

On site CNC Training Guidelines

Discussion:

The key for a successful CNC training is to have the student operate the machine during the training. Experience has shown time and again that a trainer who lectures all day with no practical operation of the machines produces students who do not know how to run the machine.

The single most important aspect of CNC training is to: Have the student operate the machine while you talk him thru the process. This means that You the trainer should NOT be pressing the buttons!

The second most important aspect is to stick to the training schedule. You have 8 hours to teach your student how to set a tool library, set part zeros and be capable programmer in INTERCON. Wasting time talking about their CAD/CAM system or other non essential subjects will produce a student who can not make parts the next day when you are gone.

"Making chips" before lunch is key. Push the training along so that you actually cut a simple part before the lunch break. This is key to keep the students confidence and interest up.

Rules for a Successful Training

Preparation:

When making **first contact** with end user. Get the answers to these questions.

- 1.) When will they have the machine in place with power to it and ready for training?
- 2.) What type of shop are there?
- 3.) What kind of parts are they planning on making with the machine?
- 4.) Do they have tooling for the machine? Edge finder, end mills, vise, 123 block and soft material to cut?
- 5.) Will they have prints available?
- 6.) Have they watched the training video? They should watch the video and use the machine to learn as much as possible BEFORE you get there so they will get the most out of your training.
- 7.) Have they ordered/purchased any options that they expect you to install?

Are they planning on using a CAD CAM system? If so, They will require an additional day of training. Will they have DXF files available? (lines, points, arcs, and splines only) If they have an in house CAD guy will he be present at the day of the training. Will the CAD and CAD/CAM operators be present during the day of the training dealing with CAD/CAM generated files? (often bigger companies have several guys, one drawing (or cad file came from outside source), one running the CAD/CAM system and your guy the CNC operator, Often the CAD/CAM guy just dumps the file on the operator and says here it is cut it...and of course there are changes needed etc.. so see if you can have the CAD/CAM guy present to participate.

- 8.) Fax the CNC training schedule, requirements and confirmation document. (training Doc #1 on the CENTROID Dealer site) to the customer before the training. Make travel arrangements only after the confirmation of services contract has been completed, signed and faxed back to you.

Pitfalls to avoid

Don't drive all day to find out that the machine hasn't arrived yet! Communication with the persons to be trained is critical. Be sure to talk directly with the person(s) you are going to be working with when arranging date and times for training. i.e.....Don't fly a 1000 miles to find out the foreman forgot that the guy you were to train is on vacation this week. Get a completed and signed Confirmation of Services contract before making any travel arrangements.

You get there and the Machine has a problem. Make sure the machine is in place and has power. On the confirmation of services contract the customer has to initial to confirm that the machine is up and running. This is obviously critical. Its hard to teach CNC programming with machine with no power. Tell Customer to watch the Mill Training DVD BEFORE the day of training. That way the customer will get the most out of the training. When you arrive on site, check out the operation of the machine before the training begins. Go over the entire machine before starting the training. Check operation of everything! Run a quick test program that you wrote in the conversational. Does the spindle turn the right way? Does the lube pump work? Has the machine been configured properly? autotune,drag,lash etc.....Find any problems now! Not in the middle of the training. Otherwise the interruption to try and solve the problem will destroy the effectiveness of the training.

Don't get stuck with an airline ticket. Don't buy a plane ticket on a verbal order! Try not to buy tickets at all, especially for travel that is for one stop! One proven method is to arrange your travel itinerary with your travel agent and have the CUSTOMER or Dealer call the travel agent and pay for the ticket! This method assures that the Customer won't call you the next day after you purchased the ticket to tell you he changed his mind because he feels like going fishing that day.

It is hard to teach someone how to set up the Tool library with no tools! Make sure the customer is prepared. Fax out the customer requirements sheet to the trainees so that they can prepare for the CNC training
1.) Make sure the customer has Tools and Tool Holders available. 2.) Make sure you are training no more than two people at once. 3.) Make sure the trainees have watched the training video, read the manual and have practiced with the machine before the day of training.

Stick to the Schedule, Do Not get distracted by anything.

If a customer has a specific training request like how to use digitizing save it for the end of the day. It is imperative that you teach the customer the basic of the control before any advanced subjects. If you are having problems with a customer, Lay down the law! They must eliminate distractions (like answering the phone every 15 minutes..etc..) Noise, Smoke etc....anything that will interfere with your training!

