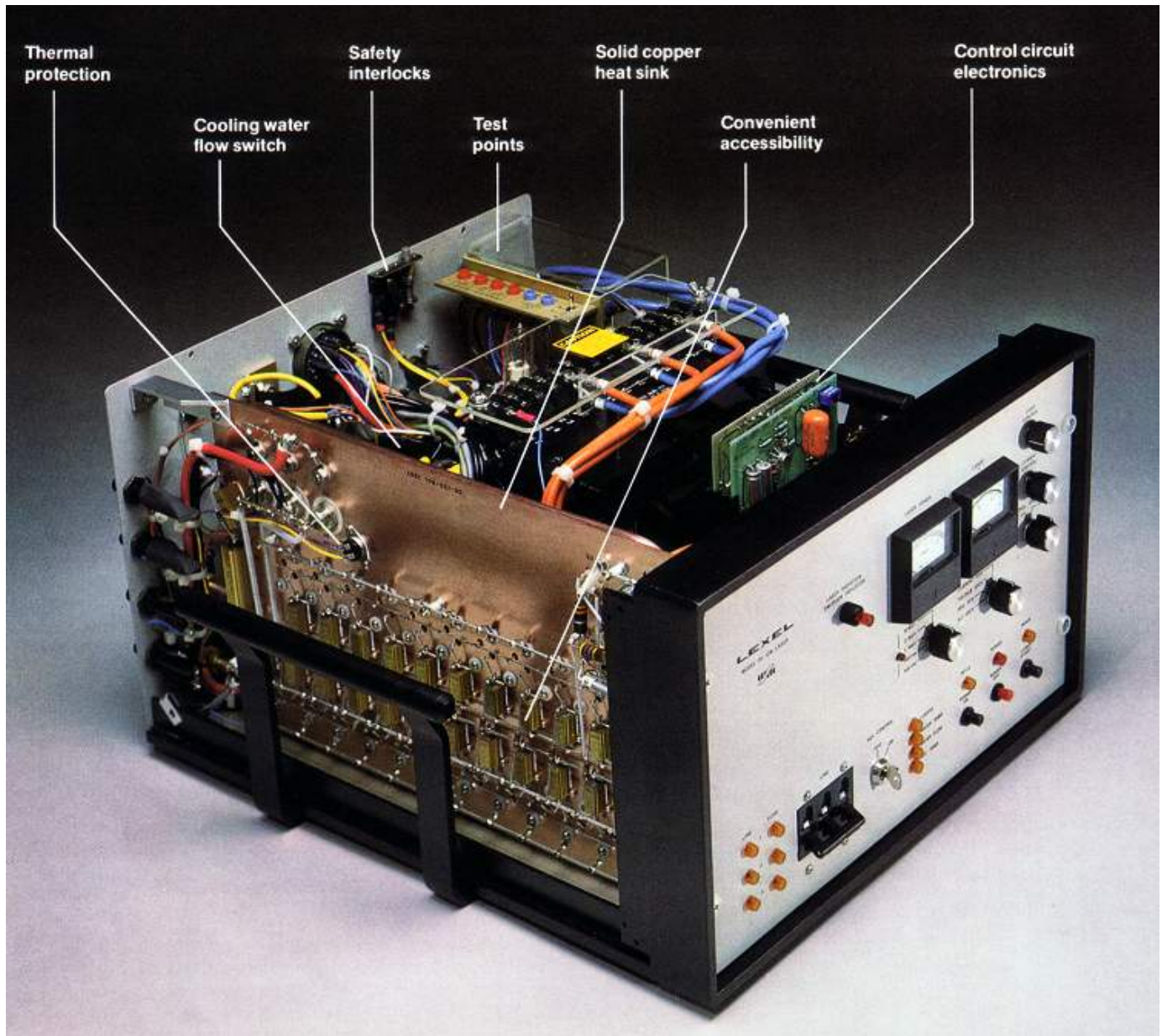




## LEXEL ION LASER POWER SUPPLY INTERIOR

**T**he Lexel ion laser power supply is the most reliable yet developed, providing a degree of convenience, flexibility and safety unmatched in the industry. The photos and captions below give an idea of the details and design that go into making the power supply worry-free.



