

Process Development Class

ZAG Equipment Sales, Inc.

Led by Your Industry Expert, Marty Key

The process development class is a hand on, interactive course that allows students to develop an injection molding process from the ground up. The course begins with identifying material, then to machine assessment, and concludes with the building of a process capable of repeatedly producing quality components. This class is approximately 80% hands for the student.

Safety – Identify safety concerns, proper PPE selection and use.

Material – How to identify and locate information for material being processed.

Controller – Overview of the machine's controller and interface.

Machine Assessment – Perform a variety of tests to assess the machine's performance and determine its capability.

Process Development – Execute a series of tests that focuses on various steps in the injection molding industry. The student will use the data to select various set points for the molding process.

Material:

- How to find and use a material data sheet
- Why are data sheets important?
- What is important to a processor on a material data sheet?

Controller:

- Overview of the controller buttons along with their meaning and use.

Machine Assessment:

- Injection Speed Linearity
- Load Sensitivity
- Check Ring (Static and Dynamic)
- Pressure Response
- Review and discuss the results.
- Why we do the test, when to do the test, what the test means
- What is good, what is bad, how to fix a bad machine



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Temperature:

- How to take a melt temp
- Approaches to setting barrel temperatures
- Back Pressure Study
- Screw Speed Study
- Input vs Output
- Discuss results.
- Function of the barrel, injection unit, screw, thermocouple, and heater bands

Injection (Flow):

- How to select a shot size
- Fill Speed study
- Fill Flow Study
- Cavity Imbalance Study
- How and why to calculate volumetric flow rate
- Fill Only procedure.

Pressure:

- Tonnage Calculation
- Pressure Loss Study
- Hold Pressure Study
- Hold Time Study
- Clamp Force Study
- Review of the studies, when and why we do them

Cooling:

- What is HDT, where to find it
- Cooling Study
- Capability Study
- Flow, Pressure, and Water Quality
- What is Capability and why we use it

Documenting the Process:

- What is important and why?
- Document development and issues

