



Tutorial  
First Steps

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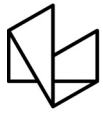
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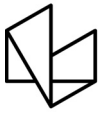
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# Getting started

## What you will learn

This tutorial will guide you through the very first steps of getting to know VGMETROLOGY. You will see how to open a CT data set, familiarize yourself with the workspace, and learn how you can visualize the volume object in the 3D window and the 2D windows.

## Tools you will need

Before you get started, you'll want to make sure you have the following items:


Feature	Description
Product name	VGMETROLOGY
Release	2026.2
Example data	<i>ExampleData_vgmetrology_GeneralTopics.zip</i> , which is located on your <b>download account</b> <sup>a</sup> . Unzip the content of the <i>.zip</i> file to a path of your choice. In this tutorial, we will use the following files: – <i>VGCube_01.mvgl</i>
Document ID	Tutorial-1106-v022-001-en

<sup>a</sup> <https://download.volumegraphics.com/website/login.html>



## Opening a *.mvgl* project

There are various ways to load different types of data into VGMETROLOGY. A common use case is opening an existing *.mvgl* project that contains one or more volume objects. In this example, the volume object is the VG cube.

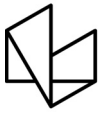
1. Start VGMETROLOGY 2026.2 by using the new entry created by the installer in the Windows **Start** menu.
2. Select **File >  Open** and open the *VGCube\_01.mvgl* example data set.



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Alternatively, you can simply drag and drop the *VGCube\_01.mvgl* example data set from your file browser into VGMETROLOGY.

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# Exploring the workspace

Once the volume object has been loaded in the scene (i.e., the virtual space in which the object is located), it will be shown in the various windows of the workspace. The following figure shows a typical workspace layout of VGMETROLOGY:

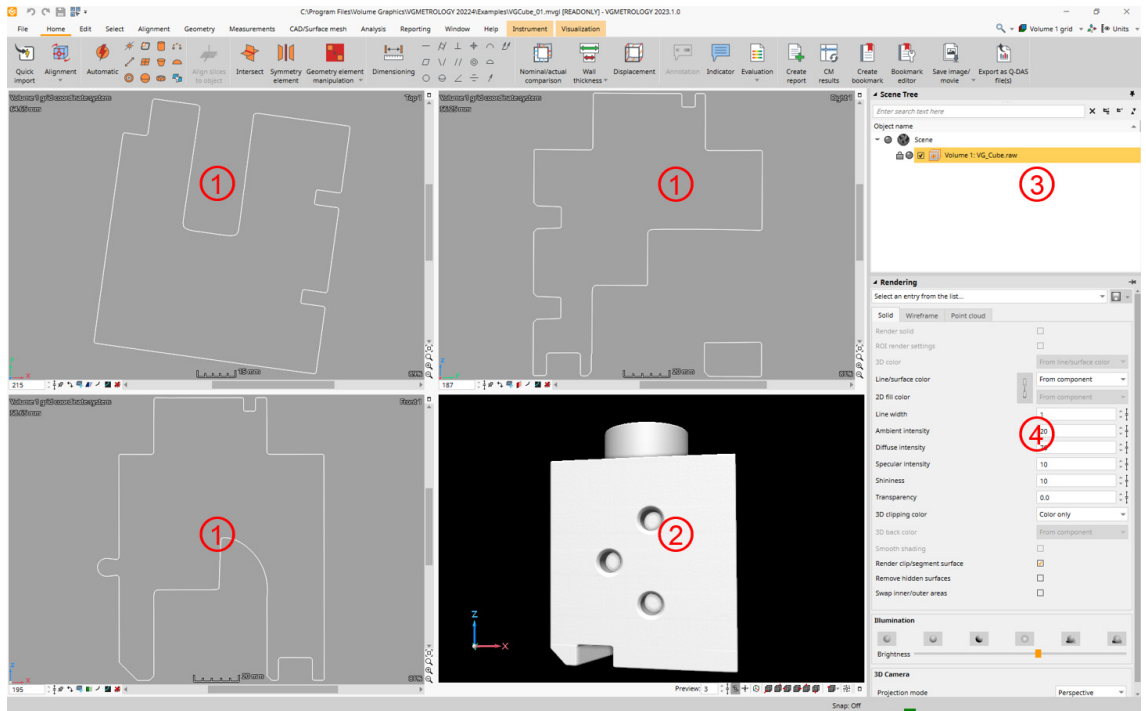




Figure 3-1: Typical workspace

In the default layout of VGMETROLOGY you see

- the 2D windows (1);
- the 3D window (2);
- the **Scene Tree** tool (3);
- other tools, e.g., the **Rendering** tool (4).

