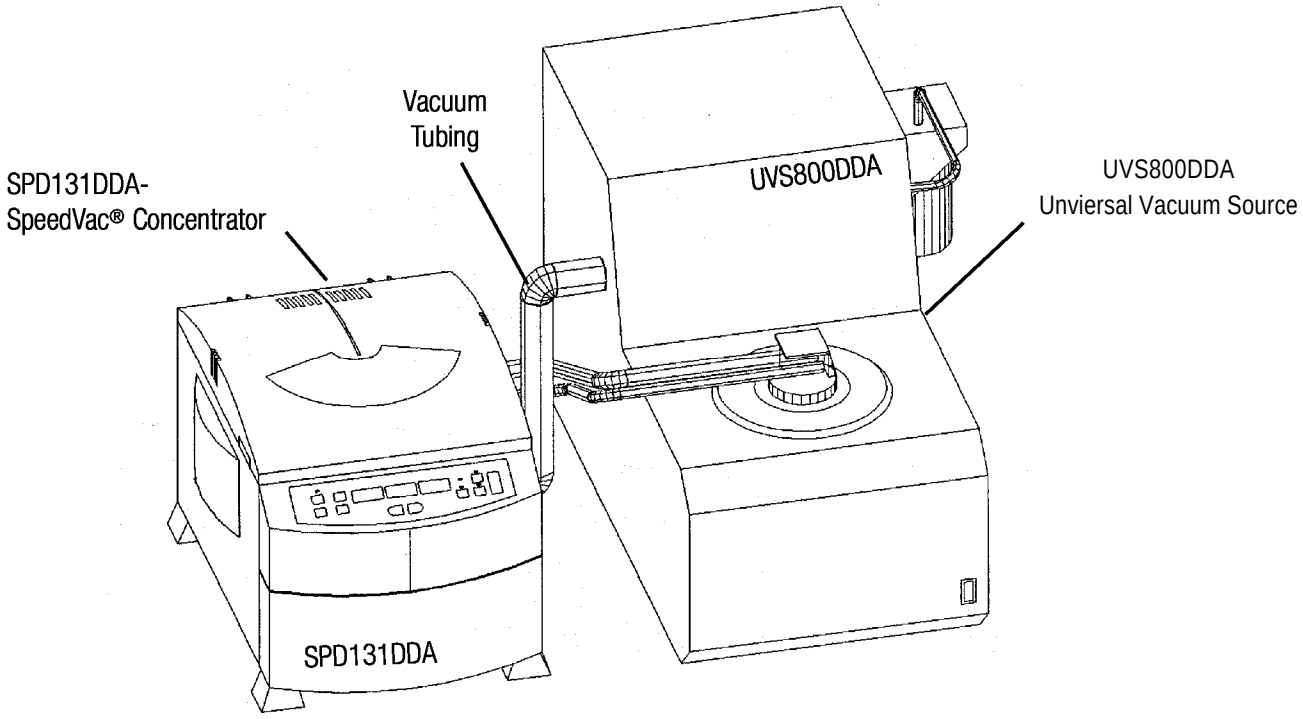


To Open The Top Cover During Power Failure:

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

INSTALLATION OF THE SPD131DDA

Figure 4-Front View of System



What it should look like:
How To Hook Up The SPD131DDA 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 Customer Service.

