

 **Sumitomo**  
SHI **DEMAG**  
Plastics Machinery

Demag and Van Dorn Machine Training  
Schedule 2013

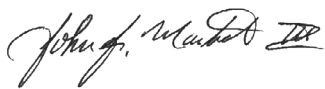
MORE KNOWLEDGE -  
IMPROVED EFFICIENCY.

Dear Valued Customer,

I am pleased to present you with our new schedule for 2013, and would like to welcome all our customers to the new Technology Center and training facility here in Ohio. Please review the various course offerings. We have many options to assist you in training your personnel at any level.

Sumitomo (SHI) Demag can also provide a customized instructional program at your facility to meet your needs. Please contact us today to schedule your sessions, or to request a quotation for customized training.

For questions, you can email us at our technical training mailbox: [technicaltraining@dpg.com](mailto:technicaltraining@dpg.com).

A handwritten signature in black ink, reading "John F. Martich III". The signature is written in a cursive style with a prominent flourish at the end.

John F. Martich III  
Chief Operating Officer

Protecting and building value.

## Training Courses in Strongsville, Ohio

Our philosophy is to offer a carefully prepared training experience that satisfies the needs of all who participate. Therefore, if you are new to the injection molding process or a veteran of the processing challenges, you will have learned valuable information you can apply to your job responsibilities. This philosophy also applies to our maintenance courses, from the basics of electrical and hydraulic symbols to troubleshooting a proportional valve and hydraulic circuit tracing.

Our training courses cover processing and maintenance on our current machines and on a variety of our older machines. Courses currently being offered in Strongsville include training for our Systemc machines, EL-EXIS SP machines and our Titan/Caliber line of machines.

### Additional Courses in Strongsville, Ohio

The following classes are available in Strongsville based on customer request:

- PK 3-5000 Control Operations (2-day classroom instruction)
- Ergotech with NC4 Maintenance (3-day classroom instruction)
- DD IntElect with NC4 Maintenance (3-day classroom instruction)

## In-Plant Program

Sumitomo (SHI) Demag is well aware of the challenges you are faced with to maintain a well-trained work force and meet the production demands of your growing business.

Here is our recommendation to stay competitive!

### The Training Plus Program

The Training Plus Program is a 5-day package which is designed by the customer and conducted at the customer's facility. The method of instruction may be a combination of the items listed below. The hours of training may be split for different groups or shift requirements. The content of training is the customer's choice.

#### Classroom Training:

This training is in a classroom environment away from production concerns and responsibilities.

## Training Courses in Strongsville, Ohio

### Hands-on at Machine Training:

Hands-on training is just that – we take the students to your designated machine and teach processing and maintenance troubleshooting skills (4 students max.).

### Predictive Training:

Predictive training will advance your personnel from apprentice to journeyman status by training them at different levels as they grow in their respective job responsibilities.

### Specialized Applications Assessment:

Our process specialists will guide students through the development and processing of new machinery, such as a molding machine, automation, new mold or new material. This also includes molding machine run-offs.

## Additional In-Plant Training Courses

- Hands-on Process Optimization with our retrofit VDU<sup>®</sup> Controller
- Hands-on Troubleshooting and Calibration HT/HP with Pathfinder 3000 – 5000 (2500 – 4500)
- Hands-on Process Optimization with Pathfinder 3000 - 5000 (2500 – 4500)
- Hands-on Leveling and Machine Set-up

The courses listed above can be conducted at your facility using your machines. This has proven to be beneficial to students since it provides them with a familiar setting.

For more information and to request a quote, please contact:

Sumitomo (SHI) Demag Training Department  
Mark.Lepole@dpg.com  
440.876.6203

# Availability

January	February	March	April	May	June	July	August	September	October	November	December	Course No.
	Available		Available						Available			1
	Available		Available						Available			2
	Available		Available						Available			3
	Available		Available						Available			4
	Available		Available						Available			5
	Available		Available						Available			6
		Available			Available			Available			Available	7
		Available			Available			Available			Available	8
				Available						Available		9
				Available						Available		10
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# 1

## NC5 Controls

### Machines that are covered

All Demag machines with NC5 controls.

### Who should attend

Operators, set-up technicians and new personnel who require a basic understanding of the injection molding process, operator set-up screens, alarm faults and process monitoring.

