



# V.SOLID *View*

- √ Integrated 2D and 3D View and Markup
- √ View Data from All Popular CAD Systems
- √ FREE SolidView/Lite Software--  
Share Designs with Anyone

# Contents

<b>Getting Started with SolidView .....</b>	<b>1</b>
<b>Viewing 3D Data .....</b>	<b>1</b>
<b>Viewing 2D Data .....</b>	<b>3</b>
<b>Managing 2D Images .....</b>	<b>4</b>
<b>Measuring with SolidView .....</b>	<b>5</b>
<b>Design Communication with SolidView .....</b>	<b>8</b>
<b>Managing Annotations .....</b>	<b>9</b>
<b>Saving Annotations and Slides .....</b>	<b>10</b>
<b>Publishing SFX Files .....</b>	<b>11</b>
<b>Printing with SolidView .....</b>	<b>11</b>
<b>Interactive Viewing Controls .....</b>	<b>12</b>
<b>Standard SolidView 3D File Formats .....</b>	<b>12</b>
<b>Optional SolidView/Pro File Formats .....</b>	<b>13</b>
<b>Supported SolidView/Pro 2D File Formats .....</b>	<b>13</b>
<b>OpenGL Hardware Acceleration .....</b>	<b>14</b>
<b>Learning More About SolidView .....</b>	<b>14</b>
<b>SolidView Licenses .....</b>	<b>15</b>
<b>Installing SolidView .....</b>	<b>15</b>
<b>SolidView/Pro Network Installation .....</b>	<b>16</b>
<b>Server Installation .....</b>	<b>17</b>
<b>Network Client Installation .....</b>	<b>20</b>
<b>About Solid Concepts .....</b>	<b>Back Cover</b>

# Getting Started with SolidView

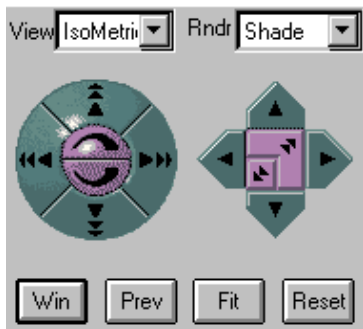
The SolidView family of Products consists of **SolidView/Lite**, **SolidView**, and **SolidView/Pro**. Within this document, the term “SolidView” will refer to any of the SolidView products.

SolidView is a powerful, yet easy to learn, Windows application designed to communicate 3D and 2D design information. Typically, this information was created on a Computer Aided Design (CAD) system, but you do not need to be familiar with a CAD system in order to use SolidView. In fact, SolidView is designed to be used by anyone who normally uses 2D drawings. And since SolidView is an interactive 3D application, most people find it easier to use than 2D drawings. This booklet briefly describes the basic features of SolidView. For a complete description of SolidView capabilities, see the *Svdemo.sfx* file in the SolidView installation directory or the complete on-line help system.

If you have not already installed SolidView, please see *Installing SolidView* on Page 15. You can also run SolidView/Lite from the SolidView CD without installing any software on your computer.

## Viewing 3D Data

SolidView has three primary functions: View, Measure, and Communicate. The most basic function of SolidView is viewing 3D designs. The first step in using SolidView is to load a 3D file. SolidView can read a variety of 3D file



formats such as STL and VRML files, and options are available to read other formats such as IGES. Select the **Open** menu item in the **File** menu to load an STL file. STL files consist of a series of facets or triangles that represent an object or shape, typically a mechanical design generated on a CAD system.

An STL file called *arm1.stl* is included in the SolidView installation directory and it's a good file with which to get

started.

SolidView's simple view buttons make it easy to move the model in the direction indicated by the arrows. The curved buttons rotate the model, while the flat buttons move and zoom the model. Simply click with the left mouse button to change the view as required. Using the right mouse button performs the same function, but in bigger steps. Go ahead and see how each button changes the view.

SolidView supports a number of "standard" views, which can be selected by using the **View** drop down list in the view control dialog.

SolidView also supports a number of display or rendering modes. Since

SolidView performs very well on standard PC hardware, it is usually best to view models in the default Shaded mode. The other modes can be selected using the **Rndr** drop down list in the view control dialog.


