PRECISION METALFORMING ASSOCIATION
NETWORK. LEARN. LEAD.

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Die Maintenance & Troubleshooting
In-Plant Training Agenda (Sample)

This agenda is based on training two shifts - or two cohorts - per day
(3 hours of training per shift/cohort)

DAY 1 (3 hours)

Introduction(s)

The Cost of Die Repair and Maintenance

- Four Types of Maintenance
- The Cost of Die Repair vs Maintenance
- The Cost of Effective Die Maintenance
- Why Maintenance Programs Fail
- Guidelines for an Effective Maintenance Program

The Metal Stamping System

- Inputs/Outputs
- The Problem: Not Always the Die
- Identifying Process Variables
- Controlling Process Variables

Tool Life Factors – Improving Uptime

- Sheet Metal Type and Thickness
- Tool Geometry
- Tool Material and Heat Treatment
- Machining and Grinding Factors

PMA in-plant training programs are fully customizable. Subjects in this agenda can be removed, replaced or additional topics added from other PMA in-plant training programs.

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DAY 2 (3-hours)

How and When to Sharpen (Grind) Punches

- Grinding Steps
- Wheel Selection
- Coolant Application
- Grinding Damage
- When and How to Temper Tool Steel

Guidelines for Shimming

- Hole Punching
- Combination Forming and Cutting
- Ball Lock Retainers
- Maintaining Alignment and Proper Entry

High Strength Steel – Die Maintenance Considerations

- Wear Issues
- Press Capacity
- Cutting Clearances
- Forming Clearances

Aluminum & Aluminum Alloys – Die Maintenance Considerations

- Wear Issues
- Lubrication Selection
- Cutting Clearances

Copper & Copper Alloys – Die Maintenance Considerations

- Wear Issues
- Lubrication Selection
- Cutting Clearances

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DAY 3 (3-hours)

Troubleshooting Methodology

- Finding Root Cause
- Challenges Finding Root Cause
- Approaching the Problem - Understanding the System
- Reading Progressive Die Strips

Reading Progressive Die Strips

- Carrier Stretching
- Die Strip Flexing
- Wrinkles Tell A Story
- Galling Problems
- Stretching vs. Drawing
- Unbalanced Loads

High Strength Steel – Maintenance Considerations

- Wear Issues
- Press Capacity
- Cutting Clearances
- Forming Clearances

Aluminum & Aluminum Alloys – Maintenance Considerations

- Wear Issues
- Lubrication Selection
- Cutting Clearances

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