

Accurate

TECHNOLOGY INC.

Linear Digital Measuring Systems

ProScale VDRO™

Virtual Digital Readout PC Software

The screenshot displays the ProScale VDRO software interface. The main window has a menu bar with 'File', 'Axis Configuration', 'System Configuration', 'Database', 'Charts', 'Tools', and 'Help'. The central area shows large digital readouts for 'X' (1.002) and 'Y' (1.981). To the right, 'X Error' is 0.002 and 'Y Error' is -0.019, both in green boxes. Below the readouts are 'Datum X' and 'Datum Y' buttons. On the left, there are radio buttons for 'Inches' (selected) and 'Millimeters', and a 'Part Search' button. On the right, the 'Part Data' section contains 'Part ID' (Test Part) and 'Desc.' (Test Part 1). Below this, there are two columns of data: 'X Axis Data' and 'Y Axis Data'. The 'X Axis Data' column has 'Nominal' (1.000), 'Upper' (1.100), and 'Lower' (0.900). The 'Y Axis Data' column has 'Nominal' (2.000), 'Upper' (2.100), and 'Lower' (1.900). At the bottom, a status bar indicates 'Data Sample Recording Not Enabled'.

X Axis Data		Y Axis Data	
Nominal	1.000	Nominal	2.000
Upper	1.100	Upper	2.100
Lower	0.900	Lower	1.900

User Manual

WARRANTY

Accurate Technology, Inc., warrants this product against defective parts and workmanship for 1 year commencing from the date of original purchase. Upon notification of a defect, Accurate Technology, Inc., shall have the option to repair or replace any defective part. Such services shall be the customer's sole and exclusive remedy. Expenses incidental to repair, maintenance, or replacement under warranty, including those for labor and material, shall be borne by Accurate Technology, Inc. (Including freight or transportation charges during the first 30 days).

Except as expressly provided in this warranty, Accurate Technology, Inc., does not make any warranties with respect to the product, either expressed or implied, including implied warranties of merchantability or fitness for a particular purpose, except as expressly provided in this agreement.

Accurate Technology, Inc., shall not be liable for any special, incidental, or consequential damages or for loss, damage or expense directly or indirectly arising from the customer's use of or inability to use the equipment either separately or in combination with other equipment, or for personal injury or loss or destruction of other property, or from any other cause.

To request repair work (either warranty qualified parts or not), contact Accurate Technology, Inc. directly by phone, fax, or e-mail. A Returned Merchandise Authorization (RMA) number is required before returning a product for repair.

© 2008 Accurate Technology, Inc.

The contents of this document are protected by the copyright laws of the United States of America. The contents of this document may not be reproduced by any means, electronic or otherwise, without the expressed written permission of Accurate Technology, Inc.

IMPORTANT NOTICE

The software described in this document is protected by an encryption method that limits the operation of the software to the hardware of **one computer** after purchase. Be sure to choose the desired computer hardware prior to purchase and final installation of the software.

Accurate Technology, Inc.
+1 828.654.7920 800.233.0580 828.654.8824 (F)
www.proscale.com info@accurate-technology.com

Table of Contents

SECTION 1	
GENERAL INFORMATION	5
Introduction	5
Hardware Requirements	6
Software Features	6
SECTION 2	
INSTALLATION	7
Interface Hardware	7
ProRF Wireless Receiver	7
ProMUX-3 Wired Multiplexer	7
VDRO Software	7
CD-ROM Installation	7
Archive File Installation	7
Common Installation Steps	7
Evaluation Screen	8
Purchasing the Software	9
SECTION 3	
ADMINISTRATION & CONFIGURATION	12
Administration	12
First Time Software Configuration	12
Entering Administrator Operation	12
Changing the Default Password	12
Software Configuration	13
Selecting the Interface Hardware	13
Selecting a Serial Port	13
Choosing the Correct Serial Port	14
Choosing the Number of Axes to be Active	14
Configuring the Interface Hardware	15
Initial Axis Configuration	16
File Location Configuration	17
Readout Precision	18
Database Configuration	19
Creating a New Part	19
Editing an Existing Part	20
Deleting an Existing Part	21
SECTION 4	
OPERATION	22
Main User Screen	22
Measurement Sampling	23
Measurement File Directory	23
Loading a Part File	24
Creating a Part Measurement File	24
Making a Measurements	25
Measurement File Format	25
Measurement File Header	25
Measurement Data Format	25

Measurement File Example	26
Measurement Acquired Message	27
Auto Save on New Data	28
Graphical Charting	29
Measurement Error Distribution Histogram	29
Bell Curve	29
Histogram Limits	29
Tools Menu	30
Clear Part Data	30
Print Test Label	30
Part Info PDF	30
Appendix A – Barcode Scanner Option	31
Recommended Barcode Scanner	31
Recommended Barcode Symbology	31
Barcode Scanner Installation	31
Barcode Scanner Operation	31
User Supplied Barcode Scanner	31
Unsupported Barcode Scanners	31
Unauthorized Barcode Scanner	31
Appendix B – Label Printer Option	32
Recommended Label Printer	32
Label Printer Hardware Installation	32
Label Printer Configuration	32
Configure the Printer Serial Port	33
Field X and Y Locations	33
Barcode Printing Option	33
Label Configuration Values	33
Printing a Test Label	33
User Supplied Printer	33
Appendix C – Product Upgrade	34
Standard	34
Professional – Charting	34
Professional – Barcode	34
Professional – Printer	34
Professional – Full	34
Appendix D – Deactivate Product	35

Introduction

The ProScale Dual Input Virtual DRO software is designed to provide a cost effective solution for QC measuring applications where one or two axes of part measurement must be checked and/or recorded.

This software is designed to be used with either the ProRF wireless PC receiver or the ProMUX-3 multiplexer. In either case, the electronics interface acquires measurement data from one or more ProScale™ measuring systems and relays the measurement data to the VDRO software.

The measurement data can then be compared to part geometry data stored in a database. Each part record in the database consists of:

- Part ID (Part number, text and/or numeric data).
- Part description, up to 50 characters long.
- X and Y measuring parameters, including:
 - Nominal Value.
 - Upper Limit.
 - Lower Limit.
- An image file name. This is used when searching for a part to provide the correct part selection verification.
- A PDF file name (that can contain user defined part information such as prints, specifications, etc.).

Measurements of individual parts can (optionally) be stored to a data file on the computer. This data file includes the part parameters from the database plus the recorded results from each part measured. Each part is identified by a part number and includes:

- Time the measurement was recorded.
- Actual measurements for X and Y.
- Error between the actual measurement and the nominal measurement.
- In-specification result for X and Y based on the defined upper and lower limits.

The stored data file is in CSV format that can be easily imported by Microsoft® Excel™ or other spreadsheet software such as Open Office® Calc™. Once imported to a spreadsheet, the data can be manipulated as required.

1	Start Date:	10/22/2008							
2	Start Time:	10:43:01 AM							
3	Part ID:	501-1025-001							
4	Description:	Connector link							
5	Nominal X:	1 inches							
6	Upper Limit X:	1.1 inches							
7	Lower Limit X:	0.9 inches							
8	Time	Sample Number	X Measurement	X Error	X In Spec				
9	10:43:08 AM	1	1.1799	0.1799	NO				
10	10:43:11 AM	2	1.136	0.136	NO				
11	10:43:13 AM	3	1.0689	0.0689	YES				
12	10:43:16 AM	4	1.0039	0.0039	YES				
13	10:43:18 AM	5	0.976	-0.022	YES				
14	10:43:21 AM	6	1.0339	0.0339	YES				
15	10:43:23 AM	7	0.9929	-0.0071	YES				
16	10:47:23 AM	9	1.1661	0.1661	NO				
17	10:47:26 AM	10	1.0726	0.0726	YES				
18									
19									
20									
21									
22									
23									
24									
25									
26									
27									
28									
29									
30									

Hardware Requirements

The following equipment is required to use the Virtual DRO software and perform part measurements.

- A one or two axis precision measuring system such as the Accurate Technology ProTable™ or ProTable-CAB™ measuring system.
- Either an ProRF wireless PC receiver **OR** ProMUX-3 multiplexer.
- A Pentium class (or greater) computer running Microsoft® XP or Vista. The computer must have a serial port (or utilize a USB to Serial port converter) when using the ProMUX-3 multiplexer. The ProRF can utilize either a serial port or USB port directly. *The computer must have Internet access during the software installation to receive any necessary support upgrades from Microsoft.*

Note: If the measuring system is an in-house design and NOT a ProTable product, it is the customer's responsibility to assure the measuring accuracy of the system.

Software Features

Standard features of the Virtual DRO software:

- One or two axes of operation
- Programmable position datum preset for each axis.
- Programmable axis direction for each axis.
- Parts database for storage of part geometry parameters. Parts can be created, edited or deleted.
- Administration user code. Prevents unauthorized changes to the software parameters or database. The user code can be reprogrammed from the default value.
- Programmable measurement display precision. 1 to 4 decimal places in inches, 1 to 2 decimal places in millimeters.
- Programmable communications port.
- Programmable input device selection (ProRF or ProMUX-3).
- Part measurement recording to .csv file.
- Show associated part image when a part is selected.
- Display a PDF document associated with the part.

Optional Features:

- Histogram charting of recorded measurements.
- Selection of a part from the database using a barcode scanner.
- Print an adhesive label for the measured part consisting of:
 - Part dimensions (L x W).
 - Part ID.
 - Time and date of measurement.
 - Optional barcode of part ID.

Interface Hardware

The VDRO software will support either the ProRF wireless receiver **OR** the ProMUX-3 wired multiplexer. The following section describes the required hardware configuration for each. **Only one setup procedure must be completed based on the hardware interface used.**

ProRF Wireless Receiver

A typical computer installation of a ProRF receiver uses a USB port. This installation procedure is outlined in the ProRF user's manual. A summary of the process is given below:

1. Install the supplied USB drivers on the target computer **BEFORE** connecting the ProRF receiver.
2. After the drivers are installed, plug the ProRF receiver into a USB port. The computer will finalize the driver installation of the ProRF receiver.

When using the ProRF receiver with a USB port, no external power supply is required. If the user desires to use the serial port interface, follow the procedure outlined in the ProRF user's manual. **Note: The ProRF is configured, by default, for USB operation.** If the serial port interface is used, the internal jumpers JP2 and JP3 must be positioned on pins 1 and 2 for proper operation. In addition, an external power supply must be used to power the receiver. See the ProRF user's manual for details.

ProMUX-3 Wired Multiplexer

The ProMUX-3 is a hard wired multiplexer typically used to interface ProScale ABS encoders directly with a computer. In the case of the Virtual DRO software, a maximum of two encoders are used, one for X and one for Y. Connect the ProMUX-3 to the computer as described in the ProMUX-3 user's manual using the provided DB-9 cable and power supply. Connect the X encoder to Port 1, and the Y encoder to port 3.

