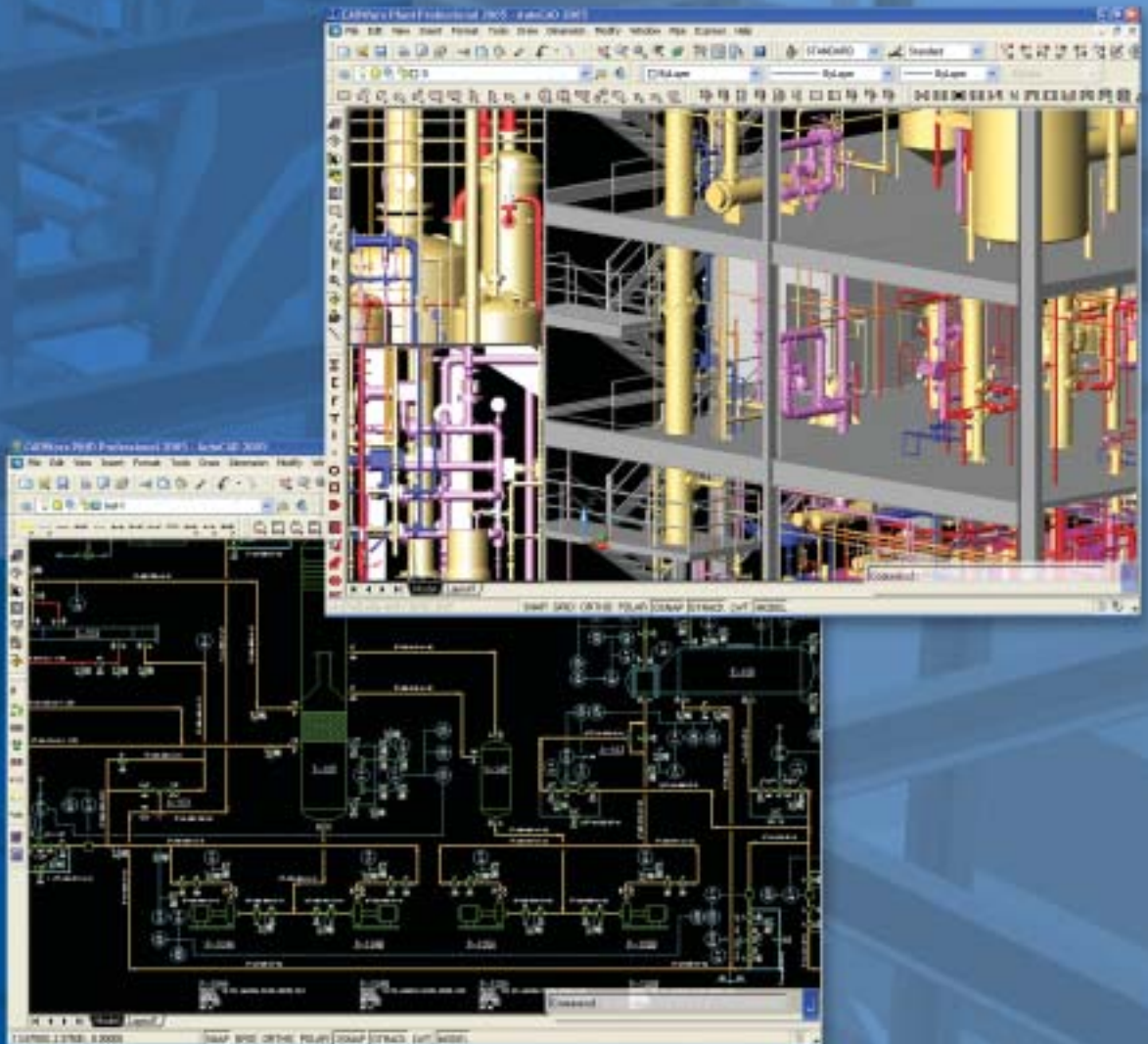


COADE **CADWorx**[®]

Plant Design Suite



CADWorx: The most complete plant design suite for the AutoCAD platform!

CADWorx is COADE's integrated series of AutoCAD®-based tools for plant design that provides intelligent drawing/database connectivity, advanced levels of automation, easy-to-use drafting tools and the industry's first link between CAD and engineering analysis programs. Since its introduction, CADWorx has revolutionized the plant design industry with its ease of use, flexibility, interconnectivity and scalability.

CADWorx supports and takes full advantage of the advanced performance and functionality features in AutoCAD. These capabilities give CADWorx the ability to let multiple users work more efficiently together on even larger models. This superior flexibility and performance is made possible by significant file size reductions, faster load and save times, superior management of external references (XREF's) and highly refined user-interface features, all while maintaining AutoCAD functionality and ease.

