IntegaDesign®

User Manual for the Plant 3D™ Plugin SpecCheck

1. Introduction

This manual describes the usage and features of the Plant 3D™ plugin SpecCheck, which has been specifically developed to simplify pipe class verification in Autodesk Plant 3D™.

The main focus lies on Python-based components, whose functionality and integration are made significantly more efficient through this plugin.

The plugin streamlines the management, analysis, and updating of pipe classes and components, offering a wide range of automation and visualization tools tailored to the specific needs of Plant 3D™ users.

2. Installation und Setup

SpecCheck

System Requirements

- Autodesk Plant 3D™ 2022 or higher
- Python scripts defined within the pipe classes
- .NET Framework 4.8 (if required)

Installation Guide

1. Download the installer from our website.
2. Run the installer and follow the instructions.
3. After installation, the plugin will be loaded into Plant 3D™ automatically.
4. Restart Plant 3D™ to ensure the plugin is correctly integrated.

Initial Configuration

- Define the default directories for pipe classes and Python scripts.

3. Main Purpose of the Plugin

The plugin was developed to efficiently test pipe classes in Plant 3D™, especially when Python-based components are involved. It provides tools that enable users to:

- Open and directly modify Python scripts.
- Easily import, update, and visualize pipe classes and components.
- Identify errors and incompatibilities in pipe classes more quickly.

Through these features, the plugin supports seamless integration of Python components into Plant 3D™ and significantly reduces the manual effort required for pipe class verification.

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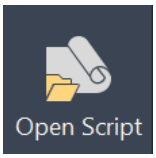
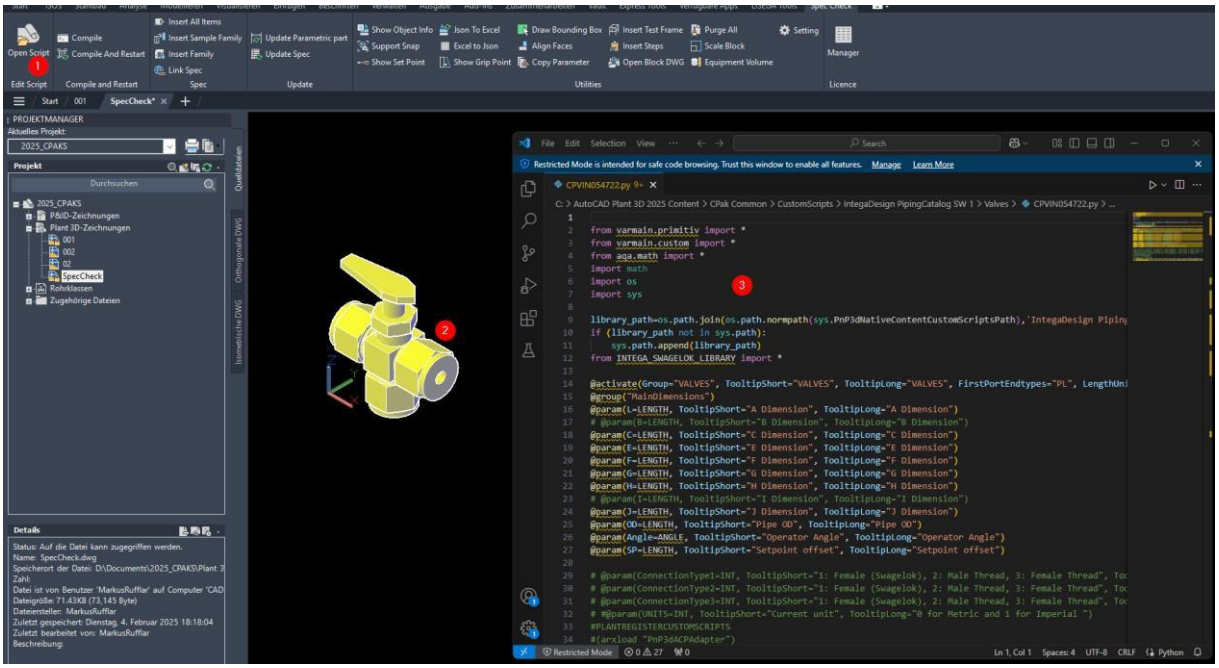
4. Features in Detail

