MICRO MOLD, Co., Inc.

PLASTIKOS, INC.
Custom Injection Molding

Transfer Mold Qualification Process

Transfer Molds. MICRO MOLD AND/OR PLASTIKOS MAKES NO WARRANTY REGARDING A CUSTOMER'S (BUYER'S) OWNED TRANSFER MOLDS, TOOLS, SPARE COMPONENTS, CAD FILES & DRAWINGS, ETC. (OTHER THAN WARRANTY OF TITLE) AND DISCLAIMS ANY AND ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, WHETHER CREATED BY CONTRACT OR BY OPERATION OF LAW, INCLUDING BUT NOT LIMITED TO WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE WARRANTIES MADE HEREIN ARE MADE SOLELY TO BUYER AND SHALL NOT EXTEND TO OR BE ASSIGNABLE TO BUYER'S CUSTOMERS, INCLUDING BUT NOT LIMITED TO ANY CUSTOMER WHO MAY BE A CONSUMER AS THAT TERM IS DEFINED UNDER THE MAGNUSON-MOSS WARRANTY-FEDERAL TRADE COMMISSION IMPROVEMENT ACT.

Micro Mold and/or Plastikos assumes that all Buyer owned transfer molds are in good working order, capable of producing product that meet all of the Buyer's quality specifications at full cavitation. Additionally, Micro Mold and/or Plastikos assumes that all transfer tools will be supplied with industry standard spare counts, all of which meet the Buyer's steel print specifications and quality requirements, along with a full, accurate, and up-to-date set of detailed mold blueprints and a comprehensive set of mold component prints and/or CAD files. Micro Mold and/or Plastikos reserves the right to inspect all transfer molds for a period of fifteen (15) calendar days, at our facility, to confirm the actual physical condition of a transfer mold, as well as to confirm and verify all assumptions, quote inputs, etc. that were utilized by Micro Mold and/or Plastikos within the quotation process. Any variance in actual condition of the transfer mold, quotation assumptions, tooling capabilities, and/or inputs will void and nullify any prior prices and/or quotations and result in a new quotation from Micro Mold and/or Plastikos.

Micro Mold and/or Plastikos will quote all applicable mold maintenance costs for a Buyer's transfer mold on a case-by-case basis based on the actual physical condition of the corresponding mold and the Buyer's specific requirements.

Any component of the transfer mold that does not meet the Buyer's specifications will require a separate quotation to address that/those issue(s) and may impact the corresponding mold maintenance cost.

Micro Mold & Plastikos Team's standard transfer process for a customer's owned mold/tool is as follows:

1. Initial Documentation Review & Preliminary Piece Price Quotation: The Micro Mold & Plastikos team will review any available documentation - e.g. CAD files, solid models, part prints, mold/steel blueprints, material specifications, physical sample parts, prior cycle times/process conditions, FAI and/or dimensional analysis from prior production runs, etc. in order to provide as accurate a piece price quotation as possible. We realize that detailed documentation is not always available for transfer tools, so we will do our best to work with what documentation is available.
    a. Our preliminary piece price quotation will be based on the assumption that the inputs that are provided by the customer are up-to-date, correct and accurate, and that the tool is in general good working order. Any deviation from the customer provided inputs and assumptions may

require updates to the preliminary piece price quotation at a later point in time to reflect the actual physical conditions and capabilities of the buyer's transfer mold/tool.

b. Sample parts, including last shots (which are preferred and strongly recommended by Plastikos), are required for detailed quality analysis and comparisons.

c. We reserve the right to inspect the transfer tool for up to fifteen (15) days to verify the customer supplied inputs and to evaluate the actual physical condition of the mold/tool. When a single tool is transferred to Micro Mold & Plastikos, this evaluation typically requires only one or two working days to complete.

   i. If the tool is in relatively good condition upon arrival at Plastikos, then the initial physical inspection is completed at no charge to the customer.

   ii. If the tool is in relatively poor condition and/or requires basic preventative maintenance work, then that cost (typically ~$500 – $750 per tool) will be quoted and submitted to the customer for its approval.

d. Micro Mold & Plastikos will communicate any issues, discrepancies, concerns, etc. that are identified during this initial evaluation to our customer.

