

**SIKORSKY AIRCRAFT
TOOLING BULLETIN
SA7303**

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1.0 INTRODUCTION: Most Special Tooling (ST) used by Sikorsky suppliers is provided by Sikorsky or through Government funding. This document establishes supplier responsibilities in the procurement, acquisition, manufacture, receipt, acceptance, storage, control maintenance, transfer, handling, accountability and disposition of ST. It further establishes requirements for records and reports related to the maintenance and disposition of ST. The responsibilities outlined herein are mainly extensions of Sikorsky's DOD prime contractual requirements and applies fully to all Purchase Orders in which it is incorporated unless specifically modified or restricted therein. Any changes made to this bulletin must be approved by the Sikorsky Durable Tooling Manager.

2.0 DEFINITIONS:

CONTRACTOR-ACQUIRED PROPERTY (CAP): Property acquired, fabricated or otherwise provided by the Contractor for performing a contract and to which the Government has title.

GOVERNMENT-FURNISHED PROPERTY: Property in the possession of, or directly acquired by, the Government and subsequently furnished to the Contractor for performance of a contract.

GOVERNMENT PROPERTY (GP): All property owned or leased by the Government. Government Property includes both Government-furnished and Contractor-acquired property.

MEDIA OF INSPECTION (MOI) TOOL: Tool used to validate product to verify compliance to engineering requirements. MOI tools require initial validation and periodic validation if they are subject to wear.

PERIODIC VALIDATION: Examination of tool features, which could affect product conformance due to wear at established intervals.

PERISHABLE TOOLS: Catalog items readily available on the open market, which because of their size and nature, are considered expendable. Drills, reamers, taps, snap gages and all types of cutting tools are considered perishable tools even though they are altered for production purposes and may be special in nature, unless they are otherwise determined to be accountable. The Supplier is expected to provide all universal shop equipment; these articles are not to be included in tooling quotations.

SAP EQUIPMENT MANAGEMENT SYSTEM: Process put in place by Tool Engineering to uniquely identify, build, inventory and maintain durable tools. Tools requiring periodic validation will have inspection plans maintained for them to allow the system to recall them automatically for review.

SELLER-OWNED TOOLS: Forging and extrusion dies and molds for permanent mold castings where practice within the industry dictates that the possession shall remain with the Seller. Seller-owned tools shall be noted separately on tooling quotations even though by reason of vendor retention they do not fall within the definition of accountable tools.

SHOP EQUIPMENT AND DURABLE TOOLS: Plant equipment required for production tools and parts, such as machines, motors, cranes, utility dollies, hoists, adapters and furniture. It will also include all equipment, instruments and tools used in manufacturing, operating, constructing and testing activities that are not classified as "Special Tooling". The Supplier is expected to provide all shop equipment; these articles are not to be included in tooling quotations.

SIKORSKY TOOLING: Tooling manufactured per the STM (Sikorsky Tooling Manual) or to a Sikorsky tool designs and are categorized as "T" tooling.

SPECIAL TOOLING (ST): Includes Jigs, Dies, Fixtures, Molds, Patterns, Gages, and other equipment and manufacturing aids which are specifically developed to produce a particular part or provide a particular service.

The term includes all components of such items but, does not include:

- a. Consumable property
- b. Special test equipment
- c. Buildings, non-severable structures (except foundations and similar improvements necessary for the installation of Special Tooling), general or special machine tools or similar capital items
- d. Software
- e. Perishable tools
- f. Shop equipment and durable tools
- g. Seller owned tools

STANDARD TOOLING (STD): A tool designed and fabricated to be generic in nature which has potential for broad application. Its use is not restricted to a specific part number or family. Standard Tooling includes but not limited to the following: measuring instruments, gages, or micrometers. Cutting tools such as drills, reamers, milling cutters, thread cutters, taps, gear cutters, or broaches. Catalogue holding device, arbors, or collects. General purpose machine tools and equipment.

SUPPLIER TOOLING: Tooling made to the supplier's design or specifications used to produce Sikorsky parts. These tools are categorized as "Z" tooling.

3.0 COMPLIANCE:

In the event this document is incorporated by Purchase Change Order to an existing Purchase Order, the Supplier shall conform to these requirements within 30 days from the issuance of the Purchase Change Order unless otherwise specified.

4.0 ACQUISITION ("Z" tooling):

Pursuant to the requirement of the Sikorsky Request for Quotation, the Supplier, when quoting on tooling, must submit the list of required Special Tools for approval on form SA 0557 "Sikorsky Aircraft Supplier Tooling Request Form" to the Sikorsky e-mail Toolrequest@sikorsky.com and cc the Buyer.