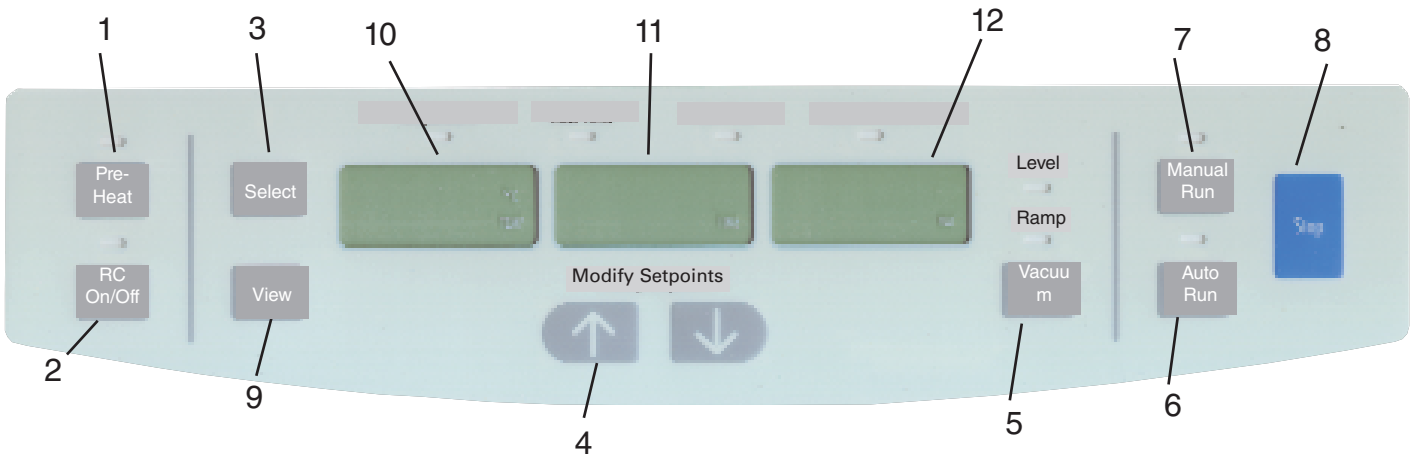
3. If the unit is part of a larger system, use the vacuum tubing supplied to hook up unit (See Figure 4).

4. Vacuum clamps must be put on vacuum ports of pump and SPD unit (See item 8 on Figure 2 and Figure 4).

5. If the unit is being connected to an existing system, attach vacuum tubing to various components as illustrated above and in Appendix 1.

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

CONTROL PANEL



Description of Control Panel

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

2. **RC ON/OFF** - Use to add radiant heat to chamber. Manually activate by pressing ON/OFF at any point during run. Will activate as long as there is time left on the heat timer. Will turn off when heat timer=0.00

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.

4. **MODIFY SET POINTS UP/DOWN** - Modifies selected parameter.

5. **VACUUM SET - (VACUUM CONTROLLER)** - Selects either "Level" or "Ramp" in the VAC display.

   Level: Allows users to select a pre-set vacuum level. Once this level is obtained, the microprocessor will regulate and maintain this vacuum level. The vacuum level can be set from 20 torr to 100 mtorr.

   Ramp: The rate at which vacuum is achieved can be set for preventing bumping. 5 adjustable levels can be set as required depending upon your solvent.

Setting	Vacuum Rate (approximate)
5	70 torr/min (Maximum setting)
4	50 torr/min
3	40 torr/min
2	30 torr/min
1	5 torr/min

6. **AUTO RUN** - Starts an 'Automated' run.

7. **MANUAL RUN** - Starts a "Manual" run.

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

9. **VIEW** - Press to view. Displays preset parameters when pressed during a run.

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

11. **TIME DISPLAYS** - Indicates heat timer or run timer set-points. In the process of a run it indicates elapsed time or time left. Set from 0.01 [1 min.] to 9.59 [9 hours, 59 minutes] or "CCC" [continuous].

12. **VACUUM PRESSURE DISPLAY** - Displays vacuum level or ramp. Chamber vacuum is displayed in torrs or millitorrs by shifting a decimal point. "Hpr." represents atmospheric pressure. No decimal point indicates microns. Ramp can be set to five (5) adjustable levels.

NOTE - The unit will sound an audible beep, every time a button is pressed.

EXAMPLE OF A MANUAL RUN

1. Connect the unit to its required voltage.

2. The cover lock disengages, allowing the top cover to be opened.

   The display lights up, showing the following default values:

   Temperature: 45 °C in RED
   Run Time: 2.00 HRS. in GREEN
   Vacuum Pressure: 01.0 in AMBER

3. Using the "SELECT" button and the up/down keys, set TEMPERATURE between 45 °C and 80 °C, or "no", for no heat.

4. Using the "SELECT" button and the up/down keys select and modif "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).

5. Select Run Time: Since this a manual run no time adjustment is needed.

6. To select a VACUUM LEVEL, press "VACUUM SET" to illuminate LEVEL and use th up/down keys to set vacuum to desired level. To select a vacuum ramp rate, press "Vacuum Set" to illuminate RAMP and use the up/down keys to set a ramp rate (5=highest, 1=lowest).

