

## **Maintenance Workshop (3 day practical hands on class)**

*“When I send people to your seminars, what kind of increase in knowledge, skills and performance should I expect to see when they are back at work?”*

After attending and successfully completing our Maintenance Workshop, your employee will be able to perform machine evaluation tests to make problems visible. This will include the following individual abilities.

### **Day 1:**

#### **I. Introduction**

During the introduction the students will have the basic understanding of the molding processors everyday molding challenges.

#### **II. Defining Molding Problems**

More defined description of the molding problems.

#### **III. Material**

Basic polymer make up of the plastic. This will also give a better explanation of why the molding machine needs to be kept tuned and in good working condition.

#### **IV. Plastics point of view**

Students will learn to think about the four plastics variables and how the machine and support equipment plays a huge role in the part quality.

#### **V. The Process**

Basic over view of the molding process

#### **VI. Group Exercise**

The group will work together to analyze a mold and machine to determine what kind of issues they may be faced with in running the mold in the machine. They will have a better understanding as to if the molding process is challenged by the process or the fact that the mold may be in the wrong machine.

### **DAY 2:**

#### **I. Plastic Temperature**

Basic understanding of what affects the plastic temperature from the machines perspective.

Tests to perform:

- Amp Draw test to determine if the heater bands are working properly
- 5 easy steps to checking the melt temperature
- Thermocouple inspection (Proper seating)

#### **II. Plastic Flow Rate**

Learn the importance of the machines flow rate and how to determine if your machine is a moving target causing more variations in your part characteristics.

Test to perform:

- Rheology Curve Study
- Least Pressure Curve
- Part Weight Study
- Speed Linearity
- Load Sensitivity
- Dynamic Checkring Study

- **Lab**

Students will be teamed up with other students to determine if the machine they are working on passes or fails the above tests. They will also document the responses and give suggestions as to how to repair the machines.

## **DAY 3:**

### **I. Plastic Pressure**

An understanding of how to think about plastic pressure instead of the typical hydraulic pressures that the students maybe used to seeing. They will also be able to determine if their machine has a good machine pressure response from the 1<sup>st</sup> stage to the 2<sup>nd</sup> stage.

Test:

- Pressure Response

### **II. Plastic Cooling**

The fourth plastic variable will help the maintenance tech understand how his/her support equipment effects the part dimensions. They will also understand what typical issues the molder has from the processors point of view.

### **III. Lab**

Students will be broken up into groups and complete all of the tests learned in class.

### **IV. Management Review**

Teams will present their findings to management with possible solutions to fixing the machine issues that will be visible to the techs once the tests have been completed.

### **V. Test**

A written test will be given to determine how well the students understood the class content.

## **How Training Impacts Business**

If given appropriate support on-the-job, these new knowledge and skills should lead to:

- Improved mold quality
- Reduced or eliminated new mold start-up runs and costs
- Reduced part variability and scrap
- Reduced time spent on trouble-shooting

If you do not see these kinds of abilities or operational improvements, please call us. Ultimately, our goal is to improve employee and operational performance. Sometimes employee knowledge and skills may increase, but that increase is not translated into improved performance. Additional coaching may be required, operating procedures adjusted, new performance expectations established, or other changes implemented. If you do not see our training lead to improved performance, we want to know about it and find a way to make it happen. Please contact us and we will do an assessment over the phone, free-of-charge, and, depending on the needs, an on-site assessment.