- The Supplier shall be responsible for procurement, maintenance and inspection (at their own expense) of all Standard Tooling (other than spline gages).
- Sikorsky shall authorize the Supplier to fabricate the "Z" tools by a Purchase Order and Sikorsky shall supply the identification tags to the Supplier to be affixed on the tooling.
- Prior to making any substitutions and/or changes on the tools listed on an approved tooling purchase order, the Supplier shall obtain written authorization from the Sikorsky Buyer.

5.0 ACCEPTANCE ("Z" tooling):

- Upon acceptance by Sikorsky Inspection of the "First Article" produced by the tooling, the Supplier shall submit photographs of the completed "Z" tools including a close-up of the tool identification tag permanently affixed to the tool to Sikorsky e-mail Toolacceptance@sikorsky.com and cc the Buyer for review.
- The Supplier shall submit an invoice to the Sikorsky e-mail Toolacceptance@sikorsky.com and cc the Buyer upon acceptance of the First Article. The invoice must include: the tooling P.O. number, line item number, tool description, tool number (stamped on tool), and individual price. It is acceptable to show only the total amount on the invoice and list the detail on a breakdown and attached to the invoice.

6.0 IDENTIFICATION OF "T" AND "Z" SPECIAL TOOLING:

- Special Tooling will be identified according to the Sikorsky Aircraft tool identification criteria in accordance with PR:03-02-074 "Tool Fabrication" Section 1 and **STM SD1.415: The physical tool must be identified with the tool number.**

1.2 These numbers must be applied to each tool in the manner specified on the Tool and Design Order (TDO).

1.2.1 The means of identifying the tool must include:

1.1.2.1 Impression stamping directly on a metal tag, that is attached to the tool, preferably by riveting in a prominent location, so as not to interfere with the operation of the tool or with the installation of the part or assembly. This is the preferred method. If this is not feasible, then attach the tag to the tool with a wire, or nylon cord, with the same restrictions.

1.1.2.2 Impression stamping directly on the physical tool provided it can be accomplished in a conspicuous area, not interfering with the locating surfaces.

1.1.2.3 Etching or engraving directly on the physical tool in an obvious area and not on a locating surface.

1.1.2.4 Painting the identification on the physical tool, again not on a locating surface, in letters large enough to be easily read.

Note: Markings of the storage box contact cognizant Buyer before marking with this method.

- All identifying markings are subject to examination as Sikorsky deems necessary
- Sikorsky tool code identification and part numbers shall be shown on all inventories, shipping documents, receiving reports and other records relating to the tool
- Supplier having an established system of tool identification may use their system as well as the Sikorsky system as long as the markings of the supplier system are identified as such. In this event a cross reference must be kept of supplier numbers and Sikorsky tool code letters and part numbers.
- Special Tooling shall be assigned identifying numbers as defined in the following procedure unless otherwise instructed.
 - a. Tool code letters shall be suffixed to the engineering drawing part number or production assembly number, whichever is applicable.
 - b. When two or more tools are assigned the same tool numbers and code letters are to perform successive operations on the same numbered part, the tools will be successively identified by sequence use.

Reference (SAP Tooling Order Instruction Manual)

- c. Number suffixes will be used to identify duplications. Reference. (SAP Tooling Order Instruction Manual)
- d. When a tool is composed of more than one component or detail, each detail will be identified with a detail number.
- All tool rework required by engineering changes will be notated on the tool record at time of rework by indicating the engineering order number, drawing revision or other engineering authorization number or code to which the tool is reworked.
- Rework of Special Tooling due to engineering design changes must be certified by completion of SA5409 "Supplier Certificate of Completion"
 - a. Tool code letters shall be suffixed to the engineering drawing part number or production assembly number, whichever is applicable.
 - b. When two or more tools are assigned the same tool numbers and code letters and are to perform successive operations on the same numbered part, the tools will be successively identified by sequence use.
 - c. Number suffixes will be used to identify duplications
 - d. When a major tool is composed of more than one component or detail, each detail will be identified with a detail number

7.0 CHANGES (REWORK or REPLACE):

- If it becomes necessary to rework or replace a "Z" tool during implementation of the purchase order due to a Sikorsky directed configuration change, the Supplier is responsible to submit a SA557 "Sikorsky Aircraft Supplier Tooling Request Form" form to Sikorsky (Purchasing) for approval. Upon receipt of authorization (P.O. or supplement) the Supplier shall rework or fabricate the "Z" tooling to the latest configuration. All work shall be sourced to an approved Sikorsky tooling supplier.