The CADWorx suite fully supports and easily adapts to all industry sectors, including process, power, offshore, pulp and paper, shipbuilding, water treatment, commercial plant and hygienic industries such as food, pharmaceutical, semiconductor and biotechnology.

CADWorx: Easy, Open, Scalable & Language Independent

EASY

The CADWorx suite is quick and easy to set up, so you can start designing right away. And, if you know AutoCAD, you are further on your way to having your projects fast tracked from conception to delivery. CADWorx allows you to deliver on time with ease!

OPEN

CADWorx conforms to the common standards of the AutoCAD platform. This means your deliverables will reach the largest possible market and will allow the greatest interoperability with other leading AutoCAD applications for integrated, error-free designs.

SCALABLE

CADWorx provides true economies of scale for projects with budgets ranging from the thousands to hundreds of millions of dollars. Workgroup size is never an issue with CADWorx.

LANGUAGE INDEPENDENT

CADWorx is supplied with user-modifiable language files that can quickly adapt CADWorx to your regional standards. Dialog boxes, command prompts and user input can all be adjusted, allowing designers around the globe to work completely in their own languages.

CADWorx modules provide the following capabilities—right out of the box!

CADWorx Plant

- 2D and 3D Piping
- Structural Steel
- Equipment
- Ducting/Cable Trays
- Automatic and Manual Isometrics
- Piping Specifications
- Bills of Material Creation
- Export to External Database
- Bi-directional Links to Stress Analysis
- Automated Stress Isometrics
- Live Database Links*
- CADWorx Equipment*
- Personal ISOGEN*
- Model Review and Walkthrough*

** Included with CADWorx Plant Professional*

CADWorx Plant (Optional Modules)

- NavisWorks Suite
- CADWorx Sanitary (Hygienic)
- Ductile Iron Pipe

CADWorx Steel

- Comprehensive Steel Libraries
- Frame and View Creation
- User Shapes and Customization
- Editing and Modification
- Databases, Reports and Bills of Material

CADWorx Equipment

- Parametric Equipment Modeling
- Bi-directional Links to Pressure Vessel Analysis

CADWorx Datasheets

- Instrument and Equipment Datasheets

CADWorx P&ID

- Intelligent Process Diagrams
- Industry Standard Symbols
- Specification Checking
- Legacy Drawing Conversion
- User-defined Project Databases*
- Bi-directional Database Links*
- Project Document Links*
- CADWorx Loops*
- CADWorx IP (Internet Publisher)*

** Included with CADWorx P&ID Professional*

CADWorx Loops

- Instrument Loop Table Creation
- Links to Third-party Packages

CADWorx IP (Internet Publisher)

- Project Drawing and Data Publishing
- Browser Accessible Drawings and Linked Data

CADWorx Plant Design Suite

When you need to deliver your best!

CADWorx Plant and Plant Professional

CADWorx Plant supplies a complete range of tools for hassle-free plant design. Piping, equipment, steel, HVAC and cable trays and database links are all included. CADWorx Plant Professional also features CADWorx Equipment, ISOGEN, NavisWorks® Roamer and live database links.

2D and 3D Piping

CADWorx Plant allows you to work in 2D or 3D with full intelligence. Quick 2D plans can be converted into 3D models at anytime. Working in 3D with CADWorx Plant is easy, and, because CADWorx Plant uses standard AutoCAD solids, it delivers some of the best performance, smallest storage requirements and greatest compatibility in its class. No special enablers are required for viewing, plotting or even editing in native AutoCAD. If ease of use, performance and collaboration are important to you, then CADWorx Plant delivers!

Structural Steel

Each seat of CADWorx Plant is shipped with CADWorx Steel, giving CADWorx Plant one of the most powerful and intuitive steel packages on the market. See the CADWorx Steel section for more information.

Equipment

Equipment capabilities built into CADWorx Plant allow you to create any 2D or 3D equipment shape.

Vessels, pumps, tanks and exchangers can be quickly added for review and interference checking.

Ducting/Cable Trays

HVAC ducting and cable tray shapes are easily placed using routines built into CADWorx Plant. Select square, rectangular, round and oval shapes with transitions from a single intuitive dialog box. Key dimensional information is retained to allow you to quickly and easily design duct and tray runs with the minimum of effort.