In case the listed elements are not visible, toggle the visibility of the tools by activating them in the  **Tools** drop-down list on the **Window** tab. You can also realign the windows by selecting **Window** >  **Quad**.

## Scene Tree

In the Scene Tree, the currently loaded objects and their associated analyses, geometry elements, GD&T features, and regions of interest (ROIs) are listed in hierarchical order. Each entry in the Scene Tree has a checkbox, which allows you to toggle its visibility in the 3D and 2D windows.

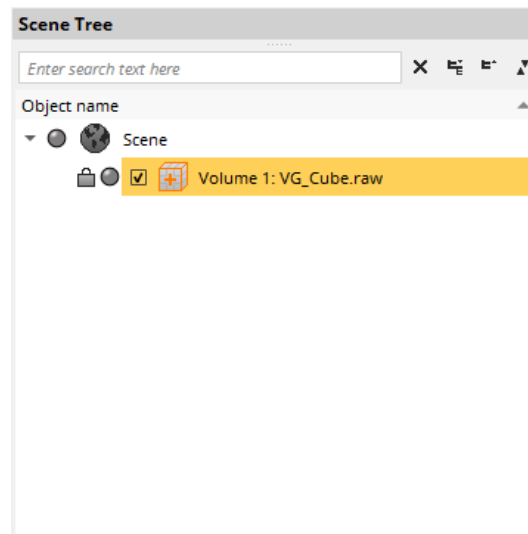
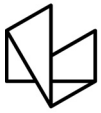


Figure 3-2: Scene Tree with **Volume 1**

1. By default, the checkbox in front of **Volume 1** is checked:
  - ➔ The 3D window will show a 3D image of **Volume 1**.
  - ➔ The 2D windows will show the colored outlines of **Volume 1** from the right, front, and top view.
2. Uncheck the checkbox in front of **Volume 1**.
  - ➔ **Volume 1** will no longer be visible in the 2D windows and the 3D window.
3. Check the checkbox in front of **Volume 1** to make it visible again.

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## 2D windows

By default, the 2D windows show the colored outlines of the currently visible objects as seen from the top (along the z-axis), right (along the x-axis), and front (along the y-axis) of the current coordinate system.

1. Click the **Top 1** window (the xy-plane) and use the mouse wheel to scroll through the object in the z-direction.
  - ➔ A blue navigation plane that indicates the current slice position will appear in the other 2D windows and in the 3D window. The navigation plane will disappear after a few seconds of inactivity and reappear each time you change the slice position.
  - ➔ The slice position spin box at the bottom left of the **Top 1** window will indicate the current slice.



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You can also use the double-headed arrow  at the bottom left of the 2D window or click and drag a navigation plane to scroll faster through the slices.

---

2. Now do the same for the **Right 1** window (the yz-plane) and for the **Front 1** window (the xz-plane).
  - ➔ The navigation plane for the yz-plane will be shown in red, and the navigation plane for the xz-plane will be shown in green.

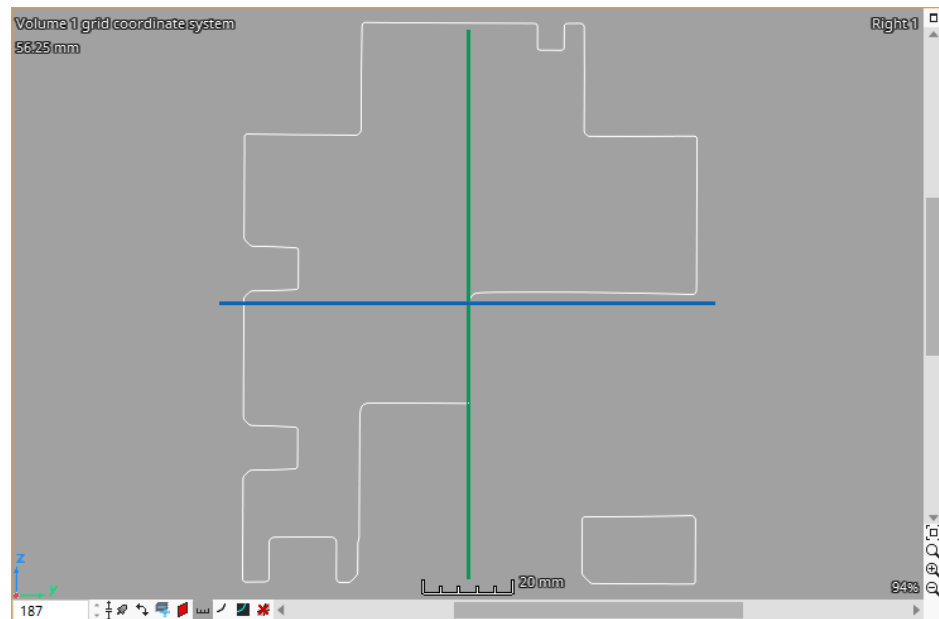
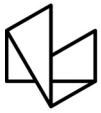














