

The Intelligent 32-Axis Motion, Vision,
PLC, Robotics, & I/O Platform

A3200

Quick Start Guide



*Dedicated to the
Science of Motion*

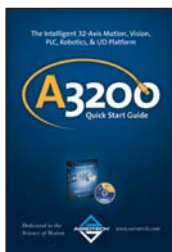


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Included



CD



Quick Start Guide



FireWire Cable

Typically Required



Npq Drive Rack



and/or

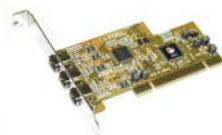
Digital Ndrive



Motor(s)



Computer



FireWire Card



Motor and Feedback Cables

FireWire® is a registered trademark of Apple Computer, Inc.

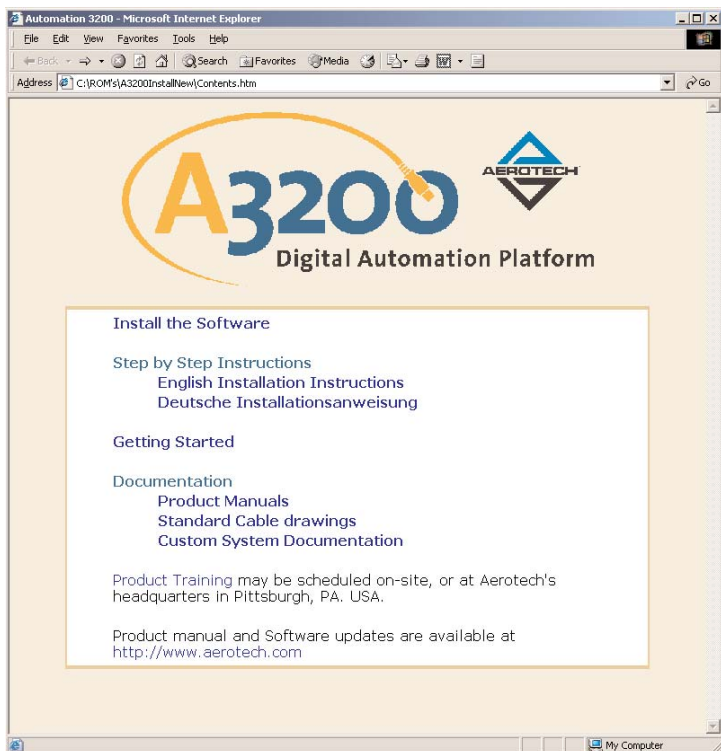
Ndrive®, Npq®, Nview®, and Ncontrol® are registered trademarks of Aerotech, Inc.

Software Installation

Insert the Automation 3200 CD-ROM into your CD-ROM drive.

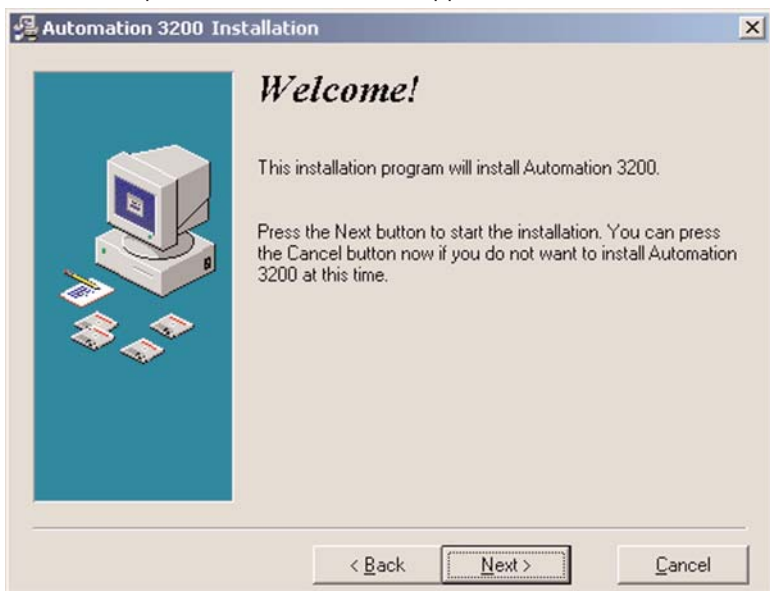


The A3200 software installation page will auto-open. Read all of the directions before proceeding – **software installation is service pack and operating system dependent.**



Click **Next** and follow the prompts.