The Supplier must obtain approval from their Sikorsky Buyer for any rework/repair/replace to a Sikorsky Supplied "T" tool that changes the tool. Authorization to implement the change will be communicated via a P.O. or supplement SA0557 "Sikorsky Aircraft Supplier Tooling Request Form."

8.0 HANDLING AND MAINTENANCE/REPAIR:

- Subject to the rights of the U.S. Government, Sikorsky Aircraft approval must be obtained prior to producing parts from Sikorsky Aircraft Special Tooling for any party other than Sikorsky Aircraft.
- During execution of a purchase order, the Supplier is responsible for maintaining in good condition all Sikorsky tooling ("T" and "Z"), as may be required, to assure acceptable part fabrication consistent with contractual requirements.
- Maintenance/repair responsibility include but are not limited to: (a.) the replacement of missing or damaged pins, cables, bushings, screws, nut, bolts, clamps, jack screws, washers, vacuum bags, caul plates, locators, form block backing plates, and miscellaneous hardware. (b.) the repair of mold and bonding fixture and form block surface imperfections. (c.) the re-inking and sealing of molds. (d.) the replacement of rubber molds for bonding fixtures. (e.) General cleaning, plating, and painting. (f.) the application of a protective finish to guard against rust to major jigs. (g.) All critical surfaces or edges will be masked and will be treated with an approved rust preventative compound prior to shipping or storage.
- Under no circumstances is a Supplier to duplicate/replace a "T" or "STD" tool, without Sikorsky authorization in the form of a valid PO issued from the SAP Equipment Management System: Process put in place by Tool Engineering to uniquely identify, build, inventory and maintain durable tools. Tools requiring periodic validation will have inspection plans maintained for them to allow the system to recall them automatically for review.
- The SAP Equipment Management System generates a recall notice bi-monthly for MOI Tools coming due for periodic validation within the next 60 days. Suppliers not approved or unable to perform periodic validation are to return tool and required information to Sikorsky, to the address found on the recall notice.

9.0 TRANSFER:

SENDER:

- When tooling is required to be transferred, from Supplier A to Supplier B, Sikorsky will issue form SA8329 "Notice of Transfer- Subcontractor Tooling" to the supplier. The form will indicate where the tooling (including copy of SA8239) is to be shipped. The Supplier shall not transfer Sikorsky tooling without SA8239 (which transfers responsibility for the tooling).

- All tooling must be in satisfactory working condition and properly protected against damage before shipping. Sikorsky Aircraft will hold the Supplier responsible and subject to charge for any tools received which, in the opinion of Sikorsky Aircraft, will not produce satisfactory parts in accordance with the drawing requirements, due to improper maintenance, handling, storage, packing, or etc.
- For all Special Tooling recalled to Sikorsky Aircraft or transferred to another Supplier, the Supplier shall furnish, upon request, three (3) copies of complete up-to-date manufacturing operational sheets containing information as follows:
 - a) Operations required to lubricate detail part of assembly
 - b) Special Tooling used, identified by Sikorsky Aircraft part numbers and tool code letters
 - c) Machine identification used with or on which each tool is used

RECIPIENT:

- The Supplier shall acknowledge receipt of Sikorsky supplied tools on the SA8239 "Notice of Transfer Subcontract Tooling", and return the SA8239 to the Sikorsky Buyer. The Sikorsky Buyer shall send form to the Government Property Tool Control Manager. This is to ensure that the Tooling records are updated accordingly.
- The Supplier shall inspect Sikorsky furnished tooling upon receipt. Any discrepancies and/or questions regarding the potential capability of fabricating acceptable parts using these tools shall be brought to the attention of the Sikorsky Buyer immediately.

10.0 INVENTORY:

- Supplier shall provide proper storage for all tools its possession during the contract period of performance and until written disposition is obtained from Sikorsky. All tooling must be free of rust and/or other contamination.
- All tooling shall bear marking (identification tags) in accordance with the tooling purchase order.
- Supplier must maintain a perpetual inventory list of all tooling and shall provide Sikorsky a comprehensive listing of all tooling in its possession within ten (10) business days of a request by Sikorsky for such list.
- No storage may be charged for tooling without specific authorization from Sikorsky.
- Supplier will be subject to periodic audit by Government and/or Sikorsky personnel as applicable. The Supplier is responsible and accountable for Sikorsky or Government owned tooling.

11.0 RECORD REQUIREMENTS:

- The Supplier is required to maintain adequate control records of all Special Tooling including the following:
 - a. Control Records listing ownership for such Special Tooling and the Purchase Order under which Special Tooling was acquired.
 - b. Accountability in the transfer from one commodity type Purchase Order to another.
 - c. Annual physical inventory lists submitted and verified by the Supplier for each Purchase Order.
 - d) Disposition authority for tools no longer in or required in the possession of the Supplier.
 - e. Sikorsky packing sheet on which tool was received.
 - f. Sikorsky tool number and code.
 - g. Manufacturing operation sheets.
 - h. Financial control in appropriate general ledger account.

