

Compact Module Assembly Production: Process Understanding & Improvement

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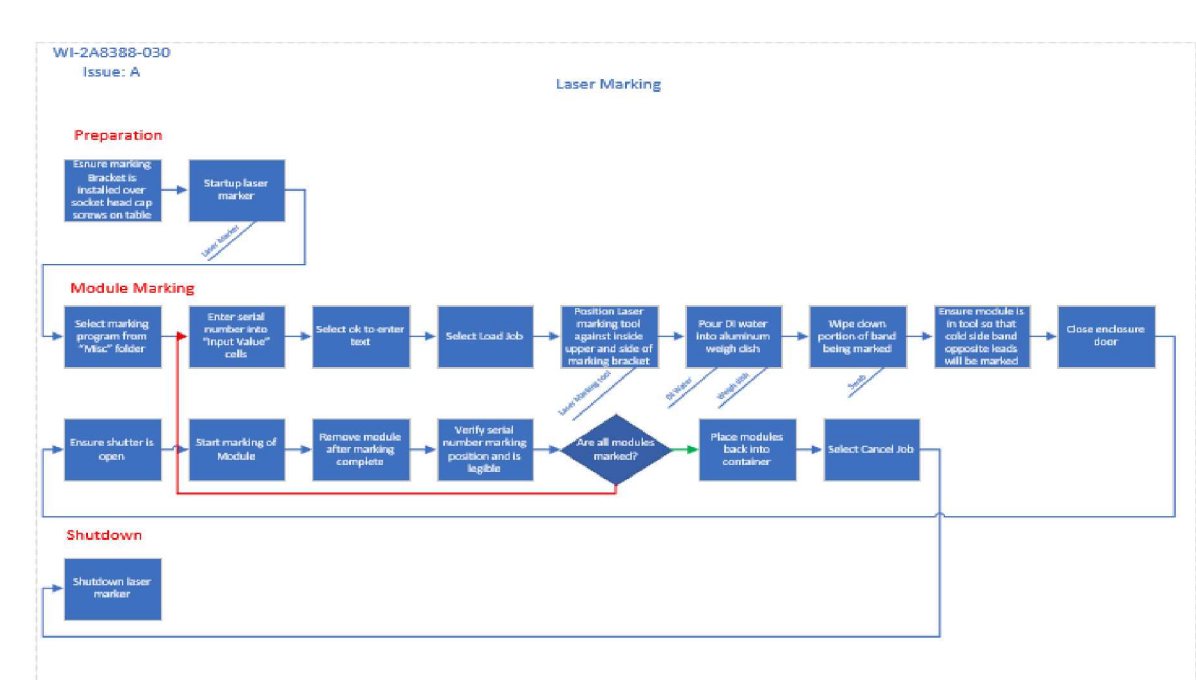
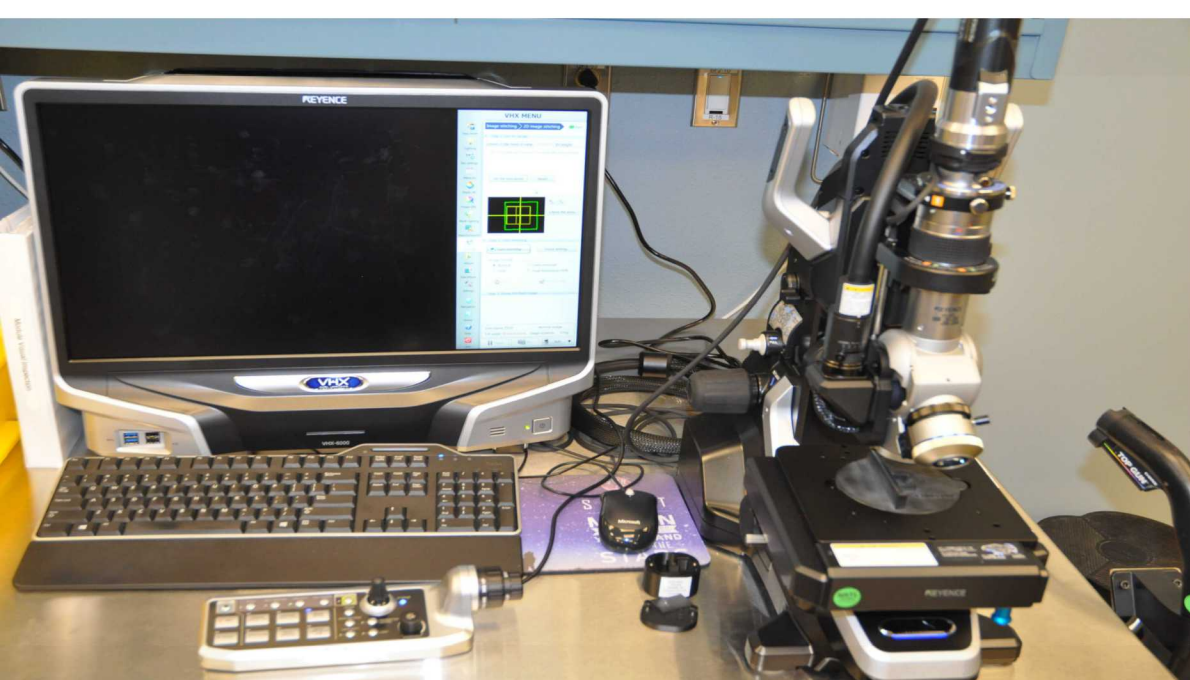
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Process Mapping & Process Observations

Objective: Provide a visual aid for each process involved in the production of compact module assemblies.