The MPS Uniprocessor PC HAL is not supported.



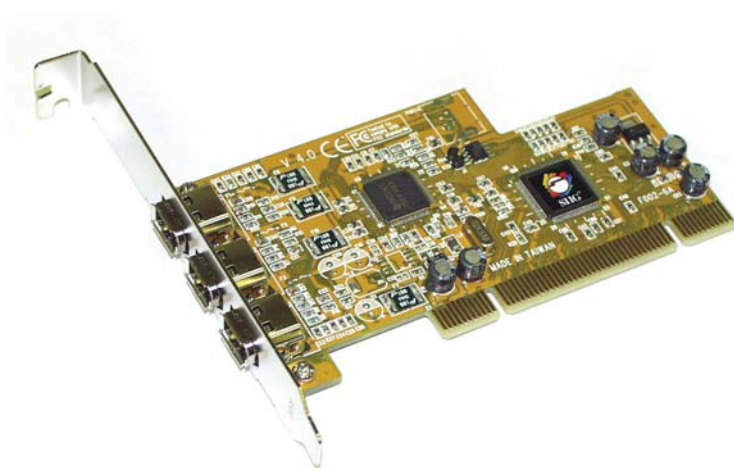
Note: RTX requires at least two processors on multiprocessor (MP) systems in order to install and operate. If an MP system has only one processor, Windows 2000 and Windows XP must first be converted to use a standard HAL and uniprocessor (UP) kernel before RTX can be used.

Shutdown and reboot your computer after installation has completed.