To learn about the functions of the other buttons in the view control panel, simply click on the **Win** button and hit the **F1** function key to activate SolidView's on-line help.

You can also rotate an object by holding down the right mouse button and moving the mouse over the view area. With practice, you will find that this is a very easy way to position an object. If SolidView detects that it is taking too long to generate the image when you rotate it this way, it will display and move an outline that represents the object until you stop moving the mouse. This way you can still interactively position the object, even if you are using a slow computer, or working with a very complex object.

## Viewing 2D Data

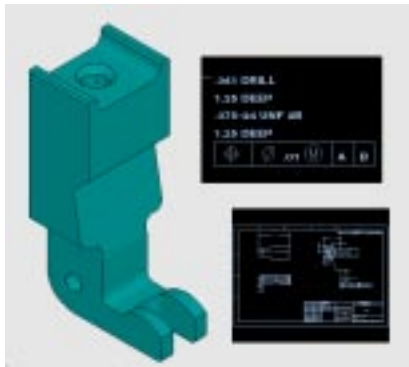
SolidView also lets you view and markup 2D raster and vector images. This feature is designed to enable detailed engineering information, usually only found on 2D drawings, to be displayed alongside SolidView's 3D images. A 2D image or graphic can be added to any SolidView slide by simply clicking



on the Add Graphic  tool button. This will bring up a file open dialog where the proper 2D graphic can be selected. A 2D graphic window can be activated by selecting the 2D graphic.

Once activated, the 2D toolbar will be displayed in the 2D graphic window. The function of each tool button can be displayed by moving the pointer over each button without clicking on the button. You can also view a 2D image by using SolidView's **File | Open** menu.

## Managing 2D Images



Once a 2D image has been added, the image size can be changed by simply clicking on the corner or side of the image as you can do with any standard Window. As with the 3D display in SolidView, you can also pan the image by holding down the **Alt** key while pressing the right mouse button.

The **Windows** menu item makes it possible to cascade and tile the 2D images, as well as hide and show the images. It is important to note that each time a 2D image is added to SolidView, only one copy of that file is loaded and saved in the SolidView file, even if you use the 2D Graphic button to load the same image multiple times. Depending on your communication intent, you may want to have only one 2D image on each SolidView slide, or you may want to have multiple minimized images on one slide—SolidView

gives you the complete flexibility to choose.

A 2D CGM (Computer Graphics Metafile) file called *Arm1.cgm* is included in the SolidView installation directory. Click on the Add Graphic tool button and select this file. Using the 2D tool buttons, you can create a view that displays the 3D object, a 2D GD&T callout, and the full 2D drawing.

## 2D Image Options

Double clicking on a 2D image will display the Markup Graphic Options dialog. This dialog has two tabs, Options and Text. The Options tab enables you to set a variety of options that control the way 2D images are displayed. Use SolidView's context sensitive help to display the functions of each option. The Text tab can be used to set the font, font size, and color of the text of the minimized 2D image.

## Measuring with SolidView

The second primary function of SolidView is measuring a 3D design. For this example, we will use the *Arm1.stl* file that is included in the SolidView installation directory. Please load this file if you have not already done so.

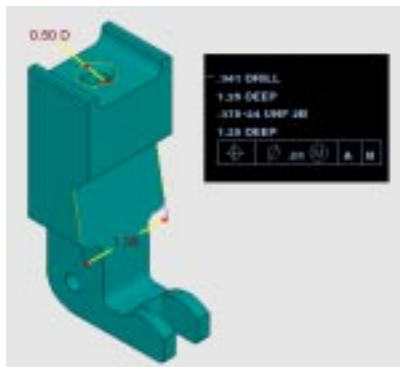


You have probably already noticed the SolidView toolbar along the top of the SolidView window. Each button in the toolbar performs a SolidView function and eliminates the need to use menu items for most SolidView operations.


Simply use the mouse to point to a button (but don't click on it!) to see the name of the function to be performed. The buttons can be used to measure various features of a design.

Move the mouse over each one to familiarize yourself with their functions. Click on the Measure Object button and SolidView will calculate everything from the basic dimensions of the object to its volume and surface area.

You will notice the information is displayed in the Measure Object dialog as well as on the model itself.

