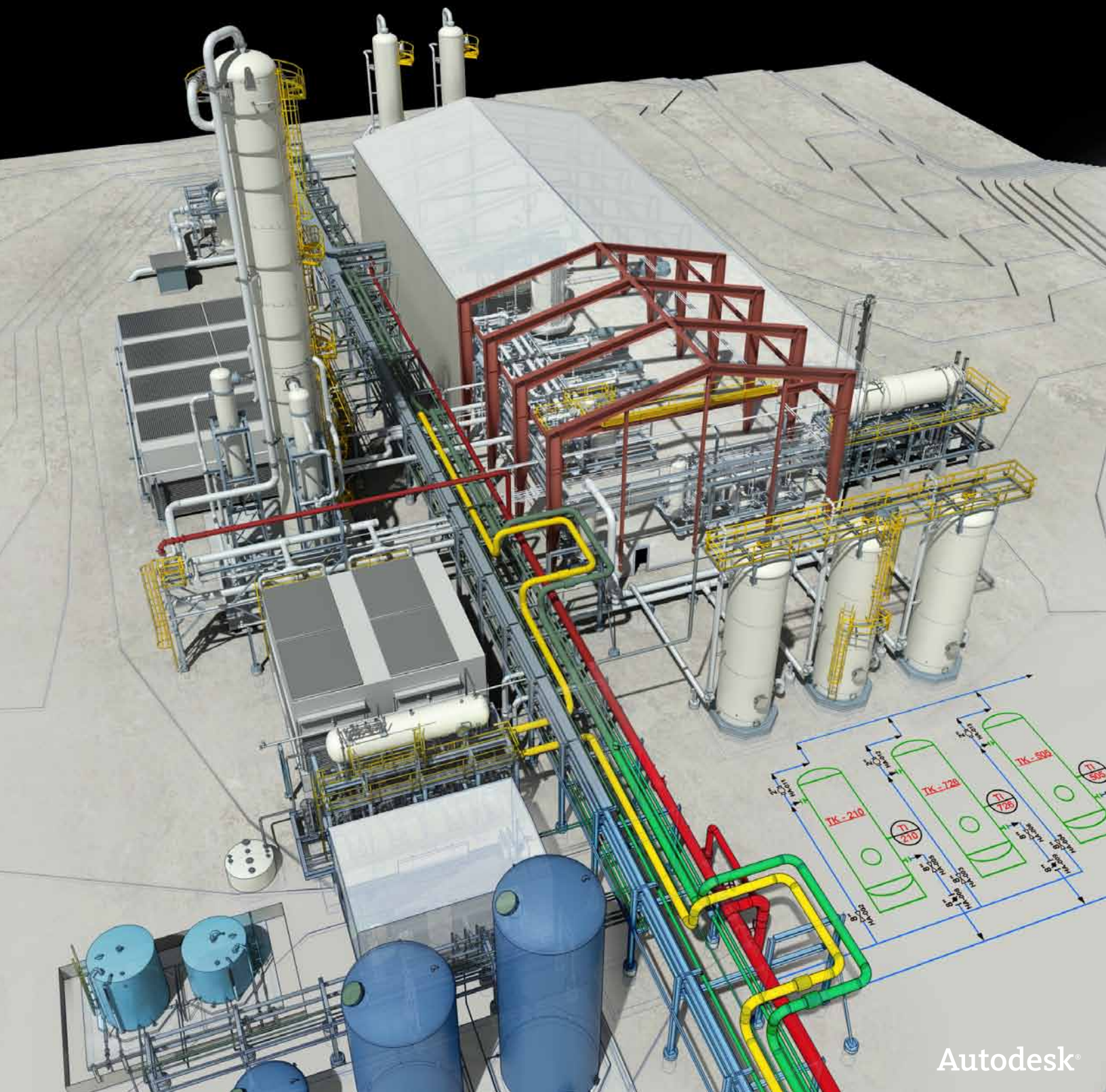
Autodesk®

Plant Design Suite

Integrated solutions for plant design and whole-project review



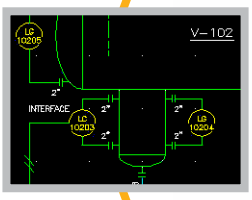
Autodesk®

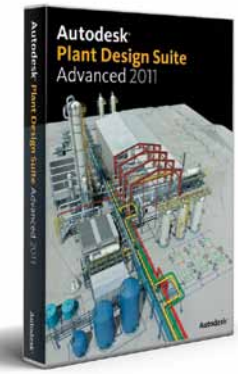
The Suite Advantage

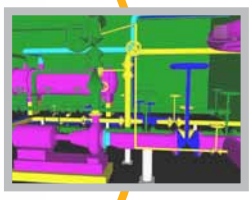
The suite combines AutoCAD, AutoCAD P&ID, AutoCAD Plant 3D, and Autodesk Navisworks software in a single integrated plant design solution, which helps streamline 2D drafting, P&ID design, 3D modeling, construction document generation, and project review processes.

