

# Installing the PIV Image Analysis System

## Sections

<b>Scope .....</b>	<b>1</b>
<b>Assumptions.....</b>	<b>1</b>
<b>Installation Overview.....</b>	<b>2</b>
Step 1: Checking the Computer Hardware.....	2
Step 2: Installing the Software Key and <i>INSIGHT 3G</i>	
Software on the Computer.....	3
A: Installing the Software Security Key .....	3
B: Installing the Software on the Hard Drive.....	3
Installing Tecplot.....	3
Installing <i>INSIGHT 3G</i> .....	3
Step 3: Reviewing ESD Protection.....	4
Step 4: Installing the Frame Grabber Board .....	4
Frame Grabber Installation .....	4
Special Installation Instructions for Model 900105	
64-bit Frame Grabber.....	5
Step 5: Verify that the Frame Grabber Board is Installed	
Properly .....	5

## Tables

1	Packing List for the PIV Image Analysis System.....	2
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# Installing the PIV Image Analysis System

This section of the PIV installation manual describes how to install the following components of the PIV Image Analysis System:

- ☐ Frame Grabber
- ☐ Tecplot<sup>®</sup> software (optional)
- ☐ **INSIGHT 3G** software

**Notes:** *The Frame Grabber is purchased as part of the Camera system or separately. The installation instructions are included in this manual because the frame grabber is installed in the computer as part of the **INSIGHT 3G** installation.*

*If you purchased the computer system from TSI, the software has already been installed on the system.*

## Scope

After completing this section you will have installed the **INSIGHT 3G** software and the Frame Grabber board in your computer.

## Assumptions

At this point in your PIV system installation, TSI assumes you:

- ☐ Have the computer operating in Windows XP.
- ☐ Are familiar with Windows<sup>®</sup> XP workstations.

The components of the PIV Image Analysis System come in more than one shipping case. Carefully unpack these cases, making sure all the components arrived in good condition. If there are signs of damage, contact the nearest TSI sales office or representative or Fluid Mechanics at TSI. See the warranty page at the beginning of this manual for further details.

Compare all the components you received with those listed in Table 1. If any parts are missing, contact TSI. See “Getting Help” section in “About This Manual” for the address and phone number.

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<sup>®</sup>Tecplot is a trademark of Tecplot, Inc.

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<sup>®</sup>Windows is a registered trademark of Microsoft Corporation.

## PIV Image Analysis System

**Table 1**  
Packing List for the PIV Image Analysis System

Qty	Description	Model Number	Part Number
1	<i>INSIGHT 3G</i> software including: <i>INSIGHT 3G</i> with Software Key Tecplot Software <i>(optional)</i>		

The Frame Grabber is included with the Camera or purchased separately.

## Installation Overview

To complete this part of the PIV system installation, you need to do the following:

- Step 1.** Check computer hardware requirements.
- Step 2.** Install the software key and the *INSIGHT 3G* and the Tecplot software on the computer.
- Step 3.** Review ESD protection measures.
- Step 4.** Install the Frame Grabber.
- Step 5.** Verify that the Frame Grabber board is installed properly.

## Step 1: Checking the Computer Hardware

*INSIGHT 3G* is a Windows XP-based application that runs on an IBM PC or true-compatible computer with Windows XP.

The required computer specifications for:

- ❑ **PCI bus slot:** The PIVCAM 13-8 and Model 600069 High Performance Frame Grabbers require full-length slots.
- ❑ **PCI Data Transfer Rate:** The actual PCI data transfer rate varies from computer to computer.
- ❑ **Processor:** A 1 GHz or faster Pentium 4 microprocessor is recommended. The *INSIGHT 3G* PIV image processing is multi-threaded, and will use multiple processors in the computer to increase processing speed.
- ❑ **Memory:** Minimum of 1 GB RAM.
- ❑ **CD-ROM Drive**
- ❑ **Hard Disk:** Minimum 10 GB.
- ❑ **Port:** USB port is required, a serial COM port is required to connect to the Synchronizer.
- ❑ **Mouse:** Microsoft compatible mouse.
- ❑ **Graphics Board and Monitor:** You can use any Windows graphics board and monitor with VGA or better resolution with a minimum 16-bit color palette. For best results, 1024 × 768, 1280 × 1024 or 1600 × 1280, or higher resolutions are recommended. A graphics board with 4 MB or more memory is recommended. A high resolution 17" or larger color monitor is also recommended.
- ❑ **Printer:** Any graphics printer with Windows drivers. Color printing is supported.

## PIV Image Analysis System

### Step 2: Installing the Software Key and **INSIGHT 3G** Software on the Computer

This step involves the following substeps:

- A.** Installing the software security key.
- B:** Installing the Tecplot and **INSIGHT 3G** software.