VDRO Software

VDRO requires Microsoft's .NET Framework version 3.5 to be installed on the target computer prior to installation. If the computer does not have Microsoft .NET Framework 3.5 installed, the user has two options to obtain the required files:

- A. If a high speed Internet connection is available to the computer, the VDRO Setup program will automatically download and install the .NET files prior to the software installation.
- B. A copy of .NET framework 3.5 is included on the Virtual DRO installation CD and can be manually installed prior to running the setup program. The user can also download a copy of the .NET framework from Microsoft at: <http://download.microsoft.com/>

For the remainder of this section, it will be assumed that the target computer has access to a high speed Internet connection.

The VDRO software is distributed in two formats:

CD-ROM Installation

Insert the CD-ROM into the CD drive. The setup program will automatically start. If the setup program does not start, navigate to the CD-ROM drive, and double click setup.exe.

Archive File Installation

Open the archive with WinZip® or other archive software. Double click on setup.exe. The setup program will start.

Common Installation Steps

Once setup has started, the program will automatically check if the latest version of .NET is installed on the computer. If not, the .NET Framework will be downloaded from the Microsoft™ site and installed. This operation may require the computer to be restarted.

Once the .NET framework is installed, setup will install the Virtual DRO software and add a shortcut for the software to the Start menu.

Evaluation Screen

Demonstration versions of VDRO are **full featured - all options included** software. The software is fully operational for a period of 15 days from initial installation. The user can purchase the software at any time during the trial period. After the trial period has expired, the software will not execute.

When the demo version of VDRO is launched, the screen shown below is displayed:



This screen provides the following information and options:

- A. Time remaining in the evaluation period.
- B. The option to register the software after purchase by clicking "Register".
- C. Continue the evaluation period by clicking "Try".
- D. Abort the software by clicking "Cancel".

To run the software in DEMO mode, click on the **Try** button.

Purchasing the Software

There are five registered versions available for purchase. Each version provides a different set of options. The customer may choose to purchase only the options required for their application. The five registered versions are:

- Standard
- Professional - Charting
- Professional - Barcode
- Professional - Printer
- Professional - Full

Standard: This version provides basic measurement capabilities, parts database cataloging and measurement sample file generation. It does not support charting, barcode scanning or label printing.

Professional – Charting: This version includes all of the features of the **Standard** version and adds **Charting** capability.

Professional – Barcode: This version includes all of the features of **Standard** version and adds **Charting** and **Barcode Scanning**. This package includes a Symbol® LS2208 handheld barcode scanner.

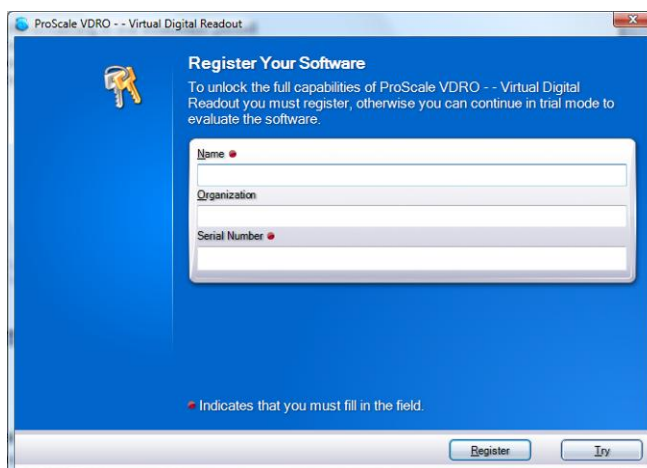
Professional – Printer: This version includes all of the features of **Standard** version and adds **Charting** and **Label Printing**. This package includes a Zebra LP-2844 direct thermal label printer.

Professional – Full: This package includes **Charting**, **Barcode Scanning** and **Label Printing** capabilities along with the necessary hardware to scan barcodes and print labels (Symbol® LS2208 handheld barcode scanner and Zebra LP-2844 thermal printer).

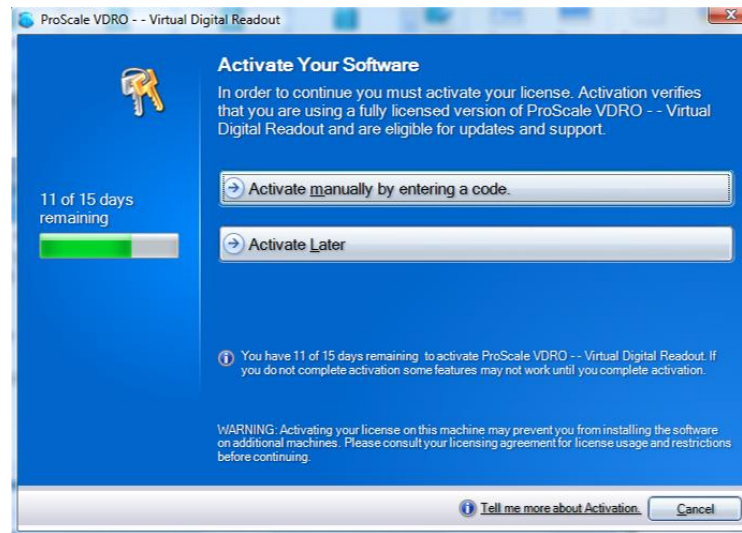
NOTE: The software is licensed to the specific machine on which it is installed. You will not be able to install the software permanently on another machine until it is removed from the primary computer. See Appendix D.

To purchase the software and register it for permanent operation on a specific computer, complete the following:

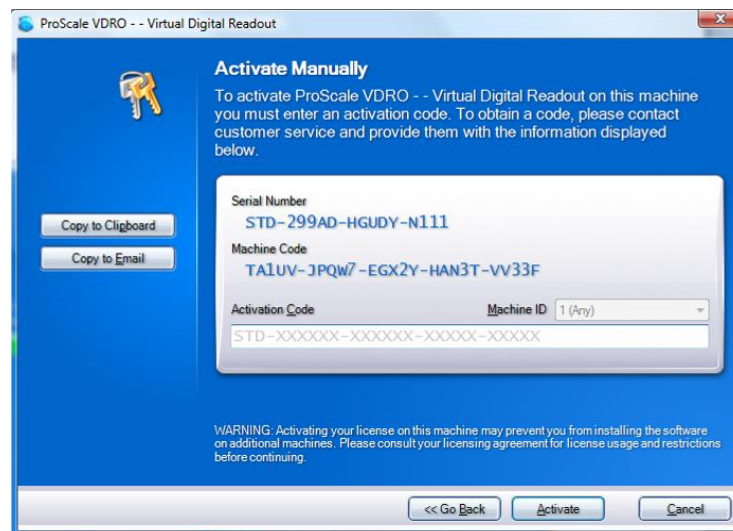
1. Contact Accurate Technology, Inc. to purchase the desired version of the software at 800-233-0580 (Toll free in the U.S.) or at +1-828-654-7920 or by email: sales@proscale.com. We accept Visa, MasterCard, American Express or Discover.
2. After the payment has been completed, a serial number will be provided by email. Click on the “Register” button. The following screen will be shown:



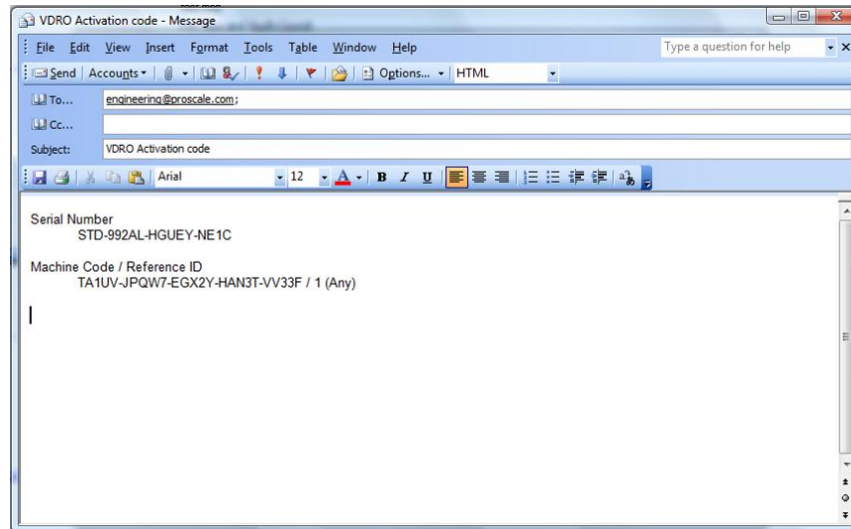
3. Enter a user name into the Name field. Cut and paste the serial number from the email you received from Accurate Technology into the Serial Number field. Click the "Register" button. The form below will be displayed.



4. Click on the "Activate manually by entering a code" button. This will bring up the next screen.



5. Click on the "Copy to Email" button if you use Microsoft Outlook™ or another email software. This will launch a new email message with the necessary information already embedded into the body of the message. If you use a web-based email tool, click on the "Copy to Clipboard" button. This will store the Serial Number and Machine Code to the Windows clipboard. Open your web browser, navigate to your email page and create a new email message. Paste the data from the clipboard into your email message as shown:



6. Email the message to engineering@proscale.com. An activation code will be emailed back to you within 48 hours or sooner. Highlight and copy the activation code to the clipboard using Control + C and paste it into the activation field as shown on the previous page. Press the "Activate" button. If all is correct, the VDRO application will launch and the registration process is complete.

NOTE: The software is now licensed to the specific machine on which it was installed. You will not be able to install the application permanently on another machine unless you complete either of the following:

1. Purchase an additional copy of the software for use on another machine.
2. Deactivate the software from the current machine and re-install it onto another machine. Note: You must follow the procedure in Appendix D to properly transfer the license from the current machine to a new machine.

SECTION 3

ADMINISTRATION & CONFIGURATION

Administration

The VDRO software has two levels of operation:

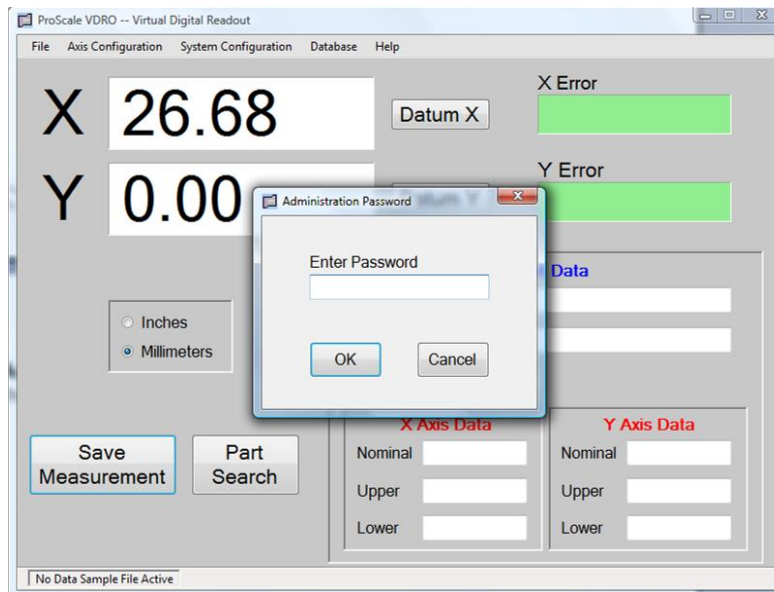
- User Level – The standard mode of operation for the software. Allows the user to open available part files for measurement use, and if configured, create and build measurement sample files.
- Administrator Level – A supervisory mode of operation for the software. This mode allows a supervisor to configure the software. This includes adding, editing and deleting parts from the database and setting parameters for software operation.