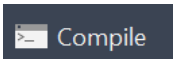
4.1. Script Automation

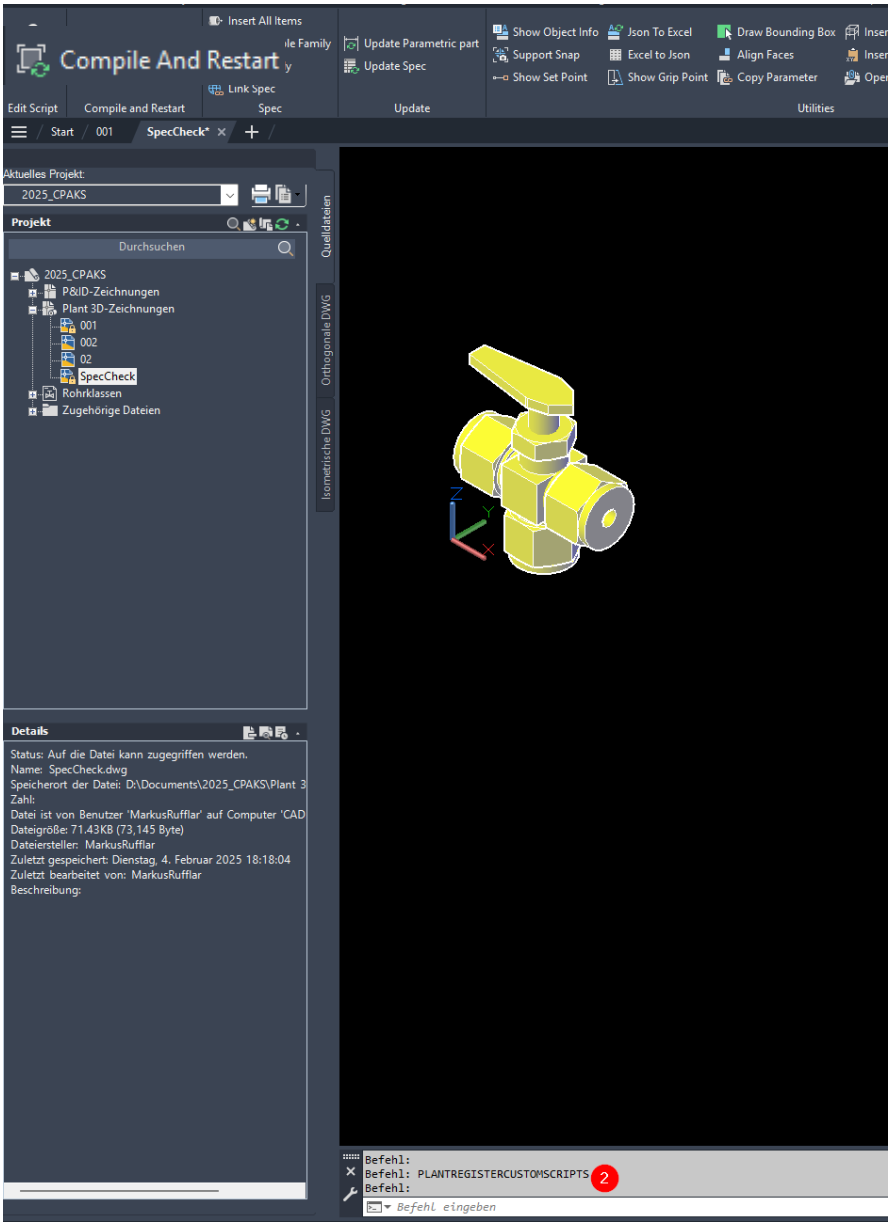
- **Automatic Opening of Python Scripts:** When a component is clicked, the corresponding Python script from which it was created is automatically opened..





- **Befehl Command "PlantRegisterCustomScripts":** Executes the command *PlantRegisterCustomScripts*.

