User's Guide

Covers the use of Inspector and 3Driver version 1.0

Introduction

Congratulations with your Inspector. Inspector is the first device to offer you the unique possibility of performing precise orientation of 3D models and ordinary mouse operations with only one device.

Inspector ensures that you stay focused on the most important thing - your work. Normally, you will have to use two orientation devices to give both 2D and 3D orientation, and this could cause a lack of concentration. With Inspector you need only one device as it offers both 2D and 3D orientation in the same device and thereby gives you a hand "back" - a hand that can be used for keyboard shortcuts. In this way Inspector not only makes working in 3D easier but also more effective.

Dimentor have developed an innovative and unique product. We have developed the first device which offers you the navigation in both 2D and 3D – simultaneously. Dimentor recently invented the technology and have several patents pending. This unique technology allows you to rotate a ball freely in all directions, causing an identical rotation on the monitor in a 3D environment. We give you an ergonomically and intuitive way to orientate and navigate in 3D.

Inspector is sized as an ordinary 2D mouse and this eases navigation. The design is made in collaboration with several ergonomical designers and research institutes.

Inspector offers all the same functions as an ordinary 2D orientation device such as a mouse or trackball but furthermore it offers smooth 3D navigation right at the your fingertips. 2D and 3D put together offer the needed 6 degrees of freedom to have full control of 3D graphical images and objects.

For additional information about using Inspector with your favorite application, visit the Dimentor web site at www.dimentor.com.

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System Requirements
- IBM or compatible PC with Windows® 2000 or Windows® XP.
- Available USB port. If connection is established via a HUB this must have an external power supply.
- CD-ROM drive.
- 20 MB of available hard-disk space.

Hardware Installation

To install Inspector on your system, connect the cable from Inspector to the USB port on your computer or in a USB hub[1] connected to your computer.
After connecting Inspector to the USB port, you may be prompted to insert the software CD. For help installing the software see the section Software Installation.

1. The USB hub needs its own external power supply connection in order for Inspector to work properly

Software Installation

To prevent possible errors during the installation process, it is recommended to remove any previously installed mouse or trackball software. For help uninstalling previously installed mouse or trackball software please refer to the uninstallment guidelines for the relevant products.

Start Windows[2], insert the enclosed CD into the computer's CD-ROM drive and follow the instructions on the screen. If the installation guide does not start automatically, you can start the installation manually by selecting Run from the Start menu on the taskbar. Type D:\setup.exe in the appearing dialog (D is the designation of your CD-ROM drive).

To enjoy all the advanced features of Inspector, you need to install both the 3Driver and the relevant add-ins. 3Driver is the software suite for Inspector which enables you to configure the buttons on Inspector and customize the device settings. The add-in is the link that makes Inspector work in your 3D application.

You can chose to have 3Driver look for updates automatically. This ensures that the Inspector software is always up to date. **Dimentor recommend automatic updates**. Otherwise, please refer to our website at www.dimentor.com for driver updates.

2. If you are using Windows® 2000 or Windows® XP Pro, you need to use an account with administrator privileges for the installation/uninstallation.

Uninstall 3Driver

To uninstall 3Driver on your system, you should open Control Panel and select Add/Remove Programs. Locate and select 3Driver on the list of currently installed software. Click the Remove button. Installshield will now remove 3Driver from your system.

Uninstall Add-in

To uninstall the add-in on your system, you should open Control Panel and select Add/Remove Programs. Locate and select the desired add-in on the list of currently installed software. Click the Remove button. Installshield will now remove the add-in from your system.

Using Inspector

Inspector is the first device to offer you the unique possibility of performing precise orientation of 3D models and ordinary mouse operations with only one device. Thus, Inspector gives you complete control of any operation. This is the case whether you are working with 3D applications, office applications, or the like.

Inspector contains five programmable buttons, a scroll wheel, a 2D reading device and a 3D orientation ball. These functionalities all contribute to making Inspector an exceptional and highly flexible input device.

