

FUJI.

America Corporation

Training Department



Course Catalog

For a real-time schedule of available classes, class descriptions, and online registration visit our web site at:

www.fujiamerica.com

FUJI

Fuji offers comprehensive machine and software training courses in our state-of-the-art training centers in Vernon Hills, Illinois and San Jose, California. Our staff of instructors consists of seasoned industry professionals. They bring their own machine and application knowledge as well as practical experience to the classroom with the goal of teaching our students how to use Fuji products correctly and efficiently.



Our classrooms encourage discussion, the exchange of ideas, and hands-on experience at individual workstations on actual Fuji equipment. Bilingual instructors are available for classes in Spanish. Our class sizes are small to ensure each student receives individual attention, including practical and detailed product instruction and in-depth answers to specific application questions. In addition, we are constantly improving our courses through the use of continuous feedback received from evaluations completed by former students.

We offer a variety of standard classes on our current machines at our training centers. We also offer customized courses upon request. In general, we offer two levels of training that build progressively upon each other. Each customer receives one training



credit for every machine or Fuji Flexa license purchased; each credit is good for 5 days of training.

Points of Contact

Scheduling, Training Coordination, Instruction- FAC and San Jose Training Sites

Chris Dayney
847-821-2478

chrisd@fujiamerica.com

Team Leader/Training

Administration, Manuals - FAC and San Jose Training Sites

Tracey Cusenza
847-821-2466

tracevc@fujiamerica.com

Training/Software Administrative Support
Vernon Hills, IL

Sherry Burke
408-954-0967

sherryb@fujiamerica.com

Training/Software/Service/Sales Administrative Support
San Jose, CA

Instructors

Eugene Granberg
847-821-2497
geneg@fujiamerica.com

Instructor
(Vernon Hills, IL)

John Versigan
408-954-0967
johnv@fujiamerica.com

Systems Engineer/Instructor
(San Jose, CA)

Juan Matos
847-821-2400
juanm@fujiamerica.com

Field Service Engineer/Instructor
(Vernon Hills, IL)

Osbaldo Rodriguez
408-954-0967
osbaldor@fujiamerica.com

Systems Engineer/Instructor
(Guadalajara, Mexico)

Jaime Cassillas
408-954-0967
jaimec@fujiamerica.com

Field Service Engineer/Instructor
(Reynosa, Mexico)



Training FAX #: 847/ 913-1277

Fuji Training Department
Course Offerings

	<i>Training Class Policy</i>	5
	<i>Training Registration Form</i>	6
106	<i>Flexa Programming 5 Day</i>	7
108	<i>Custom (Flexa) Programming 3 Day</i>	8
TRAX	<i>Fujitrax Advanced</i>	9
PD-1	<i>Advanced Part Data Creation-SMD3</i>	10
PD-XP	<i>Advanced Part Data creation -XP Series-MS Algorithm----</i>	11
PD-NXT	<i>Advanced Visual Part Data(VPD) Editing -NXT</i>	12
804-1	<i>Train the Trainer - Basic Operations (Custom)</i>	13
LS101	<i>Line Supervisor Skills Workshop(On-site only)</i>	14
CP643-2	<i>CP-6 Series Maintenance and Troubleshooting(On-site Only)--</i>	15
CP643-L	<i>CP-Series Loader System Maintenance (On-site Only)</i>	16
CP7-2	<i>CP-7 Maintenance and Troubleshooting</i>	17
502	<i>IP-3 Maintenance and Troubleshooting</i>	18
QP242-2	<i>QP-242 Maintenance and Troubleshooting(On-site Only)--</i>	19
QP351-2	<i>QP-351 Maintenance and Troubleshooting</i>	20
XP-M	<i>XP Series Maintenance and Troubleshooting</i>	21
XPF-M	<i>XPF Series Advanced Maintenance</i>	22
NXT-OP	<i>NXT Basic Operations</i>	23
AIM-OP	<i>AIM Basic Operations</i>	24
AIM	<i>AIM Advanced Maintenance</i>	25
NXT-2	<i>NXT Advanced Maintenance</i>	26
MEDIT	<i>NXT/AIM Support Tools Medit, VPD</i>	27
	<i>Fuji Store Order Form</i>	28



Training Class Policies

FREE CLASS CERTIFICATES:

New Machine Sales:

- One Free Class certificate for use in Vernon Hills or San Jose for each new machine sold (in the case of NXT - 1 class per 4 modules)

Refurb Machine Sales:

- One Free Class certificate for use in Vernon Hills or San Jose for each machine sold that exceeds \$100,000.

Flexa Software Sales:

- Two Free Class certificates for use in Vernon Hills or San Jose with a new first time Flexa software purchase.

Notes on FREE Certificates:

1. The Free Class certificates are interchangeable between software and machine classes. (ex. Flexa certificates can be used for machine training classes, software for machine)
2. Certificates expire one year from date of issue. The issue date is the date the software or machine is installed per our service report.
3. Free class certificates can not be used for on-site training classes. In the case that FAC sells a new machine to a customer and we do not offer training on that machine type, we will allow the customer to use the free certificates for on-site training.
4. Free class certificates can not be used for Level 3 machine calibration classes.
5. Free class certificates are non-transferable outside of Fuji America's territory for use at other Fuji training centers.
6. Free class certificates hold no cash value and cannot be traded/bought back before or after their expiration date.
7. Free Flexa class certificates can be used for either the 3-day or 5-day class.

On-Site Training Classes:

- FAC will offer on-site training on a case-by-case situation. Most FAC training is conducted at Fuji America's training center in an environment that we have carefully designed with safety in mind. Since we are less able to control the training environment at the customer site, we ask that the customer sign a legal agreement stating that FAC is not responsible for any costs that occur from the result of machine training (broken parts, loss of production) and also limits FAC's responsibility if someone is injured during the class.
- Onsite classes will be billed at a per student rate of \$1,800. We will also charge the customer the expenses of the instructor: airfare, hotel, car and meals.



