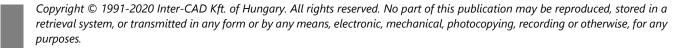


GRASSHOPPER PLUGIN FOR AXISVM

Component 3.0

AxisVM X5 R3 OR LATER VERSION FEBRUARY 2020



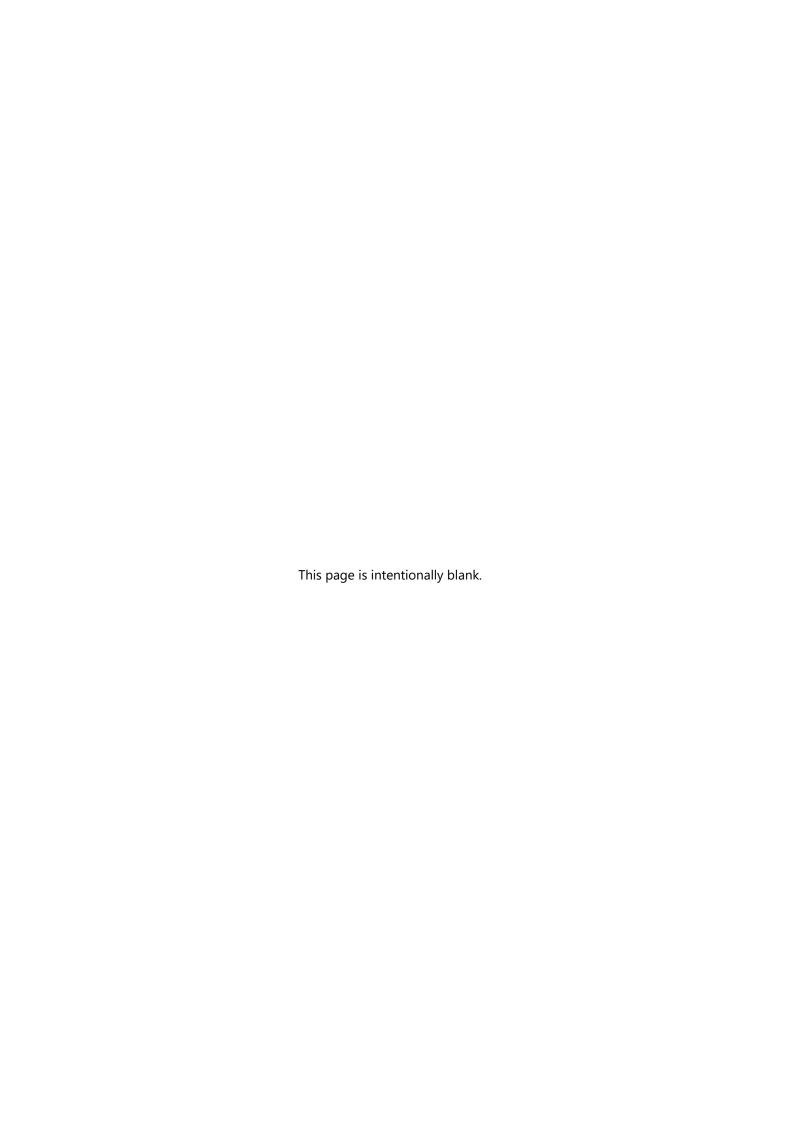
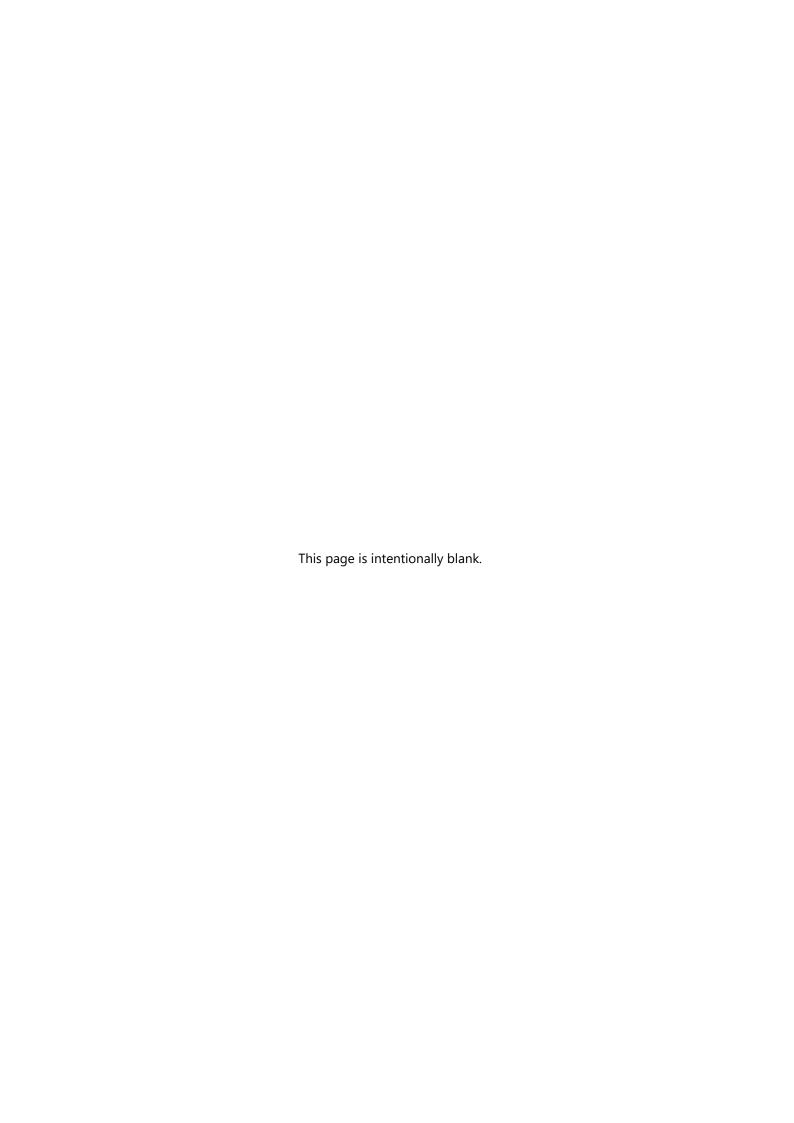