7. Place the sample tubes in the rotor and ensure that the load is balanced. Secure rotor with the supplied knob. Close cover.

8. Pre-heat may be selected at this time, to warm chamber to 45 °C.

9. Press the "MANUAL RUN" button. The cover locks and rotor starts turning. The decimal point blinks and the "RUN TIME" display counts up. The temperature rises to the set temperature. The "HEAT TIME" will count down and vacuum will be applied to the chamber. The vacuum level begins falling.
   NOTE: If the cover is not closed, the display will show "Lid" and the run will not start.

10. Press R/C for radiant chamber heat. Press at any time to turn OFF and ON. (As long as there is time left in the heat timer).

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

12. After the rotor stops spinning, the cover lock disengages and the display reverts to last set parameters, and the unit will sound several audible beeps.

13. 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.

EXAMPLE OF AN AUTO RUN

1. Refer to the "MANUAL RUN" section for start up.

2. To execute an AUTO "TIMED" RUN:

   a) Use "SELECT" button and the up/down keys to select and modify "TEMPERATURE, "HEAT TIME, "RUN TIME" parameters. RUN and HEAT TIME can be set from 0.01 to 9.59 hours (HEAT TIME also has "CCC" for continuous use).

   b) To set a VACUUM LEVEL, press "VACUUM SET" to illuminate LEVEL up/down keys to set vacuum to desired level.
   To select a vacuum ramp rate, press "Vacuum Set" to illuminate RAMP and use the up/down keys to set a ramp rate (5=highest, 1=lowest).

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

   a) 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 pressure begins decrementing down from "HPr" (atmospheric pressure), after both SAV valves actuate, applying vacuum to the chamber.

   b) 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.

c) Press R/C for radiant chamber heat. Press at any time to turn OFF and ON. (As long as there is time left in the heat timer).

d) 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.

e) After the rotor stops spinning, the cover unlocks and the display reverts to last set parameters, and the UNIT will sound several audible beeps.

f) 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.

Rotor Selection Guide

	Working Volume (ml)	Number of Tubes	Description	Fixed Angle 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	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
	2.4	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
	20.0	24 (2 blocks)	20 ml scintillation vials	RB12-28-58
	4.0	48 (2 blocks)	1 dram (4 ml) vials (15 x 45 mm)	RB24-15-45
				HORIZONTAL ROTOR
96 WELL PLATES 	2.0	2 plates	Deepwell Microplates	RHDW2MP
			or	
	0.3	6 plates	Shallow Well (ONLY)	RHSW6MP
ROTOR BLOCKS	20	12/block	20 ml scintillation 28 x 60 mm	RB12-28-58
	4	24/block	4 ml 15 x 45 mm	RB24-15-45

GUIDELINES FOR SOLVENT CHOICE

Part I Solvents suited for the SPD 131 DDA unit

- Ethanol
- Methanol
- Formic Acid
- Water
- Acetonitrile
- Methylene Chloride
- Chloroform
- Ethyl Acetate
- Hydrochloric Acid
- Trifluoroacetic Acid
- DMSO (Special set-up required-see Appendix 2)

In the event that your choice of solvents and applications are unique and not listed above, please contact Customer Support for advice.

MAINTENANCE/SERVICE

1. Maintenance: The SPD131DDA SpeedVac requires no scheduled maintenance.

2. Cleaning: The SPD131DDA SpeedVac should be cleaned if solvent, spills on or inside the unit. Clean up any spills immediately using absorbent towels.

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

3. Replace chamber seal if cracked (Part number is 197-6020-01).

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, contact Customer Service

.

SUMAX SPD MAINTENANCE INSTRUCTIONS

ALWAYS WEAR GLOVES
AND SAFETY GLASSES
TOOLS REQUIRED:
PHILLIPS HEAD SCREWDRIVER

EVERY TWO WEEKS OR DEPENDENT UPON USAGE WITH CORROSIVE SOLVENTS AND ACIDS, PLEASE EXECUTE THE FOLLOWING STEPS:

- ☐ OBTAIN A PHILLIPS HEAD SCREWDRIVER
- ☐ INSURE THAT GLOVES AND SAFETY GLASSES ARE BEING WORN
- ☐ USING PHILLIPS HEAD SCREWDRIVER REMOVE THE THREE SCREWS THAT SECURE THE SUMAX SPD (place screws in a safe place)
- ☐ REMOVE THE SUMAX SPD BY LIFTING IT STRAIGHT UP, USING THE ROTOR HOLD DOWN KNOB
- ☐ PLACE THE SUMAX SPD IN A PLASTIC CONTAINER
- ☐ RINSE THE SUMAX SPD THOROUGHLY UNDER RUNNING TAP WATER TO RID OF ALL DEBRIS AND RESIDUE
- ☐ WIPE THE INSIDE OF THE SPEEDVAC® CONCENTRATOR WITH A DAMP PAPER TOWEL
- ☐ WIPE THE SUMAX SPD DRY WITH A PAPER TOWEL
- ☐ PROPERLY DISPOSE OF THE COLLECTED WATER AND PAPER TOWELS INTO SPECIALLY DESIGNATED CONTAINERS
- ☐ RETURN THE SUMAX SPD TO ITS ORIGINAL POSITION INSIDE THE CONCENTRATOR CHAMBER, ALIGN HOLES OF SUMAX SPD WITH THREADED HOLES IN CHAMBER
- ☐ REINSTALL THE 3 SCREWS INTO THE THREADED HOLES
- ☐ TIGHTEN THE 3 SCREWS SECURELY
- ☐ TIGHTEN THE ROTOR HOLD DOWN KNOB FIRMLY WITH ONE QUARTER TURN AFTER FLUSH WITH THE KNOB SUPPORT.

DO NOT OVERTIGHTEN!

IF YOU ENCOUNTER DIFFICULTIES WITH THIS PROCEDURE PLEASE CONTACT THERMO.

SUMAX SPD UPPER MAGNETIC ASSEMBLY DRAWING

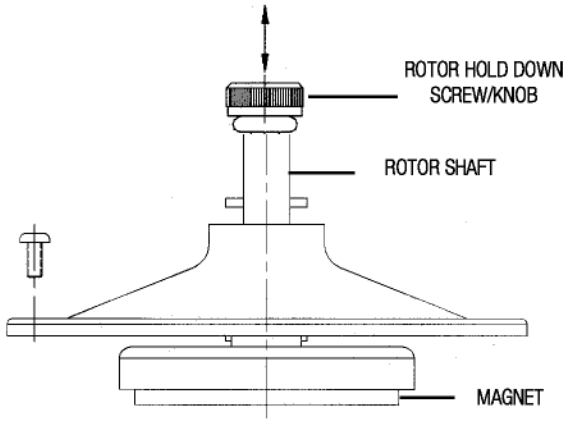
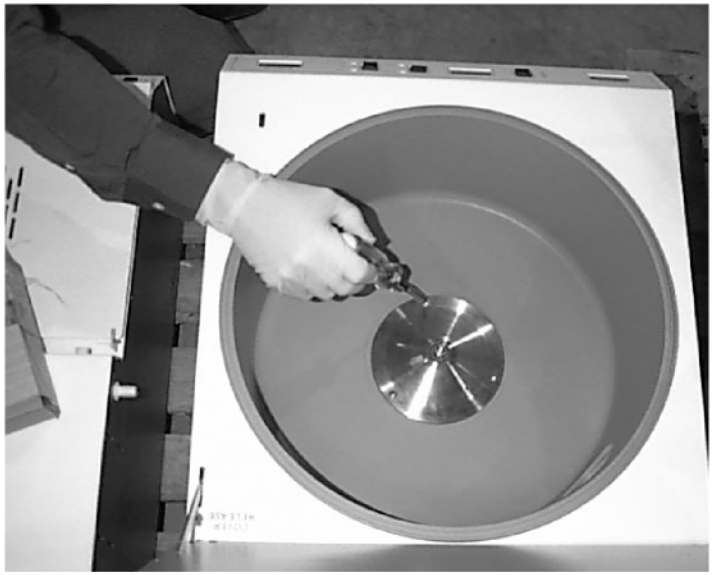