FAC,
171 Corporate Woods Parkway
Vernon Hills, IL 60061

R
e
g
i
s
t
r
a
t
i
o
n
f
o
r
m

TO REGISTER FOR ANY COURSE, PLEASE COMPLETE THIS REGISTRATION FORM. FAX THE COMPLETED FORM TO (847) 913-1277. ALL CLASSES ARE ON A FIRST COME, FIRST SCHEDULED BASIS. ALL INFORMATION MUST BE FILLED OUT COMPLETELY AND SIGNED IN ORDER FOR THE REGISTRATION PROCESS TO BE COMPLETE. IF YOU DO NOT RECEIVE A CONFIRMATION WITH 24 HOURS PLEASE CALL (847) 821-2478.

Please print clearly:

Company: _____ Students Name: _____

Address: _____ Phone: _____

_____ Fax: _____

_____ Training authorized by _____

E-mail: _____ Authorizing signature _____

Method of payment:

P.O.# _____ Certificate # _____

Visa MasterCard American Express

Credit Card # _____ Expiration date: _____

Name as it appears on Card _____

Authorizing Signature: _____ Date _____

Please select the desired course. Include a preferred date to attend and a secondary date in case your first choice is unavailable.

DESIRED DATE: _____

ALTERNATE DATE: _____

BASIC OPERATIONS

\$900 (2 DAYS)

- AIM
- NXT
- XPF
- MEDIT

MAINTENANCE AND TROUBLESHOOTING

\$1800 (5 DAYS)

- AIM
- NXT
- CP6/643
- CP7/8
- QP3
- IP3

PROGRAMMING COURSES

- FUJITRAX 4 DAY (\$1200)
- FUJI FLEXA 5 DAY (\$1800)
- CUSTOM FLEXA 3 DAY (\$1080)

OTHERS/CUSTOM

- MACHINE OVERVIEW
- ADVANCED PD WRITING
- TRAIN THE TRAINER

CANCELLATION POLICY

CANCELLATIONS ARE

ACCEPTED UP TO 5 WORKING DAYS PRIOR TO YOUR SCHEDULED CLASS DATE. ANY CANCELLATIONS LESS THAN 5 DAYS PRIOR TO SCHEDULED CLASS DATE WILL BE INVOICED FOR 50% OF THE CLASS COST. IN CASES OF CERTIFICATES THAT CERTIFICATE WILL BE FORFEITED



106

Flexible Assembly (Flexa) Programming– 5 Day

DESCRIPTION

This course explains the machine hardware and software used to program all FUJI machines. The class is an extensive hands on course which gives students a better understanding of Fuji's Flexible Assembly software and its functionality. The students will create multiple working programs using centroid, native and CCIMF CAD data. This course focuses a greater amount of detail on the Part and Shape data as well as machine specific process options.

DURATION

5 Days

AUDIENCE

Programmers, Engineers

PREREQUISITES

Windows XP or Windows 2000 experience.

OBJECTIVE

At the completion of the class the student will have the basic skills to do the following:

- Describe and understand the applications within Flexa and when they should be used.
- Understand the “Milestones” to reach in job building with Flexa.
- Understand the purpose of Relational mode and when to use it.
- Be able to describe the difference between Global verses Local jobs.
- Understand how to use the Director Interface.
- Describe the Set-up of Flexa Installation, Configuration and Production lines.
- Be able to Import existing FUJI Program Data successfully.
- Using the Job Builder, create a New Job and explain the steps to successfully build a working program that can be transmitted to a FUJI machine and run.
- Describe the necessary data fields for FUJI machine Part and Shape Data.
- Explain the various machine process options and how they affect production
- Explain the steps in creating and running a Macro in Flexa.
- Create documentation and display program related reports

TOPICS

1. Overview and Purpose of Flexa applications.
2. Flexa setup and Flexa server setup
3. User Manager, Job server, Part server, & Line Server
4. On-line Help, Basic navigation, hotkeys and pop-up menus
5. The Director application menus and system details
6. Jobs directory for local and global storage
7. Job Builder application and usage details
8. Part Library, Shape Library, Package Library, Mark library overview
9. Transmission control, Factory lines, machine nickname and recipe name explained.
10. Line monitor setup and server setup
11. Importing centroid data to create a working job
12. Importing native CAD to create a working job
13. Importing existing CCIMF (.pgo) files to create a working job.
14. Creating and importing Part and shape data.
15. Creating and importing package data.
16. Creating Mark data and the different types of marks.
17. Panelization explained.
18. Line Balancing and part assignments.
19. Optimization features and options.
20. Program (Recipe) generation.
21. Documentation for reports creation and modification.
22. Creating Macros and their uses

COURSE COST \$1,800.00



106

Custom (Flexa) Programming– 3 Day

DESCRIPTION

This course is a tailored class to fit the objectives of each customer. The course objectives are selected and only those needs are trained. The class is an extensive hands on course which gives students a more detailed understanding of Fuji's Flexible Assembly software and its functionality. Various machine applications are covered. Including; NXT/AIM programs, MEDIT, VPD, XP series on machine Part Data Wizard.

DURATION

3 Days

AUDIENCE

Programmers, Engineers

PREREQUISITES

Windows XP or Windows 2000 experience.

OBJECTIVE

Please choose custom objectives from the following checklist:

- Describe and understand the applications within Flexa and when they should be used.
- Describe the Set-up of Flexa Installation, Configuration and Production lines.
- Explain the Flexa Servers User, Job, Part, Line
- Understand the "Milestones" to reach in job building with Flexa.
- Be able to describe the difference between Global verses Local jobs.
- Understand how to use the Director Interface.
 - Import Centroid data to create a working job
 - Import Native CAD to create a working job
 - Importing existing CCIMF (.pgo) files to create a working job
- Using the Job Builder, create a New Job and explain the steps to successfully build a working program that can be transmitted to a FUJI machine and run.
- Using the Job Builder, edit a Job and explain the basic working program that can be transmitted to a Fuji machine and run.
- Explain the Part, Shape, Package, Mark Libraries.
- Describe the necessary data fields for FUJI machine Part and Shape Data.
- Be able to transmit programs to Fuji machines.
- Be able to import, export, rename, delete, copy, Jobs in Flexa.
- Explain the Machine specific program settings.(CP, IP, QP, NXT/AIM, XP series)
- Explain the various machine process options and how they affect production
- Describe the NXT/AIM Machine Concept
- Explain the different Module configuration options (M3, M6).
- Show the difference between Head types (H1, H4, H08, and H12).
- Describe the XP series machine concept
- Describe the revolver tool, single nozzle, glue head for the XPF
- Explain the Machine communication server
- Explain the Machine Accessory Software (MAS)communication Fuji Realtime Workingrate Buffer
- Describe VPD, Lead Radicals, Auto, Semi-Auto lead generation.
- Show the Part Data Wizard for XP series program changes at the machine
- Describe Data Share mode for XP's
- Explain and use the NXT/AIM Accessory software
- Describe and use the NXT/AIM Accessory Software MEDIT application.
- Edit programs in MEDIT, Skip feeders, move parts, change shape, package data.
- Retransmit jobs using MEDIT.
- Describe Fujitrax Family software-Verifier – KIT Manager.
- Create Feeder ID's, Part ID's and Verified ID's.
- Create documentation and display program related reports
- Explain the steps in creating and running a Macro in Flexa.
- Create documentation and display program related reports