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1. COMPONENTS

1.1. ATTR



Cross-section

Usage This component is used for selecting a Cross Section from the AxisVM profile catalogue. After loading

the cross-section can be selected by double-clicking on the Cross-section component.

Input There is no Grasshopper input for this component.

Output Selected cross-section as a text value. If OK is not pressed, it returns null / empty Text Value.

Advantage Graphical user interface for selecting.

Disadvantage Loading cross-sections from a catalogue is very slow, and loading uses many resources.

If the catalogue is loaded, the Selecter DialogBox appears automatically.



Usage This component is used for selecting a Material from the AxisVM material catalogue. After loading, the

material can be selected by double-clicking on the Materials component.

Input There is no Grasshopper input for this component.

Output Selected material in a text value. If OK is not pressed, it returns null.

Advantage Graphical user interface for selecting.

If the catalogue is loaded, the Selecter DialogBox appears automatically.

1.2. BASE



Line to AxisVM Line

Usage This

This component is used for sending lines from Rhino to AxisVM. Lines can be defined as members (truss) if material and cross-section are both defined.

Input

- Lines as list
- Material as a text value (optional)
- Cross-section as a text value (optional)

Output AxisVM lines as a list (if lines can be defined as trusses, they will be sent as trusses)

Lines are created independently in the component.



Usage This component is used for sending mesh structures from Rhino to AxisVM. Mesh structures can be defined as

- domains
- surfaces (shell)
- lines or trusses (from mesh edges)

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Input

- Mesh as list
- Material as a text value (optional)
- Cross-section as a text value (will be used only if the output is connected to edges) (optional)
- Thickness as a double-precision floating number (optional)

Output AxisVM Meshes as a list. If necessary inputs are missing then basic values will used in another's component input (material=S235 and thickness=10cm for surfaces and domains).



NodeSupports

Usage This component is used for creating node supports.

Input 6 double-precision floating numbers for stiffnesses of node support.

Output AxisVM node support



Point to AxisVM Point

Usage This component is used for creating nodes from Rhino to AxisVM

Input

- Points as a list
- Node support as an item (optional)

Output AxisVM Node

1.3. **SEND**



GrasshopperToAxisVM

- This is the main component of the plugin. Currently, every communication between Grasshopper and AxisVM is done by this component.
- After creating this component, a new AxisVM application will be initialized with a new Model. Currently, only new models can be created from Grasshopper.
- If any of the input parameters are changed the component will refresh the newly created AxisVM model's status.

Usage This component is used for sending Objects to AxisVM.

Input (* - as a list)

AxisVM Points* Points will be created from an AxisVM Point (optional)
AxisVM Lines* Lines will be created from an AxisVM Line (optional)
AxisVM Surfaces* Surfaces will be created from an AxisVM Mesh (optional)
AxisVM Domains* Domains will be created from an AxisVM Mesh (optional)
AxisVM Edges* Edges will be sent from an AxisVM Mesh (optional)

Output There is no Grasshopper output for this component.

Loading of this component blocks any Grasshopper - user interactions.

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2. KNOWN ISSUES

- Cross-sections's component loading is slow.
- Only new AxisVM applications can be created by this version.
- Loading Rhino/Grasshopper is slower due to reading information from the catalogue.
- Loading a Grasshopper project which contains *Materials, Cross Sections* will always ask for selecting values after the project is loaded, which slows down the opening of the project.
- Loading a Grasshopper project which contains *GrasshopperToAxisVM* components can cause multiple AxisVM applications opened at the same time.