AutoCAD® Plant 3D
Design, model, and document process plants with easier isometric and orthographic creation.

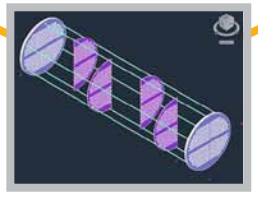
AutoCAD® P&ID
Create, modify, and manage piping and instrumentation diagrams, and then reconcile the underlying P&ID data with the 3D model.







Autodesk® Navisworks®
Aggregate models from multiple design packages, visualize and share combined models, and identify clashes and interference.



AutoCAD®
Design and draft with the powerful and flexible features of one of the world's leading CAD tools.

Common Project Setup, Data Management, and User Interfaces

Project Setup
Enter pertinent information such as project standards and specs that will be used to drive creation of piping and components. Identify and add a variety of stock or custom components and specifications, which then populate the Tool palette when design begins.

Project Manager
Set up projects more easily and preview drawings with straightforward organization and management of DWG™ files.

Data Manager
Sort and organize underlying plant design data for easier referencing and to see specific information within the context of the drawing or project. More easily update information and generate reports as the project progresses.

Workspace and User Interface
The interface includes a large drawing window, desktop organization capabilities, and access to plant design tools and commands.

Report, Search, and Query
Search for, query, and manipulate data contained in drawings. Generate materials lists and create reports based on particular search criteria. Export the information as piping component format (PCF) files for integration into other applications such as stress analysis.

Point Cloud Support
Bring 3D scans to life. AutoCAD software supports up to two billion points so users can more quickly visualize scanned objects directly within the modeling workspace.

Available in Premium and Advanced Editions
Autodesk Plant Design Suite is available in Premium and Advanced configurations. Both editions are economical and easy to deploy.

Autodesk® Plant Design Suite Premium:
- AutoCAD
- AutoCAD P&ID
- AutoCAD Plant 3D
- Autodesk Navisworks Simulate

Autodesk® Plant Design Suite Advanced:
- AutoCAD
- AutoCAD P&ID
- AutoCAD Plant 3D
- Autodesk Navisworks Manage

Start Easier, Run Better, and Finish Sooner with AutoCAD P&ID

Use AutoCAD P&ID to help create, modify, and manage piping and instrumentation diagrams.

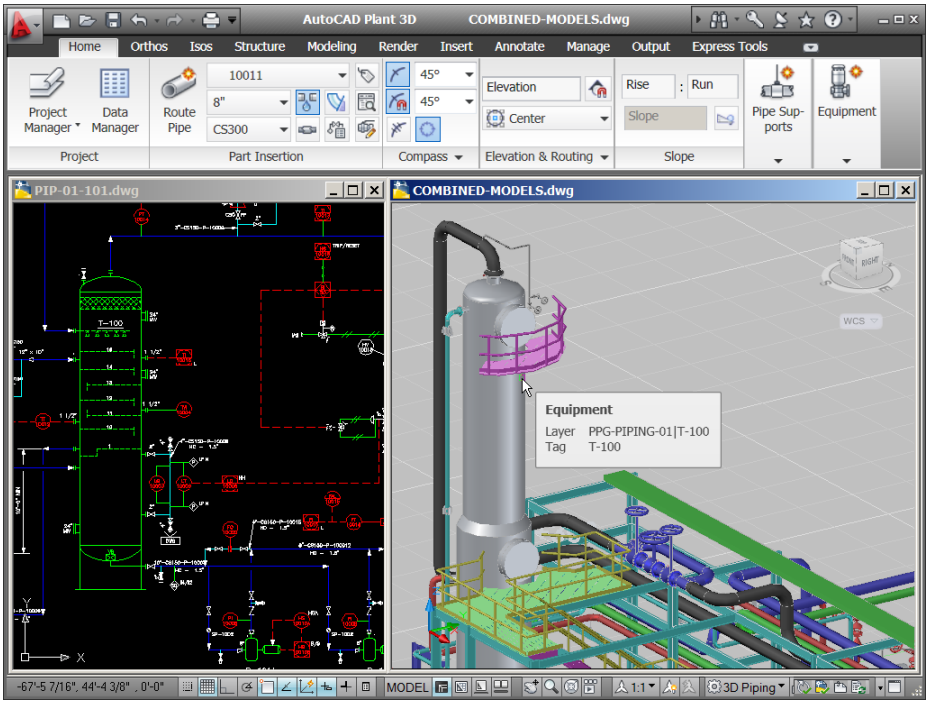
Start Easier
Using the standard AutoCAD-based functionality, AutoCAD-trained professionals can start using AutoCAD P&ID with minimal training.

