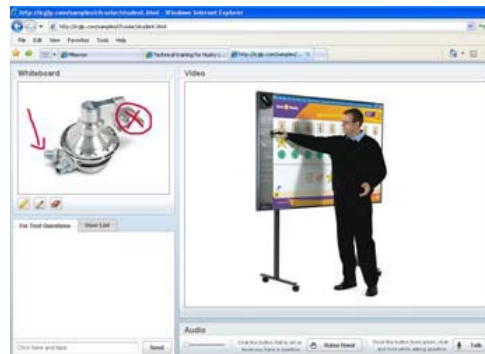


## Live Internet-Based Training

The Milacron Plastics Technologies Group is pleased to offer to its customers live Internet based training! Our newest training option specifically addresses the challenges our customers face in today's marketplace; budget and time constraints. Now you can get live training from our experts in short durations and at economical prices!

**What:** Courses are designed for the Plastics Industry and, in particular, Milacron equipment such as the Powerline and Maxima series. Some of the initial classes available include electrical and/or hydraulic specifics, understanding bar charts, lubrication, plus electrical and hydraulic print reading. These initial courses address the most common needs of maintenance personnel and the topics are applicable across different Milacron lines. Brief course descriptions on these initial offerings are listed below.



**Who:** Classes are geared to Milacron customers, but arrangements for a private class can be made so only your personnel are in attendance.

**How:** Your company personnel can take these classes from any location worldwide with ease and convenience. Access to the training courses will be via the Internet using a web browser such as Internet Explorer. No special software is needed and no special setup is required. Once logged in students will be able to interact with the instructor, interact with the instructor's presentation, take a test and even answer polling questions when prompted. Any course material that is required for the class can be downloaded and available ahead of time. Audio interaction is available via the Internet using Voice Over Internet Protocol technology (VOIP) or via phone. Specific directions for accessing the course will be available upon registration. For more information on any of the training courses please contact Milacron Customer Training Administration at 513-536-2265 or email us at [training@milacron.com](mailto:training@milacron.com).

**When:** The Fall 2010 schedule is listed below and shows what specific courses will be available in the near future. Most classes are offered multiple times throughout the week. In the months ahead complete beginning and advanced courses on specific machines such as Roboshot, Magna, Maxima, Powerline and the older Vista will be added to the class offerings.

## Schedule of Live Online Courses 4<sup>th</sup> Quarter 2010

Course #	Title	Date	Time (EST)
IM-101	Bar/Sequence Charts for Hydraulic Machines	Oct. 25	7:30 am – 9:30 am
“	“	Oct. 28	4 pm – 6 pm
IM-103	Basic Electrical Print Reading for Milacron Hydraulic Injection Molding Machines	Oct. 26	7:30 am – 9:30 am
“	“	Oct. 29	1pm – 3pm
IM-105	Electrical Print Reading for Powerline Machines Part 1 & 2	Oct. 25	1pm – 3pm
IM-107	Electrical Print Reading for Powerline Machines Part 3 & 4	Oct. 26	1pm – 3pm
IM-109	Hydraulic Circuits on Maxima and other Milacron Machines Part 1 & 2	Oct. 27	1pm – 3pm
IM-111	Hydraulic Circuits on Maxima and other Milacron Machines Part 3 & 4	Oct. 28	1pm – 3pm
IM-113	Preventive Maintenance on Powerline Lube Systems	Oct. 25	10:30am – 11:30am
IM-114	Preventive Maintenance on Roboshot Lube Systems	Oct. 27	10:30am – 11:30am
SCP-101	Hydraulic Symbols and Print Reading on Injection Molding Machines	Oct. 25	4 pm – 6 pm
“	“	Oct. 27	7:30 am – 9:30 am
SCP-103	Basic Electrical Print Reading for Hydraulic and Electrical Injection Molding Machines	Oct. 27	4 pm – 6 pm
“	“	Oct. 29	7:30 am – 9:30 am

**Pricing:** The cost for each 1-hour session is \$89. For this price a training ID is assigned and sent to an individual to be used for a single PC and single toll-free phone line. If two people from the same company want to attend the class but are in different locations the price is \$89 for each since they require separate PCs and, thus separate IDs and separate phone lines. More than one student may sit at a single PC at no additional cost. Training IDs for classes may be purchased anytime online via credit card or in advance with a PO.

**Registration:** To register for classes, please contact Milacron Customer Training Administration at 513-536-2265 or email us at [training@milacron.com](mailto:training@milacron.com).

## Course Descriptions

### **IM-101: Bar/Sequence Charts for Hydraulic Machines**

This course will cover reading and interpreting bar/sequence charts associated with Milacron hydraulic injection molding machines.

