

Thermo Scientific Savant SPD1030-115

Speed Vac Integrated Vacuum Concentrator

Integrated vacuum concentrator for streamlined laboratory sample preparation Designed for drying and concentrating aqueous and non-aggressive samples Medium-capacity design for efficient sample...



Category: Laboratory & Diagnostics

Typical Failure Modes (category reference)

- Vacuum Failure / Insufficient Pressure Decay**

High
- Symptoms: Vacuum gauge reads above 10 Torr; samples fail to concentrate within standard time; display shows 'Vacuum Error' or pump cycles continuously without building pressure.

Cause: Permeation of organic solvent vapors (ethanol, isopropanol) into the pump intake causing seal degradation and oil contamination; PTFE chamber coating flaking introduces particulate interference into the vacuum stage.
- Heater / Temperature Regulation Failure**

Medium
- Symptoms: Samples over-dry or scorch; temperature readout deviates >5°C from setpoint; unit trips thermal cutoff.

Cause: Drift of the PT1000 temperature sensor embedded in the aluminum block; thermal fuse activation due to prolonged operation above 80°C setpoint; relay contact pitting on the heater board.
- Rotors / Tray Misalignment / Mechanical Jamming**

Low
- Symptoms: Tubes or plates seat unevenly; audible grinding during ramp; rotor fails to lock; error code prevents start.

Cause: Accumulation of dried sample residue on the rotor hub threads; corrosion of the aluminum rotor interface from solvent exposure; wear of the cam-lock mechanism from frequent rotor changes.

Serviceable Parts & Consumables (category reference)

PART	P/N	SERVICE CLASS	REL. COST	R&R
Vacuum Pump Oil (PTFE-compatible formula)	-	Consumable	\$	Easy
Rotor Hub Cam-Lock Mechanism	-	Periodic replacement	\$\$	Difficult
Heater Cartridge Assembly (80°C rated)	-	Major service part	\$\$\$	Moderate

Troubleshooting Approach (BioDeviceHub synthesis)

Symptom: Vacuum will not build; pump runs but gauge stays above 10 Torr

1. Isolate the chamber: Run the unit with the door open and the PTFE chamber removed to verify pump-down speed independent of the chamber seal.
2. Inspect the vacuum intake filter: Remove and examine for solvent-induced oil emulsification or particulate blockage; replace if milky or discolored.
3. Verify pump oil condition and level: Drain a sample into a clear vial; look for solvent separation or foaming. Replace oil with PTFE-compatible formula if contaminated.

Symptom: Temperature readout unstable or exceeds setpoint

1. Access the block sensor well: Remove the top cover and disconnect the PT1000 probe. Measure resistance at 25°C (approx 100 Ω) to verify sensor integrity.
2. Perform a thermal soak test: Set unit to 80°C no-load; log temperature every 2 minutes for 20 minutes. Note any drift beyond ±3°C before replacing the sensor.
3. Check heater relay contacts: With power removed, inspect the solid-state relay for carbon tracking or pitting; replace if resistance across contacts is uneven.