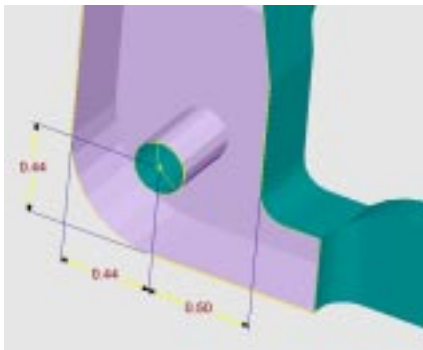


Clicking on the **Done** button in the dialog will clear the information. If you want to clear the dimensions from the model, use the Erase Annotations button or Erase ALL Annotations but-

ton, as shown here:  You can also use the **Del** key to erase the selected annotation.

Once you have erased the annotations, use the **View** menu in the view dialog to select the **IsoMetric** view of the Arm1 model. Then click on the Measure Arc button.

Next use the mouse to select the hole on the top of the object. SolidView will then calculate the diameter and other features of the arc and display the information in the dialog on the right. SolidView also creates a diameter dimension on the model. If you want to change the attributes of the dimension, such as the text size, simply double-click on the dimension. Using the other measurement



buttons, you can measure distances between faces, edges, and vertices, as well as angles and other design features.

## Section Views

With SolidView, you can define a section for viewing, measuring, and exporting to a 2D DXF file. To define a section, use the **Measure | Define Section** menu item, or click on the Define Section tool button.

The Define Section dialog is used to identify the section plane and position, as well as how the section is displayed. To position the section plane, use the slider or click on the object. The **C** button will center the section plane on the object and the **A** button will animate the section through the object or objects. Once the section has been properly positioned, click on the **Done** button to complete the operation. Once the section has been defined, you can use any of SolidView's measurement

tools to measure features of the section. Multiple objects can be sectioned at one time by using the **Select** menu item to select the objects prior to defining the section.



In addition to creating measurement dimensions, SolidView also lets you add text, notes, boxes, arrows, and red-line markups using the follow-

ing buttons:


Collectively, these are called annotations, and in the next section you will see how they can be used with SolidView’s record and playback capability to facilitate true design communication.

### **Design Communication with SolidView**


With SolidView it’s easy to add markups, such as arrows, circles, text, and notes, to a 3D view or 2D image. These markups can be used to highlight errors, suggest changes, or to call attention to particular design features. Any markup can be added to a 2D image, with the exception of another 2D image. Markups must begin and end inside a 2D image—they cannot extend outside of the image.

One of SolidView’s most powerful features is its ability to record and playback multiple views or “slides”. Each slide can have its own set of measurements or annotations, as well as its own views of the model. This makes it possible to create an “electronic” design review for effective design communi-

cation.

To create a simple slide show with SolidView, first add a few annotations to the model and then select the Save Slide button: 


This will bring up the save slide dialog where you can rename the slide, add a description, and set a display time. After you have saved the first slide, use the Erase ALL Annotations button or the Del key to clear the annotations that will not be in the next slide. You can then add any new annotations or 2D images, change the view, or create a section view before you save another slide.

Once you have saved all the slides, you can replay them using the slide playback buttons: 

## Managing Annotations

SolidView makes it easy for multiple people to review and comment on a design. A feature called authoring keeps track of who adds annotations to an SFX file and when they were added. Navigation tools enable users to review existing annotations based on author. To use this feature you must select the **Annotate | Authoring Mode** menu item. Once authoring has been enabled, you must register as an author before you create any annotations. Select the **Annotate | Author Registration** menu item to display the Author Registration dialog. If desired, you can add a password to prevent others from changing your annotations, and you can select a color scheme to make your annotations easy to identify. In order to properly review authored annotations, you

must save at least one slide, using the SolidView Save Slide button . If authoring is enabled, but no author is registered, any attempt to create an annotation will result in the Author Registration dialog being displayed. To review annotations, select the **Annotate | Author Navigation** menu item to display the Author Navigation dialog. The Author Navigation dialog has options that enable you to set the way in which annotations are displayed. Once author navigation

is enabled, use the slide playback buttons  to review the annotations. Please note that if author navigation is enabled, but no authors are selected to be shown, no annotations will be displayed.