Save Time
Developed specifically for P&ID designers, AutoCAD P&ID includes a collection of tools to help automate and simplify many of the detailed design and editing tasks performed every day.

Support Data Integrity
Whether you need to generate indrawing reports or export information to other project team members, AutoCAD P&ID includes many features to help boost-data integrity in the face of ongoing design changes and modifications analysis.

The results are compelling—the 'headline' productivity gain was found to be in the region of 40 percent—and this outcome was based on a rigorous and wide-ranging test of AutoCAD P&ID capability.

—Tony Christian
Cambashi Limited AutoCAD P&ID Productivity Study



AutoCAD P&ID software features simple drafting, editing, reporting, validation, and exchange of design information. Everyday P&ID work tasks are streamlined and automated to help boost productivity, while component and line information is more easily accessed and shared as you work.

Symbol Libraries
Place snap-to industry-standard symbols (PIP, ISA, JIS, and ISO/DIN), and customized symbols directly into drawings.

Dynamic Lines and Components
Help reduce manual breaking and mending of lines with intuitive grip editing and manipulation. Create, move, and snap lines into place. Lines automatically break, maintain flow direction, and attach to components inserted on the line. When a component is removed, lines mend automatically. More quickly move and snap components with dynamically linked properties and information without editing underlying data.

Validation Tool
Perform error checking with the Validation tool to help identify, to highlight and navigate inconsistencies in drawings. Promote greater accuracy and minimize the time required to identify potential inconsistencies in P&IDs.

Tagging and Annotations
More easily create, edit, and customize tags and annotations in industry-standard formats. Simply drag data properties from the Data Manager into the P&ID drawing as annotations that automatically update.

Data Management and Reporting
More easily report, edit, exchange, and share project information, and better know the impact of external data updates for change management. Export data into drawing data tables as well as various file formats such as Microsoft® Excel® software. More quickly sort and organize information for easier referencing. Enhanced change management, viewing, and editing functionality help promote the integrity of design information.

Maximize Productivity and Accuracy with AutoCAD Plant 3D

AutoCAD Plant 3D helps bring modern 3D modeling to your everyday plant design projects.

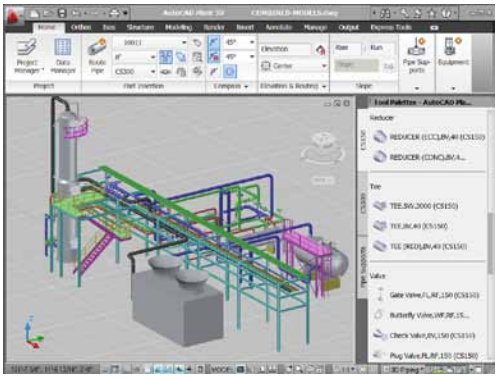
Enhance Design Productivity
Training and startup time can be minimal because AutoCAD Plant 3D is built on the widely used AutoCAD platform. Costly server-based systems and database administration are not required. AutoCAD Plant 3D software's specification-driven technology and modern interface helps simplify modeling and editing.

Promote Accuracy and Consistency
Within AutoCAD Plant 3D, underlying data is directly exchanged between the 3D model, P&IDs, isometrics, and orthographics to help information be consistent and up to date. Search and query for information and then more easily review and edit the data in the drawings.

Improve Project Team Coordination
Materials lists and reports are easy to generate and share with project teams. Portable AutoCAD Plant 3D DWG™ files can be opened by other engineering disciplines with AutoCAD-based software. The data can be exported for integration into other applications such as stress analysis.

Designed to address the challenges of 3D plant design and engineering work, AutoCAD Plant 3D software helps you simplify design and editing of 3D plant models.

Piping
From the initial spec through the final design, AutoCAD Plant 3D software optimizes the creation and editing of spec-driven pipelines. This feature enables you to route pipe, edit a line of pipe and its component elements, and manage a system of connections. You can route pipe semiautomatically or manually. As you insert fittings, required connection components such as gaskets or flanges are added automatically.



