

Prepared by: K. Marshall	NTRSD Business Process Procedures Manual		NTRSD 9.06
Approved by:			
Director of Quality "On File" Director of Value Stream Operations "On File"	Revision: G	Effective Date: 07-18-2011	Page 1 of 6
TITLE: <b style="text-align: center;">New Tool Requirements			

1.0 **PURPOSE**

The purpose of this procedure is to standardize tooling requirements for tools that are procured or built by NTRSD.

2.0 **SCOPE**

This procedure is a supplemental requirement for the manufacturing of tools by suppliers and NTRSD. The NTRSD approved tool design will always take precedence over this document.

3.0 **REFERENCE DOCUMENTS**

AS9100
14 CFR § 21.303 (h) (4)
8100.7

Paragraph 7.5.1.3
Replacement and Modification Parts
Aircraft Certification Systems Evaluation Program

ABBREVIATIONS

E.O.P.
RDT
NA
QN

Edge of Part
Route, Drill and Trim
Not Applicable
Quality Notification

NTRSD Business Process Procedures Manual	New Tool Requirements	NTRSD 9.06
		Revision: G
		Page 2 of 6

4.0 PROCEDURE

4.1 Shop Aids

4.1.1 Shop aids **will** not be accepted from suppliers.

4.2 General Tooling Requirements

4.2.1 All designs **shall** be required in a CATIA Version that is compatible with the NTRSD version. NTRSD **will** supply proper CATIA environment. Tool designs may be completed in systems other than CATIA only when agreed in writing by NTRSD Engineering and the supplier.

- a) Transfer of tool design data **will** be in a format as defined in 4.4.1a.
- b) Tool design 3D models **will** include draw sheets and be located in space in the original coordinate system axis geometry, as defined by NTRSD, to allow overlaying of tools and production parts.
- c) All tool designs **will** be submitted by vendor and approved by NTRSD before fabrication of tool. NTRSD **will** provide approval using Tool Design Form.
- d) Upon approval, draw sheets to be printed and signed by a minimum of the following personnel: Engineering, Quality, Tooling and Production / Mfg. Eng.
- e) Design **will** be released in NTRSD document control system by Engineering upon approval.

4.2.2 All tools **shall** have a coordinate system using either Carr Lane part number CL-2-SCB or bushed holes.

- a) There **will** be a minimum of three (3) tooling balls (T/B) per tool.
- b) Each tooling ball location **will** be identified with the proper T/B identification number.
- c) Coordinate system **will** be in the perspective engineering coordinate system used on engineering drawing. Tool ball values **will** be stamped on tags in close proximity of tool ball holes on non-critical surfaces.

4.2.3 Steel stamp the NTRSD tool number on a non-critical area of the tool in plain sight.

- a) All tools **shall** be tagged with a NTRSD Tool Identification Tag with inspection approval stamp before tool **will** be released for Production.

4.3 Tool Tolerance

4.3.1 Tool tolerance **shall** be no more than one third of the engineering tolerance for making the part.

NTRSD Business Process Procedures Manual	New Tool Requirements	NTRSD 9.06
		Revision: G
		Page 3 of 6

4.4 Pre-Delivery Inspection Requirements of Supplier Built Tools

4.4.1 A completed inspection packet **shall** be furnished to the Tooling Inspector or Designee on or before the arrival at NTRSD Receiving Inspection for approval to ship. The inspection packet **shall** include:

- a) Electronic inspection data **shall** be in the format of one of the following:
 - 1) .TXT, .DAT, .MODEL, .EXP, .XIT, .IGES, .IGS, .SMX, .CAT.PART, .CAT.PRODUCT, .CSV., SA
 - 2) If a different format is required by NTRSD or the supplier, the format **will** be agreed upon in writing by NTRSD Tooling Inspection, Tool Engineer, and supplier.
- b) Inspection reports of welds, stress relieve reports, and material certification reports.
- c) Complete Check List for Tools Shipping to NTRSD.

4.5 Pre-Delivery Inspection Requirements of NORDAM Built Tools

4.5.1 A completed inspection packet **shall** be furnished to the Tooling Inspector or Designee at the time NORDAM Tooling Department completes tool. The inspection packet **shall** include:

- a) Electronic or hardcopy tool inspection data **shall** be in the format of one of the following:
 - 1) .TXT, .DAT, .MODEL, .EXP, .XIT, .IGES, .IGS, .SMX, .CAT.PART, .CAT.PRODUCT, .CSV.,SA.
 - 2) If a different format is required the format **will** be agreed upon in writing by NTRSD Tooling Inspection and Tooling.
- b) Inspection reports of welds, stress relieve reports, and material certification reports.