Figure 3-3: 2D window with navigation planes

3. To display the navigation planes permanently, click the **Navigation plane** icon ( , , or  ) at the bottom in any of the 2D windows.
  - ➔ The navigation planes will be permanently displayed in all three 2D windows and in the 3D window.
4. Click the **Navigation plane** icon ( , , or  ) again to permanently switch the navigation planes off ; click it a third time to resume the temporary display ( , , or  ).

## 3D window

The 3D window shows the rendered 3D image of the object currently selected in the Scene Tree. There are two basic transformation modes for the 3D window:  **Rotate** and  **Move** mode.

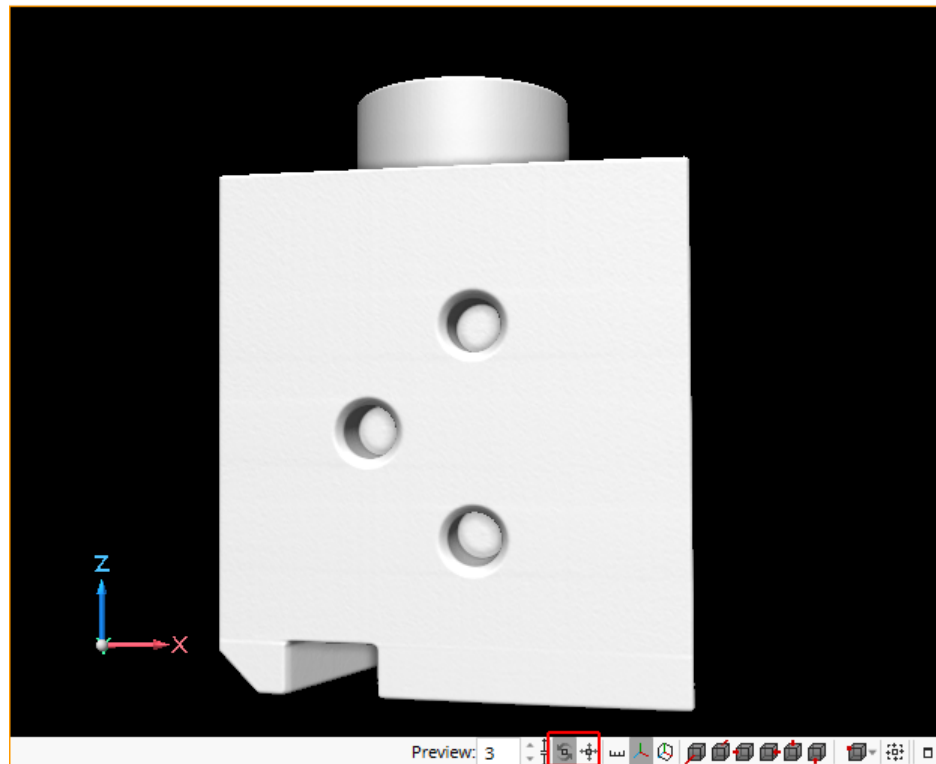


Figure 3-4: 3D window, **Rotate** and **Move** icons

1. To rotate the object, click the **Rotate** icon and click and drag the object in the 3D window.
2. To move the object along the vertical and the horizontal axis, click the **Move** icon and click and drag the object in the 3D window.
3. To move the object along the third axis (orthogonal to the screen, in your viewing direction), click the **Move** icon and use the middle mouse button to click and drag the object.