**Prerequisites:** None

**Learning Objectives:**

- Read bar/sequence chart
- Identify the Factory Set Points (FSP), Set Point (SP) and legend items
- Identify all other basic chart symbols including A-numbers
- Recognize interaction between operator screens and bar charts
- Define machine states
- Identify energized valves for various machine states

### **IM-103: Basic Electrical Print Reading for Milacron Injection Molding Machines**

This course will cover the basic knowledge needed to read the electrical prints of Milacron hydraulic injection molding machines.

**Prerequisites:** None

**Learning Objectives:**

- Identify basic electrical symbols
- Discuss mapping (moving from one electrical circuit page to another)
- Discuss incoming power and step-down transformers
- Follow inputs and outputs to and from proportional valves
- Identify fuses and what they control
- Identify power supplies, wire numbers, open/close contacts, A-numbers
- Discuss block identification, plug wiring and transducer wiring
- Discuss troubleshooting basics

### **IM-105: Electrical Print Reading for Powerline Machines (Part 1 & 2)**

This course covers the knowledge needed to work with the electrical prints from the Milacron Powerline series.

**Prerequisites:** None

**Learning Objectives:**

- Identify all symbols found on Powerline electrical prints
- Trace outputs from power source
- Discuss incoming power, step-down transformers
- Discuss and perform mapping
- Discuss troubleshooting techniques

### **IM-107: Electrical Print Reading for Powerline Machines (Part 3 & 4)**

Continuation of IM-105

**IM-109: Hydraulic Circuits on Maxima and other Milacron Machines (Part 1 & 2)**

This course covers the knowledge needed to work with the hydraulic prints from Milacron's Maxima and other hydraulic machines.

**Prerequisites:** None

**Learning Objectives:**

- Identify hydraulic symbols found on prints
- Discuss in detail the hydraulic prints
- Explain the different hydraulic machines states
- Trace flow from pumps to cylinders and back to tank
- Show where to check pressures and install gages
- Describe function of all valves
- Discuss troubleshooting techniques

**IM-111: Hydraulic Circuits on Maxima and other Milacron Machines (Part 3 & 4)**

Continuation of IM-109

**IM-113: Preventive Maintenance on Powerline Lube Systems**

This one-hour course covers the function of the lube system on the Powerline series.

**Prerequisites:** None

**Learning Objectives:**

- Identify the points of lubrication
- State approved lubricants
- Describe mechanics of lube system

**IM-114: Preventive Maintenance on Roboshot Lube Systems**

This one-hour course covers the function of the lube system on the Roboshot series.

**Prerequisites:** None

**Learning Objectives:**

- Identify the points of lubrication
- State approved lubricants
- Describe mechanics of lube system

**SCP-101: Hydraulic Symbols and Print Reading on Injection Molding Machines**

This course discusses hydraulic symbols and prints from a generic viewpoint (not manufacturer specific).

**Prerequisites:** None

**Learning Objectives:**

- Identify hydraulic symbols for pumps, motors, flow controls, pressure and directional controls
- Identify lines and other symbols found on hydraulic prints
- Explain hydraulic machine states
- Discuss ISO standards

**SCP-103: Basic Electrical Print Reading for Hydraulic and Electrical Injection Molding Machines**

This course discusses basic electrical print reading from a generic viewpoint (not manufacturer specific).

**Prerequisites:** None

**Learning Objectives:**

- Identify basic electrical symbols
- Discuss mapping (moving from one electrical circuit page to another)
- Discuss incoming power and step-down transformers
- Follow inputs and outputs to and from proportional valves
- Identify fuses and what they control
- Identify power supplies, wire numbers, open/close contacts, A-numbers, circuit breakers
- Discuss block identification, plug wiring and transducer wiring
- Discuss troubleshooting basics

**SCP-105: Free Sample Class – Fluid Conditioning**

This course discusses fundamentals of fluid conditioning. This course will also be used to familiarize the student with the online training interface.

**Prerequisites:** None

**Learning Objectives:**

- Discuss filter construction
- Define Beta Ratio
- Recognize ISO codes
- Explain oil sampling
- Describe effect of reservoirs on fluid conditioning
- Discuss filter placement

## Don't Forget About Hands-On Classes!

Want the perfect complement to our Internet classes? Milacron can provide instructor-led training on-site at your location or at our Cincinnati headquarters. This type of hands-on instruction makes a great capstone course, integrating the knowledge gained online and combining it with real-world training on your own machinery. Ask us for a quote today.

For more information on any of the training described above please contact Milacron Customer Training Administration at 513-536-2265 or email us at [training@milacron.com](mailto:training@milacron.com).

Thank you for your interest in training services from our Plastic Technologies Group!

We look forward to helping you maximize the advantages of your Milacron machinery.