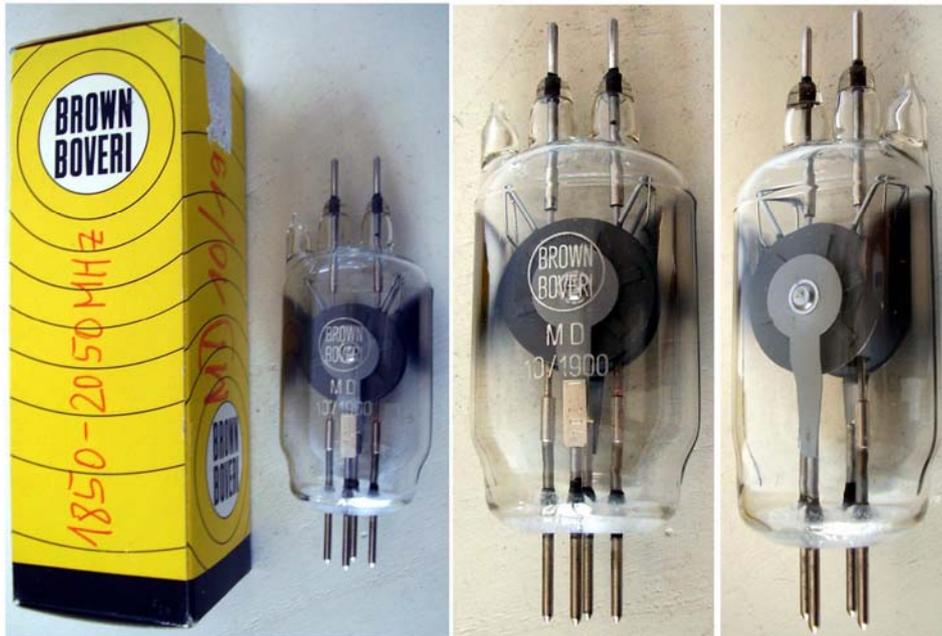
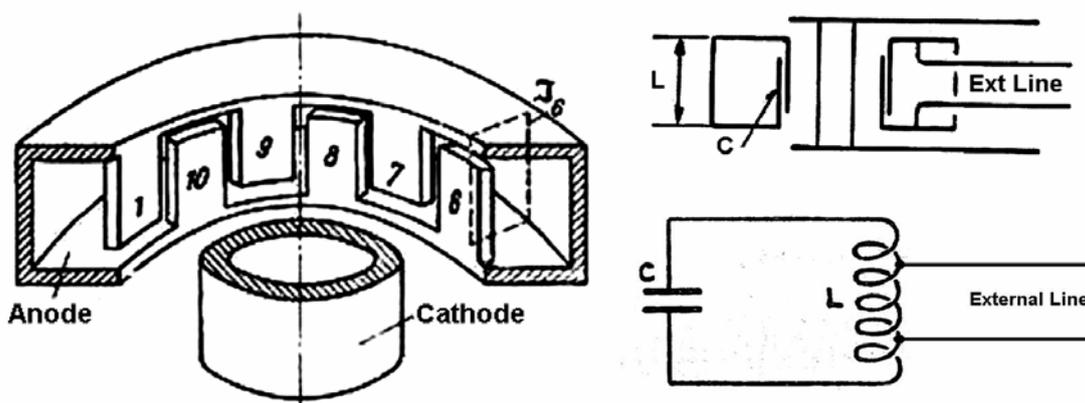


MD10/1900 - [MD10/2000](#) - 'Turbator' CW Magnetron



The family of 'Turbator' single-cavity magnetrons was introduced in 1948 by Brown Boveri for its line of microwave communication sets. The designer, Dr. Lüdi, had started experimenting microwave tubes including magnetrons years before. In the design of his 'Turbator' he integrated an interdigital structure and the resonating cavity. This solution was innovative, quite similar to that of coaxial magnetrons. The single cavity, integrated with the twelve interdigital segments, granted the very high spectral purity required for the intended application. Yet the whole anode assembly was simple to manufacture, no need for tight tolerances, as in the multi-cavity magnetrons.



Left, sectional view of the 'Turbator' showing the doughnut-shaped anode system. The inner wall of the cavity is formed by twelve interdigital segments. The draft at right top shows where most of inductance and capacity are concentrated, indicated as L and C. Also showed the connections of the external transmission line to the internal walls of the cavity. The equivalent lumped-constants circuit is given at bottom right.

Few data found for this type, introduced in 1950 for use in the Brown Boveri 1M23 microwave link:

- **1.7 V @ 3.9 A filament**
- **1900 MHz center frequency \pm 7.5%**
- **5 to 15 W output**

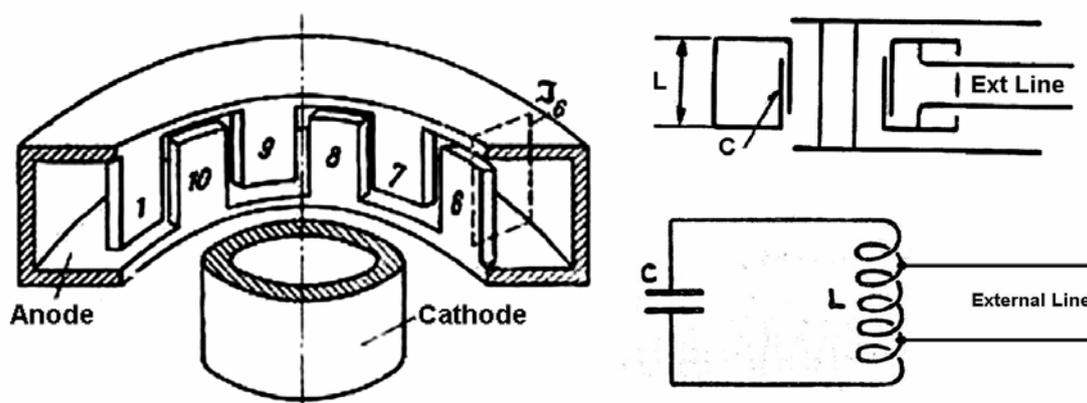
Pinout and other information can be derived from the datasheet of the MD10-2000 and from the couple of pages from 'The Brown Boveri Review', Dec. 1941 on the early developments of the 'Turbator' magnetron.

The collection also includes other 'Turbator' samples.

MD10/1900 - MD10/2000 - 'Turbator' CW Magnetron



The family of 'Turbator' single-cavity magnetrons was designed by Dr. Fritz Lüdi at Brown Boveri for microwave communication transmitters. 'Turbator' was first introduced in 1948. Dr. Lüdi had started experimenting microwave tubes and even magnetrons years before. In the design of his 'Turbator' Dr. Lüdi integrated an interdigital structure and the resonating cavity. This solution was quite innovative, anticipating the appearance of coaxial magnetrons. The single cavity, integrated with the twelve interdigital segments, granted the very high spectral purity required for the intended application. Yet the whole anode assembly was simple to manufacture, no need for tight tolerances, as in the multi-cavity magnetron.



Left, sectional view of the 'Turbator' showing the doughnut-shaped anode system. The inner wall of the cavity is formed by twelve interdigital segments. The draft at right top shows where most of inductance and capacity are concentrated, indicated as L and C. Also showed the connections of the external transmission line to the internal walls of the cavity. The equivalent lumped-constants circuit is given at bottom right.

The collection includes two MD10/2000 samples, one of which appears unused.



The unit in the two photos above came unused, still in its original box. It could be operated in the future to measure or evaluate the spectral purity of this kind of structure.

Origins	Article	Data
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