## **Saving Annotations and Slides**

The STL file format that SolidView uses does not support things like slides and annotations. In order to save these features with your model, you must save the file in SolidView's SFX format. In addition to saving all the annotation and slide information, SFX files have the additional benefit of being much smaller than standard STL files.

This would be a good time to go ahead and save your file by using the **Save SFX** function in the **File** menu. Once you have saved an SFX file, this file can be sent to anyone who needs to view the slides and annotations you have created. You might think that they would need a copy of SolidView in order to read the SFX file, but that is not the case. In order to provide effective design communication, SolidView can “publish” an SFX file, complete with a copy of SolidView/Lite, which allows the recipient to view the slides and annota-

tions you have created. In fact, SolidView/Lite includes most of the viewing and measuring capabilities of SolidView, but it only operates on SFX files. You can freely distribute copies of SolidView/Lite, subject to the SolidView/Lite license agreement.

### **Publishing SFX Files**

To publish an SFX file, complete with a copy of SolidView/Lite, simply select **Publish SFX** from the **File** menu. SolidView will prompt you for a file name, and then display the publish dialog.

Published files are always executable files (of type EXE) because they are actually multiple files saved as a self-extracting program. Within the publish dialog, you can set a password or include SolidView/Lite. The password is useful if you are sending the published file over the Internet as the file cannot be extracted without the password. Since many systems block emails containing .exe files, it may be preferable to simply save an .sfx file and forward a link to **www.solidview.com** where the recipient can download SolidView/Lite for free.

Once you have published a file, it can be sent to anyone with a Windows PC, using any method suitable for transmitting a binary computer file.

### **Printing with SolidView**

SolidView is designed to work with both color and monochrome Windows

printers. Select the **File | Preferences** menu item and then select the **Printing** tab to set the printing options. Press the F1 function key to display on-line help for the SolidView printing options.

## Creating VRML and HTML data

You can save your SolidView files in VRML and HTML formats for viewing with standard web browsers. Use the **File | Save SFX** menu item and select a file type of HTML, VRML 1.0, or VRML 2.0.

## Interactive Viewing Controls

<b>Arc Ball</b>	Right Mouse	
<b>Axis Arc Ball</b>	Right Mouse	+ Ctrl Key
<b>Zoom Window</b>	Left Mouse	+ Alt Key
<b>Drag Zoom</b>	Left Mouse	+ Ctrl Key + Alt Key
	Right Mouse	+ Ctrl Key + Alt Key
<b>Drag View</b>	Right Mouse	+ Alt Key
<b>Move Light</b>	Right Mouse	+ Shift Key
<b>2D/3D Pan</b>	Middle Mouse	
<b>Zoom</b>	Intellimouse wheel	

## Standard SolidView 3D File Formats

<b>OBJ</b>	Object file (Alias, Wavefront)
<b>SFX</b>	SolidView
<b>SLDPRT</b>	SolidWorks part file
<b>SLDASM</b>	SolidWorks assembly file

<b>STL</b>	Stereolithography
<b>SV</b>	SolidView 1.0 format
<b>WRL</b>	VRML Virtual Reality Modeling Language

### **Optional SolidView/Pro File Formats**

Direct interfaces for reading native 3D and 2D CAD and industry standard data files are available for SolidView/Pro. Called “Plugins”, these optional interfaces enable non-CAD users to view and measure native CAD data without any translation. Plugins for Pro/E, Catia, Unigraphics, SDRC, STEP, Parasolids, IGES, VDA, ACIS, SolidEdge, and other formats are available from your Authorized SolidView reseller. See [www.solidview.com](http://www.solidview.com) or click on “Supported File Formats” in SolidView’s online Help for the latest information on the available CAD interface plugins.

