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agence spatiale européenne

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**RADIOGRAPHIC INSPECTION OF
RESISTORS**

ESA/SCC Basic Specification No. 2094000

SCC

**space components
coordination group**

Issue/Rev.	Date	Approved by	
		SCCG Chairman	ESA Director General or his Deputy
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**1. SCOPE**

This specification, to be read in conjunction with ESA/SCC Basic Specification No. 20900, Radiographic Inspection, contains additional requirements for Resistors, which shall be applied to each device.

2. GENERAL REQUIREMENTS**2.1 APPLICABILITY**

The following criteria may not be varied or modified after commencement of any inspection stage. Any ambiguity or proposed minor deviation shall be referred to the Qualifying Space Agency for resolution and approval.

2.2 PROCEDURE

All items shall be examined in such a manner that a minimum of handling and movement of the components is involved.

3. X-RAY PHOTOGRAPHS**3.1 RESISTORS WIREWOUND**

Each component shall be radiographed once in each of the 2 directions shown in Figure I. Figure II shows the appearance of a typical component and indicates the terms used in this specification.

4. DETAILED REQUIREMENTS**4.1 GENERAL**

A component shall be rejected if it exhibits one or more of the defects listed in the following paragraphs.

4.2 RESISTORS WIREWOUND

The drawing (Figure III) is included to provide additional explanatory material, but shall be considered as an example only.

4.2.1 Winding

- (a) Resistance wire turns not evenly spaced.
- (b) Resistance wire winding not snug against the core.
- (c) Average winding pitch exceeding five times the wire diameter.
- (d) Effective wire coverage such that more than 20% of the overall winding area remains uncovered.

N.B.

The effective wire coverage is the winding length on the core between the points of departure from the normal winding pitch.

- (e) Broken wire.

**4.2.2 End Cap and Lead**

- (a) Kinked lead.
- (b) Distorted butt weld.
- (c) End cap out of perpendicular alignment with axis of resistor element by more than five degrees .
- (d) Cap improperly fitted by loose on core.

4.2.3 Assembly

- (a) Extraneous material in contact with resistance wire.
- (b) Resistor element offset from axis of component by more than 10%.
- (c) Extraneous material in filler or body greater than 25% of wall thickness in any dimension.
- (d) Voids in filler or body greater than 25% of wall thickness in any dimension.
- (e) Wall thickness of filler or body not meeting the requirements of the approved P.I.D.