PHOTO LOOKING DOWN INTO SPEEDVAC® CHAMBER AT SUMAX SPD UPPER MAGNETIC ASSEMBLY



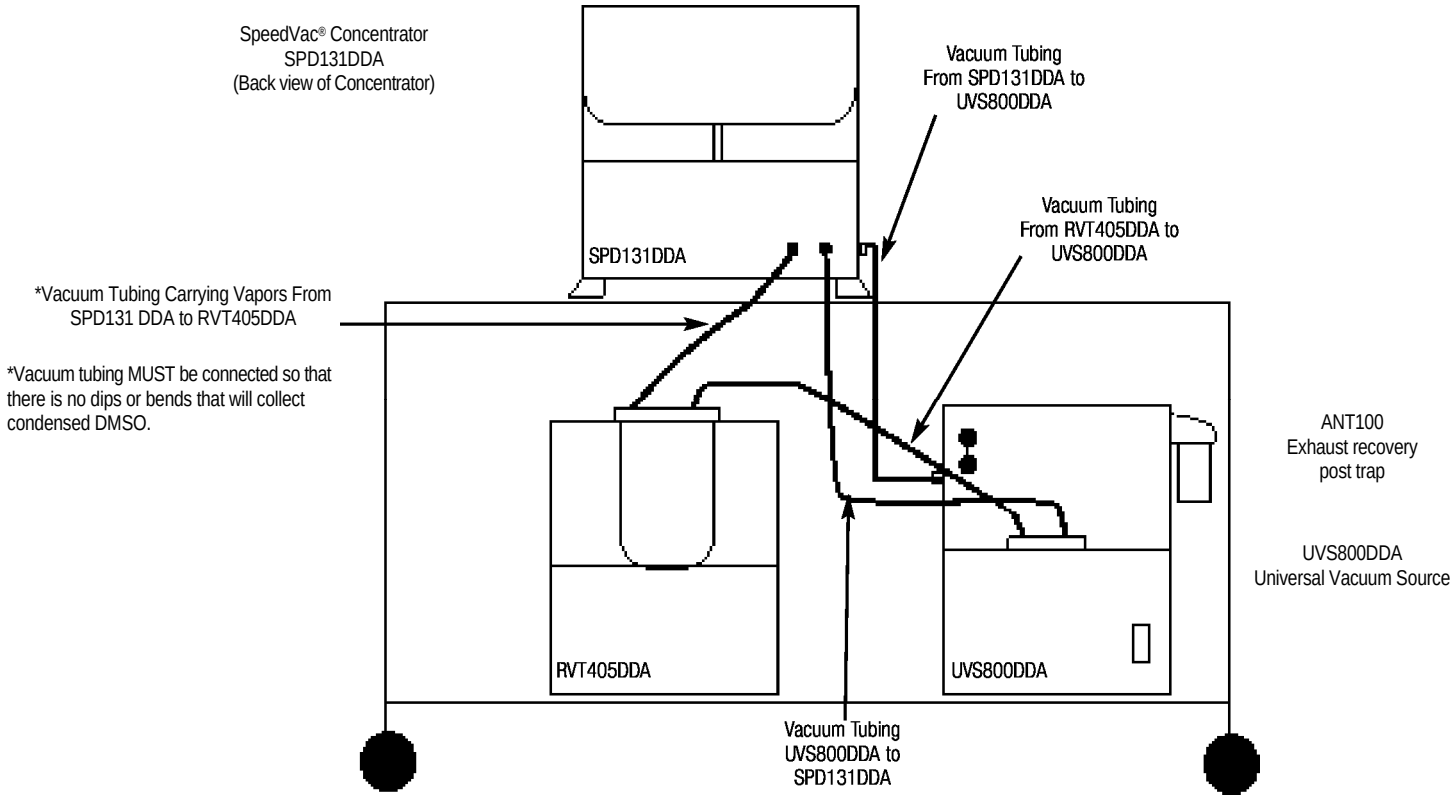
SPECIFICATIONS

Model:	SPD131DDA
Bleeder Valve:	Integrated Automatic Bleeder lve
Temperature Range:	45°C-80°C
Volume Range/Tube:	18 x 150 mm*
Tube Capacity:	6*
Maximum Carrier Capacity:	2 x (96-deepwell plates)
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, 5.0A (Part number SPD131 DDA-115) or 230 VAC/50Hz, 3.0A (Part number SPD131 DDA-230)