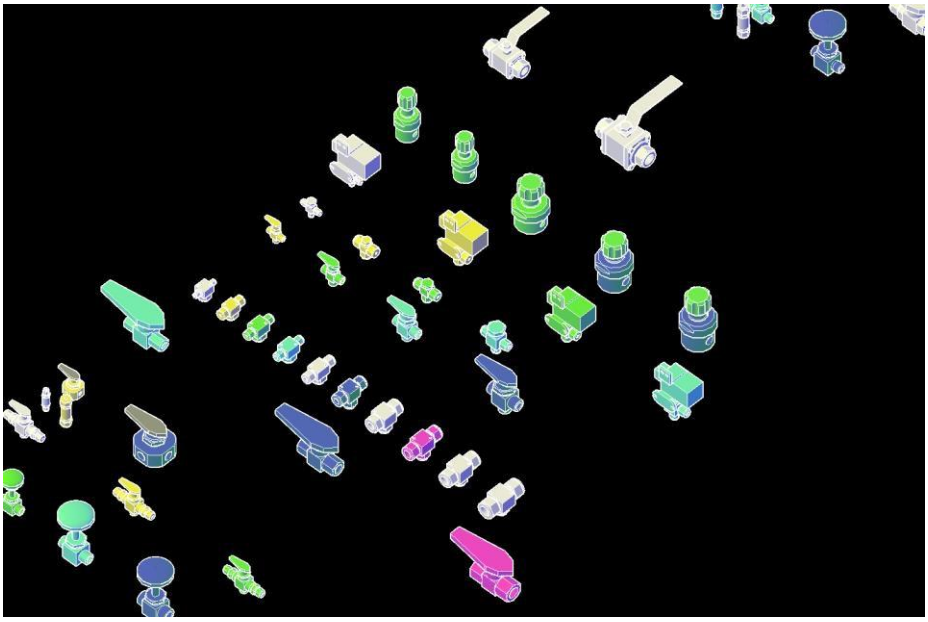




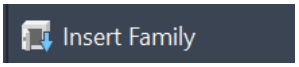
- **Command "CompileAndRestart":** Executes the command "PlantRegisterCustomScripts" and restarts Plant 3D™.

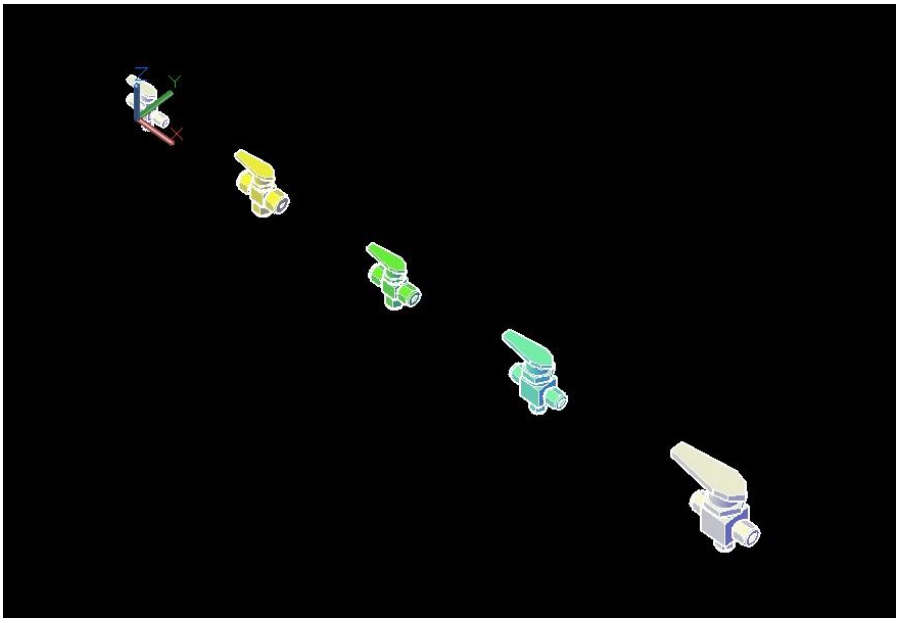
4.2. Component Import

- **Single Import:** Imports individual component families with a defined spacing.