FIGURE I - COMPONENT/EXPOSURE

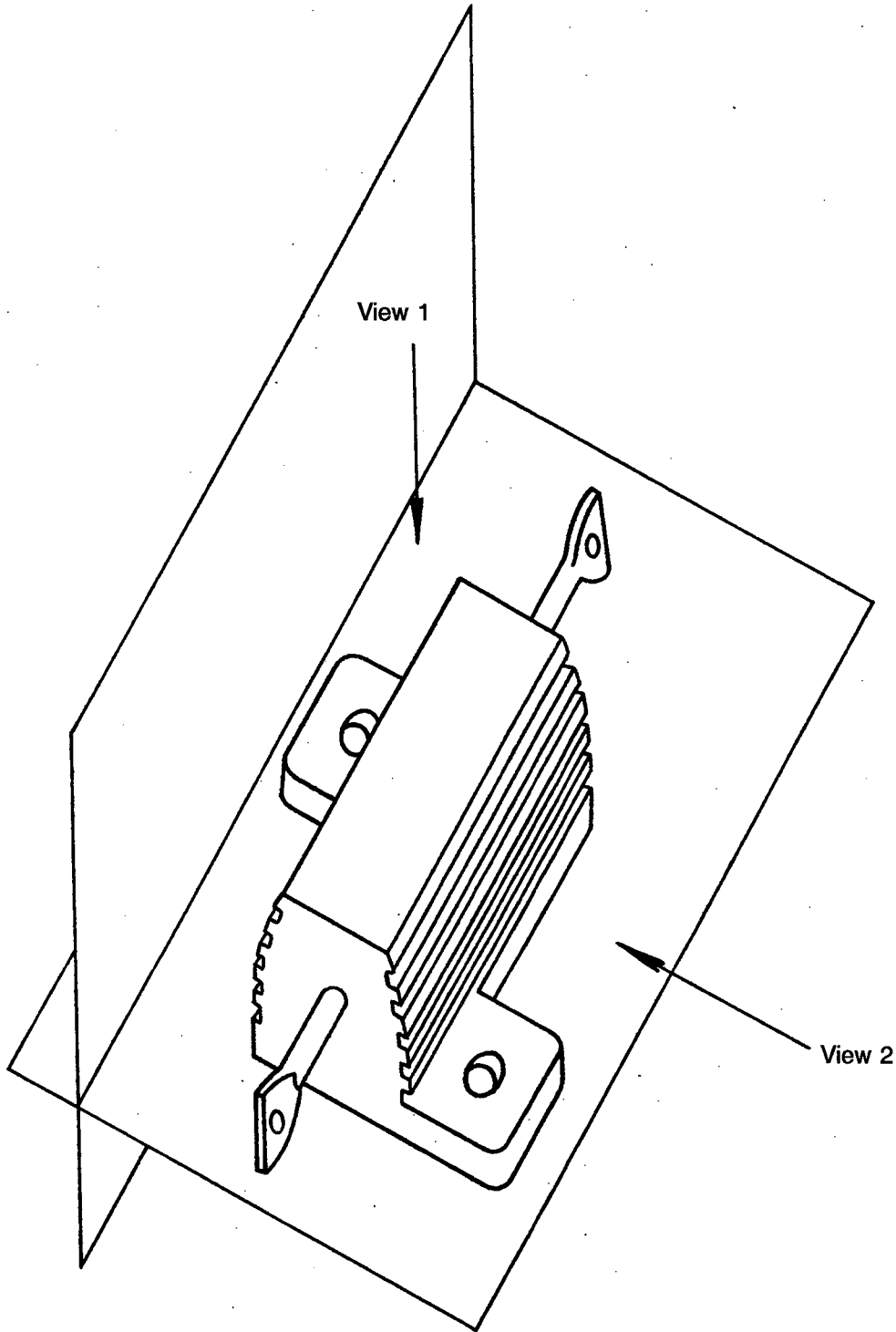




FIGURE II - TYPICAL COMPONENT

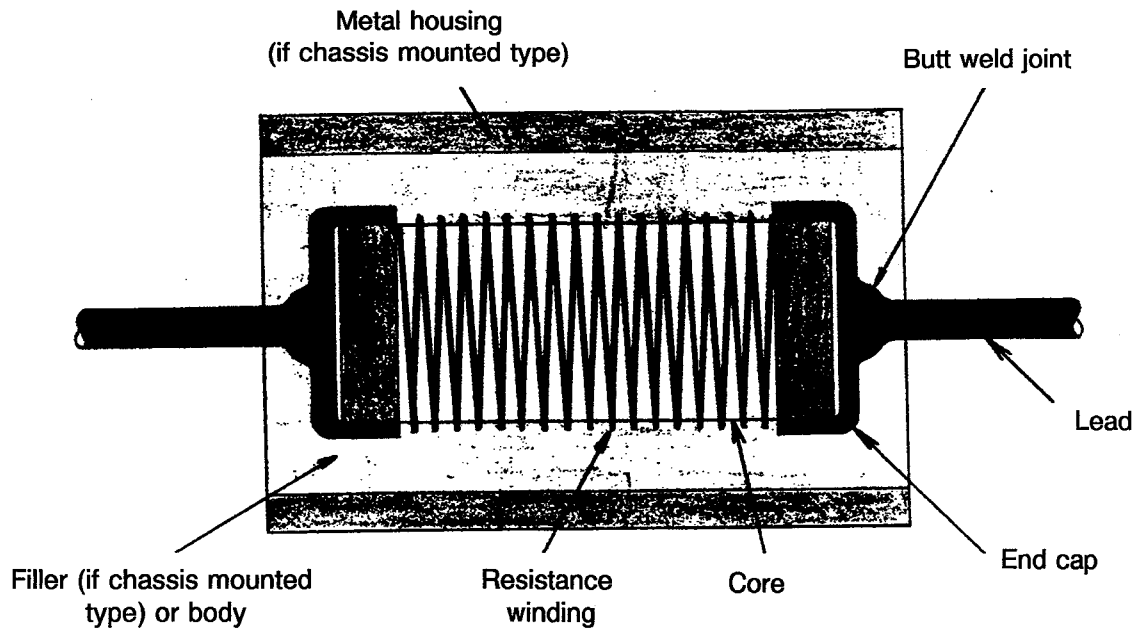


FIGURE III - POSSIBLE DEFECTS