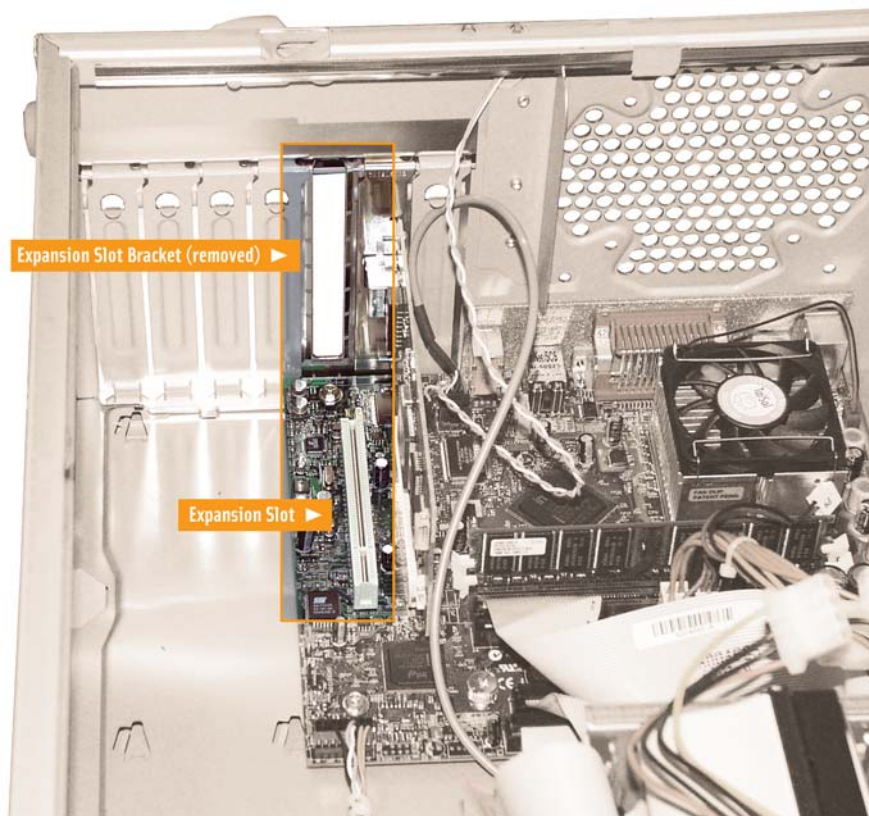
FireWire Card Installation

Before installation, turn the computer off and unplug the power cord.

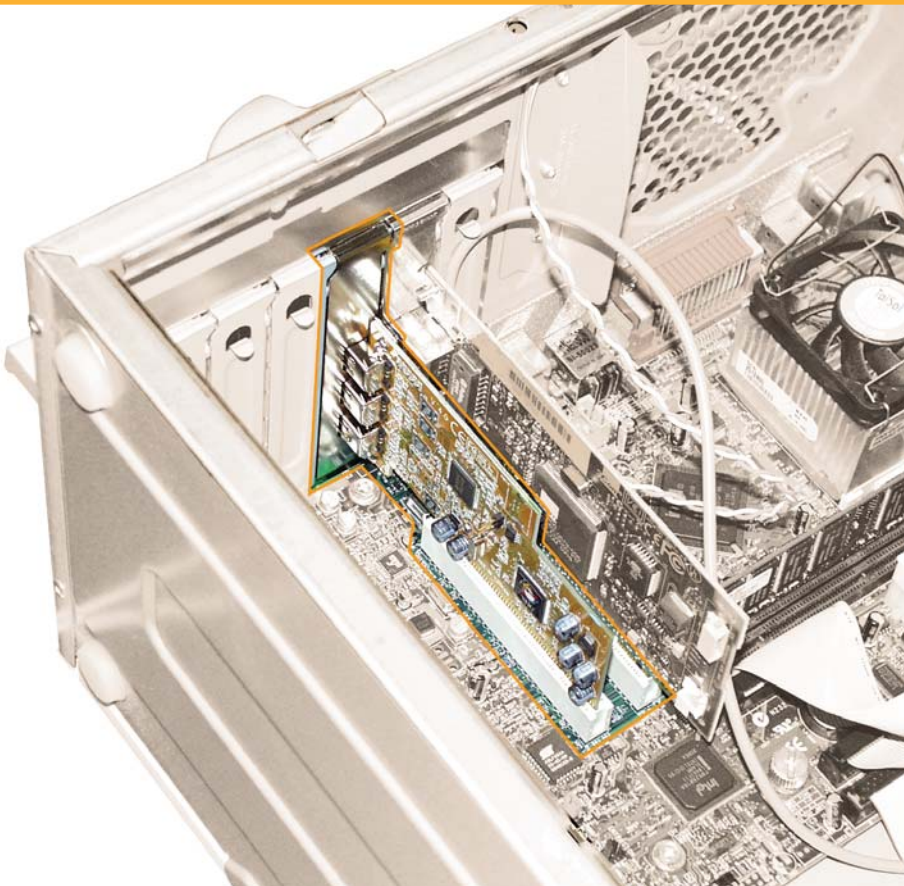


Do not remove the FireWire card from the protective antistatic pouch until you are ready to install it.

Remove the cover from your computer and locate an empty PCI expansion slot.



Slide the FireWire card into the open expansion slot and insert the mounting screw.



1 Cable Connections

Each Ndrive (HP, HL, HPe, HLe, CP, CL, or MP), Nservo, Nstep, Nmark or Npaq must have a unique, sequential address defined by switch S2.

Note that an Npaq will occupy six Drive #s. If an Npaq is set as Drive 1, the next free drive number will be Drive 7.