The following sections describe the functionalities offered by Inspector in 2D and 3D environments as well as the different possibilities of configuring Inspector to meet your specific demands.

2D Function

Inspector works as a normal mouse in a 2D environment. The movement of Inspector on a surface controls the pointer on the screen in the same way as an ordinary mouse. When installed, all buttons are set to the default settings. This means that the left front button is used for selecting and the right front button for showing the context menu or as an alternate select. The third front button, activated by clicking (pressing down) the scroll wheel, is set to auto scroll. You can use the scroll wheel for scrolling both vertically and horizontally. To scroll, simply rotate the wheel and the active window will move up or down according to the direction in which the wheel is rotated. Finally the right and left side buttons are set to backward and forward respectively.

3D Function

Inspector orientation in 3D environments can be separated into rotation and pan/zoom operations. Inspector offers the most natural navigation available, because rotating the orientation ball performs rotations, and moving the device in a linear manner performs linear motion.

3D Rotation

The orientation ball on top of Inspector handles all rotations in a 3D environment. The orientation ball is directly linked to the 3D model on the screen, which means that when you rotate the ball the model on the screen is rotated likewise.

3D Translation

Pan and Zoom operations can be performed in different ways. By moving Inspector over a surface, as in the normal 2D function area, while pressing at side function key,

you can pan your 3D object on the screen. The scroll wheel controls the depth (zoom) of the 3D object. By rotating the wheel forward the object on the screen moves further one way and vice versa. Please refer to the section Advanced Settings for information on setting up the function keys.

For specific information on using Inspector in your favorite application please refer to the section Add-in or visit the Dimentor web site at http://www.dimentor.com.

Add-in
The add-in is the link between Inspector and your 3D application. Therefore you have to install the add-in for Inspector to work in the application.

SolidWorks Add-in

Inspector provides the possibility of working with SolidWorks in an intuitive manner. All the functionality described in the section Using Inspector is available plus some extra functionality specifically designed for SolidWorks.

Ctrl Rotation

By default the rotation center is set to the models mass center. You can change the rotation center temporarily to a point, line/edge/axes or a surface/plane by selecting the desired rotation center and holding down the Ctrl-key while rotating the model. When using a point as the temporary rotation center rotations around all local axes (x,y,z) can be performed. Using the Ctrl-key while having selected a line, edge or axes will lock all rotations to this exact axis. Likewise, if you activate the Ctrl-key combined with a selection of a surface or plane, all rotations will be performed around the normal to the plane.

Pan Button

You can programme either of the side buttons to handle panning of the model. The programming of buttons is done in the 3Driver configuration panel. Please refer to the section Advanced Settings under Configuring Inspector with 3Driver for help.

Zoom Button

You can programme either of the side buttons to handle zooming of the model. The programming of buttons is done in the 3Driver configuration panel. Please refer to the section Advanced Settings under Configuring Inspector with 3Driver for help.

Special Notes for SolidWorks

To ease orientation, Inspector's built-in orientation tools are disabled while using the standard orientation tools (Rotation, Pan and Zoom) in SolidWorks.

If the model is not moving while rotating the 3D orientation ball, make sure that the add-in is installed and activated. To activate the add-in in SolidWorks, open the Tools menu and select Add-Ins. Locate and verify that the Inspector add-in is selected. If the Inspector add-in is missing, please install the SolidWorks add-in from the CD.

Inspector Software 3Driver

Inspector is delivered with the 3Driver software, which gives you complete control of your Inspector settings. 3Driver software makes it possible to adjust sensitivities, enable/disable features, perform button and scroll wheel assignments, control Pointer movement - in general set up Inspector for Windows®.

For help installing the software please refer to the section Software Installation. The 3Driver configuration panel is placed under Mouse Settings. You can access the 3Driver configuration panel in several ways. You can double click the Mouse icon in the Control Panel, or you can select the Dimentor folder under Programs in the Start menu. Click the 3Driver icon in the Dimentor folder.

