AutoCAD Plant 3D 2025

Brief overview

What is AutoCAD Plant 3D?

AutoCAD Plant 3D is a class-based software for creating 3D models of process plant components.

It allows you to plan piping runs, add equipment and other components, and incorporate support structures.

The software ensures that underlying data is exchanged directly between the 3D model, P&IDs, isometric and orthographic drawings to ensure consistency and timeliness of information.

Concepts and Terms An Overview	
Project manager	Central hub for all drawings, pipe classes and data You always work within one project.
Data manager	Table with all project or character data. You can edit this data directly.
Part	pipe system component
Platzhalterteile	A component that is used temporarily in the model until the part is added to the pipe spec
User defined Parts	A component that is not in a piping system specification
Project.xml	The project file

Navigation Navigating the model



Left click to select object or start cross selection Right click -> object context menu Mouse wheel click -> PanMouse wheel scroll -> Zoom Shift + mouse wheel click -> Orbit Ctrl + right mouse button > Snap options Ctrl + left mouse button on fastener -> connection selection

Do you need more information?

Online help:	https://help.autodesk.com/view/PLNT3D/2025/DEU/
Forum:	autodesk.com/autocadplant3d-discussion
IntegaDesign CAD Blog Consulting:	https://blog.integadesign.de/de/cad-blog https://www.integadesign.de
SuCri	https://www.sucri.de



Using the Project Manager

You can use Project Manager to create new drawings, open existing drawings, copy or link files to project folders, and start projects.

To create a project drawing:

1.In Project Manager, right-click "Plant 3D Drawings" and select "New Drawing". 2. In the "New DWG" dialog box, enter the drawing number, author, drawing title, and file name.

3. Click OK.

Short tips:

File

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Right-click a node in the Project Manager to open a context menu of useful commands. Create and manage folders according to the needs of your project within the Project Manager. Here you can copy or link drawings.

Creating tool palettes

Short tins:

In the Spec Viewer, click "Insert in Model", "Add to Tool Palette", or "Create Tool Palette"

Tool palettes are the primary method for adding valves and

other components to your piping model. Click an item in a

tool palette, then click on the model to place it.

Initial Steps A quick learning program

Step 1: Start AutoCAD Plant 3D

Step 2: Creating a Project Drawing

- open the Project manager, navigate to Plant 3D drawing and click on "New drawing". - enter the required information and click OK.

Step 3: Creating a Steel Structure

- On the ribbon, go to the Steel Structures tab. - Select Grid and click Create. - Under Settings, select Profile Settings, - Place and align the profile with the grid. - Repeat this process for stairs, ladders and other elements

Step 4: Creating Devices

- Go to the Home tab on the ribbon and click Create Equipments. - Select a component and enter the shape and nozzle information. - Click Create and place it in the model.

Step 5: Creating a pipe route

-Under the Home tab in the ribbon, select from the drop-down menus: - Line number - Pipe class - Click Create Pipe Route.

Click the desired points in the model; press ENTER to finish.

Step 6: Insert valves or fittings

- Use the Tool Palette or go to the Home tab and open the Pipe Spec Viewer. - Select the desired fitting and click Insert into Model. - Place them in the model.

Step 7: Creating isometric drawings

- Navigate to the ISOs tab on the ribbon and select Create ISO > Production ISO. - Specify the line numbers, ISO type, and output settings for your project. - Click Create ISO.

Step 8: Generate 2D Ortho Drawings

- Go to the Home tab on the ribbon and select Create 2D View. - Select the Ortho drawing and click OK. - Adjust the view, set the scale, and display the extents; click OK.

- Align the view on the orthographic drawing.

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Start/Continue:	Starts or continues laying the pipe.
Reverse:	Rotates a component in the opposite direction.
	Yellow for connecting objects (e.g. screw set) Blue for all other components
Exchange:	Pipe system component Yellow for connecting objects (e.g. screw set) Blue for all other components
Height:	Move the tube up or down to set the desired height.
Move/Stretch:	Moves a component or stretches an existing pipe.
Rotate:	Shows the compass to rotate the component. Yellow for connection objects (e.g. screw set) Blue for all other components.
Add nozzles	Adds a nozzle to an equipment.
Edit the nozzle:	Edits an existing nozzle on an equipment. For equipments from the catalog, you must first click on the nozzle with CTRL + left mouse button so that the pen appears.
Placeholder part:	Indicates whether this is a placeholder part.
Flow direction arrow:	Indicates the direction of the flow. The blue arrow is the flow reversal symbol.
Iso symbol:	The sphere shows that an iso symbol has been placed at this position.
Reference dimension:	The sphere shows that there is a reference dimension to an object at this position.
Starting point:	Sets the starting point of iso generation.