COURSE COST

\$1,080.00



108

Fujitrax Advanced – 4 Day

DESCRIPTION

This course provides the student a better understanding of the Fujitrax components. Fujitrax Verifier, and/or Profiler software is thoroughly discussed. The class is an extensive hands on course which gives students a more detailed understanding of Fujitrax integration into the factory environment. Fujitrax is installed, configured and tested on NXT series machines.

DURATION

4 Days

AUDIENCE

Programmers, Engineers

PREREQUISITES

Windows XP or Windows 2000 experience.

OBJECTIVE

Upon successful completion of this course the student will be able to;

- Describe the function of each Fujitrax Component.
- Explain Computer Hardware
- Identify terms and definitions associated with the Fujitrax software, Hardware.
- Installing/Deleting and setup of Oracle database system and services
- Install/Setup the Fujitrax database, (Verifier, Profiler and Backup).
- Operating the KIT Database Wizard
- Describe the Verifier Central Server, Kit Server application and services
- Use the Kit Line configuration to setup the Trax components for communication.
- Explain the Kit Handy Personal Data Assistant configuration and usage
- Describe the FLP and its configuration
- Operating the FLP Setup tool
- Show the BL-600(1D) and Quadras EZ(2D) Barcode scanners for Profiler
- Setting up the Verifier, Profiler NXT/AIM settings
- Setting up the Verifier, Profiler Other Machine settings
- Creating Jobs with 2D barcodes
- Describe the Fujitrax Web component and explain the usage of each item.
- Setting up Templates, META Filters
- Use Kit Manager to Register Parts, Feeders, Create ID's
- Pre-Verify parts
- Parts Out Warnings
- Replacing Parts
 1. Dynamic Alternates
 2. Usual Resupply
- Describe Splicing parts and Verifier settings for Splice Warnings
- Show the Operator Trace log
- Explain the Auto Recipe Changeover functions
- Describe Parts Scheduler
- Describe Advanced Feeder Maintenance
- Profiler system settings
- Tracing Panels, Parts, Feeders, Exporting Reports
- Troubleshooting
 1. Verifier issues
 2. Profiler issues
 3. Oracle Database issues

COURSE COST

\$1,200.00



PD-SMD3

Advanced Part Data Programming – SMD3

DESCRIPTION

This course enables programmers to better understand the machine processing of Part Data entry items. The class is taught using the Fuji Flexible Assembly software interface. This is a hands on course. Students are invited to bring complex parts they need help with to the training.

DURATION

2 Days

AUDIENCE

Programmers, Engineers and Maintenance technicians

PREREQUISITES

The student should be thoroughly familiar with Fuji's programming software. Ideally the student should have previously attended one of our Programming training courses.

OBJECTIVE

Upon successful completion of this course the student should be able to:

- Create Part Data's from component manufacturers' data or actual parts.
- Explain the required part data fields for a specific machine type.
- Identify the correct vision types and their uses.
- Show how machine vision inspection affects part processing
- Write Ball Grid Array part data's.
- Explain the part data in a CCIMF file format

TOPICS

1. Part data required fields.
2. Machine specific data entry items
3. Vision types
4. Machine types and the various vision systems
5. Troubleshooting part data techniques and tips.
6. Ball Grid Arrays
7. CCIMF part data file format

COURSE COST \$750.00



PD- XP

Advanced Part Data creation – XP Series – MS Algorithm

DESCRIPTION

This course enables programmers to better understand the XP Series machine processing of Part Data entry items. The class is taught using the XP Series machine and Fuji Flexible Assembly software interface. This is a hands on course. Students are invited to bring complex parts they need help with to the training.

DURATION

2 Days

AUDIENCE

Programmers, Engineers and Maintenance technicians

PREREQUISITES

The student should be thoroughly familiar with Fuji's programming software. Ideally the student should have previously attended one of our Programming training courses.

OBJECTIVE

Upon successful completion of this course the student should be able to:

- Describe the XP machine vision system
- Explain the MS Algorithm and XP specific machine Vision types
- Describe Seek Lines and how to use Vision Type #18
- Create Part Data's offline from component manufacturers' data or actual parts.
- Explain the required part data fields for a specific machine type.
- Create Part Data's at the XP machine from actual parts using the Part Data Wizard.
- Identify the correct vision types and their uses.
- Show and use the machine vision inspection tool.
- Create connector, Ball Grid Array and complex part data's.
- Explain the part data in a CCIMF file format
- Describe "Flexa Data sharing" and how it functions.

TOPICS

1. Part data required fields.
2. Machine specific data entry items
3. NXT Vision types – MS Algorithm
4. XP machine process data
5. Troubleshooting part data techniques and tips.
6. Ball Grid Arrays, connectors, odd form parts
7. CCIMF part data file format
8. Flexa Data Sharing

COURSE COST \$750.00



PD-VPD

Advanced Visual Part Data (VPD) Editing–NXT

DESCRIPTION

This course enables programmers to better understand the NXT Series machine processing of Part Data entry items. The class is taught using the NXT Series machine VPD Plus and Fuji Flexible Assembly software. This is a hands on course. Students are invited to bring complex parts they need help with to the training.

DURATION

2.5 Days

AUDIENCE

Programmers, Engineers and Maintenance technicians

PREREQUISITES

The student should be thoroughly familiar with Fuji's programming software. Ideally the student should have previously attended one of our Programming training courses.