If you selected Automatic Updates during installation and have Internet access on your computer, you are sure always to have the latest version of the software. If you have deactivated Automatic Updates, you can always download the latest version of the software from the Dimentor web site at http://www.dimentor.com.

Configuring Inspector with 3Driver

By default the 2D functionality of Inspector works as an ordinary mouse, but by installing the 3Driver you can configure Inspector to fit your needs for both 2D and 3D functionality.

Configuring Buttons

All five buttons on Inspector can be programmed to a wide range of functionalities, ranging from standard mouse functions and different function-keys to definition of the exact meaning of a key. The buttons can be configured on the Inspector tap in the Mouse Properties dialog (see picture on next page).

Each of the five buttons is assigned its own drop-down menu from where you can choose a particular function for the specific button. Two important button assignations for programming buttons for a specific use are KeyPress and KeyStroke.

By selecting the KeyPress option you can activate the Alt, Ctrl or Shift key, and the key stays active as long as you hold the mouse button. The KeyStroke option gives you the possibility to program a combined keystroke to the button.
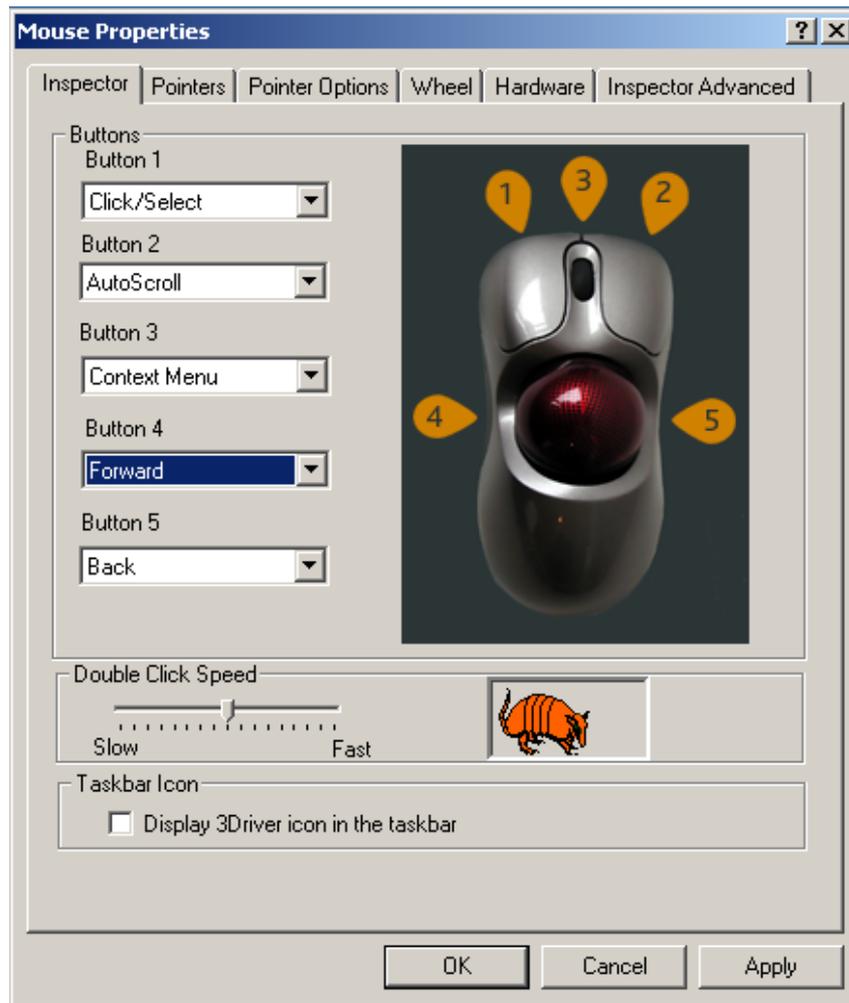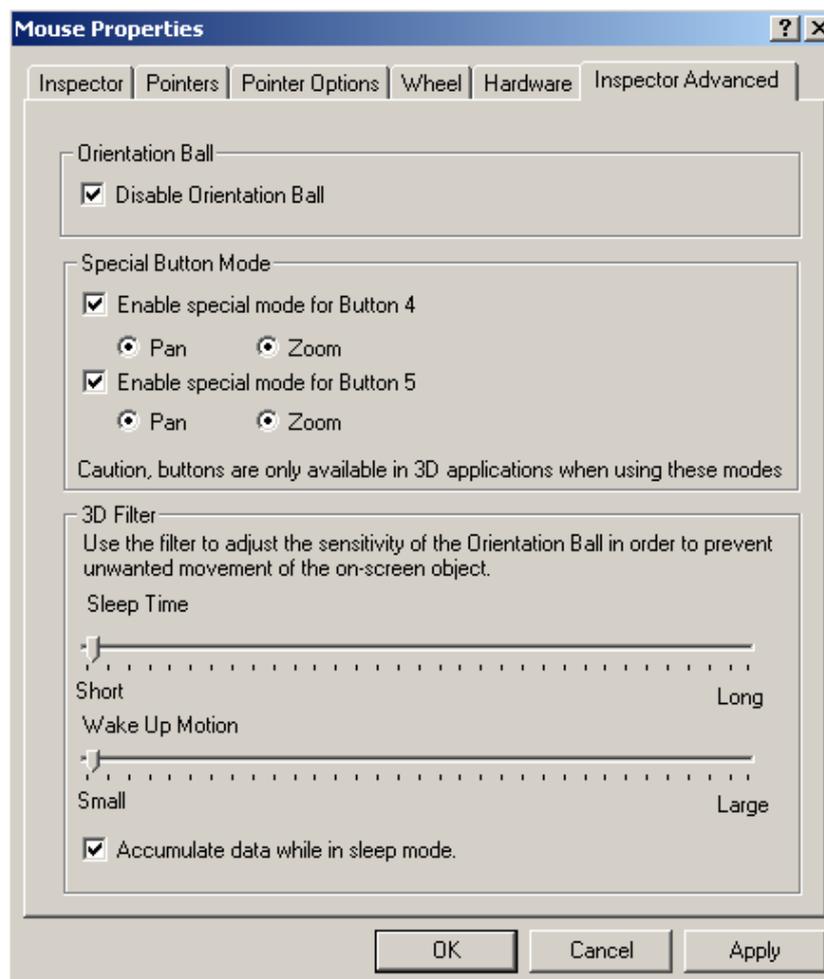
The configuration of the five Inspector buttons is done on the Inspector tab in the 3Driver configuration panel.