### **Supported SolidView/Pro 2D File Formats**

<b>BMP</b>	OS/2 or Windows bitmap	<b>PCT</b>	Macintosh PICT
<b>CGM</b>	Computer Graphics metafile	<b>PCX</b>	ZSoft Paintbrush
<b>DXF</b>	Autodesk Interchange	<b>PNG</b>	Portable Net. Graphics
<b>DWG</b>	Autocad drawing	<b>RAS</b>	Sun Microsystems
<b>EMF</b>	Enhanced Windows metafile	<b>TARGA</b>	Truevision
<b>GIF</b>	CompuServe	<b>TIFF</b>	Tagged Image File Format
<b>HPGL</b>	HP Graphics Language	<b>TXT</b>	Text document
<b>HPGL2</b>	HP Graphics Language	<b>WMF</b>	Windows metafile
<b>JPEG</b>	JPEG group		

## **OpenGL Hardware Acceleration**

If you have a graphics board that supports OpenGL accelerated graphics, you can enable this by selecting the Hardware Acceleration option under the Rendering tab in the **File | Preferences** dialog. By default, hardware acceleration is disabled in SolidView as the latest video drivers may be required in order for a particular graphics board to operate correctly. If you encounter problems while using hardware acceleration, you should contact your video board supplier and verify that you have the latest video drivers installed.

## **SolidView DDE Interface**

SolidView supports Dynamic Data Exchange (DDE). DDE is an established protocol for exchanging data between Windows-based applications. For more information on SolidView's DDE commands, see the DDE topic in SolidView's online help, or the Access or DDE directory in the Samples folder on the SolidView CD-ROM.

## **Learning More About SolidView**

In addition to the features described in this booklet, SolidView has many more features designed to make it easier to communicate design information. SolidView's complete on-line help provides reference information for all SolidView functions. If you need additional help, or if you have any questions regarding SolidView, you should contact your SolidView reseller, visit [www.solidview.com](http://www.solidview.com) or you may contact us via email at

[support@solidview.com](mailto:support@solidview.com). You can also contact us via the World Wide Web, phone, or fax, as shown on the back of this booklet.

## **SolidView Licenses**

**SolidView/Lite** does not require any license key or registration process. It may be installed on one computer and shared over the network, subject to the terms of the SolidView/Lite License Agreement. The **SolidView** product cannot be shared over the network. **SolidView/Pro** may be shared over the network, if you have purchased a Network license. If you did not purchase a **SolidView/Pro** Network license, you can only access **SolidView/Pro** from the computer on which it is installed. Whether your installation is a Network License or Single-Computer License is determined by the Program Key entered at the end of the installation process. Regardless of the license type, the basic installation process is the same.

## **Installing SolidView**

The SolidView CD-ROM contains SolidView software, demonstration files, and sample data files. To install SolidView software, run or install the demonstration files, or browse the contents of this CD-ROM, insert the SolidView CD in your CD-ROM drive. If the Setup program does not start automatically then:

1. From the Start menu, select Run.
2. In the Open field, enter x:\setup, where x is the letter of your CD-ROM drive.
3. Select OK.

The first time you run the Setup program, you will be prompted to enter your SolidView serial number from the back of this booklet or the CD-ROM jacket. After the Setup program has started, you will have menu options to view demos, install any SolidView products or options, learn more about SolidView, or browse the CD.

At the end of the installation procedure, you will be prompted for a Program Key. You must contact your authorized SolidView Reseller, or Solid Concepts (phone 661-257-6699, fax 661-295-6877, or email [support@solidview.com](mailto:support@solidview.com)) to obtain a password and run SolidView. **Registered users can obtain a permanent or trial key 24 hours a day from [www.solidview.com](http://www.solidview.com).** Click on the Help button in the Program Key Required dialog for more information on how to obtain a Program Key.

### **SolidView/Pro Network Installation**

SolidView/Pro can be installed on a network under a number of concurrent users license. SolidView/Pro can only be installed on a network if you have purchased a SolidView/Pro network license. A SolidView/Pro network license allows a specific number of SolidView/Pro users to access a copy of SolidView/Pro installed on a server. The networked version of SolidView/Pro will run on any network that supports the following:

#### SolidView/Pro Program Directory

A Network Directory mountable with a drive letter by a Windows Client for at **least read access**. This directory will contain the installed

SolidView/Pro executable program.

### SolidView/Pro NetLicense Directory

A Network Directory shared for read/write with a UNC name (Universal Naming Convention). This directory will contain the network license file. **All clients MUST be able to read/write the file.**

The Microsoft Windows network meets these requirements.

