

**III-03 HIGH VOLUME PRODUCTION TRIAL**

**Purpose**

The HVPT is one of the tools ADVICS may use to evaluate a supplier’s readiness to meet ADVICS’ quality, capacity, and delivery expectations. Although ADVICS may not require this process in every case, it is available to suppliers in the event that ADVICS elects to use this process and/or if the supplier would like to utilize this process.

**Supplier Responsibilities**

**General Requirements**

1. ADVICS Manufacturing Plant requires some suppliers to complete a High Volume Production Trial (HVPT) prior to the launch of mass production on new programs. Suppliers should report their ability to achieve production volume output on the HVPT Tracking Sheet (III-03-F01).
2. Supplier will track issues identified for correction during the HVPT on the Problem Follow-up Sheet (III-03-F03).
  - Communicate the issues to the ADVICS Manufacturing Plant Project Leader and/or ADVICS Quality contact via the HVPT Problem Follow-up Sheet. If uncertain of the correct person, contact your ADVICS Buyer.
3. HVPT evaluation is 13 core elements evaluating both documentation and processes. All 13 elements may or may not be required for each individual supplier. The ADVICS Manufacturing Plant Project Leader will notify the supplier of any elements not required prior to the visit. Below is a list of the elements and required documentation.

HVPT Core Elements		
	ELEMENT	DOCUMENTATION
1	<b>Part Number, Description, and Change Level</b> All documentation requires the correct part number, name, revision level, etc... A supplier may use its own internal part number as long as it references the ADVICS part number.	<ul style="list-style-type: none"> <li>• All</li> </ul>
2	<b>Process Flow Diagram &amp; Manufacturing Floor Plan</b> The process flow diagram and the manufacturing floor plan must represent the entire process from receiving through shipping in the correct sequence.	<ul style="list-style-type: none"> <li>• Process Flow Diagram</li> <li>• Manufacturing Floor Plan</li> </ul>
3	<b>Error and Mistake Proofing</b> Error and mistake proofing must be complete and included in the PFMEA and DFMEA where applicable.	<ul style="list-style-type: none"> <li>• PFMEA</li> <li>• DFMEA (if applicable)</li> </ul>

ELEMENT		DOCUMENTATION
4	<p><b>Control Plan</b> The Control Plan should describe each step of the manufacturing process as identified in the flow diagram. Document all process and product control characteristics. Include the verification of any mistake proofing devices in the control plans, such as POKA YOKE NG masters.</p>	<ul style="list-style-type: none"> <li>• Control Plan</li> </ul>
5	<p><b>Special Product / Process Characteristics</b> Key characteristics, which are indicated on ADVICS drawings (i.e. S, R, A, J) should be noted on Control Plans, working rules/instructions, etc.</p>	<ul style="list-style-type: none"> <li>• Control Plan</li> <li>• FMEA</li> <li>• Work Instructions</li> </ul>
6	<p><b>Operating Instructions &amp; Process Monitoring</b> Operators should be able to perform the described operating instructions. Instructs must adequately identify all control characteristics.</p>	<ul style="list-style-type: none"> <li>• Operator Instructions</li> <li>• Inspection Instructions</li> <li>• Control Charts</li> </ul>
7	<p><b>Gage and Test Equipment Evaluation</b> All gages used to ensure product quality should have acceptable GR&amp;R studies, calibrated, &amp; dated.</p>	<ul style="list-style-type: none"> <li>• GR&amp;R records</li> <li>• Calibration records</li> </ul>
8	<p><b>Parts Packaging and Shipping Specifications</b> Approved for container type, quantity of parts per container, ownership, and cleaning responsibilities.</p>	<ul style="list-style-type: none"> <li>• ADVICS Packaging Forms &amp;/or Worksheets</li> </ul>
9	<p><b>Training</b> Supplier should show evidence and/or demonstrate the completion as well as on-going operators training.</p>	<ul style="list-style-type: none"> <li>• A Training Matrix (supplier created form is acceptable)</li> </ul>
10	<p><b>Preventive Maintenance Plan</b> Established PM plans implemented for each piece of equipment in the production process, including tooling and dies.</p>	<ul style="list-style-type: none"> <li>• PM plans/procedures</li> </ul>
11	<p><b>Sub-supplier Readiness</b> Provide evidence that their suppliers are ready for production in terms of raw material, heat-treating, plating, etc.</p>	<ul style="list-style-type: none"> <li>• Sub-supplier evaluations (supplier created form is acceptable)</li> </ul>
12	<p><b>Line Speed Demonstration</b> Supplier should be able to prove that they can meet the appropriate cycle times and the quoted run @ rate for each process.</p>	<ul style="list-style-type: none"> <li>• Supplier HVPT Checksheet</li> </ul>