OBJECTIVE

Upon successful completion of this course the student should be able to:

- Describe the NXT machine vision system
- Explain the Fuji Flexa NXT Program specific settings.
- Describe VPD, Lead Radicals, Auto, Semi-Auto lead generation.
- Create Part Data's offline from component manufacturers' data or actual parts.
- Create Part Data's online with VPD Plus from actual parts processed by the NXT.
- Explain the required part data fields for a specific module and head type.
- Identify the correct vision types and their uses.
- Create connector, Ball Grid Array and complex part data's.
- Explain the part data in a CCIMF file format

TOPICS

1. Part data required fields.
2. Machine specific data entry items
3. NXT Vision types
4. NXT machine process data
5. Troubleshooting part data techniques and tips.
6. Ball Grid Arrays, connectors, odd form parts
7. CCIMF part data file format
8. Flexa Data Sharing

COURSE COST \$900.00



802

Train the Trainer - Basic Operations

DESCRIPTION

This custom training course is designed to prepare those individuals that will be responsible for providing Basic Machine Operator training. This is a hands on course with coaching from a Fuji instructor. The class is tailored to meet the needs of the facility being trained. It gives students a thorough understanding of both machine operations and the best method of classroom delivery.

DURATION

Course duration varies with the experience of each individual. The key element of the class is the co-training portion. A Fuji instructor will co-train with the new instructor and coach them as they train the class. This mentorship training technique has proven to be the most effective way of ensuring that your instructor presents the material in a manner that will promote the greatest retention and best results.

AUDIENCE

This class is intended for those individuals with more than 1-year operator experience. Students should have some level of technical knowledge (basic electricity/electronics and mechanical aptitude).

PREREQUISITES

1 year of machine operator experience. Prior Basic Machine operations training.

OBJECTIVE

Upon successful completion of this course the student will be able to:

- Identify and explain the function of all the major components of the machine.
- Explain and perform the correct sequence of events for machine start up.
- Properly shut down the equipment in: normal, abnormal, and emergency conditions.
- Analyze and troubleshoot (when needed) the messages on the Operation panel.
- Define the function of each of the Operation panel push buttons and keys.
- Identify all types of feeders and their construction.
- Perform Feeder set up and maintenance.
- Explain and perform proper Feeder preventive maintenance.
- Demonstrate different modes of operation on the Fuji SMT machine.
- Recognize abnormal machine operation.
- Demonstrate corrective actions for incorrect or inefficient machine operation.
- Effectively train a Basic Operator class.

TOPICS

1. Major machine components
2. Correct sequences of machine operation
3. Proper power on and off procedures
4. Operation panel messages
5. Types of feeders
6. Correct feeder loading procedures
7. Basic feeder maintenance
8. Operator level troubleshooting
9. Operator level preventative maintenance
10. Machine "management"
11. Effective training methods used for the Basic Operator Class

COURSE COST

\$1800.00



803

Line Supervisor Skills Workshop

DESCRIPTION

The line supervisor course is intended to provide the essential skills to monitor and supervise the assembly line as efficiently as possible. The class will cover five main topics: Fuji SMT machine fundamentals, Machine Operation as it relates to production, Feeders, Programming Fundamentals for line supervisors, and Supervisory Skills. This is a site specific course tailored to the needs of the customer.

DURATION

2 – 5 Days

AUDIENCE

Current and future line supervisors, maintenance technicians, engineers, in-house trainers and senior operators.

PREREQUISITES

The student should have a solid understanding of machine operations.

OBJECTIVE

Upon successful completion of this course the student should be able to:

- Identify and explain the differences between the types of machines (i.e. high mix low volume, low mix/high volume).
- Understand different machine options and theory of operation.
- Describe the general overview of line specific machine components.
- Identify the different feeders, perform correct loading and setup of feeders perform basic cleaning, inspection and repair of feeders, and troubleshoot errors caused by feeders.
- Identify when the equipment is operating correctly and at optimum efficiency.
- Be able to intelligently explain to programmers, technicians, and engineers the status of the equipment.
- Identify machine problems related to program problems.
- Be able to use the line monitor to improve line output.
- Describe what it takes to supervise.
- Explain the dilemmas of being a supervisor
- Learn to apply supervisory skills to their work situations.

TOPICS

1. Machine fundamentals and overview
2. Production line configuration
3. Machine components including; conveyors, placement area, control boxes, moving axes, cameras, danger areas.
4. Solder and Glue process
5. Safety
6. Operation panels and push button functions.
7. Machine Setup/Changeover
8. Feeder types
9. Feeder loading and setup
10. Feeder cleaning, inspection and repair.
11. Feeder troubleshooting
12. Overview of Jobs and recipes
13. Line balancing and Part assignments
14. Part data introduction
15. Machine process options
16. Line Monitor and Reports
17. Supervisory skills assessment questionnaire
18. Supervisory skills model

COURSE COST \$1800.00



CP-643-2

CP-6 Series Maintenance and Troubleshooting-ONSITE ONLY

This course provides the front line technician a full understanding of the Fuji CP-6 series chip shooters overview, placement, electrical, servo, loader & vision system. The goal is to have the student gain valuable hands on troubleshooting skills that will help minimize machine downtime in the future. The course is taught in a controlled environment, with an experienced instructor inserting problems that the students troubleshoot and repair.

DURATION

4.5 Days

AUDIENCE

Maintenance Technicians, Engineers, Anyone who works on the machine on a day to day basis

PREREQUISITES

The student should be able to perform Basic Operator functions and have an understanding of machine operation.