4.6 Nordam Owned Tools at Supplier

4.6.1 All NORDAM owned tools purchased, that **will** remain at the supplier and will be responsible for the periodic inspection of the tool.

4.7 Verification, Identification, and Set-Up of New Incoming Tooling

4.7.1 Tooling Inspector **will** process documentation supplied by the manufacturer and complete the requirements listed in this Procedure.

4.7.2 Tooling Inspector **will** examine the tool for damage and ensure the required signatures

4.7.3 The Tooling Department **will** apply two identification tags:

Note: Incoming tools **will** be identified before shipment to NTRSD with an Identification Tag. This tag **will** contain as a minimum, the tool number, serial number, date of inspection, and an inspection acceptance stamp to indicate the design data is acceptable.

NTRSD Business Process Procedures Manual	New Tool Requirements	NTRSD 9.06
		Revision: G
		Page 4 of 6

- b) This tag **will** be attached to all tooling, (*with the exception of "bond" tooling*). "Bond" tooling is verified to engineering design loft data. For "Bond" tooling, mark "NA" instead of an inspection acceptance stamp.
- c) Periodic Inspection Required Tag: This tag **will** be attached to all tooling, including bond tooling. For new tools, stamp "*new tool*" instead of the work order number on the tag.
- c) The Tooling Inspector **will** complete the set-up requirements for tool.

4.08 Inspection of Incoming Tooling

- 4.08.1 Tooling Department **will** inspect the Tooling prior to release for First Article Inspection to Procedure.
- 4.08.2 Tooling **will** not be released for use in production runs until the first article inspection process has accepted the first part produced from the tool. Tooling and Quality department **will** coordinate activities to ensure compliance to this procedure.
- 4.08.3 Accepted Tooling. If incoming tooling is accepted, the Tooling Inspector **will**:
 - a) Apply an inspection acceptance stamp on the Tool.
- 4.08.4 Rejected Tooling. If incoming tooling is rejected due to a tooling discrepancy, Tooling Inspector **will** Initiate a Tooling Rework/ Discrepancy Tag.
- 4.08.5 The Quality department **will** issue a Quality Notification (QN) to the tooling supplier for tooling that does not meet requirements. Purchasing **will** contact the supplier and issue a shipper. The tool will then be returned to the supplier, accepted in accordance with Section 4.10 of this procedure.

4.09 Records

- 4.09.1 Records **will** be maintained in accordance with Procedure NTRSD 16.00.

Check List for Tools Shipping to NTRSD

Reference NTRSD Procedure 9.06

Instructions: Mark an "X" in the appropriate column to indicate verification and acceptance has been completed.

This section to be completed by VENDOR:

Tool Number:	
Tool Serial Number:	
	VENDOR
Tool Design Bugged	
Weld Certification	
Stress Relieve	
Material Certification	
Electronic Data (Tool Design Key Characteristics)	
Supplier's Data tag	
Tool Ball (3) min 4.2.2 a-b-c-e	
Tool Number (Painted in plain sight)	
Tool Number Stamped in plain sight	
Tool Free of Damage	
Verified and accepted PRIOR to Shipping by Vendor:	

This section to be completed by NTRSD:

Tool Free of Damage	
Tool Identification Tags Complete	
Data Package Received	

Tool Ready for Release to Production:

Tooling

Tooling Quality

Comments:

Form 9.06-1 (10/08)

5.0 REVISIONS

Revision	Date	Description
IR	03-22-2004	Initial Release.
A	12-07-2005	Moved paragraph 4.6.6 to General Requirements 4.1.3. Added 4.1.4 and 4.1.5 to General Requirements. Deleted Section 4.4 NTRSD Verification.
B	02-17-2006	Modified Title, section 3.0: added Form 9.06-1. Clarified vendor requirements for processing tooling prior to shipping to NTRSD. Clarified internal processing of tooling received at NTRSD.
C	04-28-2006	Revised Form 9.06-1, Check List for Tools Shipping to NTRSD to add "Tool Number, Serial Number, O.K. To Ship".
D	10-08-2008	Complete Re-Write
E	12-10-2008	Added: 4.2.2(b) "location" "identification". 4.4.1 "Tooling Inspector or Quality Designee", "for approval to to ship". 4.4.1(b) "drawing", "sheet one. If no drawing is supplied, Supplier must print isometric view non-dimensioned draw sheet and stamp off as an alternative".
F	02-10-2010	Added: 4.6 "NORDAM Owned Tools at Supplier:
G	07-18-2011	Complete Re-Write