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You can also access the **Move** and **Rotate** functions via the **Edit** tab.

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## Tool dock

The tool dock provides access to various tools in VGMETROLOGY. You can open and close a tool by activating and deactivating its entry in the **Tools** drop-down list.

1. Go to the **Window** tab and in the **Tools** drop-down list, deactivate, for example, the **Rendering** tool.

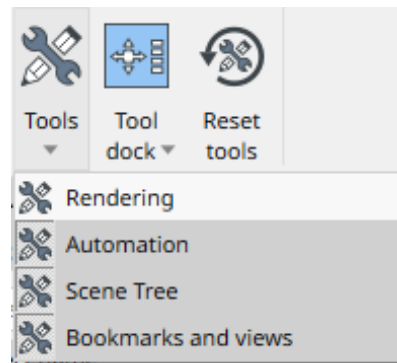
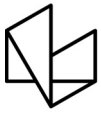





Figure 3-5: **Tools** drop-down list

- The **Rendering** tool will disappear from the tool dock.
  2. In the  **Tools** drop-down list, activate the **Rendering** tool.
    - The **Rendering** tool will reappear in the tool dock.
  3. In order to move the **Rendering** tool to another position on the screen, click and drag the title bar to a position outside the tool dock.
  4. Drag the **Rendering** tool to reposition it back in the tool dock.
- 


## Zooming in/out

1. In order to zoom the object in or out in a 2D window, hover the mouse pointer over a 2D window, hold down the **Ctrl** key, and scroll the mouse wheel. The zooming will use the mouse pointer as the center, so you will want to place your mouse pointer on an area of interest.
  2. To reset the zoom and center the slice view of the object in the 2D window, click the  **Focus selected object** icon.
- 



Double-clicking the  **Focus selected object** icon will reset the zoom, center the slice view, and take you to the slice in the middle of the data set.

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3. In order to zoom the object in or out in the 3D window, hover the mouse pointer over the 3D window and scroll the mouse wheel. Like in the 2D windows, the zooming will use the mouse pointer as the center, so you will want to place your mouse pointer on an area of interest.
  4. To reset the zoom and center the object in the 3D window, click the  **Center and focus camera** icon.
- 

## Changing the units and number of decimal places

By default, the unit in VGMETROLOGY is mm with two decimal places. You can change both.

1. On the right-hand side of the ribbon, go to the **Units** drop-down list.

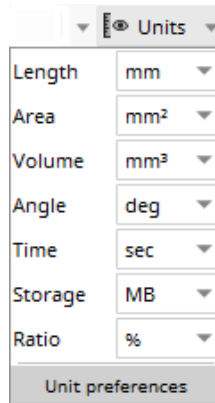


Figure 3-6: **Units** drop-down list

2. Select a different unit for **Length**, for example,  $\mu\text{m}$ .
  - ➔ The units for the current slice position and the scale bar in the 2D windows will immediately be updated (see Figure 3-7).