OBJECTIVE

Upon successful completion of this course the student will be able to;

- Identify general machine safety.
- Identify the location and function of all assemblies, subassemblies, electrical components, circuit boards, and sequences of machine operation.
- Operate the main control panel and function keys to obtain any required screen.
- Analyze normal and abnormal machine operation to include the vision system, placing system, transport system, I/O system, servo system, electrical and control system.
- Diagnose and repair mechanical and/or electrical problems.
- Perform troubleshooting of operational problems including feeders.
- Demonstrate preventative maintenance procedures.
- Differentiate between machine and program errors

TOPICS

1. Machine safety
2. Machine overview
3. Operation overview
4. Special function keystrokes
5. I/O and control system
6. Machine electrical system
7. Troubleshooting
8. Servo system
9. Vision system
10. Stations of the turret assembly
11. Loader operation and menus
12. Loader I/O

COURSE COST

\$1,800.00



CP643-L

CP-Series Loader Maintenance-ONSITE ONLY

DESCRIPTION

This course gives an in-depth look at the CP-Series Loader system as it relates to function, operation, adjustments, and troubleshooting. This is a hands on course where students will be required to remove and reinstall components. This R&R procedure enables the student to gain a full understanding of the loaders adjustments and manufacturers specifications.

DURATION

3 Days

AUDIENCE

Maintenance Technicians, Engineers.

PREREQUISITES

Completion of the CP Series maintenance and troubleshooting course.

OBJECTIVE

Upon successful completion of this course the student will be able to;

- Identify Loader system safety features
- Correctly operate the Loader system in Automatic and Manual modes
- Use the I/O to cycle the 3 loaders cycles; Load, Transfer and Unload
- Describe the proper data adjustments required for correct loader operation.
- Explain how the Z-Axis interrelates with the Loader Carriers.
- Remove and Replace the Z-axis motor.
- Successfully troubleshoot loader system problems

TOPICS

1. Loader safety.
2. Loader specifications.
3. Loader operation in automatic and in manual.
4. I/O system functions related to the Loader.
5. Maintenance adjustments on the Carriers, Clampers, and Table.
6. Air Solenoid timing.
7. Z-axis motor removal.
8. Z-axis replacement.
9. Affected Proper data during table rebuild.
10. In Carrier sensors.
11. Table sensors.
12. Out Carrier sensors.

COURSE COST \$1,100.00



CP 7-2

CP-7 Maintenance and Troubleshooting

DESCRIPTION

This course provides the front line technician a full understanding of the Fuji CP-7 series chip shooters overview, placement, electrical, servo, loader & vision system. The goal is to have the student gain valuable hands on troubleshooting skills that will help minimize machine downtime in the future. The course is taught in a controlled environment with an experienced instructor inserting problems that the students troubleshoot and repair.

DURATION

4.5 Days

AUDIENCE

Maintenance Technicians, Engineers, Anyone who works on the machine on a day to day basis

PREREQUISITES

The student should be able to perform Basic Operator functions and have an understanding of machine operation.

OBJECTIVE

Upon successful completion of this course the student will be able to;

- Identify general machine safety.
- Identify the location and function of all assemblies, subassemblies, electrical components, circuit boards, and sequences of machine operation.
- Operate the main control panel and function keys to obtain any required screen.
- Analyze normal and abnormal machine operation to include the vision system, placing system, transport system, I/O system, servo system, electrical and control system.
- Diagnose and repair mechanical and/or electrical problems.
- Perform troubleshooting of operational problems including feeders.
- Demonstrate preventative maintenance procedures.
- Differentiate between machine and program errors

TOPICS

1. Machine safety
2. Machine overview
3. Operation overview
4. Special function keystrokes
5. I/O and control system
6. Machine electrical system
7. Troubleshooting
8. Servo system
9. Vision system
10. Stations of the turret assembly
11. Loader operation and menus
12. Loader I/O
13. Preventive Maintenance

COURSE COST \$1,800.00



502

IP-3 Maintenance and Troubleshooting

DESCRIPTION

This course provides the front line technician a full understanding of the Fuji IP-3 series placement machine. Topics include; overview, placement, nozzles, electrical, servo, MFU, MTU & vision systems. The goal is to have the student gain valuable hands on troubleshooting skills that will help minimize machine downtime in the future. The course is taught in a controlled environment with an experienced instructor inserting problems that the students troubleshoot and repair.

DURATION

4.5 Days

AUDIENCE

Maintenance Technicians, Engineers, Anyone who works on the machine on a day to day basis

PREREQUISITES

The student should be able to perform Basic Operator functions and have an understanding of machine operation.

OBJECTIVE

Upon successful completion of this course the student will be able to;

- Identify terms and definitions associated with the IP3 machine.
- Demonstrate proper safety precautions when working on the IP3 machine.
- Perform basic operation in support of production, preventive and corrective maintenance.
- Identify subsystems and associated hardware.
- Explain the layout of the electrical system schematics.
- Give details on the theory of operation for the servo system.
- Clarify the components used and theory of operation of the vision system.
- Explain the layout of the MTU4 to include the electrical & servo system.
- Troubleshoot any functional area of the machine, including; Power On/Boot up, PCB Load/Unload, Fiducial Mark Read, Part Pickup, Part Placement, Part Inspection, and Nozzle Change.
- Identify the relationship between the Proper Data, and the Program.

TOPICS

1. Machine safety
2. Machine component overview and layout
3. Communications to the Host system.
4. Electrical system and schematics
5. Nozzle nest configuration and nozzle changer system
6. Layout of major sensors and solenoids
7. Servo System theory of operation
8. Vision system theory of operation
9. Troubleshooting problems
10. MFU changeover
11. Preventive maintenance

COURSE COST \$1,800.00



QP242-2

QP-242 Maintenance and Troubleshooting-ONSITE ONLY

DESCRIPTION

This course provides the front line technician a full understanding of the Fuji QP-242 series placement machine. Topics include; overview, placement, nozzles, electrical, servo, MFU, MTU & vision systems. The goal is to have the student gain valuable hands on troubleshooting skills that will help minimize machine downtime in the future. The course is taught in a controlled environment with an experienced instructor inserting problems that the students troubleshoot and repair.

DURATION

5 Days

AUDIENCE

Maintenance Technicians, Engineers, Anyone who works on the machine on a day to day basis.

PREREQUISITES

The student should be able to perform Basic Operator functions and have an understanding of machine operation.