1st



2nd

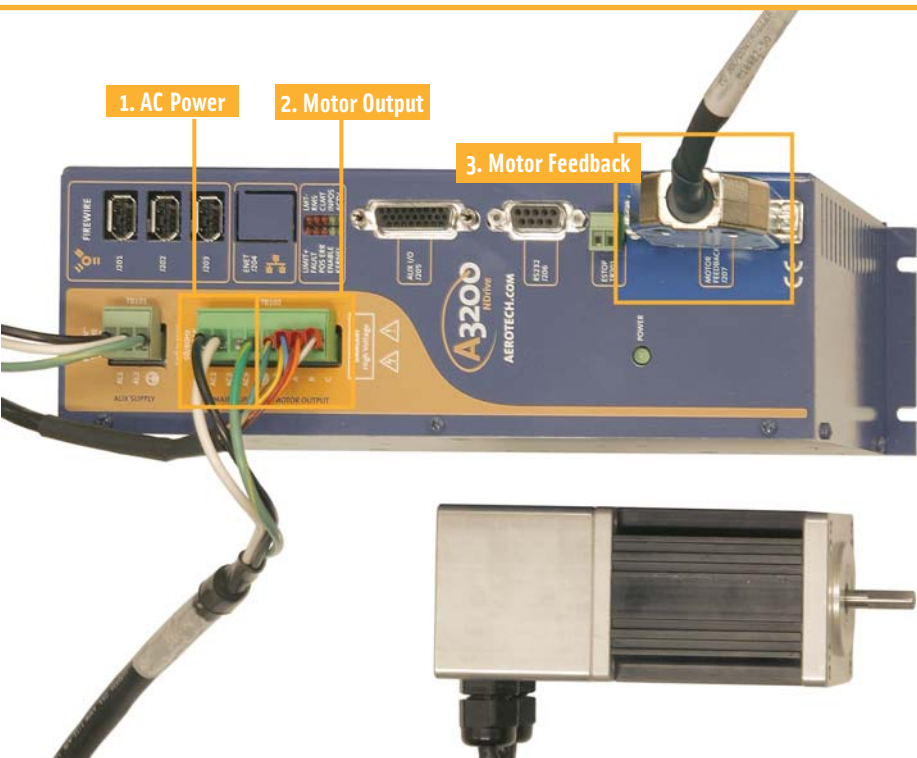


Drive #	Switch Setting*							
	7	6	5	4	3	2	1	0
1st				ON	ON	ON	ON	ON
2nd				ON	ON	ON	ON	-
3rd				ON	ON	ON	-	ON
4th				ON	ON	ON	-	-
5th				ON	ON	-	ON	ON
6th				ON	ON	-	ON	-
7th				ON	ON	-	-	ON
8th				ON	ON	-	-	-
9th				ON	-	ON	ON	ON
10th				ON	-	ON	ON	-
11th				ON	-	ON	-	ON
12th				ON	-	ON	-	-
13th				ON	-	-	ON	ON
14th				ON	-	-	ON	-
15th				ON	-	-	-	ON
16th				ON	-	-	-	-
17th				-	ON	ON	ON	ON
18th				-	ON	ON	ON	-
19th				-	ON	ON	-	ON
20th				-	ON	ON	-	-
21st				-	ON	-	ON	ON
22nd				-	ON	-	ON	-
23rd				-	ON	-	-	ON
24th				-	ON	-	-	-
25th				-	-	ON	ON	ON
26th				-	-	ON	ON	-
27th				-	-	ON	-	ON
28th				-	-	ON	-	-
29th				-	-	-	ON	ON
30th				-	-	-	ON	-
31st				-	-	-	-	ON
32nd				-	-	-	-	-