First Time Software Configuration

All steps in this section should be completed prior to initial use.

Entering Administrator Operation

To access the software administration, click on the *System Configuration* menu and select *Enable Administration*. A dialog box will be shown.



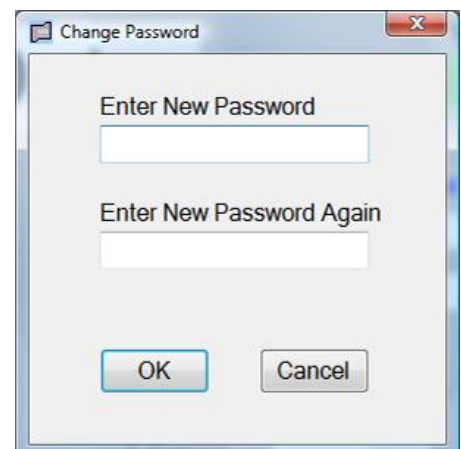
Enter the current administrator password followed by clicking OK. **The default password is 1234.** It is strongly recommended that the default password be changed after the software is initially configured. This will help to prevent unauthorized tampering with part data and software configuration.

Changing the Default Password

It is highly recommended to change the default password. This helps to protect the configuration of the software from accidental or malicious changes.

To change the password, click on the *System Configuration/Change Password*. Enter the old password and click OK.

A new window opens. Enter the new password on the first line. Re-enter it again on the second line. If both entries match, the new password is saved and a message is displayed indicating the password change has been successful.



Software Configuration

Selecting the Interface Hardware

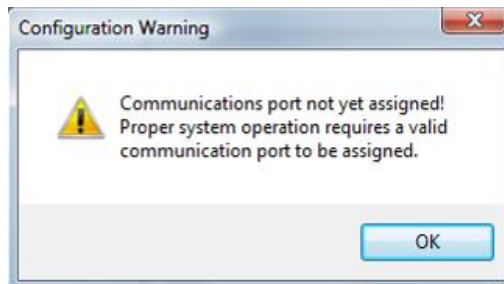
The first step in configuring the software for operation is to configure the type of Interface Hardware that will be used. To do this, select the *System Configuration* menu then the *Input Device Type/Set Input Device* item. The following dialog will be shown.



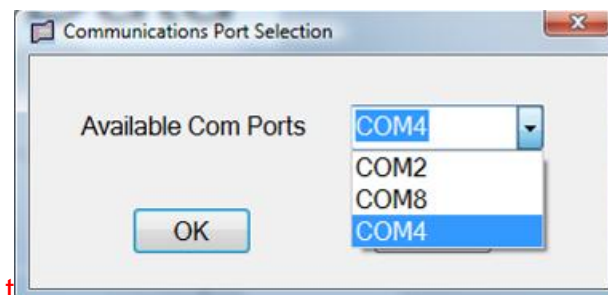
Select the input device. Click OK.

Selecting a Serial Port

The application must be configured with the appropriate serial port to be used to communicate with the interface hardware. NOTE: When the application is first installed, the serial port is undefined, and a warning may be displayed.



To select a serial port, click on the *System Configuration* menu, then the *Input Device Type/Communications Port* menu item. The following will be displayed.



Click on the down arrow in the Available Com Ports field. The field will expand to show all of the available serial ports on the computer. Choose the port associated with the interface that is used and click OK. The dialog will automatically close.

NOTE: See next page if the correct port is unknown.

Choosing the Correct Serial Port

Selecting the correct serial port can sometimes be hit or miss depending on your particular computer. This will mostly depend on the interface device connected and the type of serial port being used.

ProRF Receiver using USB – When using the USB port on the ProRF receiver, a *virtual* communications port is installed on Windows. This will typically be defined as COM4 or higher, depending on your machine. You can verify the actual port used by launching the Windows Control Panel. Go to the System icon, click the Hardware tab, and open the Device Manager. In the Device Manager, locate the Ports icon and expand it to show all COM ports. If the ProRF receiver is **connected** to the computer, an entry should be displayed entitled **ProScale ProRF receiver (COMX)** where X is the COM port number. This is the port that should be used for the VDRO software.

ProMUX-3 or ProRF using the DB-9 Connector – If you are using a hardware communications port that is built into the computer, this will typically have an ID of COM1 to COM4. If only COM1 is shown in the list, then that is likely the correct port to be used.

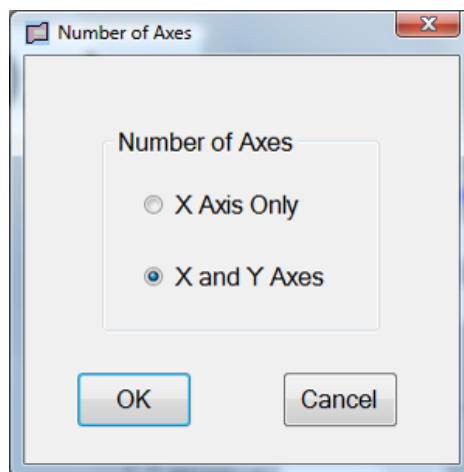
RS-232 to USB Adapter – In some cases, an RS-232 to USB adapter can be used to provide a DB-9 type serial port connection for devices such as the ProMUX-3. In this case, a *virtual* communications port is created like that used by the ProRF USB installation. In this scenario, a software driver needs to be installed to provide the serial port connection. Viewing the Ports icon in the Device Manager can indicate what COM port is assigned to the RS-232 to USB adapter.

Choosing the Number of Axes to be Active

The user must decide on the number of axes to be used in conjunction with the VDRO application.

By default, the VDRO is installed for two-dimensional (2D) operation. If you are using a ProTable-CAB or other two-dimensional measuring system, no other configuration is necessary for this parameter.

If you are using a single axis ProTable or other single axis measuring gauge, the VDRO application should be configured for single axis operation. Click on the *System Configuration* menu then select the *Number of Axes* menu item. The dialog box shown below will be displayed.



Click on the “X Axis Only” button and then click OK. The user interface will change to reflect only X axis data.

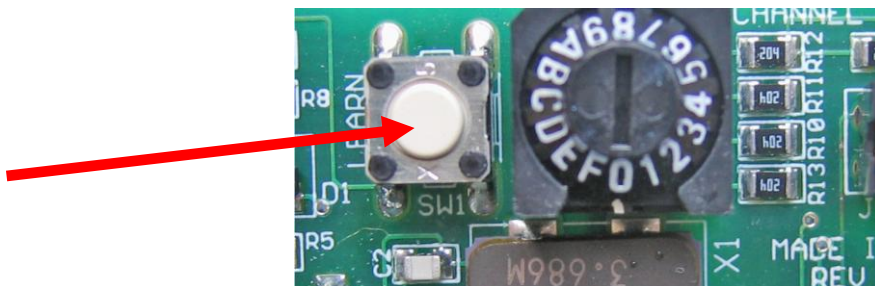
Configuring the Interface Hardware

The interface hardware, ProRF or ProMUX, must be configured prior to its initial use. This operation has been automated for the user and is activated by clicking the *System Configuration* menu and selecting the *Input Device Type/Auto Configure Device* menu item.

After selecting *Auto Configure Device*, the VDRO software will show the progression of the auto configuration process. In the case of the ProMUX-3 hardware, the process is fully automatic. When using the ProRF receiver, some user interaction is required.

ProRF Receiver Configuration with two Encoder Transmitters (ProTable-CAB)

When configuring a ProRF receiver for operation with the VDRO software, the auto configure dialog box will eventually stop with the message: **“Press Transmitter X Learn Button”**. The user will need to open the enclosure on the X axis transmitter and press the LEARN button on the circuit board. The picture below illustrates its location on the transmitter circuit board.



When the X axis transmitter has been “learned” or associated to the receiver, the auto configure dialog will stop with the following message: **“Press Transmitter Y Learn Button”**. Open the Y axis transmitter and press the LEARN button.

The configuration process will continue automatically and when completed, the configuration dialog will close. The transmitter covers can now be reinstalled.

ProRF Receiver Configuration with a single SPC Transmitter (Standard Single Axis ProTable)

When using the VDRO application with a single axis ProTable, the ProScale digital readout will be equipped with a ProRF SPC transmitter instead of an Encoder Transmitter.

The same operation is completed as above except that the software will only configure a single transmitter for operation (X Axis).

After initiating the *Auto Configure Device* item from the configuration menu, the configuration dialog will appear as related in the previous section. When the configuration message shows: “Press Transmitter X Learn Button”, the LEARN button on the SPC transmitter must be pressed. Using a bent paperclip, insert the end of the paperclip into the PGM hole in the face of the SPC transmitter. A small pushbutton is located below the hole. Press on the button until it is activated and the MSG SENT LED flashes. The auto configuration will continue and will close the dialog box when complete.



Initial Axis Configuration

Each axis can be independently configured for:

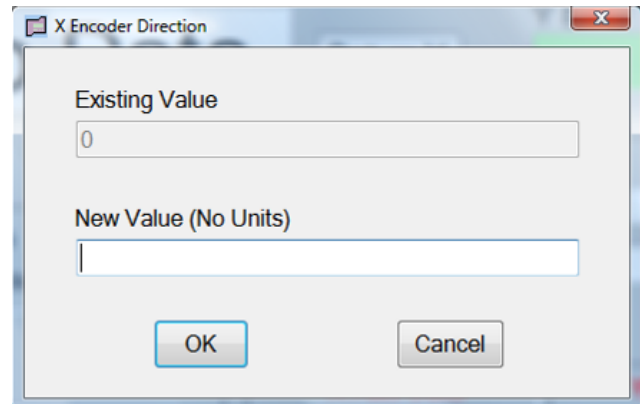
- **Axis Direction:** Axis Direction allows for changes in the sign of an axis measurement based on a particular direction of travel.
- **Datum Preset:** The Datum Preset allows the axis to assume a specific position reading when the axis is moved to a particular known location and the Datum X or Datum Y buttons are pressed.

Axis Direction

To change the direction for the X axis, click on the *Axis Configuration/X Axis/Encoder Direction* menu item. This will bring up the parameter editor shown below.

