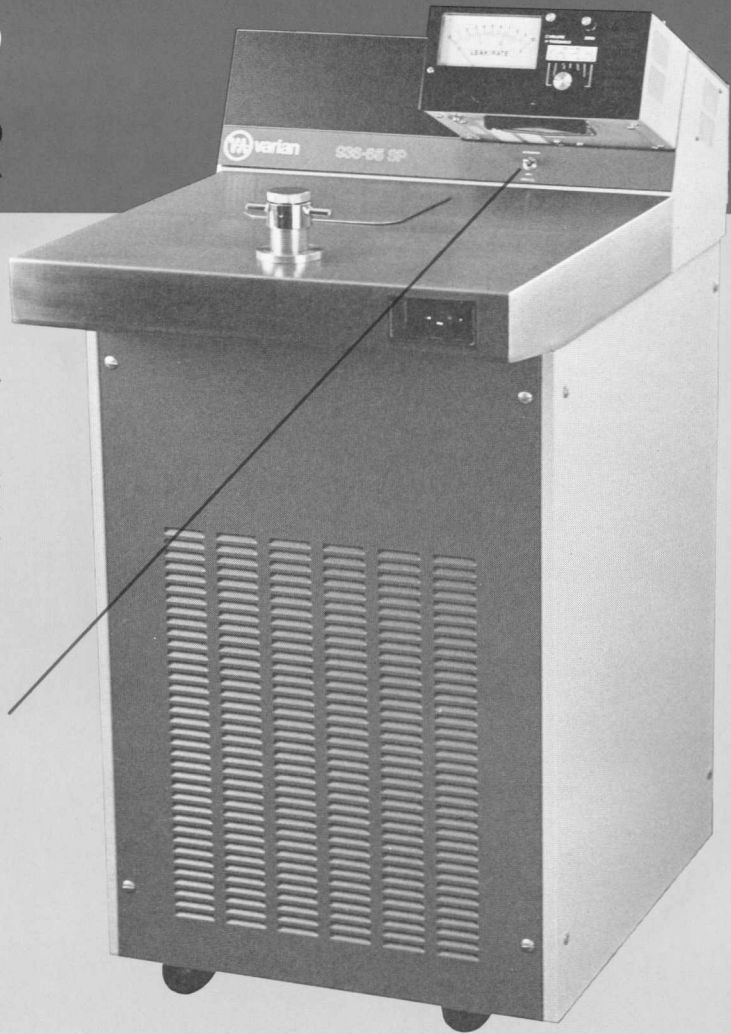


936-65 SP LEAK DETECTOR



The 936-65 SP: an ultra-sensitive leak detector with fast helium clean-up

The 936-65 SP is the only leak detector that retains high sensitivity and fast vacuum system clean-up with the automatic orifice plate type of control.

SENSITIVITY CONTROL

Automatic position provides added sensitivity during the test while insuring fast clean-up between tests. Off position negates the extra sensitivity and the 936-65 SP performs exactly like the 936-60 SP leak detector.

SENSITIVITY

2×10^{-11} ATM. CC/SEC. FOR HELIUM
 7.5×10^{-12} ATM. CC/SEC. FOR AIR

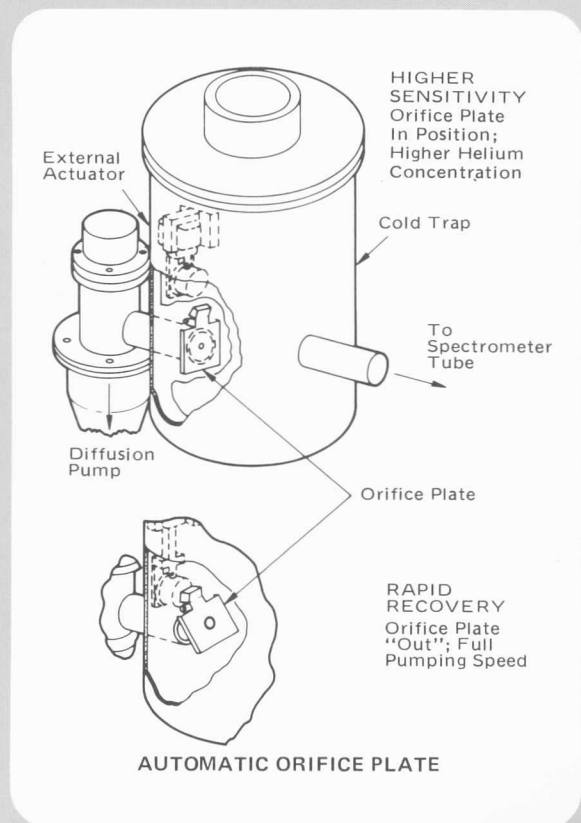
BENEFITS

RETAINS HIGH SENSITIVITY AND SPEED THROUGH UNIQUE AUTOMATIC ORIFICE PLATE CONTROL

A 2×10^{-11} atm. cc/sec. helium leak gives a 2% deflection on the most sensitive scale, while a test port pumping speed of 3 liters/sec. is maintained by the unique automatic orifice plate. This automatic control restores 10 liters/sec. pumping speed following test, for fast clean-up of helium.

IDEALLY SUITED FOR APPLICATIONS REQUIRING THE HIGHEST SENSITIVITY

In addition to the above features and benefits, the 936-65 SP incorporates all of the design elements and benefits of the basic 936-60 SP leak detector. (Refer to pages 12 through 15 for a detailed discussion of this information. Also refer to the discussion of the benefits incorporated in all models of the 936 Family, described on pages 2 through 5.)



936 SP FAMILY SPECIFICATIONS - ANALOG MODELS

SENSITIVITY

936-70 SP:

4 x 10⁻¹⁰ atm. cc/sec. for helium.
1.5 x 10⁻¹⁰ atm. cc/sec. for air.