#### **A: Installing the Software Security Key**

A security key must be connected to the computer's USB port. Without the key, the **INSIGHT 3G** software will only operate in worker mode.

#### **B: Installing the Software on the Hard Drive**

The **INSIGHT 3G** software package contains both **INSIGHT 3G**, and Tecplot software. First, install the Tecplot software and then run the **INSIGHT 3G** installation program to install **INSIGHT 3G**.

##### **Installing Tecplot**

Tecplot for Windows is included as part of the **INSIGHT 3G** PIV software package. This software is used to display the vector field as arrows, to compute and display vorticity and strain rates as contour maps. Run the Setup program from the Tecplot CD will install Tecplot.

**Note:** If you are using Tecplot 10, use the following directory instead of the default directory for your Tecplot installation:

C:\Program Files\Tec100

Refer to your **INSIGHT** manual if you have problems running Tecplot with **INSIGHT** software.

##### **Installing **INSIGHT 3G****

To install the **INSIGHT 3G** software on your hard disk, perform the following steps:

- 1.** Turn on your computer and log into Windows XP as the System Administrator.
- 2.** Insert the **INSIGHT 3G** software CD into the CD drive.
- 3.** The installation will start automatically, or you can run **Setup** from the **INSIGHT 3G** software CD.

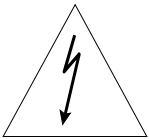
**Note:** The Setup program installs the software in a default directory called **INSIGHT 3G**. If you wish to change the name of this default directory, you can do so during installation.

The installation program creates an **INSIGHT 3G** icon on your Windows Start Screen and creates an **INSIGHT 3G** Program Group on the Windows Task Bar. In the **INSIGHT 3G** Program Group are **INSIGHT 3G** and Tecplot icons.

## PIV Image Analysis System

### Step 3: Reviewing ESD Protection

The Frame Grabber board is installed in an open PCI slot in your computer. This board contains integrated circuits that can be damaged by static electricity. This step involves reviewing the ESD protection measures that you need to take before handling and installing this board.



#### WARNING

Do *not* install or remove the board with the computer power turned on. Doing so would expose you to electrical shock. Also, to avoid any damage to the computer, be sure to follow the ESD protection procedures.

TSI recommends that you follow electrostatic discharge (ESD) protection procedures when handling the Frame Grabber board:

- ❑ Leave the board in the static-shielding container until you have taken the antistatic precautionary measures described below and are ready to actually install it in your computer.
- ❑ Wear a grounded, static-discharging wrist strap connected to the computer frame or other grounded workstation.
- ❑ Handle the board by the edges only. Do *not* touch edge connectors or exposed circuitry.
- ❑ Use only a table top with a grounded static-dissipative surface.

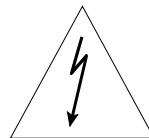
### Step 4: Installing the Frame Grabber Board

This step gives instructions for installing the Frame Grabber.

#### Frame Grabber Installation

To install the board, perform the following steps:

1. Make sure the power to the computer and all the attached equipment is turned off.
2. Following the directions given in your computer's operations manual, remove the computer cover.



#### WARNING

This board contains integrated circuits that can be damaged by static electricity, be sure to follow the ESD protection procedures outlined earlier.

3. Select appropriate PCI slots for the Frame Grabbers.
4. With the appropriate ESD protection described earlier, apply even pressure to the board and slide the board's edge connector into its socket. Make sure the board's metal tab fits securely into the slot at the back of the computer chassis.
5. Secure the board's metal support bracket to the computer chassis.

### Special Installation Instructions for Model 900105 64-bit Frame Grabber

If you have a 64-bit frame grabber, before use, you must first install the firmware into the frame grabber.

1. Install 64-bit frame grabber into the computer.
2. The Windows XP hardware wizard will pop up. Cancel the installation of the driver.
3. Through Windows Explorer browse the *INSIGHT 3G* CD to the X64 folder.
4. Execute the Setup program by double clicking on its icon.
5. Reboot the computer after the setup is done.
6. The firmware will automatically download to the frame grabber after reboot. **DO NOT PRESS ANY BUTTONS ON THE SETUP DIALOG.**
7. Reboot the computer again.

### Step 5: Verify that the Frame Grabber Board is Installed Properly

Check if the board is installed properly and the default address of the Frame Grabber is not conflicting with other components on your computer. To do that, perform the following steps:

1. Turn on the computer and run the *INSIGHT 3G* program by double-clicking on the *INSIGHT 3G* icon in Windows.

2. If the program runs successfully, the Frame Grabber is installed properly. Go to the next step; otherwise, check if the board is fitted properly in the slot. If necessary, repeat steps as described in “Step 4: Installing the Frame Grabber Board.”