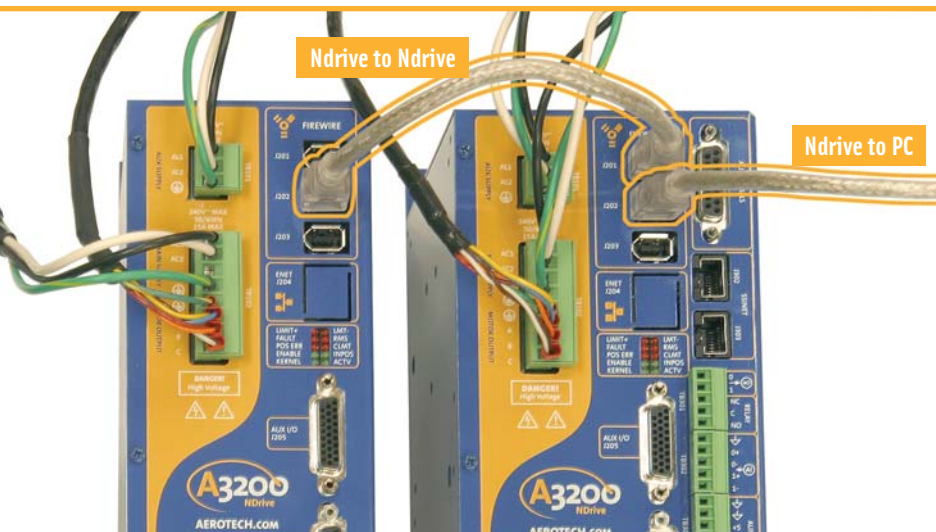
Notes: Off is indicated by " - "

There may be more or fewer switches depending on the drive; only the switches represented by columns 0 through 4 should be set.

Connect the motor output, motor feedback, and A.C. power to your drive.



Connect all of the hardware components to the FireWire card. Each device has two or three equivalent FireWire connectors and any may be used. A star connection configuration is recommended. No branch may exceed 16 devices.



Machine Configuration

step

1

If an Aerotech pre-configured machine was purchased, skip ahead to step 6. Otherwise, you will need to configure the parameters in the Nparam editor (step 2) and tune the axes with Nscope (step 4) before you can proceed to Nview (step 6).

Was Custom Configured Integration Purchased?

Yes

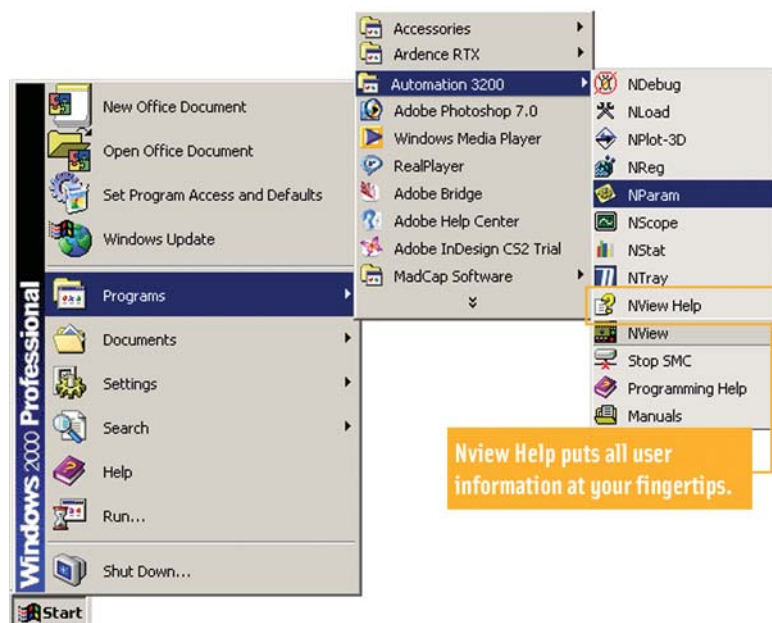
Skip to Step 6, you can begin working in Nview

No

Proceed to next step

Since integration was not purchased, you will need to configure the parameters and tune the axes (Step 3).