### Course Topics

- Understanding the machine sequence
- Machine safety features
- Machine overview (component identification)
- Operator interface
- Control screen description
- Clamp/Ejector and core pull system set-up
- Temperature control
- Injection process
- Set-up screens associated with injection
- Understanding closed loop
- Machine and production monitoring screens

### Special Notes

Class is designed for people new to injection molding and NC5 controls.

### Duration

1 day

### Tuition

\$575.00

### Dates

Strongsville, OH

February 5  
April 2

October 1



# 2

## Hands-on Process Optimizing with NC5 Controls

Machines that are covered	All Demag machines with NC5 controls.
Who should attend	Engineers and mold technicians responsible for setting or creating the process for new or existing molds. Students should have a very good understanding of NC5 screens.
Who should not attend	Individuals new to injection molding or NC5 controls should attend Course Number 1 .
Course Topics	<ul style="list-style-type: none"><li>• Optimizing clamp cycle for cycle time</li><li>• How to maximize mold protection</li><li>• Fundamentals to follow when setting up a new process</li><li>• Understanding velocity and hold phases</li><li>• Setting a process for repeatability</li><li>• Interpreting graphs and data</li><li>• Understanding cushion fluctuation</li><li>• Profiling</li><li>• Which cut-off mode to use</li><li>• Screw and material characteristics</li><li>• Setting and using process monitoring</li></ul>
Duration	2 days
Tuition	\$1,125.00
Dates	Strongsville, OH  February 6 - 7                      October 2 - 3 April 3 - 4

\* Based on machine availability

# 3

## NC4 Controls

Machines that are covered	All Demag machines with NC4 controls.	
Who should attend	Operators, set-up technicians and new personnel who require a basic understanding of the injection molding process, operator set-up screens, alarm faults and process monitoring.	
Course Topics	<ul style="list-style-type: none"><li>• Understanding the machine sequence</li><li>• Machine safety features</li><li>• Machine overview (component identification)</li><li>• Operator interface</li><li>• Control screen description</li><li>• Clamp/Ejector and core pull system set-up</li><li>• Temperature control</li><li>• Injection process</li><li>• Set-up screens associated with injection</li><li>• Understanding closed loop</li><li>• Machine and production monitoring screens</li></ul>	
Special Notes	Class is designed for people new to injection molding and NC4 controls.	
Duration	1 day	
Tuition	\$575.00	
Dates	Strongsville, OH	
	February 12 April 9	October 8

# 4

## Hands-on Process Optimizing with NC4 Controls

Machines that are covered

All Demag machines with NC4 controls.

Who should attend

Engineers and mold technicians responsible for setting or creating the process for new or existing molds. Students should have a very good understanding of NC4 screens.

Who should not attend

Individuals new to injection molding or NC4 controls should attend Course Number 3.

Course Topics

- Optimizing clamp cycle for cycle time
- How to maximize mold protection
- Fundamentals to follow when setting up a new process
- Understanding velocity and hold phases
- Setting a process for repeatability
- Interpreting graphs and data
- Understanding cushion fluctuation
- Profiling
- Which cut-off mode to use
- Screw and material characteristics
- Setting and using process monitoring

Duration

2 days

Tuition

\$1,125.00

Dates

Strongsville, OH

February 13 - 14  
April 10 - 11

October 9 - 10

\* Based on machine availability

# 5

## VDU® Controls

### Machines that are covered

All machines with VDU® controls.

### Who should attend

Operators, set-up technicians and new personnel who require a basic understanding of the injection molding process, operator set-up screens, alarm faults and process monitoring. Class is designed for people new to injection molding and VDU® controls.

### Course Topics

- Understanding the machine sequence
- Machine safety features
- Machine overview (component identification)
- Operator interface
- Control screen description
- Clamp/Ejector and core pull system set-up
- Temperature control
- Injection process
- Set-up screens associated with injection
- Understanding closed loop
- Machine and production monitoring screens

### Duration

1 day

### Tuition

\$575.00

### Dates

Strongsville, OH

February 19

April 16

October 15

# 6

## Hands-on Process Optimizing with VDU® Controls

### Machines that are covered

All machines with VDU® controls.

### Who should attend

Engineers and mold technicians responsible for setting or creating the process for new or existing molds. Students should have a very good understanding of VDU® screens.

### Who should not attend

Individuals new to injection molding or VDU® controls should attend Course Number 5.

