



Table of Contents

1	Purpose	2
2	Scope	2
3	Reference Documents	2
4	Definitions and Abbreviations	2
5	Order of Precedence	3
6	Rotors	3
6.1	General	3
6.2	Rotor Irons	3
6.3	Magnets	3
6.4	Adhesive and Adhesive Application	3
7	Stators	4
7.1	General	4
7.2	Coils and Potting	4
7.3	Lead Wires, Wire Harness and Strain Relief	4
7.4	PCBs, PCB Components and Soldering	4
7.5	Model Specific Components	4
8	Foreign Object Debris and Foreign Object Damage (FOD)	5
8.1	General	5
9	Document Change History	5

 thin gap	Document Title: Workmanship Acceptability Requirements		Page: 2 of 5
	Department(s): All	Document #: 34-20065-00	Revision: 01

1 Purpose

The purpose of this document is to establish ThinGap's interpretation, acceptance criteria, and requirements with respect to the workmanship and standards for rotor and stator assemblies.

This document provides general workmanship guidelines for ThinGap's OTS products. For applications with specific requirements (e.g., higher reliability classes), please contact our engineering team to discuss tailored solutions.

2 Scope

The requirements contained herein are for use during the definition, manufacture, and/or inspection operations of parts and assemblies manufactured by ThinGap.

- Engineering is responsible for defining and documenting designs that meet project level requirements.
- Inspection and Quality are responsible for ensuring delivered parts meet all defined requirements.

The requirements of this document provide a common reference for the preferred workmanship of parts where unspecified through other superseding requirements.

3 Reference Documents

ASME Y14.5	Dimensioning and Tolerancing
IPC-A-610	Acceptability of Electronic Assemblies
IPC/WHMA-A-620	Requirements and Acceptance for Cable and Wire Harness Assemblies
AS9146	Foreign Object Damage (FOD) Prevention Program

4 Definitions and Abbreviations

FOD	Foreign Object Debris / Foreign Object Damage
ICD	Interface Control Document
Repair	Reprocessing non-complying products to assure functionality.
Rework	Reprocessing non-complying products to assure compliance of the product with applicable drawings or specifications.
OTS	Off-The-Shelf

 thin gap	Document Title: Workmanship Acceptability Requirements		Page: 3 of 5
	Department(s): All	Document #: 34-20065-00	Revision: 01

5 Order of Precedence

These requirements shall not override or supersede any applicable specification or drawing requirement.

6 Rotors

6.1 General

These criteria apply to standard OTS configurations; consult ThinGap for custom applications requiring enhanced specifications.

6.2 Rotor Irons

6.2.1 Minor scratches and defects that do not affect the function of the rotor and meet the following are allowable:

- For coated rotor irons, scratches or defects shall not result in the removal of the coating.
- No bare metal shall be visible unless specified.

6.2.2 Standard rotor irons are thin-walled rings and may exhibit flexing during handling.

6.3 Magnets

6.3.1 Minor chips, breaks, scratches and defects that do not affect the function of the rotor and meet the following are allowable:

- Effective volume less than 0.040"x0.040"x0.040" with maximum dimension in any direction less than 0.070".
- The total volume of the chipped material shall not exceed 2% of the magnet volume, this criterion may supersede size criteria in smaller magnet designs.
- Magnet coating is present or has been reworked by applying ThinGap, Inc. approved coating.

6.3.2 Magnet axial and radial location may vary and is acceptable on the condition that dimensional and functional requirements are met.

6.3.3 Magnets may protrude up to 0.010" axially from the iron surface if functionality of the registration features are not affected.

6.3.4 If the design intent is for registration on the top and bottom of the rotor iron, then axial magnet protrusion is prohibited, and the rotor assembly shall be reworked.

6.4 Adhesive and Adhesive Application

6.4.1 Adhesives shall fill 75% minimum of the magnet surface that mates to the rotor iron but is not required between magnets themselves.

6.4.2 Excess adhesive may "squeeze" out between the magnets or above and below the magnet.

6.4.3 Magnet "squeeze" out is acceptable if the rotor conforms dimensionally and there is no risk of FOD.

 thin gap	Document Title: Workmanship Acceptability Requirements		Page: 4 of 5
	Department(s): All	Document #: 34-20065-00	Revision: 01

7 Stators

7.1 General

These criteria apply to standard OTS configurations; consult ThinGap for custom applications requiring enhanced specifications.

7.2 Coils and Potting

7.2.1 Coil wire may exhibit color variation.

7.2.2 Potting voids, minor chips, breaks, scratches and defects that do not affect the function of the stator and meet the following are allowable:

- Potted coil shall be structurally rigid.
- Condition shall not create a FOD risk.
- All copper wire is covered and no more than 10% of the strand diameter shall be affected.
- Excess potting or epoxy in the form of drips are not permissible and shall be removed.

7.3 Lead Wires, Wire Harness and Strain Relief

7.3.1 ThinGap's standard procedure adheres to IPC/WHMA-A-620 Class 2 for wire harnesses unless otherwise noted.

7.3.2 Keep out zones are designated per motor design to allow for component variation and strain relief.

7.3.3 Strain relief shall not violate the boundary set forth by the ICD.

7.4 PCBs, PCB Components and Soldering

7.4.1 ThinGap's standard procedure adheres to IPC-A-610 Class 2 for electrical assemblies unless otherwise noted.

7.5 Model Specific Components

7.5.1 LS – Lamination Stacks

7.5.1.1 The joint between the lamination stack and the coil may have additional build-up but allowable registration surface shall not be less than 50% min of the lamination stack thickness.

7.5.1.2 Minor discoloration on the welding is acceptable, but no visible rust is allowable on the lamination stack.

- If rust is seen, standard rework is performed to remove the rust and re-coat the lamination stack with a corrosion preventative finish.

7.5.2 TG – Stator Mounting Rings

7.5.2.1 Composite stator mounting rings may exhibit color variation and inconsistency.

7.5.2.2 Cracks and breaks in composite stator mounting rings are not acceptable.

7.5.2.3 For metal stator mounting rings, minor scratches and defects that do not affect the function of the stator mounting ring and meet the following are allowable:

- For coated stator mounting rings, scratches or defects shall not result in the removal of the coating.
- No bare metal shall be visible unless specified.

8 Foreign Object Debris and Foreign Object Damage (FOD)

8.1 General

ThinGap maintains a FOD policy based on AS9146 throughout the manufacturing process, but small amounts of particles may collect on the assemblies. ThinGap recommends that all assemblies be cleaned with lint free wipes and isopropyl once received by the Customer.

9 Document Change History

Date	Rev.	Description
02/03/2026	01	Initial Release