936-60 SP:

8 x 10⁻¹¹ atm. cc/sec. for helium.
3 x 10⁻¹¹ atm. cc/sec. for air.

936-65 SP*:

2 x 10⁻¹¹ atm. cc/sec. for helium.
7.5 x 10⁻¹² atm. cc/sec. for air.

Minimum detectable leak is registered as 2% of full scale deflection on the most sensitive range. Fine leak testing from 2 x 10⁻¹⁰ to 10⁻⁴ in three direct reading scales. Gross leak testing from 10⁻⁴ to 1 atm. cc/sec.

RESPONSE TIME

936-70SP: 1.5 seconds for helium.

936-60 SP: 1.5 seconds for helium.

936-65 SP*: 3 seconds for helium.

SPECTROMETER TUBE

Preamplifier is computer optimized, temperature stabilized solid state and is located in the vacuum enclosure. Heat up is programmed to minimize time from start up to stable operation.

Entire tube heated to constant temperature at all times. Demountable pole pieces for quick access to tube interior. Patented dual-filament, disposable, all-welded ion source. Patented integral cold-cathode gauge keeps source clean. Removable magnet structure provides all fields.

ELECTRONICS

Solid-state electronics.
Separate emission and pressure meters.
Lockable tuning control cover.
100% feedback at all sensitivity settings.

AMPLIFIER DRIFT

Less than 2% of most sensitive scale per hour after warm-up.

LINEARITY DEVIATION

Less than ±2% of scale reading, all ranges.
Constant electrometer negative feedback and 1% precision resistors insure excellent between-range tracking.

NOISE LEVEL

Less than 2% of full scale, peak to peak.

LEAK INDICATOR

Separate from electronics for remote use but firmly attached. It can be used remotely with the optional extension cable.
4.5" taut-band leak rate meter.
Seven-position range selector.
Three sensitivity scales for direct reading - 10⁻¹⁰ to 10⁻⁷; 10⁻⁹ to 10⁻⁶; 10⁻⁸ to 10⁻⁴ atm. cc/sec.
One arbitrary sensitivity scale - 10 to 10,000 units.
Recorder jack provided.
Standard audible alarm includes: audible alarm, with adjustable audio zero and volume.

CYCLE TIME

Varies with test volume and gas loads. Blank port can be cycled to read 10⁻⁷ std cc/sec. leaks in less than six seconds and 10⁻⁴ gross leaks in less than three seconds.

POWER PANEL

Indicator lamps for pumps and filament - gross leak, reject lamp, and test lamp.

VACUUM SYSTEM

All threads are relieved and O-ring grooves are vented.

FOREPUMP

936-60 SP and 936-65 SP

Varian SD-90 3.2 cfm direct drive.

936-70 SP

Varian SD-200 7 cfm direct drive.

ROUGHING PUMP

Varian SD-200 7 cfm direct drive.
Optional SD-300 11 cfm direct drive.

DIFFUSION PUMP

Stainless steel, air-cooled pumped specifically designed for leak detection.

Fully fractionating jet design and charged with polyphenyl oxidation-resistant pumping fluid.

Optically dense baffle is installed in the diffusion pump for maintaining system cleanliness.

COLD TRAP**

Stainless steel construction with internal built-in funnel for filling ease. Flanged without bolts for quick removal for cleaning.

Liquid holding capacity 24 hours.

AUTOMATIC MANIFOLD VALVES

Long-life pneumatic bellows-sealed valves provide automatic system cycling. Pneumatic operation provided by optional built-in air compressor or any external air supply of at least 75 psi.

Exclusive automatic valve protects diffusion pump against power loss during operation and service functions.

VACUUM GAUGES

Cold cathode gauge measures high vacuum in the 10⁻³ to 10⁻⁵ Torr range in analyzer tube. Thermocouple gauge in port manifold controls automatic roughing and test operation.

TEST PORTS

1-1/8" ID quick couplings are provided on the system top and optionally on the sides of the cabinet.

SAFETY INTERLOCKS

Automatic protection against all pressure surges (valve closure and filament shut-off). Diffusion pump and filament cannot be energized if foreline pump is not operating.

Exclusive automatic valve protects diffusion pump against power loss during operation and service functions.

Circuit breakers on all major circuits.

POWER REQUIREMENTS

120 volts AC 60 Hz Single Phase Standard.

936-60 SP & 936-65 SP with SD-200 Roughing Pump - 17 amps.

936-60 SP & 936-65 SP with SD-300 Roughing Pump - 21 amps.

936-70 SP with SD-200 Roughing Pump - 19 amps.

936-70 SP with SD-300 Roughing Pump - 23 amps.

Optional 220 volts AC, 50 Hz, single phase is available.

AIR SUPPLY

75 psi min. normal shop air. System is supplied with filter, lubricator, and regulator.

Optional built-in compressor provides pneumatics necessary for system operation.

CABINET

All-welded frame 36" H, 22" W, 30" D, including 6" work surface overhang. Actual floor space required is 22" W x 24" D.

Cabinet frame has demountable panels.

Stainless steel work surface: 30" W x 22" D.

6" knee space provided for convenience of seated operator. Demountable leak rate indicator module for remote testing. Caster-mounted for ease of mobility.

WEIGHT (approx.)

350 lbs.

SHIPPING WEIGHT (approx.)

420 lbs.

SPARES

Ion source, gauge liner, tool kit and mechanical pumping fluid are provided.

*Specifications define performance with the high sensitivity control in use. When high sensitivity is not needed, this control can be switched off; the unit then performs exactly like the 936-60 SP model, and specifications for the 936-60 SP are then applicable.

**There is no cold trap in the 936-70 SP model.