

**Instructor-Led Preventative Maintenance & Operation Training**

We provide instructor-led training on-site at your location or at our Batavia, OH headquarters. This type of hands-on instruction makes a great course, pulling in the knowledge gained and combining it with real world training on your own machinery. We help you to improve your production and reduce downtime!

Course Title	Date	Time
Level 1 Industrial Hydraulics w/Hands-On Trainers <i>(includes hardbound Eaton Industrial Hydraulics Manual*)</i>	February 4-6 April 29 - May 1 August 12-14 November 11-13	8:00 am – 4:30 pm
Level 2 Industrial Hydraulics w/Hands-On Trainers <i>(includes hardbound Eaton Industrial Hydraulics Manual*)</i>	June 10-12 December 9-11	8:00 am – 4:30 pm
Injection Molding Electrical	February 11-13 April 22-24 August 5-7 October 28-30	8:00 am – 4:30 pm
C-Series – Maintenance and Operation <i>(Cincinnati)</i>	January 7-9 July 8-10 October 7-9	8:00 am – 4:30 pm
L-Series – Maintenance and Operation <i>(Low Pressure Injection Molding)</i>	February 18-20 July 29-31	8:00 am – 4:30 pm
M-Series – Maintenance and Operation	April 1-3 July 22-24	8:00 am – 4:30 pm
Maxima MG / MGs – Maintenance and Operation	May 13-15 September 9-11	8:00 am – 4:30 pm
Maxima Ms / MPs (Servo Hydraulics) Maintenance and Operation	June 17-19 October 21-23	8:00 am – 4:30 pm
Q-Series / MTs (Servo Hydraulics) Maintenance and Operation	March 4-6 September 16-18	8:00 am – 4:30 pm
Roboshot – Maintenance and Operation	January 14-16 April 15-17 August 19-21 December 2-4	8:00 am – 4:30 pm

**Cost**

The cost for each 3-day session at our Batavia, OH plant is \$1,500 per student (*\*add \$195 for Level 1 and Level 2 Industrial Hydraulic Courses*). **Custom onsite classes are also available.**

**For more information on any of the training described above, please call 513-536-2746 or email [training@milacron.com](mailto:training@milacron.com). Thank you for your interest in training services from Milacron.**

**Course Descriptions**

All courses include classroom instruction and hands-on exercises/shop floor instruction.

**Standard Preventative Maintenance & Operation****Improve Production and Reduce Downtime**

Standard preventative maintenance and operation seminars are designed to teach machine maintenance and operation along with techniques for efficient troubleshooting and repairing machine problems. Sessions include a complete review of control screens, diagnostics and machine print review and analysis.

**Course Outline**

- General machine overview
- Operator and machine safeties
- General and preventative maintenance
- Control operation, screens, and diagnostics
- Machine sequence and operation
- Troubleshooting practices
- Electrical prints analysis
- Hydraulic circuit analysis (as applicable)

**Level 1 Industrial Hydraulics**

This first (of two levels) course correlates fluid power principles with machine operation and daily maintenance duties. Safety and basic fluid power principles first set a foundation. The construction, operation, and specific use of individual hydraulic components (pumps, directional control valves, relief valves, reducing valves) then become the focus of the class. Fluid power symbols will be compared to the physical components. Location of components in the hydraulic system and proper adjustment procedures will be identified. The course will also discuss elimination of leaks by proper fitting selection and installation. In addition, the significance of fluid cleanliness to system longevity and techniques to minimize ingestion of contaminants will be presented.

**Level 2 Industrial Hydraulics**

This component and control level course will dive further into the operation and troubleshooting of hydraulic components typically found on injection molding machines, along with the operation of the lubrication unit of the machine. Trainees will be given hydraulic schematics for an injection molding machine and will be asked to trace out circuits on their schematics and explain the operation of all components. Pressure compensator pumps and cartridge valves are additional components covered in this level 2 course.

The student will also learn the complete function of the injection molding machine lube units found on the Powerline, Roboshot, and other product lines at Milacron. They will be taught the proper way to troubleshoot, repair and look for problems on their equipment. As with the hydraulic topics, by taking the hands-on approach and working on Milacron's shop floor, the student will have a better understanding how a proper lube unit works.