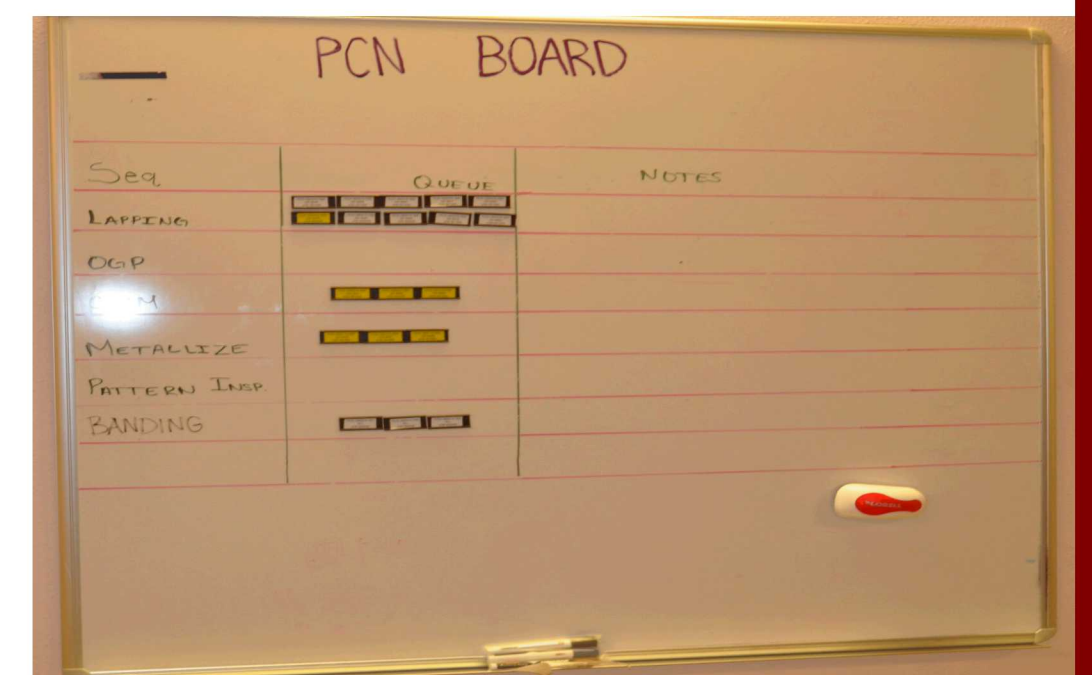
Process: For each process, we created an initial process map by following the steps stated in the work instructions. A total of 15 work instructions were analyzed and a process map was created for each work instruction using Microsoft Visio. After the initial draft of the process maps, we needed to gather a better understanding of each process to see if there were any deviations from the work instructions. We gathered a better understanding by observing each process in person, while following along with the work instructions. We also gained better understanding through hands on experience with the process. This consisted of simple tasks such as cleaning molds, imaging modules, and preparing needed materials, etc. With this improved understanding of the processes, we then made necessary changes to process map for the final draft. These process maps will serve as valuable training aids for new hires and will also be the baseline for creation of a simulation model for the compact module assembly production floor.



JST Wet Bench Qualification

Objective: To gain Process Engineering and technical writing experience by writing an operating procedure and developing and implementing a qualification plan for the JST Wet bench.

Process: We began with an initial walkthrough of the processes used on the JST Wet bench. This walkthrough consisted of starting up the machine, ultrasonic cleaning, the quick dump rinse (QDR) process, and the shutdown process. We also took note of any emergency or abnormal procedures needed. After this initial walkthrough, we were tasked with working on our technical writing by developing an initial operating procedure (OP). The operating procedure includes the steps of using the machine, as well as any emergency procedures or important details that operators would need to be aware of. We then went through the complete process of using the machine again, but this time we strictly followed the operating procedure. The purpose of this was to find steps in the operating procedure that were not correct or were not stated clearly. Corrections were made to ensure steps were clearly defined and could be easily followed by operators using the machine. We also included clarifying pictures, details and warnings as necessary. In order to get the Wet Bench qualified for use, the operating procedure should be completed and we must prove the parts can be effectively cleaned by following the operating procedure.



Process Aides

Objective: To mistake-proof by providing simple visual guides that clarify where certain things are in process, who is in certain areas (labs, clean rooms) and correct gowning procedure.

Process: This project consisted of various process aides that were created for module production. The first was the creation of a PCN board to keep track of all the Process Change Notices (PCNs) and which process those parts are currently being worked on. Next, was the development of an In/Out board in the clean room. Prior to the implementation of the In/Out Board, it was difficult to tell who was in the clean room at any given time. The final aide was the creation of a visual guide for the gowning procedure before entering the clean room. This allows for clarification on what needs to be worn prior to entering the clean room (gowns, hair covers, gloves, etc.) and steps that need to be followed to ensure proper gowning.