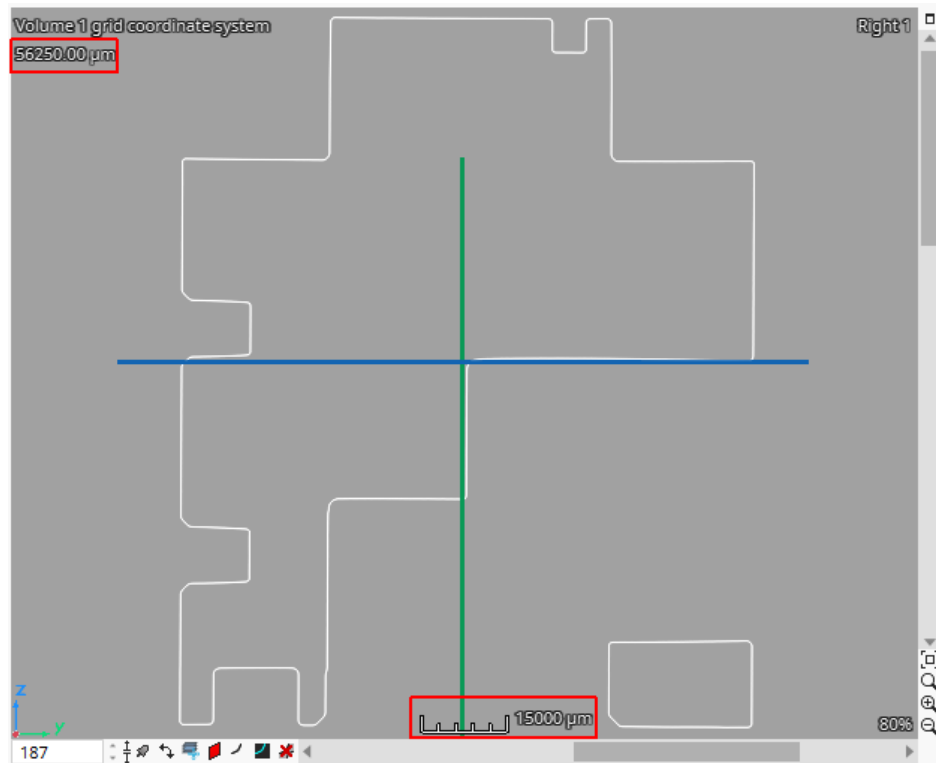


Figure 3-7: Changed length unit

3. Click the **Unit preferences** button at the bottom of the **Units** drop-down list.
  - ➔ The **Preferences > General > Unit > Properties** dialog will appear.
4. In the **Basic** section, change the number of decimal places for **Length** to 0.
  - ➔ The number of decimal places for the slice position will immediately change to zero.

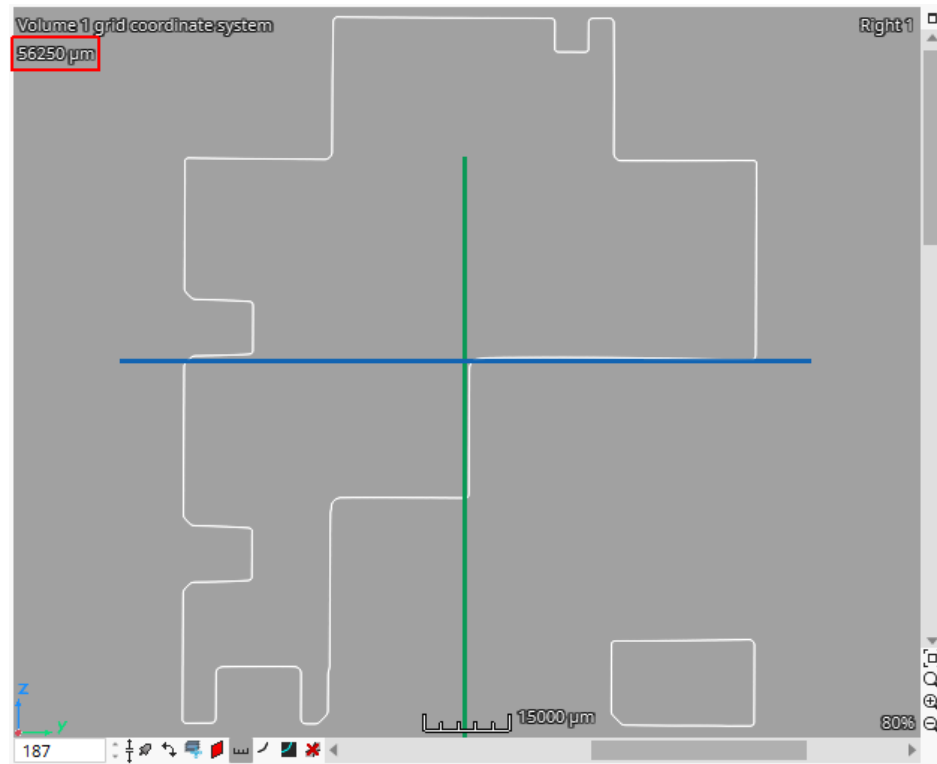
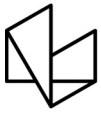


Figure 3-8: Decimal places set to zero



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The scale bar will not be affected by this setting.

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5. Change the settings back to mm with two decimal places.
-





# You've mastered this tutorial... now what?

Congratulations! You have successfully mastered your first steps in VGMETROLOGY.

We hope you enjoyed this tutorial. Ready to learn more? Why not give one of these a try:

- “Advanced alignment methods: 3-2-1 alignment”
- “Nominal/actual comparison”
- “Coordinate measurement: Introduction”
- “Coordinate measurement: Advanced”

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