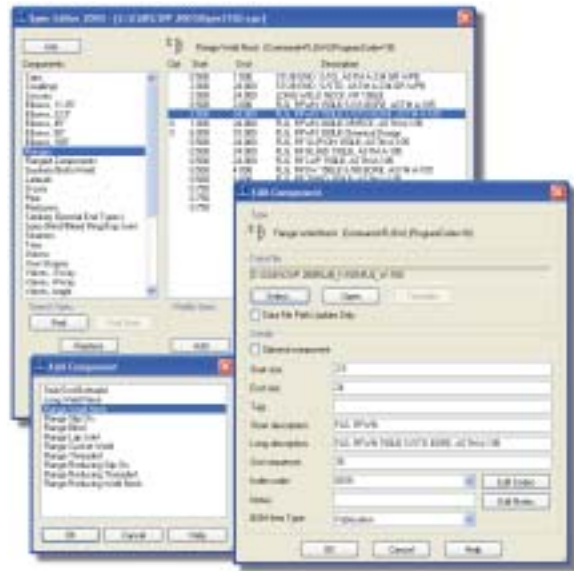
Automatic Isometrics

CADWorx Plant provides the industry's best looking automatic isometrics and does so with ease. Isometrics can be generated from individual piping layouts or project databases. Intelligent stop marks allow you to specify ideal break points for consistent drawings from revision to revision.

Settings for user borders, automatic dimensioning, tagging and bills of material are easily defined. CADWorx Plant makes automatic isometric generation a real cost saver by dramatically reducing errors and improving productivity.

Piping Specifications

CADWorx Plant includes ready-to-use specifications with access to over 60,000 parametric driven components. In keeping with the global character of CADWorx Plant, specifications and data files are provided in imperial, metric and mixed metric formats.



Piping Specifications

The specification editor makes creating or modifying your specifications a breeze, ensuring the correct components are always being used.

The powerful specification editor lets you create and modify specifications on-the-fly or outside a drawing session, thus ensuring consistency and accuracy in your designs.

Bills of Material

Because CADWorx components placed in the design are intelligent, you can create accurate user-configurable bills of material in the most popular database formats at any point in the design process.

Export to External Database

CADWorx Plant allows you to export design and component information to an external database in a variety of database formats for easy reporting and global model updates.

Bi-directional Links to Stress Analysis

You can output any part of a CADWorx Plant piping system to stress analysis in native CAESAR II file format. Routing, pipe support and system modifications made in CAESAR II can be read directly into the design by CADWorx Plant. CADWorx Plant's bi-directional link with CAESAR II reduces rework and ensures that designers and engineers work with the latest and most accurate information available.

Automated Stress Isometrics

CADWorx Plant can use CAESAR II output to automatically create stress isometrics. You can select the analysis results that you want to see on the stress isometrics.

The modules and capabilities that follow are included with CADWorx Plant Professional:

Live Database Links

CADWorx Plant Professional lets any number of users connect to a common external database during the design. Model additions and deletions from any designer are constantly monitored to ensure that the model and external project databases are always in sync.

CADWorx Equipment

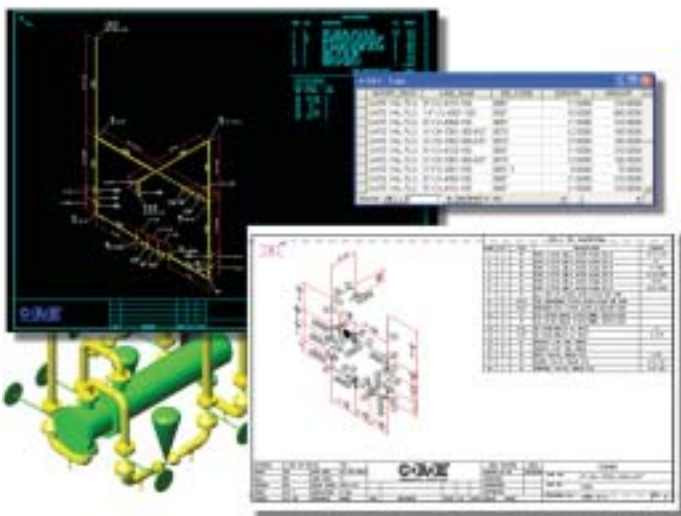
COADE's parametric equipment modeler includes all the features needed to easily model 3D equipment for plant design. The package lets you quickly and effortlessly build vessels, exchangers, tanks, pumps and other components. See CADWorx Equipment section for more information.

Personal ISOGEN

Alias' full featured ISOGEN package provides complete ISOGEN functionality to produce fully automatic isometrics in the world's most popular isometric format.

