

Injection Mold Tooling Responsibilities

Part Supplier (PS) Managed Tooling

Introduction

- ❖ This document contains tooling specific responsibilities. When conflicts arise between program specific statements of work (SOW) and these tooling responsibilities, this document will prevail.
- ❖ This document outlines the tooling expectations and definitions of responsibilities associated with the development of injection mold tooling for Johnson Controls, Inc. (JCI) through its part supplier (PS).
- ❖ All Tooling is subject to audit and approval by Johnson Controls – AE.
- ❖ THIS DOCUMENT IS NEITHER A SUPPLY AGREEMENT NOR A PROMISE TO ENTER INTO A SUPPLY AGREEMENT. In the event Part Supplier enters into a contractual relationship with JCI (pursuant to a Purchase Order, Long-Term Agreement or some other written document executed by JCI designated as a form of supply agreement, hereafter called the “Contract”), the Contract shall govern the terms and conditions of the Part Supplier -JCI contractual relationship.
- ❖ In the event of any conflict between a term of the Contract and a provision of these Part Supplier Tooling responsibilities document, the Contract shall supersede and govern. In the event that a Contract has been or is entered into between Supplier and JCI, the procedures and obligations set forth herein shall be met by Suppliers and, if a Contract is consummated, shall become express warranties made by Supplier and JCI.

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- 1) The PS is responsible for managing all aspects of tool development, design, build, launch, and meeting quoted cycle time unless informed otherwise, in writing, by the JCI Tooling Buyer for the respective program. These responsibilities include, but are not limited to the following:
 - a.) Conduct a formal product design review for feasibility concerns that affect the product, tooling, or manufacturing. Communicate and track product design recommendations to JCI in writing, which may include resolution to product or tool feasibility issues, simplifications of tool function, improvements to product or tool designs, and cost reductions. PS must obtain written approval from the JCI business unit for any unresolved product or tool feasibility items before initiating original tool build or subsequent engineering change.
 - b.) Design all tools to the latest level of JCI tooling standards with CAD data clearly identified as “OK to Tool” and drawings with GD&T (geometric dimensioning and tolerancing) provided by JCI, for approved and released levels.
 - c.) Build all tools to meet, at a minimum, JCI’s tooling & gage standards.
 - d.) Track and log all data levels, changes, agreements, and transmissions.
 - e.) Obtain written authorization after kick-off meeting to proceed with initial tooling or tool engineering changes from JCI in the form of a Purchase Order.
 - f.) Attend JCI launch team meetings with qualified tooling engineers, design reviews, and customer tool shop visits as required.
 - g.) Issue written tool progress reports and tool-tracking spreadsheets to JCI throughout the build of the tools to meet the program requirements and milestones.
 - h.) Provide material that is certified to meet JCI design intent for tool tryout process. PS is responsible for all tryout material.
 - i.) Provide JCI with sample parts from the tool tryout runs upon request.
 - j.) Shipment of tools to the required destinations from the tool shop.
 - k.) Perform all internal and external PPAP requirements for each tool to meet program timing.
 - l.) Managing and advising JCI on potential obsolescence during engineering changes, model year changes and production balance out.
 - m.) Any part or tool issues associated with the tooling if already under construction (whether in the process of design, build, launch or prior launched tooling) must be identified and resolved by the PS before signing the SSOW and/or Award Letter. Otherwise, PS is required to meet all SSOW, quoted items and the responsibilities set forth herein.

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- n.) Perform mold flow, mold cool, and warp analyses for any tool required by JCI or its customers.
- 2) The PS is responsible for preparing and executing the tooling request for quote (RFQ) process, unless JCI has sourced the tooling prior to award. These responsibilities include, but are not limited to the following:
- a.) Define the tooling requirements to meet the minimum JCI tooling & gage standards.
 - b.) The PS's tooling quote in response to the RFQ must detail the process that will be utilized in production including mold cavitation. PS must request tool line-up defined by JCI if available to allow an "apples-to-apples" comparison on tool cost.
 - c.) Tooling quotes must be received on the JCI Tool RFQ form including JCI Tool Cost Breakdown Sheets, and all appropriate fields must be completed in order to be valid. PS must submit at least three competitive tool quotes, which must include both Low Cost Country (LCC) and Minority sources. JCI current LCC and Minority targets are 70% by purchased cost.
 - d.) The PS should schedule a joint meeting between the JCI Operational Buyer and JCI Tooling Buyer when all parties have received the quotes and are ready to discuss tooling cost, tool process, function, timing, and source selection with geographical location.
- 3) Unless tooling has been or will be sourced by JCI, the PS is responsible for sourcing the tooling at the agreed upon tool cost defined in the Purchase Order. Tool sources must be identified and communicated to JCI Tool Purchasing. JCI reserves the right to prohibit the building of any tool at any particular tool source.
- 4) The PS is responsible to track the progress of the tool build and timing. Current timelines and pictures of the tools in progress must be provided upon JCI request. The PS is responsible to meet all program timing and deliverables associated with the tool and any early part requirements required off the tool during the tool build, at the tooling supplier, or PS before production release requirements.
- 5) For all tools with PO's issued by the PS, the PS is responsible to support all JCI & JCI customer audits and provide documentation that reflects the cost of the JCI P.O. to the PS. The PS will refund (or JCI may debit PS for) any JCI tooling payments that cannot be supported by appropriate documentation (i.e., pursuant to a JCI audit) to JCI upon JCI's request.
- 6) All JCI / OEM CUSTOMER owned tools are to be identified per JCI and OEM CUSTOMER specifications.
- a) The following items are considered tooling and therefore the property of JCI or the OEM:
 - i) Tools specifically made for the production of a part or parts unique to JCI or OEM CUSTOMER.
 - ii) Unique computer software required directly for the production and or gauging of parts for JCI or OEM CUSTOMER.