The available choices are 0 or 1. The top line shows the current value. If the current value is 0, set the new value to 1. If the current value is 1, set the new value to 0. Press the OK button to save the changes.

To change the Y axis direction, choose the *Axis Configuration/Y Axis/Encoder Direction* menu item and follow the same procedure.



The dialog box titled "X Encoder Direction" has a close button (X) in the top right corner. It contains two text input fields. The first field, labeled "Existing Value", contains the number "0". The second field, labeled "New Value (No Units)", is empty. At the bottom of the dialog are two buttons: "OK" and "Cancel".

Axis Datum Preset

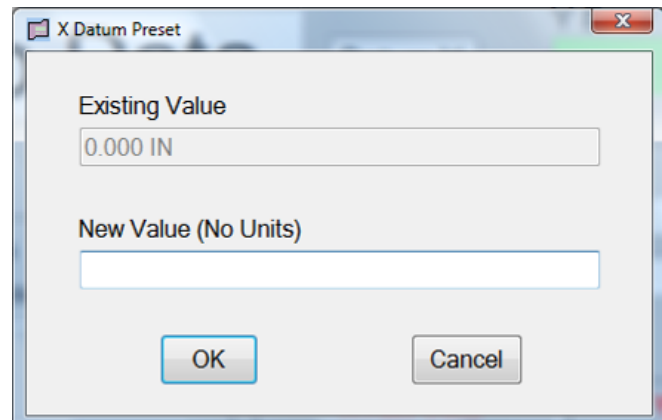
To change the datum preset for the X axis, select the *Axis Configuration/X Axis/Datum Preset* menu item. The parameter editor shown below will be presented.

The existing datum preset is displayed on the top line. To change the datum preset, enter a new value and click the OK button.

Whenever the Datum X button is pressed on the main user interface screen, the current X position being displayed will change to this datum preset.

To set the Y axis datum preset, select the *Axis Configuration/Y Axis/Datum Preset* menu item. Use the same procedure as used for X axis.

NOTE: The current datum preset values shown are in the current unit of measure. New values should be entered using the same units (IN or MM)



The dialog box titled "X Datum Preset" has a close button (X) in the top right corner. It contains two text input fields. The first field, labeled "Existing Value", contains the text "0.000 IN". The second field, labeled "New Value (No Units)", is empty. At the bottom of the dialog are two buttons: "OK" and "Cancel".

For single axis ProTable applications, the datum preset should always be 0.0 since any datum would be applied by the ProScale digital readout, NOT by the VDRO software.

File Location Configuration

Several additional parameters need to be configured prior to utilizing the VDRO application. For each of these configurations, the user must have already enabled the administration mode of operation.

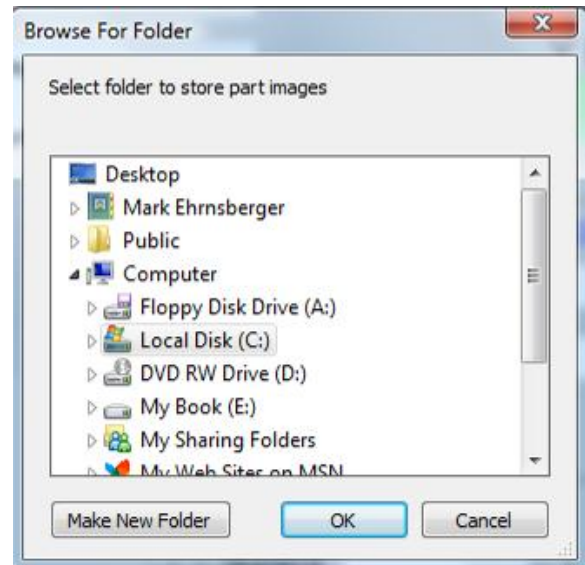
Default Part Image Directory

Each part in the database may have an image file associated with the part. This image file is displayed when a part is selected from the list of available parts in the part search dialog.

Part image files can be stored anywhere on the computer but the VDRO application allows the user to define a default directory location where the files can be stored. This allows the user to quickly locate the image files in the default directory when a part record is created or edited.

To set the default image directory, choose *Database/Default Part Image Directory*. The folder dialog will be displayed.

The initial default directory is C:\. Any existing folder can be used or a new folder can be created on any available drive. Navigate to the desired folder that will be used as the default image folder and click OK.

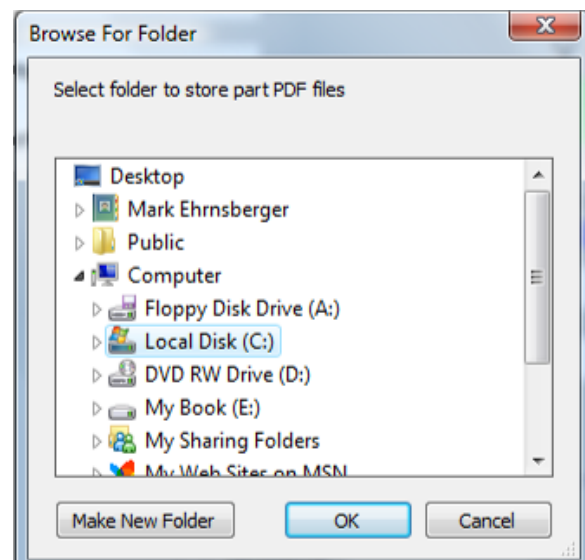


Default Part Information PDF directory

Each part in the database may have an Adobe Acrobat Reader file (PDF) associated with it. The PDF file can be used to provide user defined data relating to the part (such as a saved CAD image). PDF files can be stored anywhere on the computer but the application allows the user to define a default directory where PDF files can be stored. This allows the user to quickly locate the PDF files starting at the default directory when a part record is created or edited.

To set the default PDF directory, choose *Database/Default Part Info PDF Directory*. The folder dialog will be displayed.

The initial default directory is C:\. Any existing folder can be used or a new folder can be created on any available drive. Navigate to the desired folder that will be used as the default PDF folder and click OK.

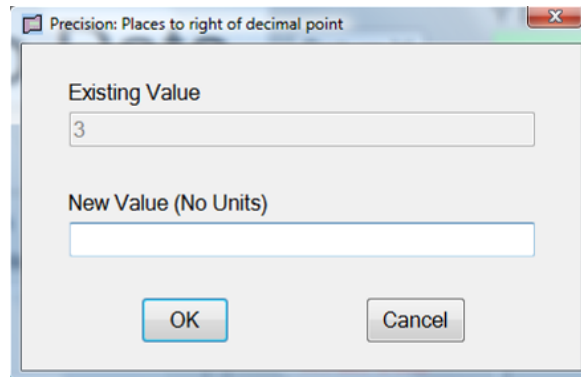


Readout Precision

The VDRO application can display positional information in various resolutions. The default resolution for the software is:

- 3 decimal place for inch measurement.
- 2 decimal place for millimeter measurement.

To change the precision, click the *System Configuration/Display Precision* menu item.



Enter the new resolution value and click the OK button to accept. The software will immediately update the position readout fields including the active part dimension fields.

Note that the maximum (highest) resolutions for the measuring units are as follows:

Inches: 4 decimal places	x.xxxx
Millimeters: 2 decimal places	x.xx

Precision values of 3 or 4 result in 2 decimal place resolution in millimeters. The minimum resolution for either measuring unit is 1 decimal place.

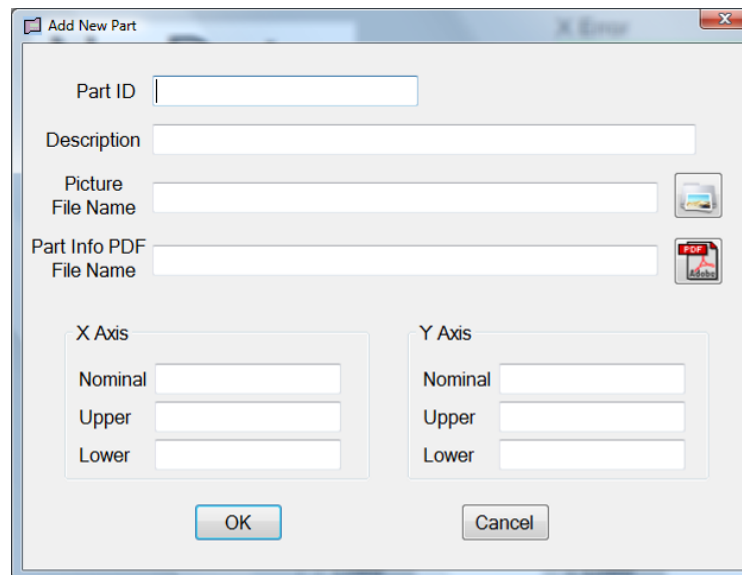
Database Configuration

Once the VDRO software has been configured, an administrative user will need to start entering and maintaining part data in the database. The following sections outline the procedures for part database maintenance.

Creating a New Part

All software configurations, including the part database management are password protected. To access the part database management menu, click *System Configuration/System Administration*. Enter the password into the password field and click OK. If the password was accepted, the *Database* menu items will now be active and available.

To create a new part in the database, select the *Database/Add Part* menu item. The part editor shown below will be displayed.



Part ID – The name or identifier of a part. This must be unique for each part. The field can contain letters, numbers and spaces. This field is required. Maximum length is 100 characters.

Description – A free form description of the part. Maximum length is 100 characters. This field is optional.

Picture File Name – The file name and path that point to an optional image file of the part. Click on the image folder icon at the end of the field to navigate to the desired file. Maximum length is 255 characters. This field is optional.

Part Info PDF File Name – The file and path name that point to an optional Adobe® Acrobat™ PDF file that contains user defined part data information. This information could include drawings, specifications, materials, etc. Click on the PDF icon at the end of the field to navigate to the desired file. Maximum length is 255 characters. This field is optional.

Axis Nominal – The desired target value for the dimension. This represents the ideal dimension for the part. i.e. 6.000 inches. This field is required.

Axis Upper – The largest dimension that is considered within tolerance. i.e. 6.010 inches. This field is required.

Axis Lower – The smallest dimension that is considered within tolerance. i.e. 5.990 inches. This field is required.