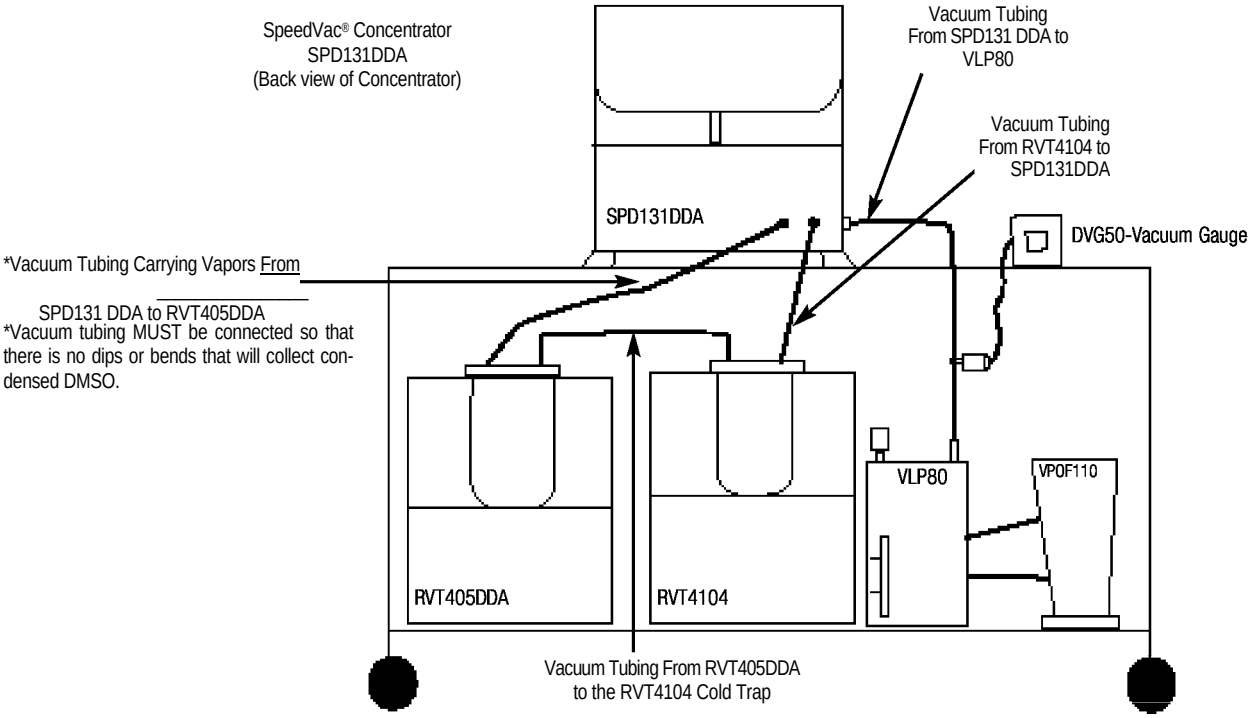
* This is an example of volume range and tube capacities, please see page 6 for other tubes and capacities available.