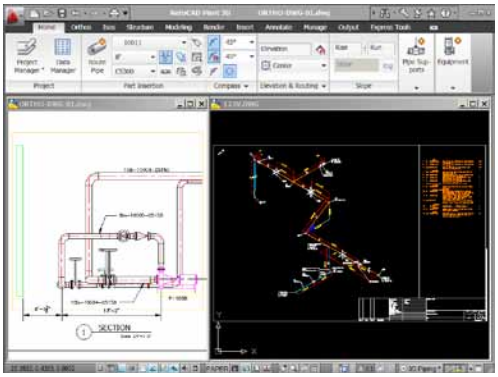
Equipment Elements
Create, modify, manage, and use equipment in your plant model. A comprehensive library of standard equipment is available from the Tool palette. Add custom content to your library and import Autodesk® Inventor® equipment models.

Structural Elements
You can also externally reference structural drawings created in Autodesk® Revit® Structure software, AutoCAD® Structural Detailing software, and other applications.

Specifications and Catalogs
AutoCAD Plant 3D helps streamline the placement of piping, equipment, support structures, and other plant components through spec-driven technology and standard parts catalogs such as ANSI/ASME (B16) and DIN/ISO. When you need to create a spec, you can work directly with included content-rich catalogs, or you can modify the catalogs to better meet your project requirements.

Spec Converter
Import specs from third-party plant design applications such as Bentley® AutoPLANT® software.

Construction Document Generation
From the 3D model, you can more easily generate and share isometrics, orthographics, and other construction documents. Information is directly exchanged with the 3D model, helping your construction documents to be more accurate, consistent, and up to date.



Communicate and Coordinate with Autodesk Navisworks

Autodesk Navisworks aggregates projectwide design information for comprehensive project review.

Increase Efficiency
Advanced tools can be used for collaboration and analysis of project information. Multidiciplinary, project-wide design data created in a variety of design and engineering applications can be combined into a single integrated project model for efficient whole-project review.

Reduce Rework
Project team members, clients, and partners can explore small design details to identify errors before they occur.

Stay on Budget and on Schedule
Project risks are minimized as teams coordinate effectively, plan accurately, and review problems early in the project cycle.

We believe Navisworks should be on the table of every engineer to help make work better, quicker, and more cost effective for the client.

—Leon Josepis
Managing Director
Unison Engineering

Autodesk® Navisworks® software and AutoCAD Plant 3D software are directly compatible for seamless design review, visualization, and error identification.

Model and File Aggregation
Combine design, construction, and other project data from most 3D design or laser scan formats into a single integrated, whole-project model.

Real-Time Navigation
Explore a whole-project model using advanced navigation tools, including Walk, Look Around, Zoom, Zoom Box, Pan, Orbit, Examine, Fly, and Turntable. Access the the 3D navigation widgets, Autodesk® ViewCube® tool and Autodesk® SteeringWheels® tool. Enable gravity, solid-object recognition, and customizable avatars for a realistic, real-time experience.

Project Team Review
Help communication and collaboration by extending the whole-project view to all stakeholders, including other design and engineering disciplines, clients, and partners.

Review Toolkit
Measure distance, area and angles. Organize and share camera views and export them into images or reports. Add cross sections and section plans to inspect details.

Collaboration Toolkit
Add markups and searchable comments to viewpoints with advanced redlining tools and audit trails. Record walk-throughs for playback, export, and streaming over the Internet.

Photorealistic Visualization
Create 3D animations and imagery for presentations. Customize and configure every render aspect, including materials, lights, backgrounds, and rendering styles.

Object Animation
Create and interact with animations showing object movement, operation, construction. Link animations to specific events, triggers, key commands, or tasks in a 4D schedule. Include animated objects in a clash detection and interference analysis.

4D Scheduling
Simulate construction schedules and logistics in 4D to help visually communicate, analyze, and validate project activities, and to help reduce sequencing problems.

Clash Detection
Anticipate and avoid potential problems before construction, reducing expensive delays and rework. View clashes in context of the model and in relation to other clashes. Make all nonclashing items transparent to more easily locate clashes. Open identified clashes in many original design software applications, including AutoCAD Plant 3D. Manage and track clashes from identification to resolution.

NWD and 3D DWF Publishing
Publish and share whole-project models in a single NWD or DWF™ file. Files can be secured, 90 percent compressed, and viewable over the web or via Microsoft® Office documents.

Free Viewer
Available as a free* download, the Autodesk® Navisworks® Freedom viewer extends whole-project visualization to all project stakeholders.

Autodesk Navisworks Simulate
Included in the Autodesk Plant Design Suite Premium edition, Autodesk® Navisworks® Simulate software enables whole-project visualization and design simulation.

Autodesk Navisworks Manage
Included in the Autodesk Plant Design Suite Advanced edition, Autodesk® Navisworks® Manage software has all the features of Autodesk Navisworks Simulate plus clash detection and problem tracking.

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