NOTES:

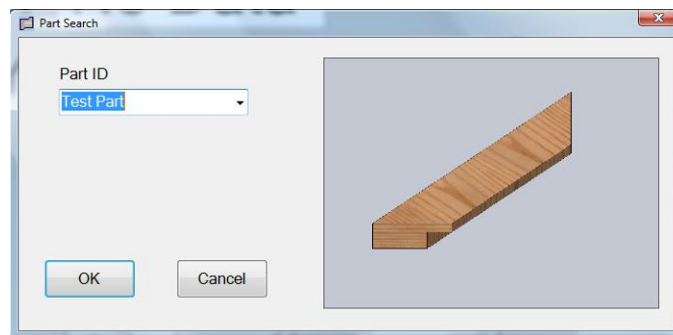
1. The VDRO application verifies that the upper limit is greater than or equal to the nominal and that the lower limit is less than or equal to the nominal.
2. If a part ID is already in the database, the software will not allow a duplicate.
3. Dimensions are in the current measurement units that were active when the part editor was activated. **DO NOT add unit text to the dimension data (i.e. mm or in) as an error will be detected.**

Editing an Existing Part

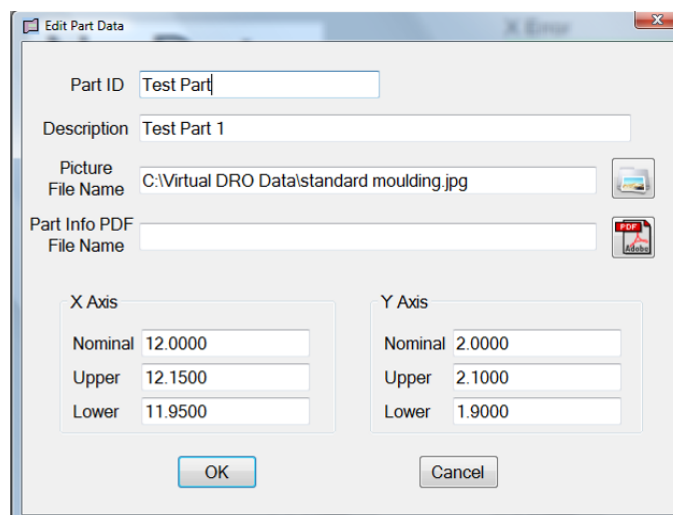
To edit an existing part in the database, the user must first enter the administration mode of operation.

To access the part database management menu, click *System Configuration/System Administration*. Enter the password into the password field and click OK. If the password was accepted, the *Database* menu items should now be active and available.

Select the *Database/Edit Part* menu item. The Part Search dialog will be presented. Select the desired existing part from the list or type in the part ID. When a valid part is selected, the software will show the associated part picture if defined as illustrated below.



To accept and edit this part, click the OK button. The Part Editor will be displayed with the current part data shown.

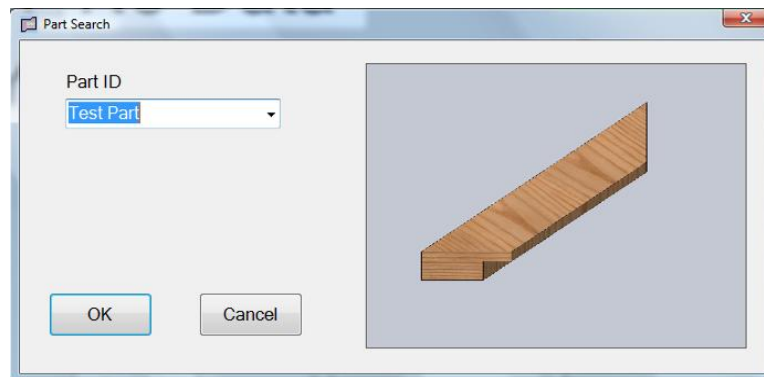


Deleting an Existing Part

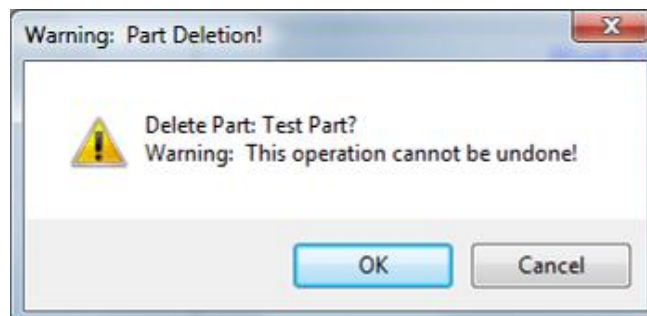
To delete an existing part from the database, the user must first enter administration mode.

To access the part database management menu, click *System Configuration/System Administration*. Enter the password into the password field and click OK. If the password was accepted, the *Database* menu items should now be active and available.

Select the *Database/Delete Part* menu item. The Part Search dialog will be presented. Select the desired existing part from the list or type in the part ID. When a valid part is selected, the software will show the associated part picture if defined as illustrated below.



A warning message will be presented as shown below.

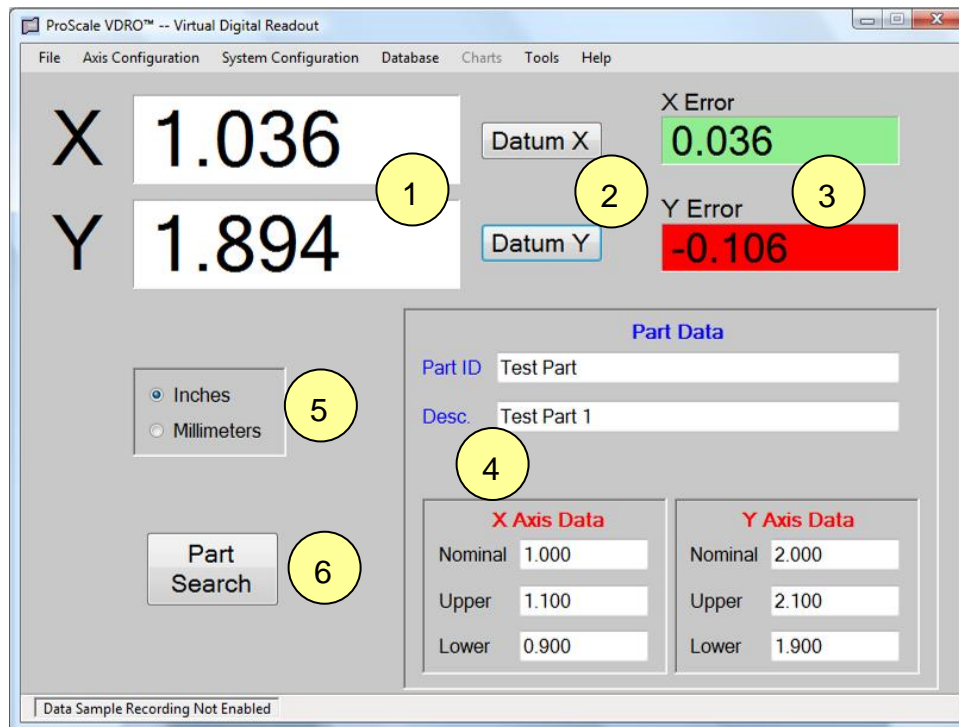


Clicking OK deletes the part from the database. Cancel will abort the operation.

NOTE: Deleting a part cannot be undone. The part record will need to be re-created if accidentally deleted.

Main User Screen

The image below illustrates the main user interface.



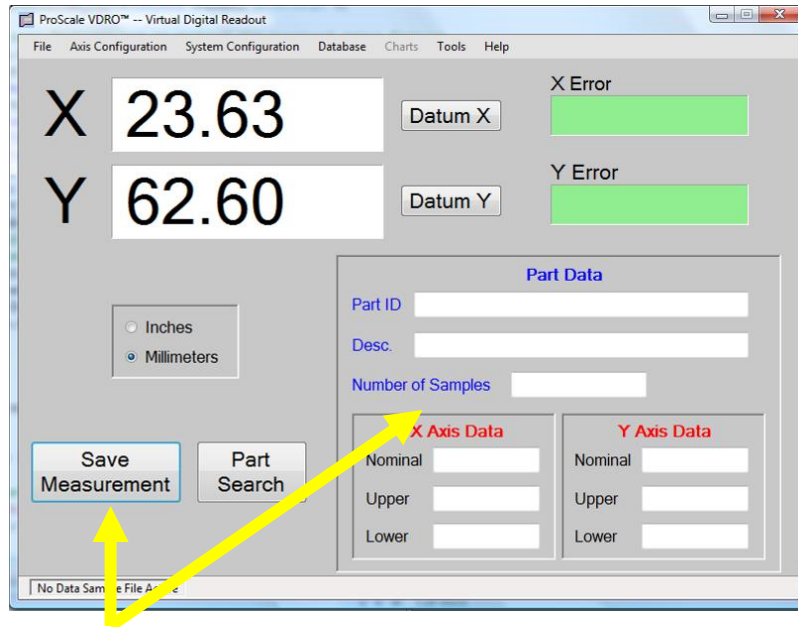
- 1 The real-time measurements for X and Y provided by the hardware input device, ProRF receiver or ProMUX-3. **NOTE: When the VDRO application is launched, the initial X and Y positions are shown as NO DATA when using the ProRF receiver. When position data is received for each axis, the fields will automatically update.**
- 2 Datum buttons for X and Y axes. Clicking the associated button forces the displayed axis position to a preset value.
- 3 The measurement error for axes X and Y. The background color is green if the current measurement is within the upper and lower limits for the axis. It is red if the current measurement is outside the limit tolerance. **NOTE: This feature is only active after a part has been loaded from the database.**
- 4 The data for the currently loaded part. This data includes the part ID, a description and X and Y axis data. Axis data consists of a nominal value plus upper and lower tolerance limits.
- 5 User selectable measurement units display. Click on either the Inches or Millimeters button to change the displayed units. Note that changing the current units changes all numeric fields that hold measurement data.
- 6 Part Search button. Clicking this button opens the part search dialog.

Measurement Sampling

Measurement sampling allows the user to store the recorded measurements of individual part samples to a CSV data file. This file can later be opened and read by a spreadsheet software or other application.

Upon initial installation of the VDRO software, measurement sampling is disabled. To enable measurement sampling, the user must first enable administration by selecting the *System Configuration/Enable Administration* menu item. Enter the administration password and click OK.

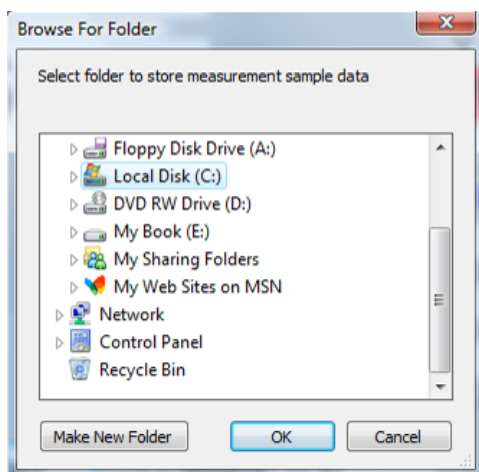
Click on the *System Configuration/Sample Measurement* menu item. A secondary pop-up menu appears. Click on the *Enable Sample Measurement* menu item. The menu disappears and the general user interface changes to the format shown below.



A new button appears next to the Part Search labeled **Save Measurement**. In addition, a new field is added in the *Part Data* section labeled **Number of Samples**. The software is now ready to recall parts from the database and save measurement samples.