APPENDIX 1

Additional SPD 131 DDA System Set-ups

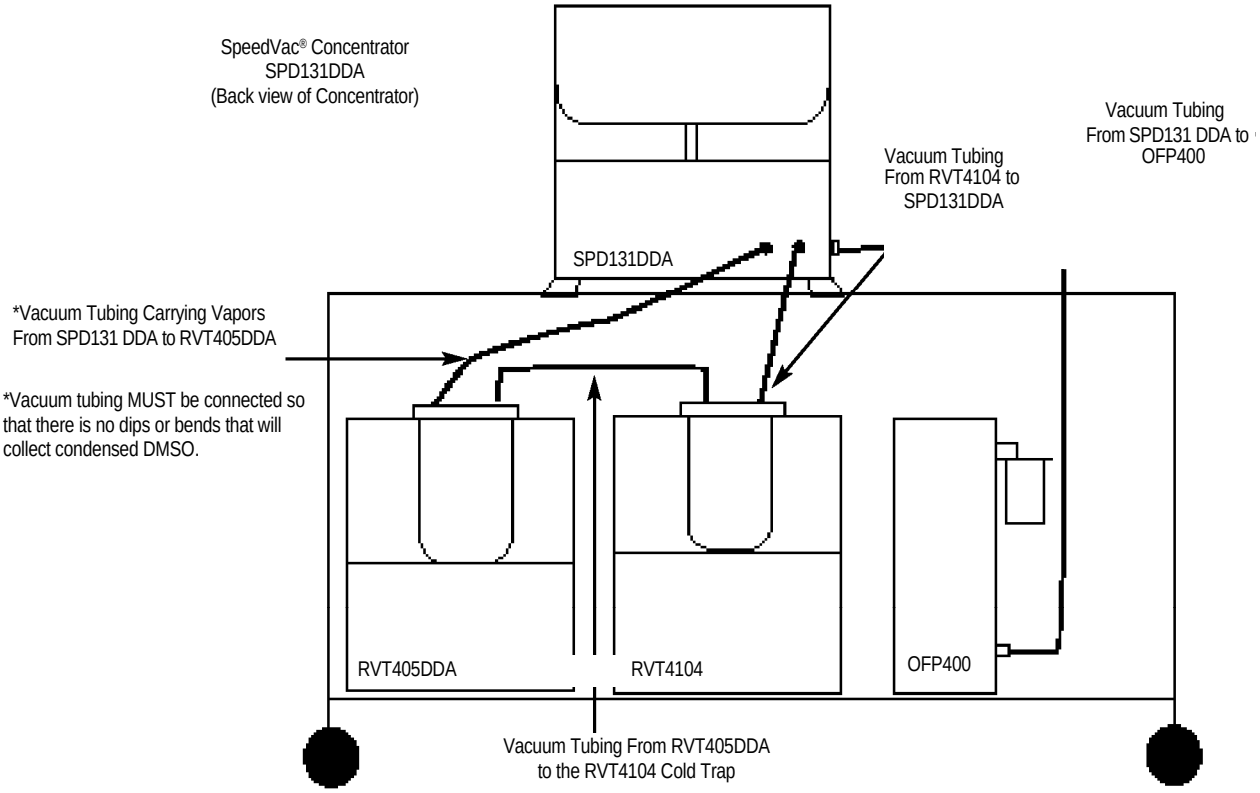


SEMI-INTEGRATED SYSTEM-HVSU131 DDA



COMPONENT HIGH VACUUM SYSTEM-HVS131 DDA

APPENDIX 2
Additional SPD 131 DDA System Set-ups for DMSO Applications



LOW VACUUM SYSTEM-LVS131 DDA

APPENDIX 3

RS232 Port Specifications

Baud Rate: 9600
Parity : None
Bits: 8
Stop Bit: 1

Data Format:
*ALL X's are numerals from 0-9.

X X__ (space) _ X.XX (space) X.XX (space) __ XX.X(space) sequence repeats

The first field (XX) indicates temperature in ◦C. The display "no" denotes no heat being supplied.

The second field (X.XX) indicates heater time, hours.minutes. The display "C.CC" denotes a continuous heat run. The display "E.nd" denotes the end of the heat run

The third field (X.XX) indicates run time, hours.minutes. The display "E.nd" denotes the end of the run.

The fourth field indicates vacuum in torr units. If the vacuum is less than 1 torr, the format is .XXX. If it is greater than 1 torr, the format is XX.X

For example:

5 6 __ (space) _ 3.30 (space) __3.59 _____ (space) 15.8 (space) (sequence repeats)

This represents a temperature of 56 ◦C, a heater time of 3 hours and 30 minutes, a run time of 3 hours and 59 minutes and vacuum level of 15.8 torr.

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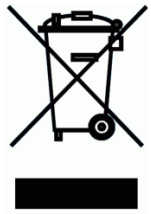

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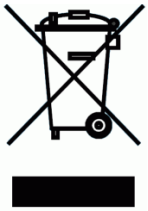
Italia



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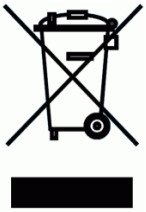
France



Important

For your future reference and when contacting the factory, please have the following information readily available:

Model Number: _____

Serial Number: _____

Date Purchased: _____

The above information can be found on the dataplate attached to the equipment. If available, please provide the date purchased, the source of purchase (manufacturer or specific agent/rep organization), and purchase order number.

IF YOU NEED ASSISTANCE:

SALES DIVISION

Phone: 1-866-984-3766
1-866-9-THERMO

LABORATORY PARTS and SERVICE

Phone: 1-800-438-4851

TECHNICAL SUPPORT

Phone: 1-800-438-4851

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