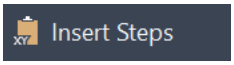


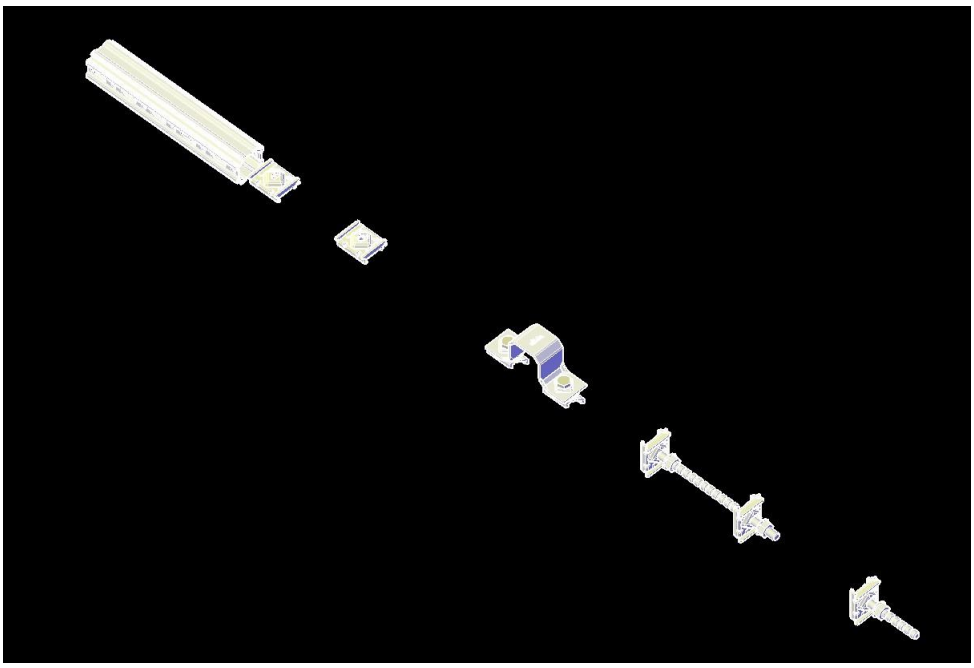
- **Size Import:** Imports all sizes of a component family into the current drawing. The spacing settings are requested dynamically when executing the command to ensure maximum flexibility.





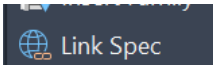
- **Bulk Import**: Supports the import of multiple components and STEP files simultaneously.

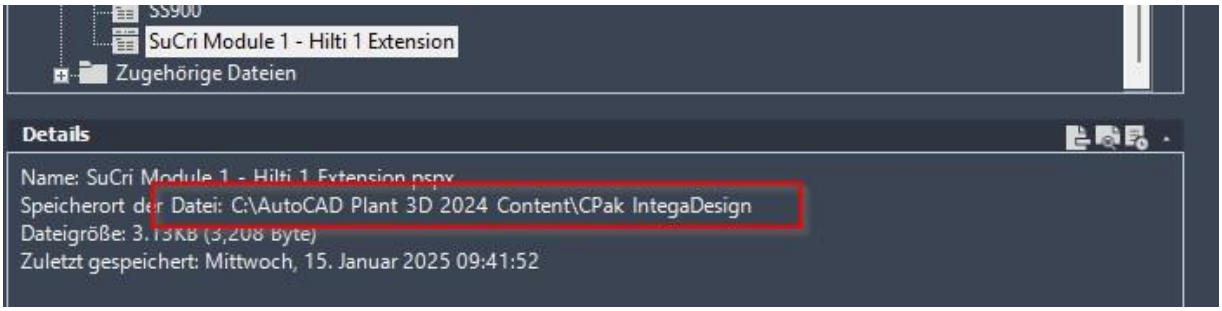




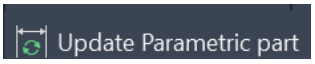
4.3. Pipe Class Management

- **Linking of Pipe Classes:** Instead of being copied, they are directly linked to the active project.





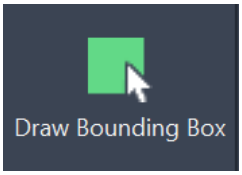
- **Update Commands:** Updates scripts, components, and pipe classes, including linked classes.

