

BOMBARDIER

Turboprops (de Havilland)

PROPRIETARY INFORMATION

PPS 9.23

PRODUCTION PROCESS STANDARD

RECEIPT VERIFICATION OF PRINTED CIRCUIT BOARDS

- Issue 2
- This standard supersedes PPS 9.23, Issue 1.
 - Vertical lines in the left hand margin indicate changes over the previous issue (e.g., changes initiated by Bombardier PPS Amendment Request AR #9080).

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Quality

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1 SCOPE

1.1 This Production Process Standard (PPS) specifies the procedure and requirements for receipt verification of printed circuit boards.

1.1.1 This PPS complements the engineering drawings that specify its use as an authorized instruction and the procedure specified must be followed to ensure compliance with all applicable specifications. In general, if this PPS conflicts with the engineering drawing, follow the engineering drawing. The requirements specified in this PPS are necessary to fulfil the engineering design and reliability objectives.

1.1.2 Refer to [PPS 13.26](#) for the subcontractor provisions applicable to this PPS.

1.1.3 Procedure or requirements specified in a Bombardier BAPS, MPS, LES or P. Spec. **do not** supersede the procedure or requirements specified in this PPS. Similarly, the procedure and requirements specified in this PPS are not applicable when use of a BAPS, MPS, LES or P. Spec. is specified.

2 HAZARDOUS MATERIALS

2.1 Before receipt at Bombardier Turboprops (de Havilland), all materials must be approved and assigned Material Safety Data Sheet (MSDS) numbers by the Bombardier Turboprops (de Havilland) Environment, Health and Safety Department. Refer to the manufacturer's MSDS for specific safety data on any of the materials specified in this PPS. If the MSDS is not available, contact the Bombardier Turboprops (de Havilland) Environment, Health and Safety Department.

3 REFERENCES

3.1 [PPS 13.26](#) - General Subcontractor Provisions.

3.1.1 QDI-10-02.10-1 - Product Sampling Plan.

4 MATERIALS AND EQUIPMENT

4.1 Materials

4.1.1 No materials required.

4.2 Equipment

4.2.1 Light table.

4.2.2 Self-Illuminating Magnifier (3X - 5X).

5 PROCEDURE

5.1 General

- 5.1.1 Upon receipt of a batch of printed circuit boards, perform receipt verification on a sample from the batch according to QDI-10-02.10-1 before release of the batch to the applicable Stores. Take care not to damage the traces, pads or board when handling or examining printed circuit boards.

5.2 Photo-Negative Comparison

- 5.2.1 Use the photo-negative of the engineering drawing and a suitable light table to visually verify that the printed circuit boards are correct to the engineering drawing (i.e., hole, trace and lead spacing, position, etc.). Ensure that the part number on the photo-negative matches that of the printed circuit board.

5.3 Detail Examination

- 5.3.1 Using a self-illuminating magnifier, examine printed circuit boards for the following defects:
- trace discontinuity (cuts, cracks or scratches completely across the trace)
 - tracks, chips or bulges on the board surface
 - trace or pad lifting (trace or pad is imperfectly bonded to the surface of the board)
 - trace peeling (defect occurs most often at terminals or at the ends of the trace)
 - loose standoff terminals
 - excessive warp or twist (maximum warp or twist 0.015" per inch length)
 - incorrect hole size (check one hole of each respective diameter)
 - incorrect pad size (check one pad of each respective size)
 - silk screening extending onto the solder pad area

5.4 Repackaging

- 5.4.1 After the completion of detail verification, repackage printed circuit boards in the same container and packing materials in which received.

6 REQUIREMENTS

- 6.1 Printed circuit boards must match the photo-negative of the engineering drawing and be free of the defects listed in [section 5.3](#).

7 SAFETY PRECAUTIONS

- 7.1 *The procedure specified herein presents no specific safety hazard when carried out in accordance with accepted plant safety regulations.*

8 PERSONNEL REQUIREMENTS

- 8.1 Personnel responsible for receipt verification of printed circuit boards must have a basic understanding of the procedure and requirements as specified herein and must have exhibited their familiarity to their supervisor.