Use the Double Click Speed slider to adjust the timing of double clicks. When set to Fast two rapid clicks are needed to activate a double click function. When set to Slow the pause between the two clicks is longer. The sensitivity of the double click speed is tested on the orange Armadillo placed to the left of the slider.

Advanced Settings

By selecting the Inspector Advanced Property Page tab you can configure special settings in Inspector. These settings are described below.

The Inspector Advanced Property Page tab contains options for specialized configuration of the orientation ball and the side buttons.

Orientation Ball

You can select to completely disable the Orientation ball. When the orientation ball is disabled, no applications will receive 3D data from Inspector.

Movement filter for the 3D orientation ball
With the movement filters it is possible to adjust the reading sensitivity on the 3D operation ball in order to prevent unwanted movement of the on-screen object. For instance if the ball is moved unintentionally when using Inspector as a 2D device in a 3D application.
The Sleep Time filter indicates how long the orientation ball must remain inactive for the ball to go to sleep and stop sending data. The Wakeup Motion filter indicates the amount of data required to wake up the ball again.

The Accumulate data while in sleep mode refers to the sleep/wakeup functionality. If the option is selected while the sleep/wakeup functionality is enabled, motions of the orientation ball is collected even though the ball is asleep. If the motion is great enough to wake up the ball the collected previous motion is released.

