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REL3D / NT98 S-band magnetron (E1189) ([see the end of this page for an internal view](#))



The magnetron measures 190x75mm overall, plus leads, and weighs 550g.



E1189 was developed in mid-1940 from E1188, which was itself developed from Randall and Boot's original cavity magnetron. It was the first magnetron suitable for use as a radar transmitter. The first E1189 was 6-segment but was redesigned as 8-segment, and an example was taken to the USA by the Tizard Mission in August 1940.

Used in Naval Radar Type 271, the E1189 was later standardised as NT98. The REL3D is equivalent.

Heater voltage	6V
Heater current	1.25A
Approx wavelength (NT98C)	10.05cm
Max anode dissipation	150W
Typical conditions at 500pps, 1µs pulse width; 1080 oersteds magnetic field	
Peak anode voltage	9.5kV
Peak anode current	8A
Peak output power	8kW

Above: REL3D; Below: NT98. The serial number of this magnetron is Q24136 and it has the number 8827 written on the anode block.

See also [REL3C](#) (E1198/CV38)



A.P. W2510  
NT 986  
Serial No. Q2436

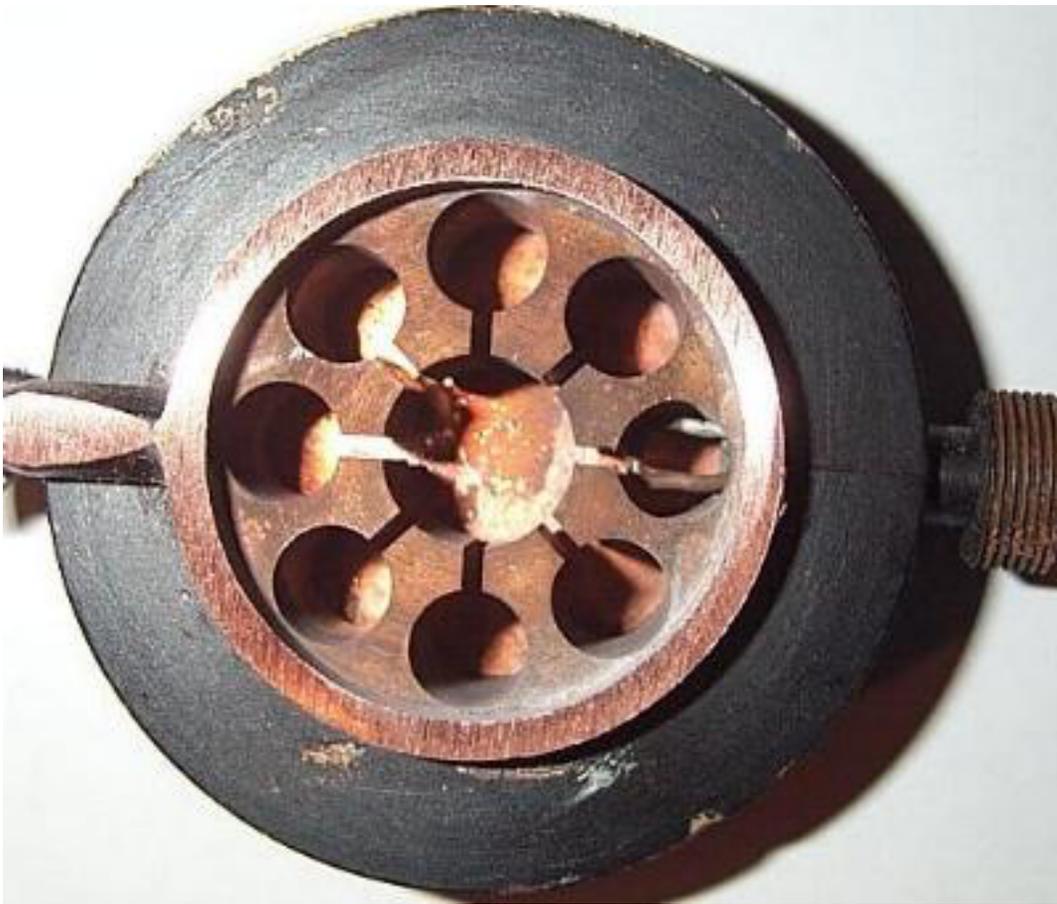
827



Both faces of the magnetron, showing the serial number 7665, and the marking J24 R.E.L.



Internal views



REL3D serial 7427 opened up. The output port is on the right but this magnetron was damaged and the output loop has been distorted. Below is the cathode and heater. The cathode cylinder measures approx. 22x5mm, the heater coil was supported at each end by the fittings shown, and a mica insulator was placed between the end of the heater and the metal plate that forms the side of the magnetron. Shown also is one of the glass lead seals.



NT98 donated by Danial Stocks

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**FOR SALE:** Note that any valve which is not CV marked is now for sale. Contact me via email - see the home page.