OBJECTIVE

Upon successful completion of this course the student will be able to;

- Identify terms and definitions associated with the QP242E machine.
- Identify and demonstrate proper safety precautions when working on the QP242E machine.
- Perform basic operation of the QP242E machine in support of production, preventive and corrective maintenance.
- Identify all major subsystems and associated hardware.
- Explain the ICM to PLM communications – ARC Net.
- Show the electrical system layout and be able to cycle thru all the schematics including the electrical relationship between the ICM and PLM.
- Explain the servo system theory of operation including the Y-Net and the ARC-net
- Describe the vision system components and various camera configurations/capabilities.
- Describe the MTU7 components, including; the electrical system, servo system, and the interface with the PLM.
- Perform troubleshooting exercises on any functional area of machine operation to include: Power On, System Boot up, PCB Load/Unload, Fiducial Mark Read, Part Pickup, Part Placement, Part Inspection, Part Placement, and Nozzle Change.
- Identify the interface between the QP242E machine, the Proper Data File, and the Program.

TOPICS

1. Safety features of the “E” series
2. Overview and layout of system components
3. ICM and PLM types and configurations
4. Machine communications – ARC Net and Y-Net
5. Front vs. Rear loading nameplate data
6. Reading Electrical schematics, cycling the ICM and PLM electrical system
7. Nozzles changer system
8. Sensors and Solenoids
9. Vision system
10. Troubleshooting
11. MFU and MTU changeover

COURSE COST \$1,800.00



QP351-2

QP-351 Maintenance and Troubleshooting

DESCRIPTION

This course provides the front line technician a full understanding of the Fuji QP-351 series placement machine. Topics include; overview, placement, nozzles, electrical, servo, MFU, MTU & vision systems. The goal is to have the student gain valuable hands on troubleshooting skills that will help minimize machine downtime in the future. The course is taught in a controlled environment with an experienced instructor inserting problems that the students troubleshoot and repair.

DURATION

4.5 Days

AUDIENCE

Maintenance Technicians, Engineers, Anyone who works on the machine on a day to day basis

PREREQUISITES

The student should be able to perform Basic Operator functions and have an understanding of machine operation.

OBJECTIVE

Upon successful completion of this course the student will be able to;

- Identify terms and definitions associated with the QP351 machine.
- Demonstrate proper safety precautions when working on the QP351 machine.
- Perform basic operation in support of production, preventive and corrective maintenance.
- Identify subsystems and associated hardware.
- Explain the layout of the electrical system schematics.
- Give details on the theory of operation for the servo system.
- Clarify the components used and theory of operation of the vision system.
- Explain the layout of the MTU9 to include the electrical & servo system.
- Troubleshoot any functional area of the machine, including; Power On/Boot up, PCB Load/Unload, Fiducial Mark Read, Part Pickup, Part Placement, Part Inspection, and Nozzle Change.
- Identify the relationship between the Proper Data, and the Program.
- Perform the MFU to MTU changeover procedure.

TOPICS

1. Machine safety
2. Machine component overview and layout
3. Communications to the Host system.
4. Electrical system and schematics
5. Nozzle nest configuration and nozzle changer system
6. Layout of major sensors and solenoids
7. Servo System theory of operation
8. Vision system theory of operation
9. Troubleshooting problems
10. MFU changeover
11. Preventive maintenance

COURSE COST \$1,800.00



XP-2

XP Series Maintenance and Troubleshooting

DESCRIPTION

This course provides the front line technician a full understanding of the Fuji XP Series placement machine. Topics include; overview, placement, nozzles, electrical, servo, & vision systems. The goal is to have the student gain valuable hands on troubleshooting skills that will help minimize machine downtime in the future. The course is taught in a controlled environment with an experienced instructor inserting problems that the students troubleshoot and repair.

DURATION

3 Days

AUDIENCE

Maintenance Technicians, Engineers, Anyone who works on the machine on a day to day basis

PREREQUISITES

The student should be able to perform Basic Operator functions and have an understanding of machine operation.

OBJECTIVE

Upon successful completion of this course the student will be able to;

- Identify terms and definitions associated with the XP machine.
- Demonstrate proper safety precautions when working on the XP machine
- Perform basic operation in support of production, preventive and corrective maintenance.
- Identify subsystems and associated hardware.
- Explain the layout of the electrical system schematics.
- Give details on the theory of operation for the dual vacuum holder system
- Show how the head is used to pick and place components
- Clarify the components used and theory of operation of the on the fly vision system.
- Explain the layout of the PFU.
- Troubleshoot any functional area of the machine, including; Power On/Boot up, PCB Load/Unload, Fiducial Mark Read, Part Pickup, Part Placement, Part Inspection, and Nozzle Change.
- Identify the relationship between the Proper Data, and the Program.

TOPICS

1. Machine safety
2. Machine component overview and layout
3. Communications to the Host system.
4. Electrical system and schematics
5. Nozzle nest configuration and nozzle changer system
6. Layout of major sensors and solenoids
7. Servo System theory of operation
8. On the Fly Vision system theory of operation
9. Troubleshooting problems
10. PFU or MFU changeover
11. Preventive maintenance

COURSE COST \$1,080.00



XPF-Series

XPF Series Advanced Maintenance

DESCRIPTION

This course provides the front line technician a full understanding of the Fuji XPF Series placement machine. Topics include; overview, placement, revolver auto tool, nozzles, electrical, servo, vision and Flexa programming systems. The goal is to have the student gain valuable hands on troubleshooting skills that will help minimize machine downtime in the future. The course is taught in a controlled environment with an experienced instructor inserting problems that the students troubleshoot and repair.

DURATION

4 Days

AUDIENCE

Maintenance Technicians, Engineers, Anyone who works on the machine on a day to day basis

PREREQUISITES

The student should be able to perform Basic Operator functions and have an understanding of machine operation.

OBJECTIVE

Upon successful completion of this course the student will be able to;

- Identify terms and definitions associated with the XPF-L, XPF-S machine.
- Demonstrate proper safety precautions when working on the XPF machine
- Explain the pallet configuration options; MFU, BTU, MTU, ITS, OTS, Fixed
- Perform basic operation in support of production, preventive and corrective maintenance.
- Identify subsystems and associated hardware.
- Explain the layout of the electrical system schematics.
- Describe the Revolver tool, Single nozzle, Glue application head.
- Give details on the theory of operation for the dual vacuum holder system
- Show how the head is used to pick and place components
- Show the Auto Calibration function and when its used.
- Describe Program editing at the machine
- Use Part Data Wizard to create Part Datas at the machine
- Clarify the components used and theory of operation of the on the fly vision system.
- Troubleshoot any functional area of the machine, including; Power On/Bootup, PCB Load/Unload, Fiducial Mark Read, Part Pickup, Part Placement, Part Inspection, and Nozzle Change.
- Identify the relationship between the Proper Data, and the Program.