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- b) The PS is responsible to mark the tool such that it contains the required information as specified in the JCI Injection Mold Tooling Standards and by JCI Purchasing, including the manner in which the tool is marked (plaques, engraving, etc.).
- c) The following items are **not** considered tooling and are **not** acceptable as part of a tooling bill, even if they are dedicated but not unique:
 - i) Generic tooling, general-purpose items, processing or capital equipment, and computer hardware.
 - ii) The cost of or associated with automation, test equipment, process control equipment, manufacturing learning curve, launch costs, operator training, and vision cameras.
- 7) Tool cost submitted to JCI is limited to the following: design of tools, tool build labor, tool build materials, one (1) tool sampling, and initial tool shipment to the manufacturing facility. All gages must be quoted as a separate line item. Costs of capability studies are considered part of the PS's overhead. A general percentage markup of tooling is not allowed. JCI must be notified of, and reserves the right to be present for any run-at-rates of new tooling. Costs associated with managing the tool build and launch are also considered part of the PS's overhead and will not be reimbursed under any circumstances.
- 8) JCI reserves the right to decline payment of any tooling cost not supported by a JCI Tooling Purchase Order.
- 9) PS that designs, develops, or manufactures tooling in-house will provide all associated overhead costs in fully accounted tooling labor rates to JCI upon request. In addition, before placement of any tooling work with internal tool shops, the PS will provide evidence to JCI of competitive quoting with outside tool sources. PS records will be subject to audit by JCI (or a third party designated by JCI).
- 10) Changes that occur while new tooling is being constructed should be completed by the tool shop(s) currently constructing the tools. Cost of changes must be validated individually by review of the tool cost breakdown prior to issue of purchase orders. Changes that occur to tools after the tool build is complete are also required to have costs validated prior to issue of purchase orders. JCI reserves the right to conduct run-at-rates after changes have been completed.
- 11) PS will manage tool shop and work schedules to meet JCI program requirements without additional charges. However, in those circumstances where overtime at a tool shop becomes necessary, JCI will consider requests for reimbursement for that overtime. JCI maintains sole discretion whether or not to reimburse such overtime. Before proceeding with work, it is necessary that these costs be reviewed and agreed to by a JCI Operational Buyer / Tooling Buyer. Final authorization to proceed with a change must come from a JCI Operational Buyer by means of a Purchase Order.
- 12) JCI must be notified and agree in writing to, in advance, the transferring of tools from one manufacturing site to another. The PS will cover all costs associated with the transfer of tools. JCI reserves the right to re-PSO (Part Sign Off) after tools have been transferred. The PS is responsible for design and build of all tooling used to manufacture parts awarded to the PS and shall meet all applicable JCI tool standards.

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- 13) The PS is responsible to ensure the quality and manufacturing capability of the tooling for the entire life of the program, including the service period after production balance-out. PS will notify JCI in advance of implementing any engineering change if that change will impact the tool's ability to provide service part requirements.
- 14) The PS will ensure that the Tool Shop building the tools is certified to QS 9000 and TS 16949.
- 15) The PS is responsible for the tooling preventative maintenance and spare parts so as to meet all JCI manufacturing, delivery, and quality requirements. Preventative maintenance plans must be documented and kept on file by PS. JCI reserves the rights to review the PS's preventative maintenance and spare parts plans. If adequate record of a preventative maintenance cannot be documented, refurbishment costs to bring the function of the tool up to an acceptable level will be at the expense of the PS.
- 16) The PS will insure and protect said property against loss or damage.