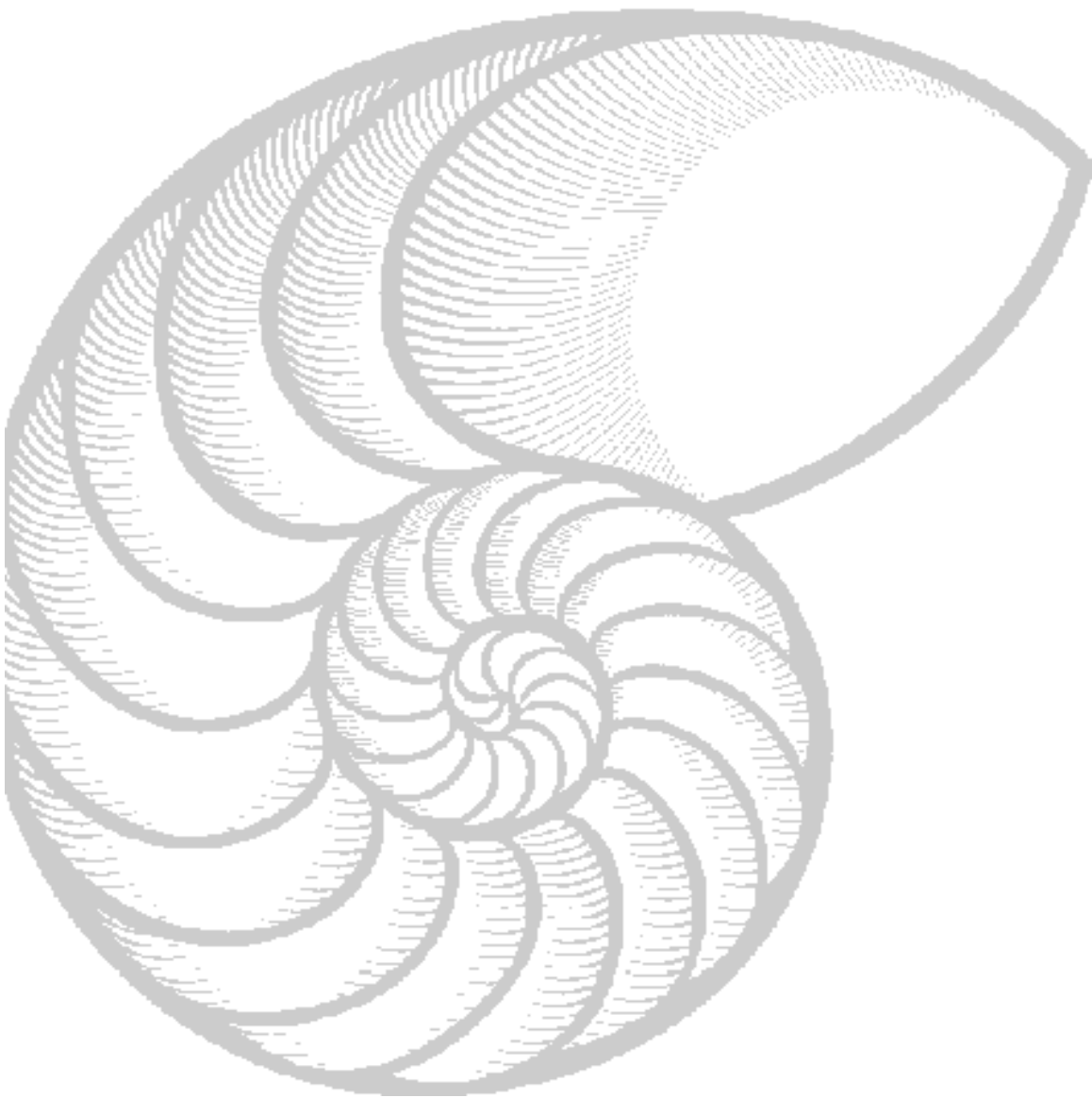


Insight™ 3.5

Installation Guide



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March 31, 2003
PN# 104067-0010

Insight Software Installation

Overview

The following information describes how to install Insight software on workstations running Microsoft Windows XP, Microsoft Windows NT 4.0 or Microsoft Windows 2000, for use with Stratasys FDM 1650, 2000, 3000, 8000, FDM Titan, FDM Maxum/Quantum, and Prodigy Plus modelers. This guide is divided into two sections:

Section 1 - Installing Insight software

Section 2 - Initial calibration of the FDM modeler.

Follow the instructions carefully. If necessary, consult with your system administrator for more detailed information.