Special Button Mode

To optimize the work situation in 3D applications you can configure the side buttons to handle Pan and Zoom. If you set up a button to handle i.e. panning, you can pan the model by pressing the appropriate button. Note: setting a button to a special mode disables the button functionality set up on the Inspector tab.

Guidelines for the Work Environment
Inspector is constructed to ensure you the most flexible working conditions possible. This means that there are no specific guidelines for using Inspector. Inspector should be used in the way that suits you best. For instance you might feel more comfortable rotating the 3D orientation ball with the thumb while your hand is resting on Inspector. Or you might feel more comfortable rotating the orientation ball by lifting your hand from Inspector and rotating the ball with several fingers.

The use of a computer and its accessories involves the risk of computer related Repetitive Strain Injury (RSI). So far there is no scientific answer to what causes the injuries. The symptoms of RSI are listed below:

- Tightness, discomfort, stiffness, soreness or burning in the hands, wrists, fingers, forearms or elbows.
- Tingling, coldness or numbness in the hands.
- Clumsiness or loss of strength and coordination in the hands.
- Pain that wakes you up at night.
- Need to massage your hands, wrists and arms.
- Pain in the upper back, shoulders or neck associated with using the computer.

Do not ignore any warning signs; immediately seek professional help.
To decrease the risk of injury and to maximize your comfort while working you should follow the ergonomic guidelines listed below.

- Inspector is designed symmetrically so it can be used with either hand. From time to time you should change your working hand and thereby avoid discomfort by sharing the workload on both hands.

- As the first device ever, Inspector offers you the option to change between the mouse and the trackball as a 2D input device. Using this feature can vary your work situation even more and have significant importance for your comfort.

- Stay relaxed when working. Avoid all kinds of stressful work situations since stress has a tendency to tense your muscles and provoke injuries.

- Do not bend your wrist while working.

- Make sure that your workspace is set up properly. Keep the material that you use most close to you. If you need any documents while typing, keep them close to the monitor to prevent having to turn your head.

- Optimal mouse position - sit back in your chair, relax your arms and lift your mouse hand up, bending at the elbow, until your hand is just above elbow level. The mouse should be positioned somewhere around this point. Don not use the mouse by stretching to the desk or out to the side of a keyboard. With a flat mouse platform, position this 1-2" above the keyboard and over the numeric keyboard if you are right handed - you can easily move it out of the way if you need to access these keys.

- Vary the movement of Inspector; do not use Inspector for long periods of repetitious motion. Vary your working routines; take frequent short breaks. Use your breaks to stretch, massage or just relax. Stretching helps reduce muscle tension. Generally you should not stretch if it hurts. If you already suffer from RSI, some exercises can be harmful. Seek professional help.

- Keep warm while working. Cold tendons and muscles are more liable to get injured.

- Hold the mouse loosely and remove your hand from it when the mouse is not in use.

Maintenance

Due to the technology used Inspector does not require any specific maintenance. Inspector is very reliable as it is based purely on optical technology. However, it should be handled with care to extend its operational lifetime.

If there is a little dust or dirt, which makes the 3D ball move unevenly, or if the sensors seem to read poorly, you can clean the system by following the instructions written below.

1. Pull the USB cable out of the computer or HUB.
2. Remove the ball from the mouse.
3. Clean the ball with a clean cloth.
4. If necessary, clean the lenses for dust or dirt with a cotton stick.
5. Place the ball back in the mouse.
6. Connect Inspector to the computer.

If the screen Pointer seems to not move properly and it is not due to surface texture, please refer to the section Troubleshooting for information on surfaces. It might be caused by dust or dirt on the lens for 2D reading. To clean the lens for the 2D reading device, follow the instructions written below:

1. Pull the USB cable out of the computer or HUB.
2. Turn Inspector around so that the base is pointing upwards.

3. Use a cotton stick to clean the lens.
4. Place Inspector back on your operating surface and plug it back in the computer or HUB.

NB: Do not use any dissolvent for cleaning.

Keep all liquids away from Inspector. Accidental spillage of corrosive liquids can cause severe damage

Do not drop or bump Inspector. Severe impact on the device can damage it.