### **Server Installation**

The SolidView/Pro server may be Windows NT, Windows 95/98/ME , any Windows 2000, Windows XP, or any other FILE SERVER supporting the conditions above. If you have purchased a SolidView/Pro Network License, you will be prompted to select the network installation type, either **Network Drive** or **Windows File Sharing**. In general you should select the default Network Drive option. If you are using Windows 95/98/ME as your SolidView/Pro server and you are concerned about giving users write access to the SolidView/Pro program directory, you can select Windows File Sharing and create a separate Read/Write share for the SolidView/Pro NetLicense Directory.

The default network installation will use the following directories:

#### SolidView Program Directory:

**c:\Program Files\Solid Concepts Inc\SolidViewPro** to be shared as  
\\<SERVER>\SolidViewPro.

This directory must be mapped by the clients with a drive letter such as S:

SolidView NetLicense Directory:

c:\Program Files\Solid Concepts Inc\SolidViewPro\SVIEWNET to be shared for **WRITE** access as \\<SERVER>\SVIEWNET

This directory is not mapped by the clients.

Installation Steps:

- 1 Install SolidView on the Server. You will not be prompted for any of the network parameters until after you have entered your SolidView/Pro program key.
- 2 You must contact your Authorized SolidView Reseller or Solid Concepts (phone 661-257-6699, fax 661-295-6877, or email [support@solidview.com](mailto:support@solidview.com)) to obtain a password and run SolidView. **You can obtain a network key 24 hours a day from [www.solidview.com](http://www.solidview.com).** Click on the Help button in the Program Key Required dialog for more information on how to obtain a Program Key.
- 3 Select the network installation type.  
After entering the SolidView/Pro program key, you will be given the choice of selecting a Network Drive or Windows File Sharing installation.
- 4 Specify the NetLicense Directory on the Server.  
SolidView will prompt you for a network directory such as

c:\sldview\sviwnet. This directory will be used to track network licenses and **must be shared with read/write access for all clients**. Using a subdirectory is recommended since it protects application files.

- 5 Specify the UNC name to the NetLicense Directory. SolidView will then prompt you for the UNC network path for the NetLicense directory created above. The network path must follow the UNC (Universal Naming Convention) format which consists of two back slashes ‘\’ followed by the server name, followed by another back slash ‘\’ and the network share name such as \\<SERVER>\directory. SolidView clients will use this network path to access the license file ‘sldview.net’.
- 6 Exit SolidView/Pro.
- 7 Configure your server to share the SolidView/Pro install directory (c:\Program Files\Solid Concepts Inc\SolidViewPro) with read access for all clients.
- 8 Configure your server to share the SolidView network directory (c:\Program Files\Solid Concepts Inc\SolidViewPro\sviwnet) with **read/write** access.
- 9 If you want SolidView to create a log file to enable monitoring of the network license, create a MS-DOS text file with the name “sldview.log” in the \sviwnet folder.

## Network Client Installation

- 1 Connect to the server and network drive where SolidView/Pro was installed using the Network Neighborhood icon or the File Manager. (The share name \\<SERVER>\SolidViewPro should be what you want. Check with your Network System Administrator, if needed.) **Since you will need access to this same network drive with the same drive letter, it is highly recommended that you specify that the connection is reestablished next time you log in.**
- 2 Run SolidView/Pro.  
Using the File Manager or Explorer, open the drive mounted above and double click on 'sldview.exe' or use the Program Manager's run command and specify <s>:\sldview.exe where <s> is the drive letter you specified when mounting the SolidView Program Directory above.
- 3 SolidView will prompt you to determine if you want to perform Network Setup (this allows each Client to have its own SolidView/Pro defaults). Select **OK** to continue with the Client Network Setup.
- 4 SolidView/Pro will then prompt you for a local directory to install defaults and other information (< 200K required). This directory will be used to save the user's default settings in a file called 'sldview.df'.

- 5 SolidView/Pro will then prompt you for a Program Group Name. Several icons and start menu options will be created for accessing SolidView/Pro and SolidView Help.

This concludes the Network Client Installation Process.

## About Solid Concepts

Solid Concepts Inc. is the world's leading supplier of third-party software for the rapid prototyping industry and is a recognized leader in rapid prototyping and manufacturing. Founded in 1991, the Company has enjoyed tremendous growth, fueled by a commitment to service and constant technical innovation.

SolidView® is a registered trademark of Solid Concepts Inc.

Other names are trademarks or registered trademarks of their respective owners

SolidView Serial No:

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