Before You Begin

Insight System Requirements for Windows Workstations

Insight is designed to work exclusively on Intel Pentium-based (or AMD Athlon based) PCs running Microsoft Windows XP, Microsoft Windows NT version 4.0 or Microsoft Windows 2000. The following configuration is required:

Microsoft Windows XP, or

Microsoft Windows 2000, or

Microsoft Windows NT 4.0 with Service Pack 6 or higher

Intel Pentium 3 500 MHz processor minimum; Pentium 4 recommended. AMD Athlon based systems are also recommended. Higher speed processors reduce preprocessing times.

256MB minimum; 512 MB strongly recommended; 1 GB for large or complex jobs (especially with FDM Titan and FDM Maxum/Quantum modelers).

Graphics that supports OpenGL rendering, which includes any Nvidia or current ATI Radeon™ based card.

35 MB of disk space for software installation

Minimum 300 MB of swap space, depending on RAM quantity installed

CD-ROM drive

Serial port for connection to FDM modeler

Ethernet connection for FDM Titan, FDM Maxum/Quantum, or Prodigy Plus

System administrator privileges to perform the installation

FDM Titan, Maxum, and Prodigy Plus Requirements

You must have an Ethernet connection for FDM Titan, FDM Maxum/Quantum, or Prodigy Plus. This connection requires a static IP network address.

FDM 1650, 2000, 3000, and 8000 Modeler Requirements

You must have a serial port available to download the files to the FDM modeler.

Before starting the Insight installation you will want to collect the following information:

The serial port (com port) that will be used to communicate with the FDM modeler

The firmware revision of the modeler. This is found by pressing **space 2 3 6** on the front panel of the modeler. Typical values will be either 906 or 907.

The type of support head. Please note if you are using the new ABS SR-2 support head.

Section 1 - Installing Insight

1. Login as the Administrator or as a Username within the Administrator group.
2. Insert the Insight 3.5 CD into the CD-ROM drive.
3. Click on the Start button and pick the Run option.
The Run dialog box appears.
4. In the command line after "Open:" enter the following command:

D:\NT4.0\setup.exe

Substitute drive D for your CD-ROM drive or click the Browse button to locate the CD-ROM drive and the filename **\NT4.0\Setup.exe**.

5. Click OK.

Follow the instructions as they appear during the installation process. The install program will go through the following steps:

The setup program asks for the directory in which you want the Insight software installed. The default location is *c:\InsightV35*.

The setup program prompts you to choose a Typical, Compact, or Custom installation. Select **Typical** for most installations.

Typical is the default option. This installs all Insight program files, but does not install the training files.

Compact is reserved for future software versions.

Custom is used to pick the software components from the following list:

- Insight application program files
- CMB/SML utilities
- Training files
- Creation of desktop icons used to start Insight

The setup program asks for the name of the program folder to use in the Windows Start menu. The default is *InsightV35*.

The next prompt is for the default modeler system type. This will be used by Insight during the preprocessing of STL models. Choose from: FDM Titan, FDM Maxum/Quantum, Prodigy Plus, FDM 1650, FDM 2000, FDM 3000, or FDM 8000.

If your default modeler system type is an FDM Titan, FDM Maxum/Quantum, or a Prodigy Plus, your installation is complete.

The rest of the instructions assume you have selected from the FDM 1650, 2000, 3000, or 8000 default modeler types.

Enter the name you want to use for your modeler. This can be any alphanumeric name. Use names to differentiate between modelers, if you have multiple modelers.

Enter the COM port number that you will use to communicate with the FDM 1650, 2000, 3000, or 8000 modeler.

Select the modeler firmware revision. Choose from either *906 or older* or *907 or newer*. You can determine this by entering **space 2 3 6** on the modeler front-panel keypad.

Select the type of support head. Use *ABS-SR2* for the new WaterWorks support head. Use *ABS-SR or other (non-SR)* for all other types of support heads.

When complete the setup program displays the message "Setup is complete".

6. After successful installation of Insight, it is not necessary to logout. You can immediately use any of the Insight applications contained in the Insight Program Group.

Section 2 - Initial calibration of the FDM 1650, 2000, 3000, or 8000 modeler.

After installing Insight it is beneficial to update the modeler button files and to verify the tip offset calibration.

Update Modeler Button File Procedure

This procedure is used to send a new button file to the modeler. The button file contains definitions for canned functions that are used during machine operation, e.g. tip wipe sequence.