TOPICS

1. Machine safety
2. Machine component overview and layout
3. Communications to the Host system.
4. Electrical system and schematics
5. Revolver tool configuration and nozzle changer system
6. Layout of major sensors and solenoids
7. Servo System theory of operation
8. On the Fly Vision system theory of operation
9. Troubleshooting problems
10. MFU, BTU, ITS, OTS changeover
11. Preventive maintenance

COURSE COST \$1,200.00



NXT

NXT Series Basic Operations

DESCRIPTION

This course teaches the skills needed to setup, load and operate the NXT series machine. Fuji's NXT series Basic Operations class is designed to provide the foundation needed for machine ownership (management). The students will be given hands-on experience in a controlled environment. The students will be expected to correctly operate, monitor, and troubleshoot the NXT series machine to meet the course objectives.

DURATION

2 days. Class length may depend on class size and the experience level of the students.

AUDIENCE

Anyone who is responsible for operating a NXT series machine and has less than 1 year experience operating the equipment.

PREREQUISITES

None

OBJECTIVE

Upon successful completion of this course the student will be able to;

- Identify and explain the function of all the major components of the machine.
- Explain and perform the correct sequence of events for machine start up.
- Properly shut down the NXT in: normal, abnormal, and emergency conditions.
- Analyze and troubleshoot (when needed) the messages on the Operation panel.
- Define the function of each of the Operation panel push buttons and keys.
- Understand the Manual Mode keys
- Use the Accessory software to look up erro codes
- Use MEDIT to skip feeders and holders.
- Identify all NXT types of feeders and their construction.
- Perform Feeder set up and maintenance.
- Explain and perform proper Machine/Feeder preventive maintenance.
- Demonstrate different operating modes of the NXT
- Recognize abnormal machine operation.
- Demonstrate corrective actions for incorrect or inefficient machine operation.

TOPICS

1. Major machine component overview
2. Correct sequences machine operation
3. Proper power on and off procedures
4. Operation panel messages
5. Types of feeders
6. Correct feeder loading procedures
7. Basic feeder maintenance
8. Operator level troubleshooting
9. Operator level preventative maintenance
10. Machine "management"

COURSE COST \$900.00



NXT

AIM Series Basic Operations

DESCRIPTION

This course teaches the skills needed to setup, load and operate the AIM series machine. Fuji's AIM series Basic Operations class is designed to provide the foundation needed for machine ownership (management). The students will be given hands-on experience in a controlled environment. The students will be expected to correctly operate, monitor, and troubleshoot the AIM series machine to meet the course objectives.

DURATION

2 days. Class length may depend on class size and the experience level of the students.

AUDIENCE

Anyone who is responsible for operating a AIM series machine and has less than 1 year experience operating the equipment.

PREREQUISITES

None

OBJECTIVE

Upon successful completion of this course the student will be able to;

- Identify and explain the function of all the major components of the machine.
- Explain and perform the correct sequence of events for machine start up.
- Properly shut down the AIM in: normal, abnormal, and emergency conditions.
- Analyze and troubleshoot (when needed) the messages on the Operation panel.
- Define the function of each of the Operation panel push buttons and keys.
- Understand the Manual Mode keys
- Use the Accessory software to look up erro codes
- Use MEDIT to skip feeders and holders.
- Identify all AIM types of feeders and their construction.
- Perform Feeder set up and maintenance.
- Explain and perform proper Machine/Feeder preventive maintenance.
- Demonstrate different operating modes of the AIM
- Recognize abnormal machine operation.
- Demonstrate corrective actions for incorrect or inefficient machine operation.

TOPICS

1. Major machine component overview
2. Correct sequences machine operation
3. Proper power on and off procedures
4. Operation panel messages
5. Types of feeders
6. Correct feeder loading procedures
7. Basic feeder maintenance
8. Operator level troubleshooting
9. Operator level preventative maintenance
10. Machine "management"

COURSE COST \$900.00



AIM-1

AIM Advanced Maintenance

DESCRIPTION

This course provides the student with a more than general understanding of the Fuji AIM machine. The course teaches options and configurations, setup, machine functions, electrical, servo and vision system. In addition, the advanced operations thru the AIM/NXT Accessory software are practiced. The course is taught in a controlled environment with an instructor inserting problems that the students troubleshoot and repair. The goal is to have the student gain valuable hands on troubleshooting skills that will help minimize machine downtime in the future.

DURATION

4.5 Days

AUDIENCE

Maintenance Technicians, Engineers.

PREREQUISITES

The student should have a fundamental knowledge of Fuji machines.

OBJECTIVE

Upon successful completion of this course the student will be able to;

- Understand the general configuration of the AIM machine.
 - General overview of the machine and its components, (CPU's, Control Box's, Remote I/O's, I/F Box's, Conveyor boards, Image boards, Servo Box's, Operation Panel.
 - Basic machine requirements, power and air.
- Explain all the units associated with the AIM.
 - Heads, Nozzles, nozzle nests, cameras, device pallets, conveyors, feeders.
- Show the difference between each individual unit.
- Describe the options /special units available for the AIM.
- Identify and explain the usage of the modules sensors and solenoids.
- Understand the MTU-L, MTU-M components and functionality.
- Describe the Aim's Electrical schematics.
- Show the general configuration of the servo system.
- Describe the various communication protocols used. (Ethernet, CUNET, 1394, SynqNet)
- Explain and Perform Firmware reloads.
- Describe the machines 2D Identification system.
- Perform Changeover for heads, nozzles, and feeder pallets.
- Remove and Replace the following: MTU, Head, Nozzle Nest, Parts Camera, Fiducial Camera, feeder pallet, waste tape cutter.
- Perform and explain the Auto Calibration feature (During Production and Full-Head Exchange).
- Clarify the components used and theory of operation for the Parts and Fiducial Cameras.
- Explain and use the NXT Accessory software.
- Show how to maintain the intelligent feeders.
- Describe consumable parts replacement.
- Troubleshoot any functional area of the machine, including; Power On, PCB Load/Unload, Fiducial Mark Read, Part Pickup, Part Placement, Part Inspection, and Nozzle Change.