Do Not stand in front of the control and "Show" the customer how to operate it. Have the End User operate the control during the training.

It is important that you check out the machine before the training so that you don't run into a problem in the middle of the training therefore disrupting the class.

Check out the machine in the morning. Make sure everything works software and hardware wise. Program and run a simple part in INTERCON to verify operation. Perform, lash,drag checks, look at config parameters for anything not set correctly. Perform software update if necessary Look for mechanical problems, LUBE is the number one problem, is the machine getting lube? Look for possible problems in the future, Fan filter in place?, crushed lube lines?, table locks in place dragging? Loose belts(does the DRO flicker?), Loose wires or hardware in control cabinet? Metal Chips or wire pieces in control? Proper limit switch installation? etc.....

It is imperative that the End User have on hand the materials you need to train them. Tools, Tool holders and drill rod for the reference tool, a vise, cutting material, and a gage block are the bare minimum requirements. In addition to the End User initialing the confirmation contract, Review verbally with that they will have the training materials on hand.

Do not train more than 2 people at a time. Even when training 2 people at a time you will often find that you end up concentrating more with one person! If the End User has more that one person to train (2nd and 3rd shifts) they can arrange with you for additional days of training or you can suggest (provided you feel that this person is capable) that the person you are training can teach the rest. Training more that two people at once leads to no ONE person fully understanding the control.

You trained them and they call the next day and can't even drill holes! Your teaching method is critical. During the training it is very important that the operator is working the buttons and not you! Avoid standing in front of the control and lecturing! The operator will only retain knowledge if HE goes thru the process himself!

Can we give you a PO? Get paid!_All service and training work should be COD or Prepay. Before traveling tell

the customer that you will need a check by the end of the training day. Fill out the workorder have the customer sign it and remind them at the beginning of the training that you will need a check for the amount shown on the workorder. Obviously there are exceptions, but for the most part be sure to get paid as soon as the training is done (or before)...since your travel time and training time is something you can't just restock on the shelf.

Training Checklist

- 1.) Who's paying? Trainings are COD. Customer shall supply check before or on the day of the training. Basic one day Centroid CNC trainings are \$680 per day plus travel. You may have to estimate travel for customer to write check.
- 2.) Fax out the CNC training information to End User. Training information sheet are located in (Doc #1 on dealer support site under Tech Training. That document informs the customer what is expected of him for a proper training.
- 3.) Fax out the Confirmation of services contract (Doc #1) to the End User. End User (the person who is receiving the training, not necessarily the person who is paying for the training) must sign and fax back to you before any travel arrangement shall be made. The confirmation of service contract is an agreement between the customer and CNC Services as to WHEN the training shall take place. If a third party is paying for the training CLEARLY mark on the contract that the third party is paying for the training before faxing to the End User. The contract also shows that the customer confirms that the machine has arrived and has been powered up and is functioning. (It is critical that you confirm that the machine is functioning so that you don't travel all the way there and find that the machine is not working (damage in shipping etc.....))
- 4.) Review verbally with the End User the purpose of the CNC Training information and the confirmation contract that you faxed to him.
Major points to stress are:
 - 1.) Has the machine arrived?
 - 2.) Does the machine have power?
 - 3.) Does the control function properly? (do the axis move? are there any error messages?
 - 4.) Does the End User have the manual and training video?
 - 5.) Has the End User reviewed the Training video?
 - 6.) Has the End User reviewed the chapters that are going to be covered in the training? (see training schedule for chapters)
 - 7.) How many people will be trained? (No more that two people can be properly trained at a time)
 - 8.) If possible, encourage End User to use the machine and learn as much as possible on their own. That way the will get more value out of you being there.
 - 9.) Find out what type of work the end user does. Does the customer expect to be trained on something in particular?
 - 10.) Has the customer purchased any options that he expects you to install and train on? (4th axis, Digitizing etc....)
- 5.) At the end of the day while still on site, fill out your Work order and have it signed by the guy you trained. This is your proof that you did you job. (If a third party is paying for the training, clearly write on the work order who is paying) Give a copy of the work order to the End User. This document serves several purposes, 1.) It is a receipt of payment if the End User is paying for the training. 2.) It is signed proof that the service was performed 3.) It states that you are acting under the request of the End User to perform this service.)