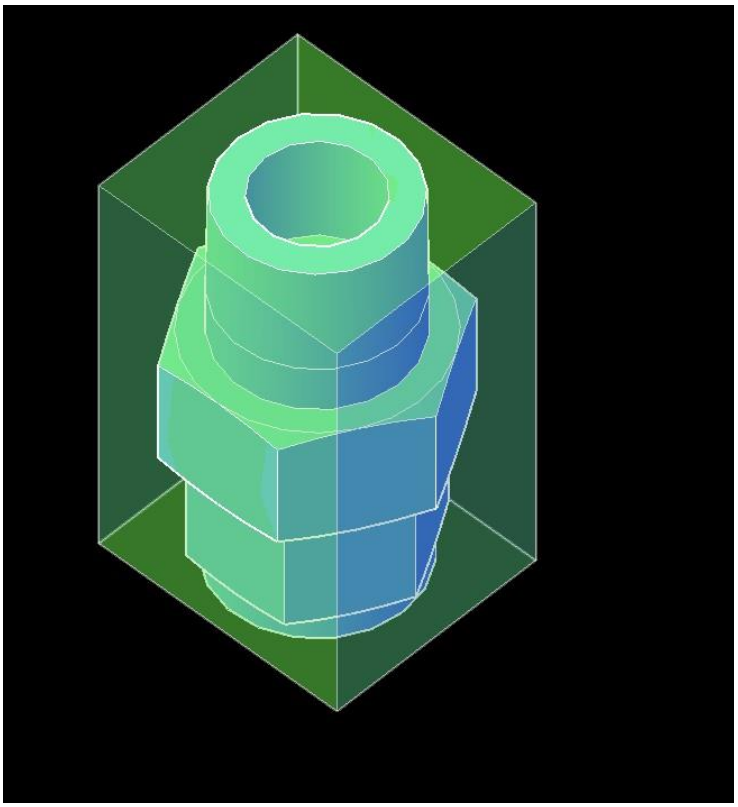


- **UpdateCommands:** Performs a quick pipe class change.

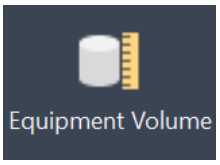
4.4. Visualization and Analysis

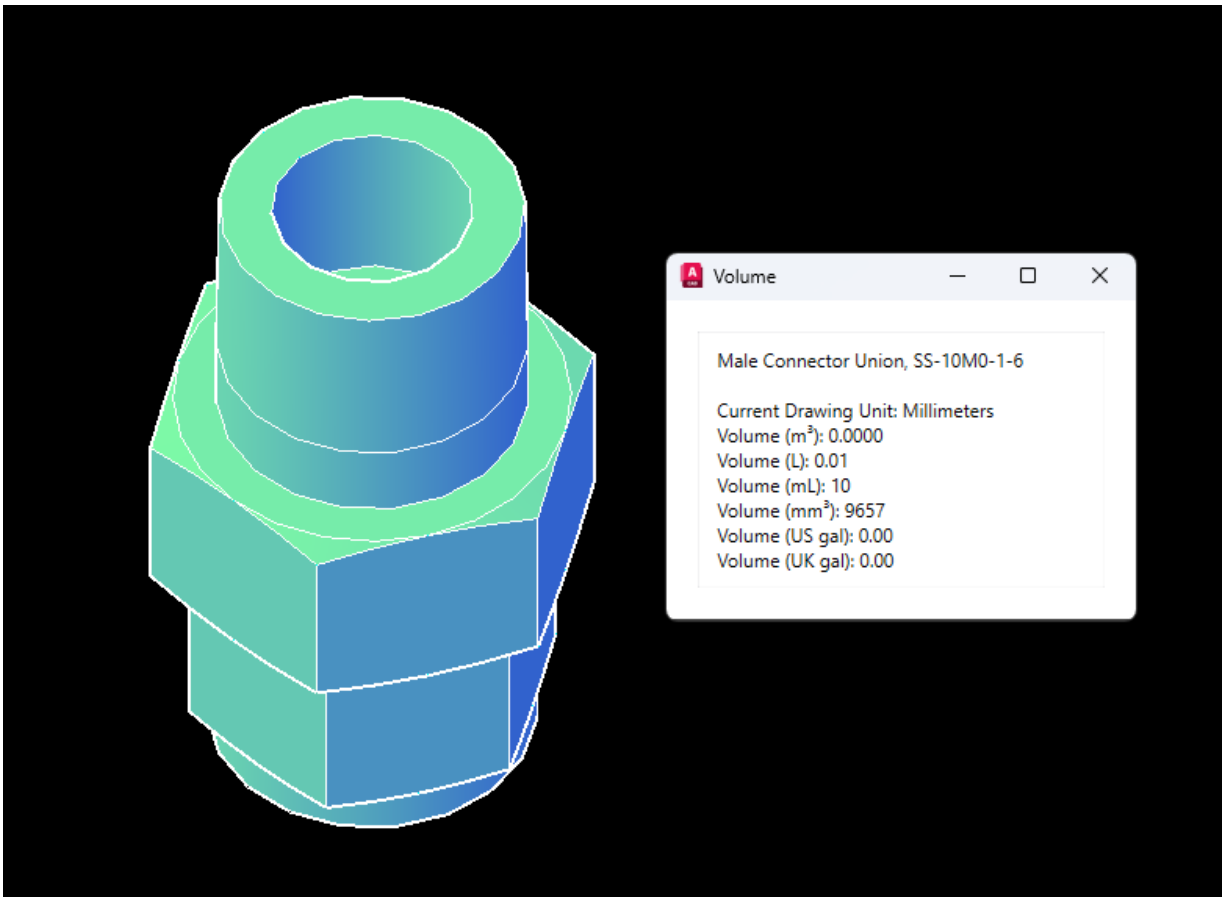
- **Bounding Box**: Creates a bounding box around selected objects for better clarity.