#### é Thermal protection

Thermal protective switches sense any abnormal temperature condition and will de-energize the laser before any damage can take place.

#### é Cooling water flow switch

A reliable flow switch is used to prevent operation without proper cooling water flow. If the water is not on, the laser cannot be turned on. If the cooling water is shut off while the laser is operating, there will be no damage to the tube or other components.

#### é Safety interlocks

A safety interlock de-energizes the power supply if the cover is removed. Safety is an important part of Lexel's design concept.

#### é Test points

Clearly marked electrical test points are provided for measuring the most important electrical parameters.

#### é Solid copper heat sink

The heat from the power transistors and associated components is transferred into the cooling water by means of the solid copper heat sink. The cooling water tubing is brazed directly to the copper plate so that all of the heat is transferred without a thermal interface such as sometimes exists in aluminum heat sink designs. A cool heat sink means cool transistors; and cool transistors provide solid reliability.

#### é Convenient accessibility

Removal of the power supply cover completely exposes the top and both sides for full access to the components inside. Components are located so that they are easily accessible for checking or maintenance.

#### é Control circuit electronics

Printed circuit cards provide the electronics for the Light and Current stabilization circuits.

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#### é AC line contactor

The power supply is switched on and off by a large relay which applies and disconnects the AC line power. This line contactor works in conjunction with the pushbutton and interlock circuits to provide complete main power control. This contactor may also be controlled from remote locations.

#### é Auto-transformer

A multitapped auto-transformer is used to match the power supply to widely different AC line voltages. Line voltages may be as low as 190 volts or as high as 245 volts in different parts of the world. To force a transistor regulator circuit to adjust for this range of line voltages directly is to invite transistor failures. The Lexel auto-transformer method allows an optimum match to the AC line at installation. The regulator circuit will thereafter reliably compensate for normal line voltage variations of 10% or more.

#### é Protective shielding

Areas inside the power supply connected directly to the AC line and therefore not interlocked, are covered with additional protective shielding.

#### é Rectifier fuses

These main fuses protect the diode rectifiers.

#### é Copper water tubing

The cooling water in the power supply uses copper tubing. There are no water hoses in Lexel power supplies to blow off and flood the electronics.

#### é BeO transistor insulators

The power transistors making up the current regulation circuit are mounted to the copper heat sink using high thermal conductivity BeO insulators. Much of the high reliability of the Lexel power supply comes from keeping the transistors cool.

#### é Light regulator connector

The electrical feedback signal from the light sampler in the laser head connects to the Light Regulator and Power Meter electronics at this connector.

#### é Power to laser head

The interconnecting electrical cable from the laser head plugs into the back of the power supply.

#### é Recorder output

This output may be used to operate a power indicator such as Lexel's Model 508 Remote Power Monitor.

#### é External modulation

The laser may be modulated by applying a signal to this connector. This feature is often used to remotely change the laser power level or to pulse from an idle level to a preset operating level.

#### é Laser head water connections

The cooling water hoses to and from the laser head are connected to these fittings. Like the electrical connection, the water hoses may be completely disconnected from the power supply.