Measurement File Directory

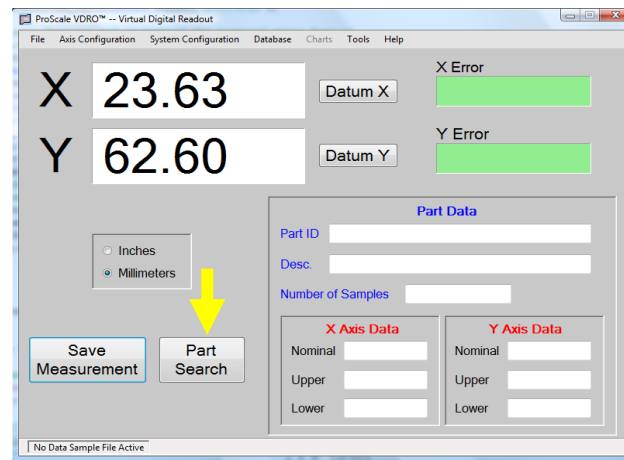
Prior to creating measurement sample files for the first time, the user should define a default directory location where measurement sample files are stored. To complete this, choose *System Configuration/Sample Measurement/Change Target Directory*. The VDRO application will provide the following dialog.



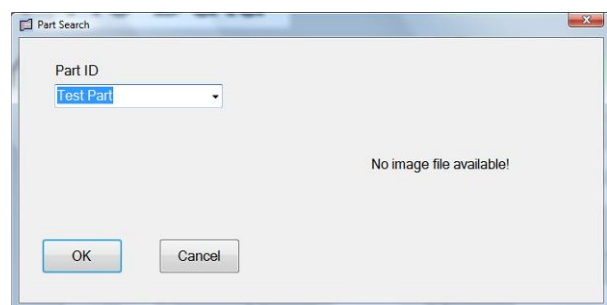
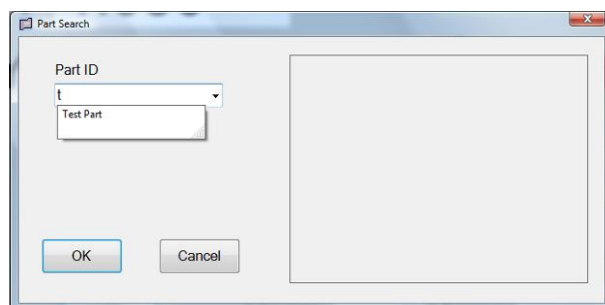
Locate a folder on the computer or use a network share by expanding the drive locations in the folder explorer. If the desired folder does not exist, use the **Make New Folder** button to create a new folder under the current drive or directory. When completed, click on the **OK** button. The folder path is now stored.

Loading a Part File

Prior to recording part measurement samples, the user must first load an existing part from the part database. Clicking this button opens the part search dialog shown below.

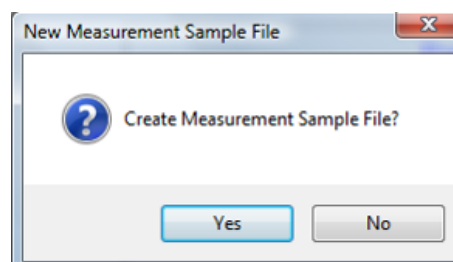


As a part ID is entered, the software starts to find the closest match in the available list. The user can also scroll through the list to locate the desired part name. Once a part has been selected, the software will determine if an image file has been associated with the part. If so, the associated image will be displayed to the right. If no image file has been defined for the part, the message **No image file available!** will appear.



Creating a Part Measurement File

After a part has been located and selected, the Create Measurement Sample File dialog will be displayed as shown below.



Click **Yes** to create the part measurement sample file. Click **No** if no measurement samples are to be recorded. **Note: You *MUST* choose yes prior to allowing individual part measurement samples to be recorded. See *Part Measurement Sample File Format* for details of the measurement sample file structure.**

Making a Measurements

Complete the following procedure to record a measurement sample.

1. Place the part to be measured on the measuring table.
2. Move the X and/or Y axis to measure the part.
3. Click on the **Save Measurement** button on the main user screen. The status bar at the bottom of the application will indicate that the measurement was saved and indicate the time when it was recorded.

Note that the *Number of Samples* field in the Part Data section has increased by 1 count. Each time the **Save Measurement** button is pressed, the status bar will update to reflect the sample recording time, and the *Number of Samples* field will be incremented.

Optionally, the VDRO software can be configured to momentarily show a "Measurement Recorded" message dialog whenever a sample is recorded. See *Measurement Acquired Message* configuration.

Measurement File Format

When a part is selected from the database and the measurement sample file is created, a .csv file is generated for the associated part sample. The format for the file name is:

Part ID-month/day/year-hours/minutes/seconds.csv

For example, measurement sample file "Test Part-9222008-144523.csv" is based on the following attributes:

Part ID: Test Part

Date: 9/22/2008

Time: 14:45:23 (2:45 PM, 23 seconds local time)

Note that the time and date values are based on the time and date the file was initially created. This occurs when the user chooses **Yes** from the Create Measurement Sample File dialog shown on the previous page.

Measurement File Header

When the measurement sample file is initially created, a predefined set of data is written to the file called the file header. This information consists of the following:

- Start Date – The date that the file was created.
- Start Time – The time when the file was created.
- Part ID.
- Part Description.
- Nominal X dimension
- Upper X limit
- Lower X limit
- Nominal Y dimension
- Upper Y Limit
- Lower Y Limit
- Column headings for each measurement sample

Measurement Data Format

Each time the **Save Measurement** button is pressed, the measurement sample data is recorded to the file. The data recorded consists of the following information.

- Sample recorded time
- Sample number
- X measurement recorded
- X measurement error
- X in specification (yes or no)
- Y measurement recorded
- Y measurement error
- Y in specification (yes or no)

Measurement File Example

The following is an example of a measurement sample file that has been imported by Microsoft® Excel™.

	A	B	C	D	E	F	G	H
1	Start Date:	9/18/2008						
2	Start Time:	3:07:29 PM						
3	Part ID:	Test Part						
4	Description:	Test Part 1						
5	Nominal X:	1 Inches						
6	Upper Limit X:	1.1 Inches						
7	Lower Limit X:	0.9 Inches						
8	Nominal Y:	2 Inches						
9	Upper Limit Y:	2.1 Inches						
10	Lower Limit Y:	1.9 Inches						
11								
12	Time	Sample Number	X Measurement	X Error	X In Spec	Y Measurement	Y Error	Y In Spec
13	3:07:53 PM	1	1.033	0.033	YES	1.682	-0.318	NO
14	3:07:57 PM	2	1.033	0.033	YES	1.587	-0.413	NO
15	3:08:03 PM	3	1.033	0.033	YES	1.983	-0.017	YES
16	3:08:11 PM	4	1.033	0.033	YES	1.978	-0.022	YES
17	3:08:17 PM	5	1.033	0.033	YES	1.985	-0.015	YES
18	3:08:48 PM	6	1.033	0.033	YES	1.972	-0.028	YES
19	3:08:56 PM	7	1.033	0.033	YES	1.955	-0.045	YES
20	3:09:03 PM	8	1.033	0.033	YES	1.974	-0.026	YES
21	3:09:12 PM	9	1.033	0.033	YES	2.026	0.026	YES
22	3:10:14 PM	10	1.033	0.033	YES	1.999	-0.001	YES
23	3:10:16 PM	11	1.033	0.033	YES	1.999	-0.001	YES
24	3:10:18 PM	12	1.033	0.033	YES	1.999	-0.001	YES
25	3:10:38 PM	13	1.033	0.033	YES	2.012	0.012	YES
26	3:10:40 PM	14	1.033	0.033	YES	2.012	0.012	YES
27	3:11:04 PM	15	1.033	0.033	YES	2.011	0.011	YES
28								

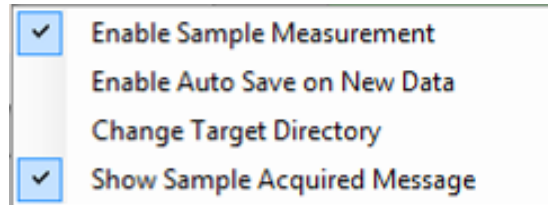
Notes regarding Measurement Sample Files

- The measuring units that are used for measurement sample recording must be chosen **PRIOR** to selecting the part from the database. When the file header is written, the part data is displayed in the selected units. Subsequent measurement samples will be recorded in the defined units regardless of the current units setting on the user interface.
- The raw measurement data information is stored in the file using the precision defined in the software configuration. Your spreadsheet software may override this precision based in the column definition.
- When each measurement sample is completed, the data file is opened, written to and closed. The number of rows of data is limited to 64,000 total.
- Measurement samples are written to the same data file sequentially until one of the following events occurs:
 - A new part is loaded from the part database.
 - The part data is cleared when the *Tools/Clear Part Data* menu item is selected.
 - The number of input axes is changed.
 - The VDRO program is closed.
- The “In Spec” entry is determined to be true (yes) if the recorded measurement is greater than or equal to the lower limit **AND** is less than or equal to the upper limit. Otherwise, it is false (no).

Measurement Acquired Message

In certain situations (particularly when using an Accurate Technology ProRF SPC transmitter) it may be beneficial to provide the user with a message that a measurement sample has been saved. This feature can be enabled or disabled via the software configuration.

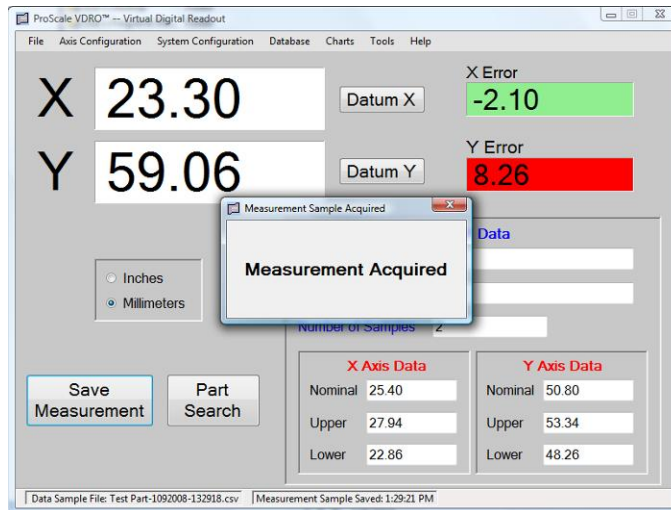
To enable or disable the message feature, choose the *System Configuration/Sample Measurement* menu item. The Sample Measurement will be displayed as shown below.



If a checkmark is shown next to the *Show Sample Acquired Message* menu item, the feature is enabled.

Click the *Show Sample Acquired Message* menu item to toggle its status.