AutoCAD Plant 3D 2025

Add.

Modify...

Delete

Help

File extensions General overview

File extension Description

- .dwg Standard file format for drawings in AutoCAD that stores 2D and 3D design data
- .dwt AutoCAD drawing template file used as a basis for new drawings
- .dcf Data control file used in various Autodesk programs to manage project data
- .pcf Piping Component File, contains piping components and data used in Plant 3D and other piping software
- .pspx / .pspc Pipe class files for Plant 3D components, stores components and data.
- .rcfx File format for report templates in AutoCAD Plant 3D 2025, used to customize reports. Up to version 2024, the format for report templates was .rcf. If you try to open an old template with 2025, the template will be automatically converted.
- .xml Extensible Markup Language file that stores structured data and is used to exchange data between different applications.
- .pcat / .acat Catalog files in Plant 3D that contain material and component data for piping and equipment
- .peqx Project change log file that tracks changes and versioning in Plant 3D projects
- .atr Attribute file that stores custom properties and metadata in AutoCAD.
- .dwl Lock file that indicates that a DWG file is currently being edited to prevent simultaneous access
- .bak Backup file, automatically created by AutoCAD to save a backup copy of the drawing
- .lok Lock file used in Plant 3D to prevent simultaneous access to projects or files
- .adsk Autodesk Exchange Package file used to install apps and extensions for Autodesk software
- .py Python script file that contains source code in the Python programming language
- .pyc Compiled Python file generated by Python interpreter to execute source code faster

Edit data in the data manager Adjust your model data

You can insert, view, edit and capture information about components and lines in a drawing. The Data Manager is ideal for viewing and editing multiple data sets at once. You can also export elements to Microsoft Excel® and edit the data there.

Columns	de la	Long Description (Family)	Compatible Standard	Manufacturer	Material	Material Code	Long Descript (Size)
- Heat Exchanger	•						Buttweld
- Misc Equipment		BOLT SET, RP, 30.			CS	ASTMA193 B7,	STUD BOL
Mump							Buttweld
- 1808		Gate Valve, Solid.	ASME B16.10		CS	ASTM A216 Gr	GATE VAL
- Fastanara		GASKET, SWG,	ASME 816.20		CS	SS/PTFE	GASKET,
- Bot Set		FLANGE WN, 30	ASME 816.5		CS	ASTMA105	FLANGE 1
- Buttweld - Gasket							Buttweld
- Socketweld							Buttweld
- Tap Weld							Buttweld
Thread		PIPE, PE, ASHE B	ASME 836.10		CS	ASTMA106 Gr B	PIPE, 6" NI
Pipe Run Component							Socketwe
Canal Canad Canal Canad Canal Canad Canal Canad Canal Canad Canal Canad		REDUCER (ECC)	ASIVE B16.9		CS	ASTMA234 Gr	REDUCER
- Ebow		ELL 90 LR, 8W,	ASME B16.9		CS	ASTMA234 Gr	ELL 90 LR

Plantendcodes

Data

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An overview

With the "Plantendcodes" command you can view existing connection end types and add new ones.

Endcode	Description	Add	Endcode	Description
Undefined ET	Undefined End Type		LLP	Lined Lap Joint
PL	Plain End, Socket Male	Modify	LUG	Lug
BV	Beveled End	Delete	BELL	Bell
THDM	Threaded Male		SPIG	Spigot
THDF	Threaded Female		TAP	Тар
SW	Socketweld Female		MJM	Mechanical Joint Male
FL	Flanged		MJF	Mechanical Joint Female
WF	Wafer		MJP	Mechanical Joint Plug
LAP	Lap joint	- 1	PFS	Push Fit Socket
GRV	Grooved		Universal_ET	Universal End Type
SO	Slip on		TC	Triclover End Type
PPL	Plastic Plain		C	Female Solder End Type
PSW	Plastic Socket Female		FTG	Male Solder End Type
LFL	Lined Flange		FA	Flare End Type
LLP	Lined Lap Joint		P	Press End Type
LUG	وبنا		SL	Slip End Type
DELL	Dell			

Modeling of devices General overview Create

There are three options available for equipments: Use **predefined equipment types**: Select from predefined types such as pumps.

Assemble equipments from existing shapes: Combine different standard shapes to create.

Create custom equipment: assemble using AutoCAD solids and surfaces.

The "Create Equipment" dialog allows you to set up your equipment by class (e.g. Pump > Centrifugal Pump). After placing the equipment, you can add or change nozzles by clicking on an "Add Nozzle" grip.

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