Open Nparam to configure the parameters for your motors, feedback devices, and application.



Select the number of axes present and then define your parameters in the Nparam editor.

1. From the Display menu, choose the Axis selection to define the number of axes present

The screenshot shows the Nparam editor interface. The 'Display' menu is open, and the 'Axis' option is selected. The 'Axis Select' dialog is open, showing a list of axes (Axis 1 - X, Axis 2 - Y, etc.) with 'Axis 2 - Y' highlighted. The 'Parameters' table is visible, showing columns for X, Y, and Z. The 'FaultMask' parameter is highlighted in the directory, and its description is shown in the 'FaultMask' section below. The 'Axis X' section shows a list of parameters with checkboxes for Position Error, Over Current, etc.

2. Set your parameter values here

Highlighting a parameter in the directory generates a description below.

Selecting a folder displays the related subset of parameters.

Axis X

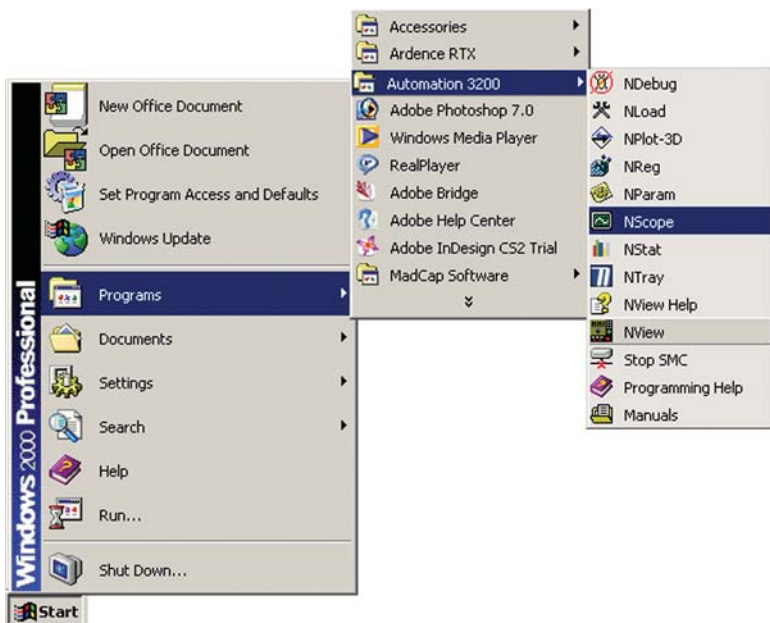
<input checked="" type="checkbox"/> Position Error	<input type="checkbox"/> ESTOP	<input type="checkbox"/> Spare
<input checked="" type="checkbox"/> Over Current	<input type="checkbox"/> Velocity Error	<input type="checkbox"/> Spare
<input checked="" type="checkbox"/> CW Hard EOT	<input type="checkbox"/> Task Fault	<input type="checkbox"/> Spare
<input checked="" type="checkbox"/> CCW Hard EOT	<input type="checkbox"/> Probe Hit	<input type="checkbox"/> Spare
<input checked="" type="checkbox"/> CW Soft EOT	<input type="checkbox"/> Auxiliary	<input type="checkbox"/> Spare
<input checked="" type="checkbox"/> CCW Soft EOT	<input type="checkbox"/> Safe Zone	<input type="checkbox"/> Spare
<input checked="" type="checkbox"/> Amp Pre Stage	<input type="checkbox"/> Motor Temp	<input type="checkbox"/> Spare
<input checked="" type="checkbox"/> Position Fdbk	<input type="checkbox"/> Amp Temp	<input type="checkbox"/> Spare
<input checked="" type="checkbox"/> Velocity Fdbk	<input type="checkbox"/> External	<input type="checkbox"/> Spare
<input checked="" type="checkbox"/> Hal Fdbk	<input type="checkbox"/> Spare	<input type="checkbox"/> Spare
<input checked="" type="checkbox"/> Vel Cnd Max	<input type="checkbox"/> Spare	<input type="checkbox"/> Spare

FaultMask

This axis parameter determines which faults the system will detect. The parameter is a bit mask where each bit corresponds to a specific fault. Setting a bit to a one enables monitoring of the fault assigned to that bit. Conversely, clearing a bit causes the system to ignore that fault if it occurs. Master/Slave axes configured as a gantry should have their FaultMask parameters set the same.