#### é Water inlet and drain

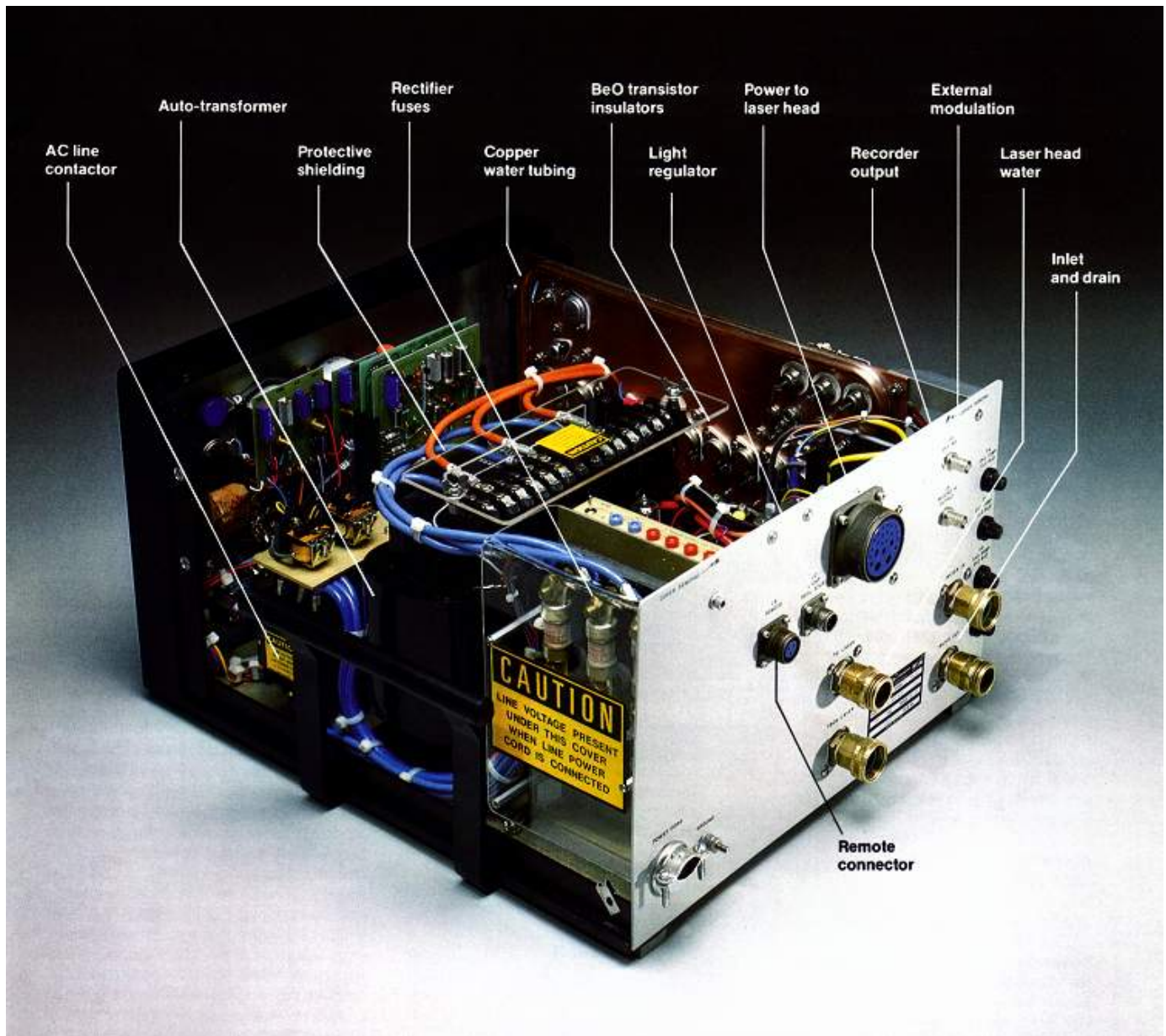
The cooling water to and from the laser is connected to the power supply using ordinary garden hose connections.

#### é Remote control connector

Provides terminals which must be electrically joined in order to energize the laser. Complies with CDRH standards.

#### é Components clearly labeled

Each major component or subassembly is clearly marked with its identifying symbol. This identification allows easy and direct comparison to the schematics and parts list in the instruction manual.



Click here for [detailed information about Lexel ion laser power supplies.](#)

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