### Course Topics

- Optimizing clamp cycle for cycle time
- How to maximize mold protection
- Fundamentals to follow when setting up a new process
- Understanding velocity and hold phases
- Setting a process for repeatability
- Interpreting graphs and data
- Understanding cushion fluctuation
- Profiling
- Which cut-off mode to use
- Screw and material characteristics
- Setting and using process monitoring

### Duration

2 days

### Tuition

\$1,125.00

### Dates

Strongsville, OH

February 20 - 21  
April 17 - 18

October 16 - 17

# 7

## EL-EXIS Machines - Electrical and Mechanical System Maintenance

Machines that are covered

Demag EL-EXIS Series 60 - 700 toggle clamp.

Who should attend

Maintenance personnel (both technical and supervisory) who require a better understanding of the overall machine operation and maintenance including detailed circuit tracing of the hydraulic and electrical control systems.

Who should not attend

Individuals requiring training on machine operation, screens or processing techn. *only*. Those people should attend Course Number 3 or 4.

Course Topics

- Basic machine operation
- Clamp and injection unit descriptions
- Machine safety features
- Basic maintenance screens and alarm/fault message screens
- Machine layout/component identification
- Preventive maintenance and lubrication requirements
- Clamp and injection unit maintenance
- System diagnostics and troubleshooting
- Hydraulic drive systems: controls, symbols, print reading, advanced hydraulic controls (hydrostatic transmission, proportional valves, variable pumps and accumulator systems)
- AC drives and servo motors, basic theory, operation, calibration and troubleshooting
- System diagnostics - principles and function of input and output devices, hardware description and identification, and amplifier cards
- Electrical symbols, control circuits and troubleshooting fault codes

Duration

3 days

Tuition

\$1,000.00

Dates

Strongsville, OH

March 5 - 7  
June 4 - 6

September 10 - 12  
December 3 - 5

# 8

## Demag NC4 Print Reading

Machines that are covered	All Demag machines with NC4 controls that have IEC prints (International Electrical Standard).	
Who should attend	Maintenance personnel who require more in-depth experience in machine troubleshooting to fully understand IEC standard prints, proper calibration procedures for all sensors and components that require periodic adjustments.	
Who should not attend	Individuals requiring training on machine operation, screens or processing techniques <i>only</i> . Those people should attend Course Number 3 or 4.	
Course Topics	<ul style="list-style-type: none"><li>• IEC symbols</li><li>• Extensive electrical print reading</li><li>• How to use bit status screen in troubleshooting</li><li>• Basic operational screens and alarm/fault message screens</li><li>• Operation of smart pumps</li><li>• System diagnostics</li><li>• How to calibrate position sensors, pressure sensors, smart pumps</li><li>• NC4 control: system diagnostics - principles and function of input and output devices, hardware description and identification, and amplifier cards</li></ul>	
Duration	3 days	
Tuition	\$1,000.00	
Dates	Strongsville, OH	
	March 12 - 14 June 11 - 13	September 17 - 19 December 10 - 12

# 9

## Systemec Machines – Electrical and Mechanical System Maintenance

Machines that are covered

Demag Systemec machines with NC5 controls.

Who should attend

Maintenance personnel (both technical and supervisory) who require a better understanding of the overall machine operation and maintenance including detailed circuit tracing of the hydraulic and electrical control systems.

Who should not attend

Individuals requiring training on machine operation, screens or processing techniques *only*. Those people should attend Course Number 1 or 2.

Course Topics

- Basic machine operation
- Clamp and injection unit maintenance
- Hydraulic/electrical systems overview
- Machine safety features
- Basic operational screen functions
- Alarm message screens, production monitor screens and calibration screens
- Preventive maintenance
- Lubrication requirements
- Machine troubleshooting
- Hydraulic systems: basic theory, controls, symbols, advanced hydraulic controls including cartridge valves, proportional valves, smart pumps and hydraulic circuit analysis and test points
- NC5 control: system calibrations, alarm faults and service screens, principles and functions of input and output devices, C-Dias control panel layout and hardware description, control modules description and electrical control circuit diagram

Duration

3 days

Tuition

\$1,000.00

Dates

Strongsville, OH

May 7 - 9

November 5 - 7



# 10

## Titan/Mid-size Caliber Series Hydraulic, Electrical and Mechanical System Maintenance, NC4 Controls

### Machines that are covered

Titan and mid-size Caliber clamp machines equipped with NC4 controls.