### III. PRE-PRODUCTION (PILOT) PREPARATION

ELEMENT		DOCUMENTATION
<b>13</b>	<p><b>Bottleneck Processes</b> Clearly identify and report to ADVICS any limiting or “constraint processes” which may affect quality or production schedules.</p>	<ul style="list-style-type: none"> <li>• Control Plan</li> <li>• FMEA</li> <li>• Flow Diagram</li> </ul>

4. Suppliers may prepare for an HVPT audit by following the HVPT Checklist (III-03-F02)
5. Some of the documentation for the HVPT elements is completed during PPAP submission, prior to HVPT. Supplier should have copies of all documents, procedures, plans, etc... available during the visit. A HVPT “13 section binder” is the recommended method to present your evidence during the HVPT.
6. If a supplier contributes more than one component to a particular program, ADVICS may choose to attend the HVPT for each component. For most launches, ADVICS personnel may only audit one component due to time restrictions. A supplier should expect, however, that the most complex component (the component requiring the most processes) will be chosen for the trial. Additionally, ADVICS personnel may view other supporting processes to the HVPT component in order to ensure the overall quality and effectiveness.
7. Any element determined as unsatisfactory will require the supplier to conduct follow-up activity(ies). Depending on the impact of the item on mass production, a return visit to the supplier may be necessary.
8. Suppliers must complete all necessary steps and requirements to achieve a successful HVPT. This should include internal run @ rate trials, internal audits, and process reviews. The supplier **MUST** take all actions necessary to ensure that they are prepared to perform a successful HVPT during the ADVICS team visit. The ADVICS team visit **IS NOT** the forum for completing production preparation.
9. If a supplier does not successfully pass an ADVICS attended HVPT audit, the supplier may be charged costs associated with any necessary follow-up visits to achieve a successful HVPT audit.
10. The following is a typical meeting agenda in which ADVICS personnel may follow.

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### III. PRE-PRODUCTION (PILOT) PREPARATION

Agenda for Supplier HVPT		Approximate Time
1	Introduction – Explain agenda, team introductions, answer questions	15 min.
2	Facility Tour – Brief tour of entire facility	45 min.
3	Review Process flow diagram and manufacturing floor plan for ADVICS components and equipment.	15 min.
4	Walk Control Plan through the complete production process, from Receiving Inspection to shipping of the product. Items of interest will include: <ul style="list-style-type: none"> <li>i. Documents identified with the correct part number, change level, etc</li> <li>ii. Gages / test equipment</li> <li>iii. Special characteristics identified and controlled</li> <li>iv. Operator instructions and control charts</li> <li>v. Error and mistake proofing</li> <li>vi. Line speed demonstration, bottleneck processes</li> </ul>	2 hrs.
5	Discussion of PFMEA	45 min.
6	Preventive Maintenance	15 min.
7	Training	30 min.
8	Sub-supplier evaluations	30 min.
9	ADVICS Wrap-up and Report Finalization	45 min.
10	Closing comments / Follow-up	30 min.