

Section 14

PACKAGING

Valves shall be packed according to the requirements of Joint Service Specification K1005. The following acceptance tests shall be performed as required during packaging tests (See K1005, Section 7.)

14.1. Test for Inoperatives (see paragraph 5.14):-

- (1) Discontinuities
- (2) Shorts
- (3) Air leaks
- (4) Broken pins
- (5) Loose base or caps

The methods of test for (1), (2), (3) and (5) shall be those normally used by the Manufacturer subject to the approval of the Inspection Authority.

14.2. Electrical Tests

14.2.1. Receiving Valves

TESTS

1. Anode Current
2. Screen Current and Diode Current where applicable.
3. Anode Current Cut-off. (Where this is stated in the Test Specification it is to be measured as the average change in grid voltage for a fixed current).

LIMITS

When minimum and maximum values only are given in the Test Specification, the average value of change of the referenced parameter shall not exceed $\pm 10\%$ of the difference between the maximum and minimum limits.

When a bogey value is given in the Test Specification, the average value of change of the referenced parameter shall not exceed $\pm 20\%$ of the difference between the bogey value and the wider limit.

When a single sided limit is given in the Test Specification, the average value of the change shall not exceed $\pm 10\%$ of this limit.

14.2.2. Rectifiers

TESTS

All rectifiers shall be subjected to the Load Test as specified. On gas filled rectifiers this test shall be made at least 24 hours after the drop test.

LIMITS

Load Test: $\pm 5\%$ of existing specification limit.

NOTE: Where the Peak Inverse Voltage rating exceeds 10 kV, the tolerances shall be raised from 5% to $7\frac{1}{2}\%$.

14.2.3. Cathode Ray Tubes

TESTS

1. Spot Centrality
2. Beam (or Anode) Current at a fixed point or alternatively - Visual Cut-off
3. Useful screen area to be fully scanned

LIMITS

1. Spot Centrality: The geometrical position of the spot shall not change by more than 50% of the total tolerance.
2. Beam (or Anode) Current, or, alternatively, Cut-off. When minimum and maximum limits are given in the Test Specification, the average value of the change shall not exceed $\pm 20\%$ of the difference between the maximum and minimum values.

When a single sided limit is given in the Test Specification, the average value of change shall not exceed $\pm 10\%$ of this limit.

3. Deflection Sensitivity. (Electrostatically deflected tubes only): 50% of the total tolerance.

14.2.4. Small or Medium Power Transmitting Valves

- TESTS
1. Any Functional Test given in the Test Specification (ignoring the time clause).
 2. If no functional test is specified, test as for receiving valves in Section 14.2.1 above.
- LIMITS
1. Functional Test e.g. Power Output: $\pm 10\%$ of existing specification limit.
 2. As in Section 14.2.1 above.

14.2.5. Magnetrons

- TESTS
1. Power Output Test
 2. Frequency Pulling
 3. Peak Anode Voltage
 4. Frequency.
- LIMITS
1. Power Output: $\pm 10\%$ of existing specification limit.
 2. Frequency Pulling: $\pm 10\%$ of maximum limit.
 3. Peak Anode Voltage: $\pm 10\%$ of existing specification limit.
 4. Frequency: $\pm 10\%$ of the difference between the specification limits or $\pm 20\%$ of the difference between the bogey value and the wider limit.

14.2.6. Reflex Klystrons

- TESTS
1. Power Output
 2. Reflector Voltage
 3. Tuning Range
- LIMITS
1. Power Output: $\pm 20\%$ of existing specification limit.
 2. Reflector Voltage: $\pm 10\%$ of the difference between the specification limits.
 3. Tuning Range: As in the Test Specification.

14.2.7. Gas Filled Tubes

All tests to be made not less than 24 hours after the drop test.

- TESTS
1. Load Test as for rectifiers
 2. Striking Voltage
- LIMITS
1. Load Test: as for rectifiers (See 14.2.2.)
 2. Striking Voltage: $\pm 10\%$ of the difference between the existing specification limits.

14.2.8. All other valves. Where the specification requires a functional test to be made this test shall be the package acceptance test.

Where no functional test is given life test conditions shall be used.

Where neither functional nor life test conditions are stated selected specification tests may be used in agreement with the Inspection Authority.