12.0 LIABILITY:

- Except to the extent that the Supplier may be expressly relieved of liability elsewhere in the Purchase Order, Supplier assumes all risk for loss or damage to Special Tooling while in supplier's possession, custody or control, or in the possession, custody or control of his subcontractors. The requirements for these accountability instructions apply equally to all Special Tools for which a Sikorsky supplier is responsible, regardless of location. The supplier shall promptly report all cases of loss, damage, destruction of Special Tooling in his possession or the possession of his subcontractors. This provision is in addition to any requirements appearing on Sikorsky's Purchase Order.
- In the event that tooling is lost, damaged, and/or destroyed, Supplier shall provide written notification to the Sikorsky Buyer. The Buyer will notify the Supplier of the action to be taken.
- If "ST" tooling is to be repaired or replaced, it will be at the Supplier's expense.

13.0 DISPOSITION:

- All Special Tooling, either supplied by Sikorsky, produced or required by the Supplier, shall be retained or disposed of in accordance with the procedure set forth in the Sikorsky Purchase Order under authority of which tools were furnished, purchased, produced or otherwise accountable.
- All Special Tooling will be maintained and stored by the Supplier until formal disposition instructions are received from Sikorsky. Under no circumstances shall Special Tooling be scrapped without prior written authorization from Sikorsky.
- If an engineering change results in a requirement for tool rework, the Supplier shall review the tool to determine appropriate action. Whenever possible, the tool should be reworked to produce the new part and retain the capability to produce the replaced part as well. Rework of Special Tooling furnished by Sikorsky shall not proceed until authorized by the Sikorsky Buyer. If the tool cannot be reworked to satisfy both the old and the new configurations, the original tool configuration must be retained if any of the following conditions apply:
 - a. The tool is necessary to control a critical dimension that cannot otherwise be maintained.
 - b. The tool is necessary to guarantee interchangeability or replaceability.
 - c. The tool is necessary to produce a part without the use of special machines that are not available.
- When Special Tooling in the Supplier possession is no longer required, the Supplier will submit to the Sikorsky Buyer form SA5400-3 "Worn, Damaged or Obsolete Tooling" for disposition instructions. Special Tooling will be dispositioned in accordance with Sikorsky / U.S. Government instructions, i.e. conduct sale, scrap or ship to another facility. The Supplier is not permitted to ship or otherwise dispose of any Sikorsky "T", "STD", or "Z" tooling in their position unless prior Sikorsky authorization is obtained.
- When authorization to scrap Special Tooling has been received, the Supplier will proceed to dispose of same through his approved scrap procedures.
- The Supplier shall transfer Special Tooling to another site or to Sikorsky only when authorized by the Sikorsky Buyer. The Supplier will list Special Tooling on all shipping documents in accordance with identification criteria described herein.

14.0 OWNERSHIP OF SPECIAL TOOLING

- Special Tooling either produced hereunder or supplied by Sikorsky are Sikorsky or Government property and will be used only for the fabrication of Sikorsky parts or assemblies under Purchase Orders issued by Sikorsky unless otherwise specified by Sikorsky, subject to the rights of the U.S. Government, Sikorsky approval must be obtained prior to producing parts from Sikorsky Special Tooling for any party other than Sikorsky.
- Title of all Special Tooling provided for use by Sikorsky will remain with either Sikorsky or the U.S. Government, accountable to the Prime Contract and Purchase Order as identified.

15.0 COST RESPONSIBILITY SUMMARY

- The following chart clarifies responsibility for expenses incurred in support of tooling used by Suppliers to fabricate Sikorsky parts.

	<u>SA TOOL</u>	<u>COST RESPONSIBILITY</u>	
	<u>BULLETIN</u>	<u>SUBCONTRACTOR</u>	<u>SIKORSKY</u>
<u>NEW PART</u>	Para 3.0		X
New Design			
<u>S/A CHANGES</u>	Para 5.0		X
Engineering Change Order			
Manufacturing Engineering Change Ordered (MECO)			
<u>SUBCONTRACT CHANGES</u>	Para 3.0	X	
Improvements benefiting subcontractor			
<u>MAINTENANCE</u>	Para 6.0, 9.0	X	
Repair			
Replace			
<u>TRANSFER</u>			
Resource S/C to S/C		X	
Resource S/C to S/A		X	