

# Customizing Units

If you did not find a suitable [Using Units](#) in the standard libraries (ISO-80000), you can:


- [Creating a custom Value Type](#)
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## Creating a custom Value Type

If you want to use a different [Value Type](#) than our library provides, you can create a custom [Value Type](#) and specify a desired [Using Units](#) for it from the ISO-80000 package.

To create a custom Value Type

1. Select a package in the [Containment tree](#) where you want to create a new Value Type.
2. Right-click it and select **Create Element**.
3. In the opened dialog, search for a Value Type and select it.
4. Type its name in the following syntax: quantity name[unit name]. (e.g. volume[liter]).
5. Press Enter.
6. Double-click the newly created Value Type to open its [Specification window](#).
7. In the Specification window, specify the Unit property value:

- a. Click .
- b. In the **Select Instance Specification** dialog, clear the **Apply Filter** box.
- c. Make sure the ISO-80000 library is loaded in your project.



### Warning

If the ISO-80000 library is not uploaded in your project, you can load it directly in the **Select Instance Specification** dialog by clicking the **Load** button.

- d. Select the required Unit from the ISO-80000 package (e.g. litre).
8. Click **Close**.  
The new Value Type is defined in your project and can be used as a type for a Value Property.

## Creating custom Unit


If you need to use imperial units (e.g. inch, foot, mile) or other units that are not defined in the ISO-80000 standard, you can create a custom Unit in your project. A [Using Units](#) must always be related to a [Quantity Kind](#), but a Quantity Kind need not have any associated Units. Often equations can be expressed in terms of quantities that include Quantity Kinds without specifying Units.

To create a custom Unit

1. From the [Block Definition Diagram](#) palette, expand the **Value Type** button and select the **Unit** button.



If you do not see the Unit button, make sure the **Expert Mode** is turned on.

2. Click the mouse pointer on the diagram pane. The **Select Classifier** dialog opens automatically.
3. In the **Select Classifier** dialog, find the *Unit* Block, double-click it to select and click **OK**. The new Unit is created.
4. Type its name (e.g. mile).
5. Double-click the Unit shape to open its [Specification window](#).
6. In the Specification window specify:
  - The **Quantity Kind** property value:
    - a. Click .
    - b. In the **Select Quantity Kind** dialog, clear the **Apply Filter** box.
    - c. Make sure the ISO-80000 library is loaded in your project.



### Warning

If the ISO-80000 library is not uploaded in your project, you can load it directly in the **Select Quantity Kind** dialog by clicking the **Load** button.

- d. Select the required quantity from the ISO-80000 package (e.g. distance).
- The symbol of Unit:
    - a. In the [Property group list](#), select Slots.
    - b. Select the symbol slot and click the **Create Value** button.
    - c. Type the unit symbol in the Value area (e.g. mi).
    - d. Click **Close**.

The new Unit is created and can now be specified for the Value Type and then used in your project as a type of Value Property.

## Related pages

- [SysML Block Definition Diagram](#)
- [Instance Table](#)
- [Package import](#)
- [Using QUDV model library](#)
- [Using Units](#)
- [Quantity Kind](#)
- [Value Type](#)
- [Value Property](#)
- [Block](#)