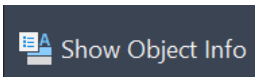


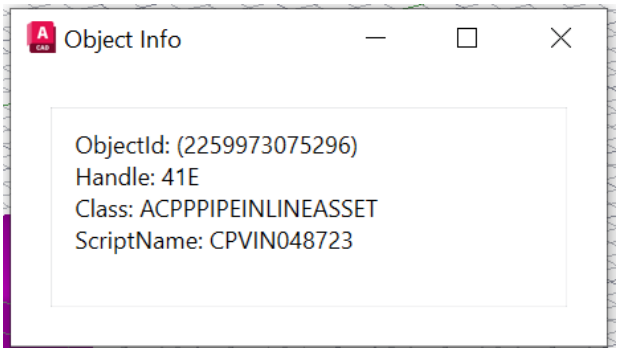
- **Component Volume Calculation:** Calculates the volume of components using P3D-specific algorithms.



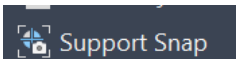


- **Object Properties:** Displays detailed object-specific properties.

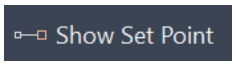


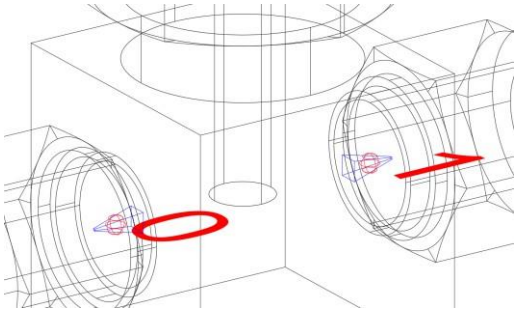


- **Snappoints:** Enables all possible snap points for P3D components to allow proper placement of components.



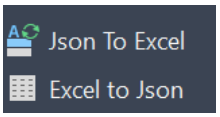
- **Connection Points:** Graphically visualizes the connection points of components.