2. Initial Transfer Tool Sample: After a physical inspection of the tool by one of our Class-A Toolmakers, we then complete an initial sample of the mold and apply Plastikos' proprietary scientific molding processes and engineering analysis to determine the optimal process conditions and document the current state and actual performance & capability of the tool. Typically, the initial sample is slated to produce up to twenty (20) sample pieces or require two (2) dedicated hours, whichever comes first, to complete unless otherwise requested by the customer. The price of the initial sample will be quoted by Micro Mold and/or Plastikos on a case-by-case basis.

   a. If the initial sample is successful, and we are able to establish a robust, production-ready process (based on our proprietary scientific molding process optimization methodology and engineering analysis), then the sample parts are inspected at Plastikos and the corresponding results are documented. The inspection results and sample parts are then sent along to the customer for its review, inspection, and approval.

      i. If the optimal process that was established during the initial sample aligned with the customer supplied inputs (as utilized to establish Plastikos' preliminary piece price quotation), then no adjustment to the preliminary piece price quotation is required.

      ii. If the optimal process that was established during the initial sample revealed that the mold is not capable of attaining the customer supplied inputs (as utilized to establish Plastikos' preliminary piece price quotation), then the piece price quotation will be adjusted to reflect the actual performance/conditions that were attained.

      iii. In a few, rare cases, a transfer mold outperformed the initial customer supplied inputs, in which case Plastikos was able to lower the preliminary piece price quotation slightly. Based on experience, we have found that this case is quite rare.

   b. At this point, Plastikos strongly recommends to complete an eight (8) hour capability study (pre-production run) to determine the statistical capability of any critical dimension(s) (i.e. warp, overall dimensions, etc.) that is/are likely to change throughout a production run due to inherent variation in material viscosity, which translates into molding process variation (i.e.

injection pressure, fill rate, etc.) during a production run. The statistical results of the capability study are then used to determine if print adjustments are required to match actual conditions and tool capabilities, and/or if any tooling modifications are required. We have found that the completion of an extended pre-production capability study directly results in more reliable production capabilities and fewer unplanned shipment issues once the tool is officially approved for production. The capability study run, which includes the data collection and corresponding statistical analysis, will be quoted upon request of the customer (Cpk levels of 1.33 or 1.66).

c. In some cases, the Initial Transfer Tool Sample cannot be completed within two (2) dedicated hours due to a combination of issues with: part design + material selection + tool design + tool fabrication + actual physical tool condition. If Plastikos cannot establish a stable, production-ready process via our proprietary scientific molding methodology, then we will pull the tool for further evaluation by the Micro Mold & Plastikos team.

    i. In this case, Plastikos will provide an update to the customer that details the steps taken and actual results attained. Any required tool repair and subsequent samples will be quoted to the customer for its approval.

    ii. The tool will be placed in an "on-hold" status until further direction and a purchase order (PO) is provided by the customer.

    iii. In rare cases where the tool is in exceptionally poor condition, multiple repairs and sample attempts may be required, each of which will be quoted by Micro Mold and/or Plastikos per the customer's request.

3. Production Approval: The tool is officially approved as "ready for production" once the customer reviews and inspects the initial sample parts and the corresponding inspection data, and signs-off that the parts are acceptable from its perspective and fully satisfies all of the customer's quality requirements and expectations.

    a. Any pre-existing tool related quality concerns, issues, etc. will be noted, and will either need to be fixed (a quote to do so will be submitted to the customer for review and approval) or a quality/engineering deviation granted (with reasonable corresponding tolerances provided by the customer and agreed to by the Micro Mold and Plastikos team).

    b. If the customer waives the capability study (i.e. extended pre-production run) that was outlined above in favor of the initial 20 piece sample, then it is possible for a dimension (or visual condition such as flash, drag, sink mark, etc.) to meet the customer's quality specification over the short 20 piece initial sample run, but then drift out of tolerance during a longer production run due to inherent process variation, pre-existing tooling condition, and/or different material lots and corresponding material viscosity variation. The purpose of the capability study (i.e. extended pre-production run) is to determine the statistical confidence (capability) that a dimension and/or visual condition will meet specification over the length of a longer production run. If any quality issues emerge during a production run that were not uncovered during the short initial 20 piece sample, then the appropriate repair/fix will be quoted and/or a print dimension change will be required to accurately reflect the actual production capability of the customer's transfer tool.