TOPICS

1. Machine safety.
2. Machine component overview and layout.
3. Communications to the Host system.
4. Electrical system and schematics.
5. Nozzle nest configuration and nozzle changer system.
6. Layout of major sensors and solenoids.
7. Servo System theory of operation.
8. Vision system theory of operation.
9. Troubleshooting problems.
10. Preventive maintenance.

COURSE COST

\$1,800.00



NXT-1

NXT Advanced Maintenance

DESCRIPTION

This course provides the student a full understanding of the Fuji NXT series placement machine. The course teaches options and configurations, setup, machine functions, electrical, servo and vision system. In addition, the advanced operations thru the NXT Accessory software are practiced. The course is taught in a controlled environment with an experienced instructor. The goal is to have the student gain valuable hands on skills that will help minimize machine downtime in the future.

DURATION

4.5 Days

AUDIENCE

Maintenance Technicians, Engineers.

PREREQUISITES

The student should have a fundamental knowledge of Fuji machines.

OBJECTIVE

Upon successful completion of this course the student will be able to;

- Understand the NXT Base (M2, M4) and Module(M3, M6) configuration, options.
- Show the difference between Head types (H1, H4, H08, H12).
- Describe the special items available for the NXT; (MTU, Conveyors, FujiTrax)
- Identify and explain the usage of the modules sensors and solenoids.
- Describe and cycle the Base and the Modules Electrical schematics.
- Show how the modules Servo axes are configured and used.
- Describe the various communication protocols used.
- Describe the system network setup.
- Explain and use the NXT Accessory software.
- Show and explain FujiFlexa for the NXT; Line configuration, Job creation, Transmission.
- Use Medit and VPD plus to modify programs at the machine.
- Testing Jobs with “Simulation” and “Place and Test”.
- Use the I/O Monitor to access machines signals
- Show the Motion Tool Mini functions and use.
- Explain PCMCIA formatting and Firmware reloads.
- Perform and explain the Auto Calibration feature (Production and Full-Direct Load)
- Troubleshoot any functional area of the machine, including; Power On, PCB Load/Unload, Fiducial Mark Read, Part Pickup, Part Placement, Part Inspection, and Nozzle Change.
- Show how to maintain the intelligent feeders.
- Perform parts replacement; Battery, Fuses, Camera’s, Tape Cutter.

TOPICS

1. Machine safety.
2. Machine component overview and layout.
3. Communications to the host system., network setup
4. Electrical system and schematics.
5. Layout of major sensors and solenoids.
6. Fuji Flexa for the NXT
7. Accessory Software
8. Medit, Job Test, program changes at the machine
9. VPD Plus - Vision system theory of operation.
10. I/O Monitor
11. Servo System theory of operation - Motion Mini Tool
12. Auto Calibration
13. Preventive maintenance.

COURSE COST \$1,800.00



NXT

NXT Support Tools, MEDIT

DESCRIPTION

This course provides front line technicians the skills needed to use Medit, VPD and the NXT support tools. The students will be given hands-on experience in a controlled environment. The students will be expected to correctly navigate, operate, monitor, and troubleshoot the NXT series machine using Medit and VPD tools.

DURATION

2 days. Class length may depend on class size and the experience level of the students.

AUDIENCE

Anyone who is responsible for operating a NXT series machine and has less than 1 year experience operating the equipment.

PREREQUISITES

None

OBJECTIVE

Upon successful completion of this course the student will be able to;

- Describe the Medit application and its uses.
- Describe the VPD Plus software application and uses.
- Explain and perform the correct sequence of events for opening current job.
- Describe the Job relationship with Medit and Flexa.
- Show how to Retransmit Jobs
- Explain the Image Buffer
- Acquire Images, Edit and correct using VPD
- Show how to Hand Pick a component for Vision Images
- Describe Job test, “Simulation” and “Place and Check”
- Describe how to determine Tray Pick Point X,Y and Tray Pitch X,Y using Medit
- Properly restart production on the NXT in: normal, abnormal, and emergency conditions.
- Analyze and troubleshoot (when needed) the messages on the Operation panel.
- Use the Accessory software to look up error codes.
- Use the Accessory software to Delete Jobs
- Use Medit to skip feeders and holders.
- Demonstrate different operating modes of the NXT
- Recognize abnormal machine operation.

TOPICS

1. Medit application overview
2. VPD application overview
3. Editing Current Jobs while in production
4. Saving/Retransmitting Jobs
5. Image Acquisition
6. Job Test
7. Tray Pickup points
8. Operation panel messages
9. Accessory Software
10. Skipping Feeders Nozzles
11. Operation Mode settings
12. Troubleshooting

COURSE COST \$900.00



Fuji Store Order Form

FUJI Golf Windshirts (khaki, green, navy)	\$30.00
FUJI Polo Shirts (S, M, L, XL, XXL, XXXL) (black, navy, plum, sage, cream, light blue, green)	\$25.00
Portfolio	\$10.00
FUJI Zippo Lighters	\$15.00
256MB Thumb Drives	\$ 10.00
FUJI Hats (Khaki)	\$10.00
FUJI Calculator	\$5.00
Travel Mugs	\$5.00
FUJI Rulers	\$3.00
FUJI Sweat Shirts (M, L, XL, XXL) (Maroon, Forest, Black, Grey, Navy, Purple)	\$15.00 *SALE
FUJI Badge Holder	\$2.00
FUJI Pin	\$2.00
FUJI White Shirt Long Sleeve (M, L, XL, XXL, XXXL)	\$23.00
FUJI Feeder Cards	\$1.00
Screwdrivers	\$1.00
FUJI Silver/Blue Pen	\$2.00

Name: _____ **Class** _____

Please specify color and sizes

<u>Qty</u>	<u>Item</u>	<u>Price</u>	<u>Ext. Price</u>
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

Total: _____

Method of Payment:

Cash

Credit Card # _____

Name as it appears on the card: _____ Exp. Date: _____

AMEX VISA Mastercard

Authorized Signature: _____ Date: _____