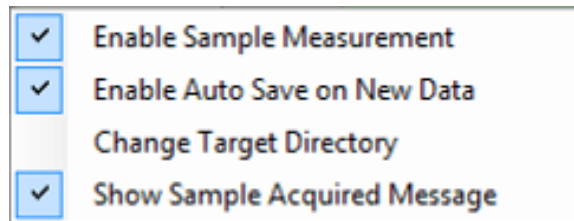
If the *Show Sample Acquired Message* feature is enabled, a timed dialog shown below will be displayed whenever a measurement sample is recorded to the data file.



Auto Save on New Data

When using the ProRF wireless receiver with an Accurate Technology SPC transmitter, measurement data is only received by the VDRO software when the user presses the **SEND** button of the ProScale readout. To allow the VDRO software to automatically save the measurement sample data when this event occurs, the user should enable the *Auto Save on New Data* feature.

To enable or disable this feature, click on the *System Configuration/Sample Measurement* menu item. The sub-menu shown below will appear.



If Auto Save is enabled, a checkmark will be shown next to the menu item. Otherwise, it is disabled.

It is recommended that the *Show Sample Acquired Message* also be enabled in this scenario. This provides an easily identifiable confirmation that the measurement was recorded.

Note that this feature is only functional when a part has been selected AND a measurement sample file has been created.

The user **SHOULD NOT** enable the Auto Save feature when utilizing Accurate Technology Encoder Transmitter devices. These devices provide new position data **when** the encoder position changes. Enabling this feature would cause measurement samples to be automatically saved while positioning the measuring axis. This is typically an undesired operation and also causes the measurement sample file to grow excessively large very quickly.

If the VDRO software is configured for ProMUX-3 operation, the Auto Save feature is not available.

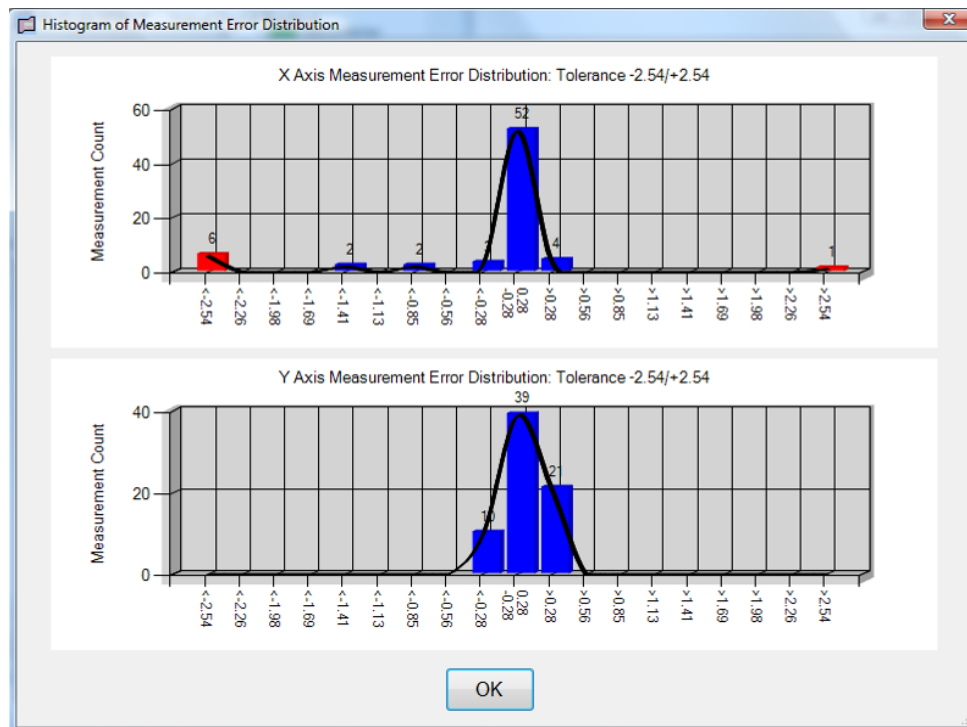
Graphical Charting

The VDRO **Professional Version** software provides the option of representing measurement data in graphical form. In many cases, quality control issues regarding the manufacturing process can more easily be represented and interpreted using graphical models.

Measurement Error Distribution Histogram

When utilizing the Measurement Sampling feature of the VDRO software, the software records the measurement error of each sample taken and stores the data in the form of a histogram. This histogram represents the distribution of measurement error, in X and/or Y over the defined acceptable measurement tolerance.

The measurement error range is based on the nominal dimension of an axis with the upper and lower tolerance limits defining the boundaries of the graph. An example chart is shown below.



The graph is divided in horizontal tolerance groups with the nominal measurement being located in the center of the chart. Each tolerance group, except for the center, is labeled by a starting tolerance range (i.e. >.56, > 1.41, <-.85). As each measurement sample is completed, the measurement error for each axis is calculated and compared to each defined tolerance group. If the measurement error falls within a particular error range group, the count for that group is increased by one. Each column of error tolerance provides the total number of measurement samples that have fallen into each group. This number is displayed above the column.

Bell Curve

A second graphical representation of the measurement error data is shown as a black curve that tracks each column of measurement error distribution. This curve helps to outline the measurement error distribution in addition to the bar graph.

Histogram Limits

The rightmost and leftmost columns of the histogram define measurement error values that were outside the acceptable control limits. Like the other tolerance columns, these areas track the count of the number of measurement errors that fall within their defined ranges. The main difference is that these columns have no upper and lower range limits respectively. These columns are easily identified by their color.

Tools Menu

This menu controls general tool options for the VDRO software.

Clear Part Data

Use this option to clear the currently displayed part data. This will also terminate the writing of measurement data to the current measurement file (if active). This will also clear all plot data and disable the graphing function.

Print Test Label

If a label printer is installed (see appendix B), selecting this menu item will print a test label on the label printer. This option is to provide a print test of the label printer.

Part Info PDF

Selecting this menu item opens an internal version of Adobe® Acrobat Reader™ and displays the associated PDF file for the selected part. This option is only available if a part is selected **AND** the part has a PDF filename defined in the part's database record.

Appendix A – Barcode Scanner Option

The Accurate Technology VDRO software can be purchased with an option to use a barcode scanner for automatic selection of parts from the database. This option can be purchased initially or as an upgrade at a later date. Pricing options include the barcode scanner hardware/software upgrade or software upgrade only.

Recommended Barcode Scanner

Accurate Technology recommends the use of a Symbol® LS2208 handheld barcode scanner. This scanner can read various 2D technology barcodes and utilizes a USB™ interface. It is a mid-priced and robust scanner. This unit is currently the only scanner tested and certified to work with the Accurate Technology VDRO software.

Recommended Barcode Symbology

Although the LS2208 can scan various barcode symbologies, the recommended barcode symbology for use with the VDRO software is Code128. This symbology supports alpha-numeric data and reads barcodes of various lengths.

Barcode Scanner Installation

The LS2208 is easy to install.

1. Be sure that your version of the VDRO software has the barcode scanner option installed. This can be completed either during initial installation or as an upgrade at a later time.
2. Plug the LS2208 into an available USB port on the computer. Windows™ will automatically install the appropriate drivers. Since the scanner connects to the USB port, no external power supply is required.

Barcode Scanner Operation

Point the scanner at a barcode that is encoded with the ID of a part in the database. Squeezing the trigger scans the barcode and causes the VDRO software to search the database for the specified part. If the part is found, it will be loaded into the software. If Measurement Sampling is enabled, the software will ask if a measurement sample file should be created.

If the specified part is not located in the database, an error message will be displayed that indicates the part does not exist.

User Supplied Barcode Scanner

If the user wishes to purchase a barcode scanner from a 3rd party, the barcode scanner must be configured for proper operation. Contact engineering at Accurate Technology for the necessary information regarding the scanner configuration. **NOTE: The user must still purchase the barcode scanner option from Accurate Technology, Inc. for the scanner to operate with the software.**

Unsupported Barcode Scanners

Accurate Technology only certifies the Symbol® LS2208 barcode scanner for use with the VDRO software. Other barcode scanners may operate with the software but their operation is not guaranteed nor supported by Accurate Technology.

Unauthorized Barcode Scanner

If a barcode scanner is installed for use with the VDRO software but the barcode option has not been purchased, the VDRO software will detect the unauthorized scanner. **An error message will be displayed and the software will immediately terminate.** To continue to use the software, either:

- Remove the unauthorized barcode scanner from the computer
- Purchase and install the barcode scanner upgrade from Accurate Technology.

Appendix B – Label Printer Option

The Accurate Technology VDRO software can optionally support a label printer. Labels that include the actual part measurements can be printed when a measurement sample has been completed. This option can be purchased initially or as an upgrade at a later date. Pricing options include the label printer hardware/software upgrade or software upgrade only.

Part labels include the following information

- Part Width
- Part Height (if X and Y axes used)
- Part ID
- Date and time of measurement
- Optional barcode of Part ID

Recommended Label Printer

The recommended label printer for use with the VDRO software is a Zebra LP-2844 direct thermal printer. This printer has been tested with and is certified to work with the VDRO software.

Label Printer Hardware Installation

The Zebra label printer communicates with the VDRO software using an RS-232 serial port. Many new computers do not have a standard serial port. If this is your situation, a USB to serial port converter can be purchased from most office supply or electronics stores to provide this capability.

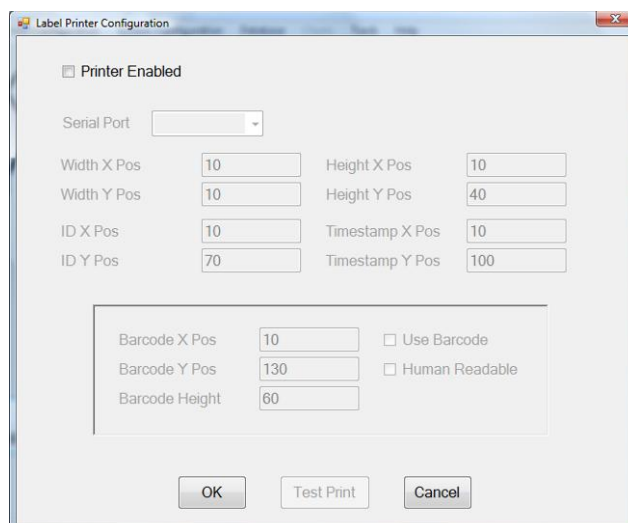
Connect a 9 pin male-female serial cable between the printer's DB-9 serial port connector and the computer's DB-9 serial port connector. If using a USB to serial port adapter, install the drivers FIRST, then connect the cables to the printer and computer.

Connect the power supply to the printer and plug the power supply into a wall outlet.

Install the roll of labels in the printer as outlined in the printer's user manual.