### Who should attend

Maintenance personnel (both technical and supervisory) who require a better understanding of the overall machine operation and maintenance including detailed circuit tracing of the hydraulic and electrical control systems.

### Who should not attend

Individuals requiring training on machine operation, screens or processing techniques *only*. Those people should attend Course Number 3 or 4.

### Course Topics

- Basic machine operation
- Clamp and injection unit descriptions
- Machine safety features
- Basic operational screens and alarm/fault message screens
- Machine layout/component identification
- Preventive maintenance and lubrication requirements
- Basic clamp and injection unit maintenance
- System diagnostics and troubleshooting
- Hydraulic systems: basic theory, controls, symbols, advanced hydraulic controls (cartridge valve, proportional valves and proportional systems)
- Hydraulic print reading and circuit analysis NC4 control: system diagnostics - principles and function of input and output devices, hardware description and identification, and amplifier cards
- Electrical symbols and control circuits
- C-Dias modules operation and troubleshooting
- Machine troubleshooting

### Duration

3 days

### Tuition

\$1,000.00

### Dates

Strongsville, OH

May 14 - 16

November 12 - 14

# 11

## Caliber Series - Hydraulic, Electrical and Mechanical System Maintenance with Pathfinder 3000 - 5000 Controls

### Machines that are covered

All 1100 - 3300 Caliber Series machines equipped with Pathfinder 3000 - 5000 controls.

### Who should attend

Maintenance personnel (both technical and supervisory) who require a better understanding of the overall machine operation and maintenance including detailed circuit tracing of the hydraulic and electrical control systems.

### Who should not attend

Individuals requiring training on Pathfinder 3000 – 5000 processing techniques *only*. Those people should contact the Training department.

### Course Topics

- Basic machine operation and troubleshooting
- Clamp and injection unit maintenance
- Hydraulic/electrical systems overview
- Machine safety features
- Basic operational screen functions
- Alarm messages screens, production monitor screens and calibration screens
- Preventive maintenance and lubrication requirements
- Machine troubleshooting
- Hydraulic systems: basic theory, controls, symbols, advanced hydraulic controls (cartridge valves, proportional valves and fix volume pumps), and hydraulic circuit analysis
- Pathfinder 3000 - 5000 control: system calibration, alarm faults and service screens, principles and functions of input and output devices, control panel layout and hardware description, control modules description and electrical control circuit diagram

### Duration

3 days

### Tuition

\$1,000.00

### Dates

Strongsville, OH

April 30 to May 2

September 24 - 26

# 12

## HT/HP Series - Hydraulic, Electrical and Mechanical System Maintenance with Pathfinder 3000 - 5000 Controls

### Machines that are covered

All toggle and hydraulic clamp machines equipped with Pathfinder 3000 - 5000 controls.

### Who should attend

Maintenance personnel (both technical and supervisory) who require a better understanding of the overall machine operation and maintenance including detailed circuit tracing of the hydraulic and electrical control systems.

### Who should not attend

Individuals requiring training on Pathfinder 3000 – 5000 processing techniques *only*. Those people should contact the Training department.

### Course Topics

- Basic machine operation and troubleshooting
- Clamp and injection unit maintenance
- Hydraulic/electrical systems overview
- Machine safety features
- Basic operational screen functions
- Alarm messages screens, production monitor screens and calibration screens
- Preventive maintenance and lubrication requirements
- Hydraulic systems: basic theory, controls, symbols, advanced hydraulic controls (cartridge valves, proportional valves and variable volume pumps), and hydraulic circuit analysis
- Pathfinder 3000 - 5000 control: system calibration, alarm faults and service screens, control panel layout and hardware description, control modules description and electrical control circuit diagram

### Duration

3 days

### Tuition

\$1,000.00

### Dates

Strongsville, OH

March 19 - 21  
June 18 - 20

October 22 - 24

## Notes

# Registration Form

Please fax your completed registration form to Terry Rieser at 440-876-6382.

## Student Information

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First Name

---

Last Name

---

Company

---

Address

---

City

State / Zip

---

Phone

---

Fax

---

E-mail

## Course Selection

---

Course Name

---

Dates

## Hotel Accommodations

Please provide a list of recommended hotels in the area.

I will make hotel reservations on my own or with my company's travel service.

## Method of Payment

American Express

Master Card

Visa

---

Credit card number

Exp. date

---

Name on card

---

Purchase order number







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