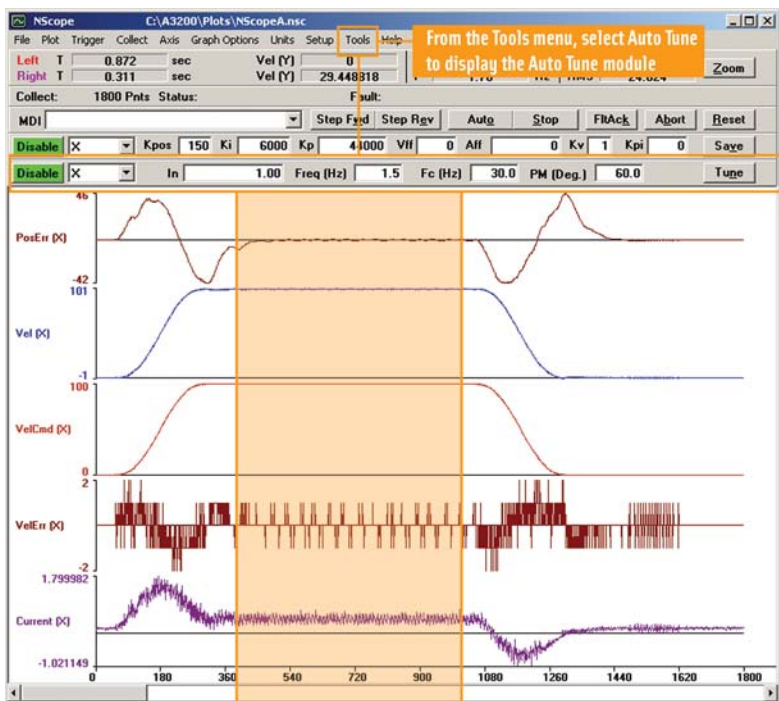
NOTE: Each bit set in this parameter should have a bit set in at least one of the other mask parameters (FaultMaskDisable, FaultMaskDecel, FaultMaskAcc, FaultMaskStop and FaultMaskInterrupt) to define the action to occur for that fault. If you set a bit in the FaultMask, but fail to set any corresponding bits in one of the other masks listed above, then the fault will occur, but, have no corresponding action. These actions will be occur immediately after detection.

Open the Nscope utility to begin axis tuning.