Label Printer Configuration

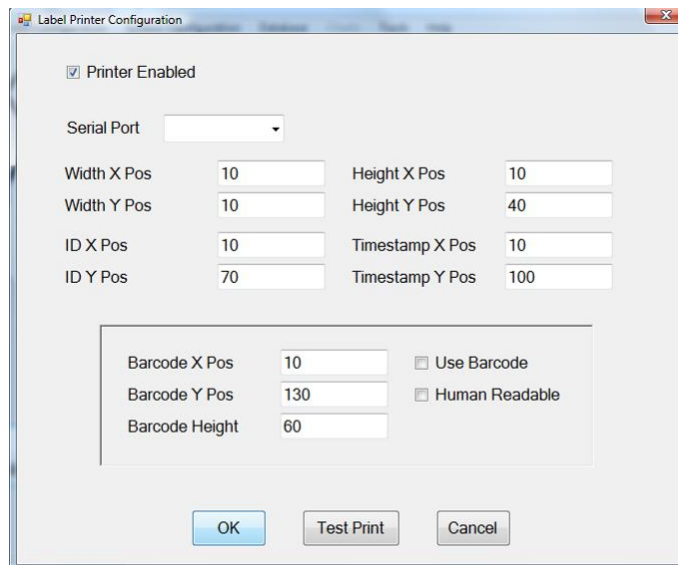
The label printer must be configured prior to its initial use. To configure the printer, enable the administration in the *System Configuration* menu. Then select *System Configuration/Label Printer Configuration*. The dialog shown below will be displayed.



The screenshot shows the 'Label Printer Configuration' dialog box. It has a title bar with a standard Windows window icon and a close button. The dialog contains the following elements:

- A checkbox labeled 'Printer Enabled' which is currently unchecked.
- A 'Serial Port' dropdown menu.
- Two columns of input fields for positioning:
 - Width X Pos: 10
 - Width Y Pos: 10
 - ID X Pos: 10
 - ID Y Pos: 70
 - Height X Pos: 10
 - Height Y Pos: 40
 - Timestamp X Pos: 10
 - Timestamp Y Pos: 100
- A group box containing:
 - Barcode X Pos: 10
 - Barcode Y Pos: 130
 - Barcode Height: 60
 - Two checkboxes: 'Use Barcode' (unchecked) and 'Human Readable' (unchecked).
- Three buttons at the bottom: 'OK', 'Test Print', and 'Cancel'.

Click the *Printer Enabled* checkbox to access the other fields of the form.

The image shows a 'Label Printer Configuration' dialog box. At the top, there is a checkbox labeled 'Printer Enabled' which is checked. Below it is a 'Serial Port' dropdown menu. The main area contains two columns of input fields for positioning: 'Width X Pos' (10), 'Width Y Pos' (10), 'ID X Pos' (10), 'ID Y Pos' (70) on the left; and 'Height X Pos' (10), 'Height Y Pos' (40), 'Timestamp X Pos' (10), 'Timestamp Y Pos' (100) on the right. A separate section at the bottom contains 'Barcode X Pos' (10), 'Barcode Y Pos' (130), and 'Barcode Height' (60). To the right of these are two checkboxes: 'Use Barcode' and 'Human Readable'. At the bottom of the dialog are three buttons: 'OK', 'Test Print', and 'Cancel'.

Configure the Printer Serial Port

Click on the pull down list for the *Serial Port* field. The list is populated with all of the available serial communications ports on the computer. Locate the serial port that is connected to the printer. Built-in serial ports are typically COM1 to COM4. Virtual COM ports (used with USB serial converters) are typically higher COM port numbers. If you are using a USB serial converter, examine the Control Panel/System/Device Manager tool and expand the **Ports** icon. The virtual COM port with its port number should be listed.

Field X and Y Locations

The four printable fields can be configured to print anywhere on the label. The user may choose a different label size to meet their particular needs.

Barcode Printing Option

The user may choose to print a barcode which encodes the Part ID. To enable this feature, check the *Use Barcode* checkbox. The position of the barcode on the label may also be defined by the user in both X and Y. In addition, the height of the barcode may be altered. The barcode used is Code128. *The type of barcode used is not configurable.*

If the *Human Readable* checkbox is active, the encoded value of the barcode is printed directly below the barcode.

Label Configuration Values

The X and Y values shown in the printer configuration dialog are in units of dots. The origin (0,0) of the label is in the upper left corner of the label.

Printing a Test Label

Click on the **Test Print** button to print a label with the pre-defined data to test the positioning of the fields on the label.

User Supplied Printer

The user may purchase a label printer from a 3rd party vendor. No special printer hardware configuration needs to be completed. **NOTE: The user must still purchase the label printer upgrade option from Accurate Technology, Inc. for the label printer to operate with the VDRO software.**

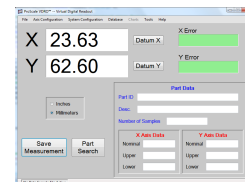
Appendix C – Product Upgrade

The Accurate Technology VDRO software is distributed in **full feature** demo form and is limited to 15 days of operation from its date of installation. The product can then be purchased and converted into registered software to run on a single machine.

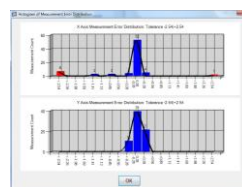
There are five registered versions available for purchase. Each version provides a different set of options. The customer may choose to purchase only the options required for their application. The five registered versions are:

- Standard
- Professional Charting
- Professional Barcode
- Professional Printer
- Professional Full

Standard - This version provides basic measurement capabilities, parts database cataloging and measurement sample file generation. It does not support charting, barcode scanning or label printing.



Professional – Charting - This version includes all of the features of the Standard version and adds Charting capability. It does not support barcode scanning or label printing.



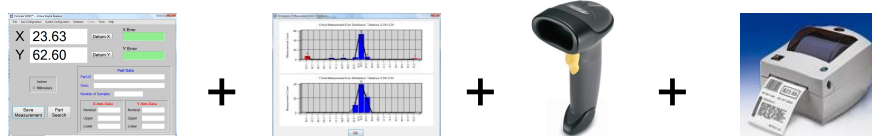
Professional – Barcode - This version includes all of the features of Standard version and adds Charting and Barcode Scanning. This package includes a Symbol® LS2208 handheld barcode scanner. This version does not include label printing.



Professional – Printer - This version includes all of the features of Standard version and adds Charting and Label Printing. This package comes with a Zebra LP-2844 direct thermal label printer (standard 2.25" x 1.25" adhesive labels). This version does not include barcode scanning capabilities.



Professional – Full - This package includes **Charting, Barcode Scanning** and **Label Printing** capabilities along with the necessary hardware to scan barcodes and print labels (Symbol® LS2208 handheld barcode scanner and Zebra LP-2844 thermal printer).



VDRO can be purchased initially with the options desired or can be upgraded at a later date to add a desired option. See *Purchasing the Software* for details.

To upgrade the currently registered product, complete the following.

- Contact Accurate Technology to purchase the required upgrade and receive a new serial number for the product upgrade.
- *Enable Administration* from the *System Configuration* menu and then click on the *Help/Upgrade Product* menu item. The registration dialog will appear. Enter the new serial number and click on the **Register** button. The product will require re-activation.

Appendix D – Deactivate Product

The VDRO software is hardware locked to a particular computer once the product has been purchased and installed. This security feature **does** allow the software to be deactivated on the current machine and reinstalled on another machine. **Note that once the software is deactivated, it cannot be executed on the original machine without reactivating the product.**



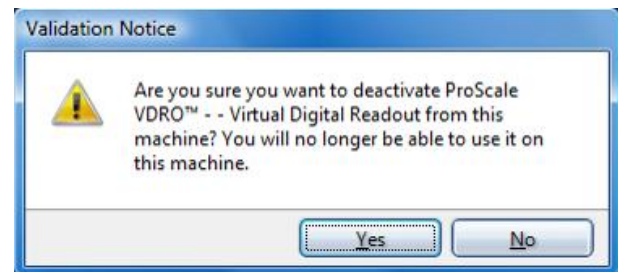
To deactivate the product, *Enable Administration* from the *System Configuration* menu and then click on the *Help/De-Activate Product* menu item. The following security message appears.

To deactivate, click the **Deactivate** button.

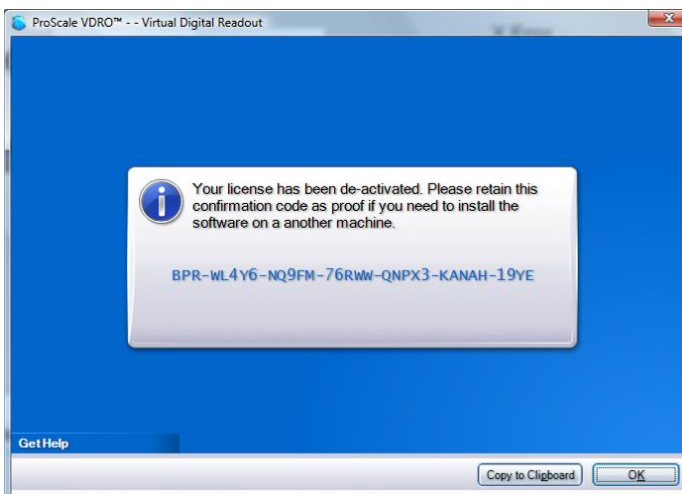
A second warning is displayed as shown.

Click **Yes** to continue.

The software will deactivate the license on the existing machine and provide a deactivation code as shown below.

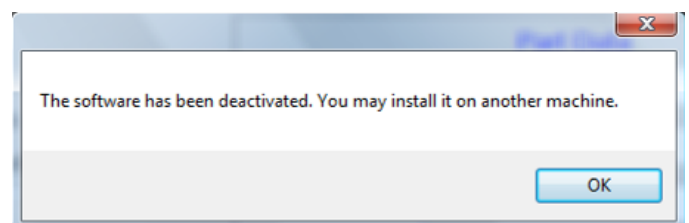


It is **STRONGLY** recommended that you record this deactivation code in a text file, email or other document.



This is your **ONLY** proof that the software was deactivated from the current machine. You will be required to provide this code to Accurate Technology prior to receiving a new activation code for installation on another computer. **IF YOU CANNOT PROVIDE THIS CODE, YOU WILL BE REQUIRED TO PURCHASE ANOTHER COPY OF THE SOFTWARE FOR INSTALLATION ON ANOTHER MACHINE.**

Once the software has been deactivated, the final notice shown will be displayed. Upon clicking the **OK** button, the VDRO software will terminate.



**Thank you for choosing an
AMERICAN MADE PRODUCT**



Accurate Technology, Inc.
270 Rutledge Rd. Unit E
Fletcher, NC 28732 USA
828.654.7920

Please register this product at:
<http://www.proscale.com/registration.htm>
This manual is available online at:
www.proscale.com

P/N 800-1140-001 Rev A, Copyright © 2008, Accurate Technology, Inc. All rights reserved.