

Processing I: Control Utilization

MOSAIC CONTROL

Two-Day Outline

Mosaic Operator Controls

- The push-button assembly
- Soft key usage
- Direct menu access keys
- Manual and single cycle
- Manual operation keys

Clamp Setup Control Menu

- Toggle vs. hydraulic clamps
- The mold closing sequence
- Setting the mold touch point
- The mold protection pressure
- The mold opening sequence
- Slow breakaway set up

Ejection Control Menu

- The ejector forward sequence
- Dwell and pulse settings
- Ejecting during mold opening
- The ejector retract sequence
- Setting up retract override
- The air eject sequence

Temperature Control Menu

- Hydraulic oil temperature control
- Setting the feed throat temperature
- Barrel temperature profiles
- Setting temperature alarm bands
- Nozzle temperature control

Process Timer Control

- Components of a molding cycle
- Position controlled filling
- Pack and hold time division
- Cooling timer set up
- Fill time readings
- Cycle time readings

Injection Velocity Control Menu

- Setting a single injection velocity
- Establishing the shot size
- Setting max. injection pressure
- Setting an injection speed profile
- Monitoring the velocity shot trace
- Establishing a Transfer position

Evaluating Mosaic Shot Traces

- Shot traces over screw position
- Superimposed graphing techniques
- Velocity plots and traces
- Fill pressure traces
- Shot traces over time
- Holding pressure plots and traces

Transfer Mode Options

- The position transfer mode
- Optimizing the transfer position
- The hydraulic transfer option
- Hydraulic transfer principles
- Establishing a cut-off pressure
- Applications for hydraulic transfer
- The cavity pressure transfer option

The Packing and Holding Menu

- Packing and holding principles
- Setting up the packing and holding
- Determining the gate freeze time
- Establishing dimensions
- Profiling the holding pressures
- Holding pressure shot traces

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Extruder Control Menu

- The plastication process
- Back pressure principles
- Machine back pressure ranges
- Optimizing the screw speed
- Profiling the back pressure

Solutions for Packing Related Defects

- Packing out sinks and voids
- Improving surface defects
- Defects due to molded-in stress
- Controlling dimensions
- Hold pressure profiling applications

Process Monitoring Menus

- Key processing parameters
- Causes of process variation benchmarks
- Process variation benchmarks
- Setting alarm limits
- The production monitor

Alarm and Fault Menus

- Common alarms conditions
- Accessing the alarm menu
- Common fault conditions

Specialty Menu Usage

- Moving cores set up
- Mold data storage
- Auto die height set up procedures
- Lube status menu

Velocity Controlled Filling

- Setting the max. injection pressure
- Advantages of fast filling rates
- Maximizing the filling rate
- Monitoring fill time variations

Machine Considerations

- Clamp tonnage and projected area
- Screw diameter options
- The amplification ratio
- Injection pressure capability
- Non-return valves
- Open vs. closed loop control

Plastic Materials and Their Behavior

- Commodity vs. engineering plastics
- Crystalline vs. amorphous plastics
- Molecular weight and viscosity
- Thermal stability
- Moisture absorption
- Material grades and lots
- Surface defects
- Fill related defects
- Process monitoring
- Dimensional control

Process Troubleshooting

- Sources of molding variation
- Troubleshooting procedures
- Packing related defects

Solutions for Fill Related Defects

- Fountain flow principles
- Procedures to minimize short shots
- Solutions for blush and jetting
- Solutions for flash and burn marks

Course conducted by Polymer Training Resources®

MILACRON Processing I Seminar

Xtreem, CAMAC 486, or VSX Machine Controller Utilization

Course Outline for 2-Day Seminar

Xtreem or 486/VsX Operator Controls

- The push-button assembly
- Soft key usage
- Direct menu access keys
- Manual and single cycle
- Manual operation keys

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- Components of a molding cycle
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- Cycle time readings

Injection Velocity Control Menu

- Setting a single injection velocity
- Establishing the shot size
- Setting the fill pressure high limit
- Setting an injection speed profile
- Monitoring the velocity shot trace
- Establishing a Transfer position
- Adaptive shot control applications

Evaluating Xtreem or 486/VsX Shot Traces

- Shot traces over screw position
- Superimposed graphing techniques
- Velocity plots and traces
- Fill pressure traces
- Shot traces over time
- Holding pressure plots and traces

Transfer Mode Options

- The position transfer mode
- Optimizing the transfer position
- The hydraulic transfer option
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- Establishing a cut-off pressure
- Applications for hydraulic transfer
- The cavity pressure transfer option

The Packing and Holding Menu

- Packing and holding principles
- Setting up the packing and holding
- Determining the gate freeze time
- Establishing dimensions
- Profiling the holding pressures
- Holding pressure shot traces

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Solutions for Packing Related Defects

- Packing out sinks and voids
- Improving surface defects
- Defects due to molded-in stress
- Controlling dimensions
- Hold pressure profiling applications

Process Monitoring Menus

- Key processing parameters
- Causes of process variation benchmarks
- Process variation benchmarks
- Setting alarm limits
- Defective part signal applications
- The production monitor

Alarm and Fault Menus

- Common alarms conditions
- Accessing the alarm menu
- Common fault conditions

Specialty Menu Usage

- Moving cores set up
- Mold data storage
- Feature select menu options
- Printer set up menu
- Auto die height set up procedures
- Lube status menu
- Configuration menus
- Quick set section menus

Overview of the SPC Menus

- Applications for SPC
- Sample data charts
- Analysis charts
- Plotting charts
- Capability charts
- Overview menu

Velocity Controlled Filling

- Setting the fill pressure high limit
- Advantages of fast filling rates
- Maximizing the filling rate
- Monitoring fill time variations

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- Solutions for blush and jetting
- Solutions for flash and burn marks

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