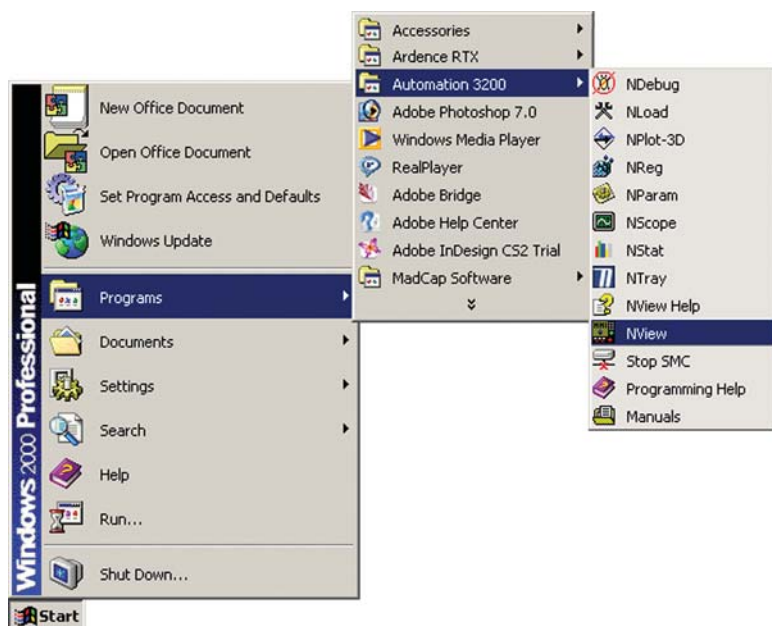


Machine Configuration

From the Tools menu, select Auto Tune. Press F1 on your keyboard to access the Help file to guide you in successfully entering Auto Tune parameters.



If you did not purchase Nview or will write your own application, skip ahead to Step 6b.



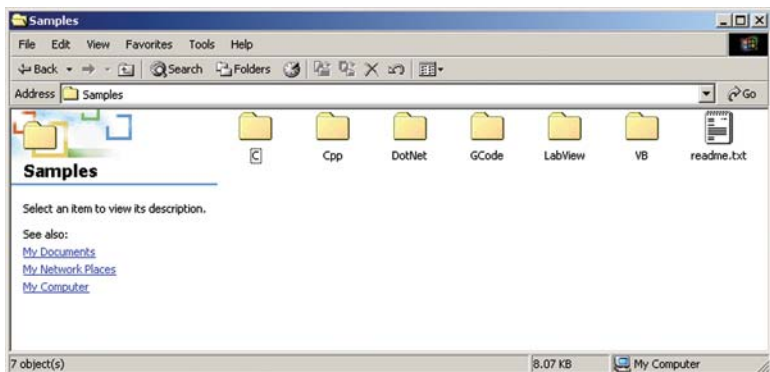
To Jog and/or Home the axes from NView, select F3-Manual, then F6-Jog Mode.

- Click on the axis names to enable the axes.
- Click the HOME buttons to home the axes or enter a suitable distance and velocity.
- Click the arrow keys to move the axes.

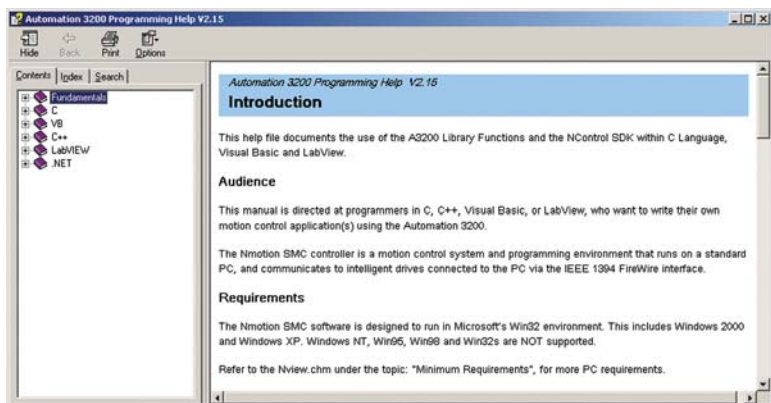


Context sensitive help for each screen of NView.

Or you can review the demo programs to write your own applications.



The Ncontrol SDK provides event driven monitoring of inputs, outputs, and status. The Ncontrol SDK also provides ActiveX .OLE objects for creating a custom application in Microsoft® Visual Studio 6.





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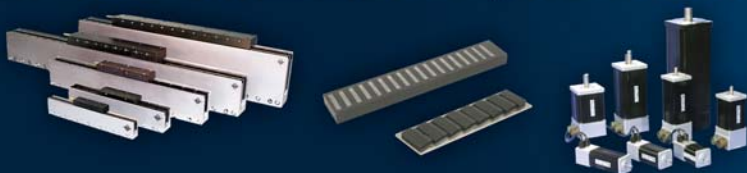
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