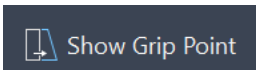


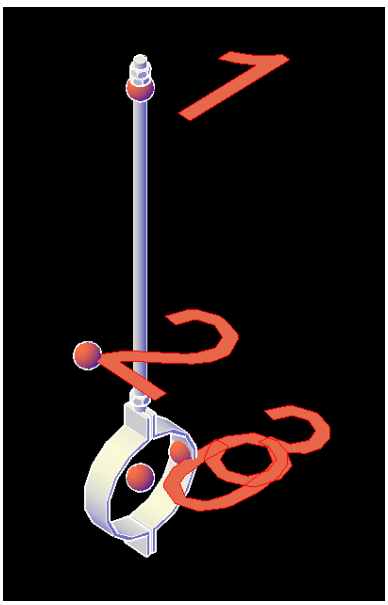
4.5. Additional Tools

- **Excel-JSON Conversion:** Converts Excel files to JSON and vice versa.



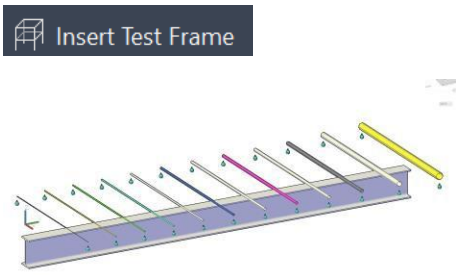
- **Component Grip Positions:** Graphical display and adjustment.



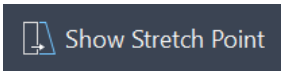


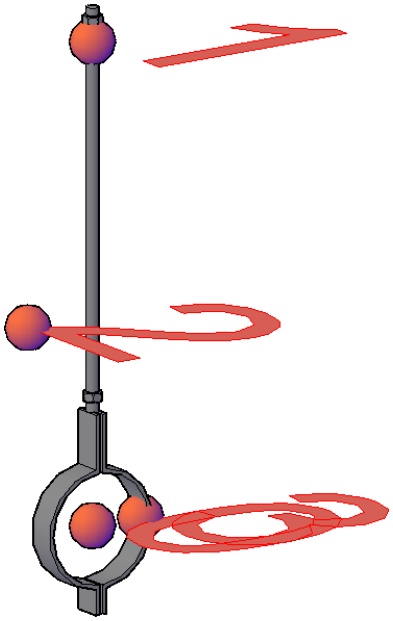
- **Alignment Tools:** Enable the precise alignment of surfaces.

- **Structural Steel Test:** Placement of pipes over a test steel structure at defined intervals.

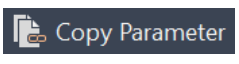


- **Show Stretch Points**: Different visualization of grip positions.



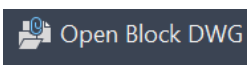


- **Clipboard Copy**: Copies the creation parameters of a selected component to the clipboard.



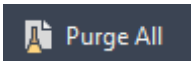
L=300;L1=42;OD=19;OD1=6;OD2=4;OD3=6;OD4=17

- **Block Management**: Automatically opens the associated DWG when block components are used.

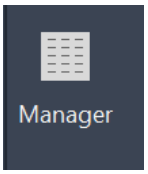


Scale Blocks: Scales selected blocks to a defined scale.

- **Purge Command**: Performs an optimized cleanup of the drawing, similar to the standard "Purge" command, but faster and more efficient.



- **License Manager**: Opens the license manager for managing licenses.



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5. Examples and Tutorials

Example 1: Importing Python Components

1. Start the import command "PlantRegisterCustomScripts".
2. Select the desired component family.
3. Define the spacing for placement when prompted, and start the import.

Example 2: Updating a Pipe Class

1. Open the pipe class management.
2. Click "Update" to synchronize all links and components.

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6. Troubleshooting

Common Issues

- **Python scripts are not recognized:** Check the paths in the configuration.
- **Incorrect placement of components:** Ensure that the pipe class is correctly linked.

Solutions

- Update the plugin via the Add-In Manager.
- Contact support for complex issues.

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7. Glossary

- **Bounding Box:** A geometric boundary that encloses an object.
- **Pipe Class:** A collection of components and their properties.
- **Python Components:** Components created using Python scripts.

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8. Conclusion

The Plant 3D™ plugin is a powerful tool that revolutionizes pipe class verification and the integration of Python components in Plant 3D™. Through automation and a wide range of specialized tools, users can save time and execute their projects more efficiently.

For further information and updates, please visit our website or contact our support team at helpdesk@integadesign.de.