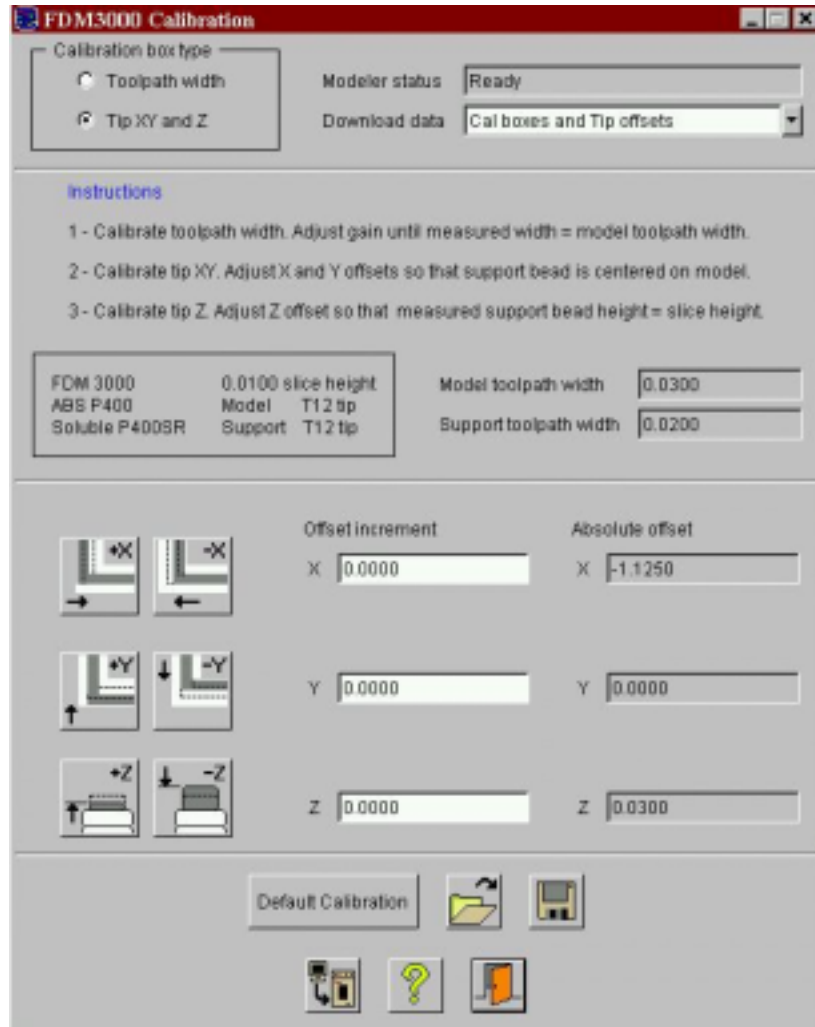
1. Start FDM Status application.
2. Verify the modeler type specified during Insight installation. Click the  button to view the Add/Modify Modeler window. Pick the name of the modeler specified during the software installation in the *Modeler name* list. Verify the values for the modeler type and the COM port.
3. Click the Calibration  button.
4. Specify the properties of the modeler in the *Configure Modeler* window. This is much like the configuration window in Insight. Specify the
 - model material type
 - support material type
 - model tip size
 - support tip size
 - slice height
5. Click  to confirm the modeler configuration parameters.
6. The *Calibration* window is displayed.
7. Select *Reset FDM controller, buttons* as the type of *Download data*.
8. Click the Download  button to reset the FDM controller and send the new button file.

Tip Offset Procedure

If you are installing a new FDM modeler or have recently changed the heads or tips, you will want to perform tip offset calibration. Refer to the FDM manual for a more complete description of the tip offset calibration procedure.

1. Check the tightness of the tip using the tip wrench.

2. Start FDM Status application.
3. Click the Calibration  button.
4. Specify the properties of the modeler in the *Configure Modeler* window. This is much like the configuration window in Insight. Specify the
 - model material type
 - support material type
 - model tip size
 - support tip size
 - slice height
5. Click  to confirm the modeler configuration parameters. These parameters will determine the values used to build the calibration box used to set the tip offset values.
6. The *Calibration* window is displayed.



7. Choose *Cal boxes and Tip offsets* as the type of *Download data*. For tip-offset calibration, you will want to download the current offsets and a calibration box.
8. Click the Download  button to build an initial calibration box using the current modeler configuration and offset values.
9. The FDM Pause light will start to blink. Press the Pause button to initiate the XYZ homing procedure. When the Pause light starts to blink again, the extrusion head will be in the front-left corner. Lower the tip so that it is slightly embedded in the foam. Press the Pause light again to start building the calibration box.
10. Verify the results and modify the X and Y offsets to center the support material directly on top of the model material. Do this by clicking the +/- X and +/- Y buttons to shift the location of the support material bead. You can also enter numeric values for the X and Y offset increments.

11. Repeat steps 8 through 10 as necessary, until the support material is centered on the model material.
12. After completing the X and Y offset calibration, peel away the support material layer from the final calibration box. Measure the Z-thickness of the support material bead using a caliper or micrometer. The thickness should match the slice height displayed in the configuration box. Typically this is 0.010 inches for T12 and T16 tips and 0.007 inches for the T10 tip.
13. If the support bead is too tall or too short, use the +Z and -Z buttons to change the Z offset.
14. After changing the Z offset, build a new calibration box by clicking the Download  button.
15. Repeat steps 12 through 14 until the support-material bead is the correct height.