

MAINTENANCE TRAINING COURSE PROFILES

Course title	MA-01 Hydraulic Safety Awareness
Duration	½ day
Aims / Objectives	After the course the participant will understand the safety requirements required when dealing with hydraulic systems and the need for a robust accident response plan
Target Group	Process & Maintenance technicians moving into the field of hydraulic systems
Prerequisites	None
Content	Oil Injection Injuries Dermatitis Oil Spill control Dieseling Hoses & fittings Creating a accident response plan

Course title	MA-02A Electrical Safety Awareness Without Practical
Duration	½ day
Aims / Objectives	This module is designed to provide a basic understanding of the importance of electrical safety
Target Group	Maintenance and Process technicians
Prerequisites	None
Content	Possible Hazards & Accidents Stop & think – assess the risk Monitor Hazard Control the hazard Identify & explain circuit breakers & fuses Explain the need to allow Servo drives to fully discharge Residual Circuit Breakers

Course title	MA-02B Electrical Safety Awareness with Practical
Duration	1 day
Aims / Objectives	After the course the participant can understand the robot structure and its associated operational components
Target Group	Automation / Electrical / Hydraulic / Maintenance and Process technicians
Prerequisites	Good understanding of injection moulding / automation and basic machine functions
Content	Possible Hazards & Accidents Stop & think – assess the risk Monitor Hazard Control the hazard Identify & explain circuit breakers & fuses Explain the need to allow Servo drives to fully discharge Residual Circuit Breakers

MAINTENANCE TRAINING COURSE PROFILES

Course title	MA-03 Maintenance Training – Tasks
Duration	½ day
Aims / Objectives	After the course the participant can understand the maintenance tasks that need to be carried out to keep the machine in a good condition
Target Group	Maintenance and Process technicians
Prerequisites	Good understanding of injection moulding and basic machine functions and have completed MA-01 & MA-02A or MA-02B
Content	Mechanical and hydraulic maintenance tasks Understand the need to create a robust maintenance plan Break down the maintenance plan into daily, weekly, monthly, 3monthly & yearly tasks

Course title	MA-04 Basic Electrical Training
Aims / Objectives	1 day
Objectives	This course is designed to give the candidate an introduction to the Electrical & Electronic circuits used in a Injection Moulding machine
Target Group	Maintenance & Process Technicians
Prerequisites	A basic understanding of injection moulding and basic machine function
Content	To be able to identify key components locate them on the machine and the circuit diagram Understand the need of a Star/Delta pump start circuit Understand how the heater band circuits work

Course title	MA-05 Part 1 Maintenance Training for injection Moulding
Duration	1 day
Aims / Objectives	To understand the maintenance requirements for a hydraulic injection moulding machine
Target Group	Maintenance and Process technicians
Prerequisites	Good understanding of injection moulding and basic machine functions or MA-01 & MA-02A or MA-02B
Content	Safety systems – Fixed & moving Guards Safety Gates switches & circuits Inputs & Outputs to control movement Routine maintenance screws & barrels Levelling, tie bar stretches and strain gauges

MAINTENANCE TRAINING COURSE PROFILES

Course title	MA-06 Part 2 Maintenance Training for Injection Moulding
Duration	1 day
Aims / Objectives	After the course the participant can understand the maintenance requirements for a Hydraulic injection Moulding Machine
Target Group	Maintenance and Process technicians
Prerequisites	Good understanding of injection moulding and have completed MA-05, MA-01 & MA-02A or MA-02B
Content	Lubrication Systems Hydraulic Oils, The importance of Oil Cleanliness Filtration & analysis Introduction, identification & explanation of the main hydraulic components within a Hydraulic Moulding machine

Course title	MA-07 Further Hydraulic Training for Maintenance Engineers
Duration	1 days
Aims / Objectives	To provide further understanding of the maintenance for a hydraulic Injection moulding machine
Target Group	Maintenance and Process technicians
Prerequisites	Good understanding of injection moulding and have completed MA-05, MA-06, MA-01 & MA-02A or MA-02B
Content	Safety - Recap Filters - What where & why Classification of moulding machines Overview of fully Hydraulic Overview of Hydraulic with fixed & variable pumps Overview of Hybrid Overview of Servo driven Intensification Servo motor Clamp

Course title	MA-08 Servo drives for Injection moulding maintenance Engineers
Duration	1 day
Aims / Objectives	To provide an understanding of Servo Drives as used in Injection moulding machines.
Target Group	Maintenance and Process technicians
Prerequisites	Good understanding of injection moulding and completed MA-05 Part 1 & Part 2, MA-01 & MA-02A or MA-02B
Content	Introduction to servo drives, What, Why & Where are they used Overview of Servo Electrical Drawings Overview of Servo Hydraulic Drawings Servo Health & Safety