Troubleshooting

- Inspector does not work.

  If Inspector does not work, the most common problem is a loose cable connection.
  Check that your USB port is correctly configured on your PC. Please refer to the documentation for your PC for correct configuration of your ports.
  If Inspector is connected to the computer by a HUB, check that the HUB is connected in its own power supply.

- The model does not move when moving the 3D orientation ball.

  Make sure that the enclosed software is installed correctly as described in the section Software Installation. Verify that the installed software is activated in the 3D application as described in the section Add-in.

- Image movement is very slow or there is a time lap between the movement of the ball and the movement on screen.

  Dynamic movement of objects on screen is mainly limited by the performance of your PC. The movement on screen can be improved by reducing the number of displayed objects/entities.

- The screen Pointer does not track well.

  Make sure that the mouse is used on the right surface conditions (See the section Using Inspector). Try using the mouse under different surface conditions i.e. using a traditional mouse pad.
  If that does not solve the problem, follow the instructions in the section Maintenance.

- Inspector does not work in the 3D application.

  Make sure that the Inspector software is activated in the application.

- Inspector seems slow or inaccurate in 2D.

The sensor used in Inspector for 2D reading performs best on surfaces with detail to track. It will not function on surfaces without visible detail (like glass) or surfaces where it will be reflected (glossy surfaces). The sensor may also have difficulty tracking on highly repetitive patterns (like some printed photographs from magazines). Furthermore the sensor might have problems reading a red surface similar to the light used in Inspector. To avoid problems with surface readings you can use a traditional mouse pad.

Warranty

Dimentor guarantie that any hardware product accompanying this documentation shall be free from significant defects in material and workmanship for the length of the warranty period. The warranty period may differ according to regional laws and regulations. Please refer to your local reseller.

Remedies

Dimentor's or the reseller's liability and your exclusive remedy for any breach of warranty shall be, at Dimentor's or the reseller's option, to:
- repair or replace the hardware, provided that the hardware is returned to the point of purchase or such other place as Dimentor may direct, with a copy of the receipt, or
- refund the price paid.
These remedies are void if failure of the hardware has resulted from accident, abuse, misapplication, or any unauthorized repair, modification or disassembly.

Limitation of Liability

In no event will Dimentor or its suppliers be liable for any costs of procurement of substitute products or services, lost profits, loss of information or data, or any other special, indirect, consequential, or incidental damages arising in any way out of the sale of, use of, or inability to use any Dimentor product or service, even if Dimentor have been advised of the possibility of such damages. In no case shall Dimentor's and its supplier's total liabilities exceed the actual money paid for the Dimentor product or service giving rise to the liability. The above limitations will not apply in case of personal injury where and to the extent that applicable law requires such liability.

Software License Agreement

This software end user license agreement is a legal agreement between you and Dimentor. Read it carefully, it provides a license to use the software related to Dimentor's product.

You may use this software in relation to any of Dimentor's products. You may not use this software to operate any other hardware or the like. You may not decompile, reverse engineer, disassemble or otherwise reduce the software to a human-perceivable form. You may not rent, lease or sublicense the software. You may not modify the software or create derivative work based upon the software without prior consent from Dimentor.

FCC Regulations

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Any changes or modifications not expressly approved by the party responsible for compliance could void in the user's authority to operate the equipment. Where shielded interface cables have been provided with the product or specified additional components or accessories elsewhere defined to be used with the installation of the product, they must be used in order to ensure compliance with FCC regulations.

Safety

No serviceable parts included. User-observable light is 15 microwatts in normal operation. This device is rated as a commercial product for operation at 1°C to + 45°C.

The product has been tested to comply with international standard IEC 60825:1994. The Standard requires the follow statement:

CAUTION: Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

Class 1 LED Product

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Remember to register your Inspector in order to receive software updates and product news. You can register your Inspector either by filling out the form on the CD or by visiting Dimentor's web site at www.dimentor.com.

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