Model Review and Walkthrough

NavisWorks Roamer allows real-time design review of even the largest 3D models. Intuitive tools allow the navigation, collaboration, presentation and coordination of your 3D models, making it easy to create movies and to review comments with other CADWorx Plant users.



World Class Deliverables

Produce what you need when you need it! Isometrics, layouts, database reports and 3D deliverables can be easily and intuitively created.

CADWorx Plant

OPTIONAL MODULES

NavisWorks Suite

The NavisWorks modules—Freedom, Publisher, Presenter, Clash Detective, and TimeLiner—fully compliment CADWorx's 3D products. These modules bring 3D collaboration, world-class photorealistic output, collision checking and construction time-line visualization to the CADWorx suite.

CADWorx Sanitary (Hygienic)

CADWorx Sanitary is a supplemental package to CADWorx Plant and Plant Professional that provides additional components and data files accessible through over 120 specialized specifications. CADWorx Sanitary gives those in the hygienic industries, such as food and beverage, pharmaceutical, bio-gen and semi-conductor, access to the specialized components that their industries require.

Ductile Iron Pipe

The CADWorx Ductile Iron Pipe supplemental module gives CADWorx Plant and Plant Professional additional components and data files for ductile iron pipe capabilities, widely used in the waste water and water treatment industries.

CADWorx Steel

CADWorx Steel is a full-featured 3D steel modeling package that comes complete with powerful design tools and international steel shapes.

Comprehensive Steel Libraries

CADWorx Steel includes a full library of international steel shapes in both imperial and metric units. Metric or imperial shapes can be placed in either environment without modifying their underlying data files.

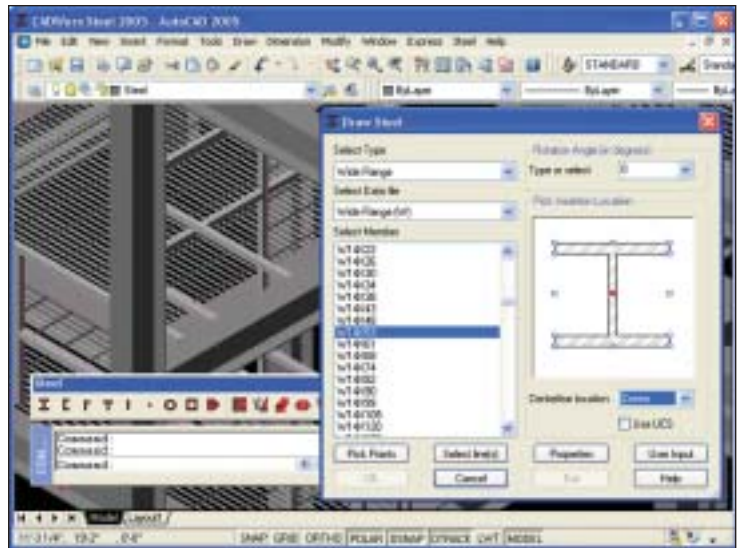
Frame and View Creation

CADWorx Steel makes the creation of complex 3D steel structures as simple as drawing in 2D. Multilevel frames with vertical or sloped sides can be combined to create intricate layouts. You can easily place steel members by picking single or multiple frame lines to have the program automatically place steel members in the model.

As each frame is created, CADWorx Steel automatically creates AutoCAD views for each elevation, column or row in the model. CADWorx Steel's built-in routines can also automatically dimension and annotate each elevation, column or row view for ease of drawing creation.

User Shapes and Customization

CADWorx Steel allows structural designers and engineers to create user shapes that can be made up of plates or derived from any extruded profile. This means that you can build on CADWorx Steel's capabilities and deliver what you need intelligently!



Structural Steel Modeling

Create intelligent 3D steel models with tools for framing, view creation, coping, and creating user shapes and bills of material.

Editing and Modification

As all CADWorx Steel members are intelligent, they can be easily modified by selecting them and changing their properties. You can automatically cope steel members against each other and cut, trim and join any two members, allowing modifications to the design without time consuming remodeling.

Databases, Reports and Bills of Material

CADWorx Steel outputs to popular database formats and has full auditing capabilities to make sure model and database are kept in sync. Center-of-gravity calculations are automatically created and can be shown on the screen, in drawings or in a detailed report. User-configurable bills of material are also available directly from the model or from the external database.

CADWorx Equipment

CADWorx Equipment is a parametric equipment modeler with all the features needed to easily model 3D equipment for plant design. The package lets you accurately build units such as vessels, exchangers, tanks and pumps quickly and effortlessly. Also, vessels and exchangers can be bi-directionally linked to COADE's PVElite package for engineering analysis.

Parametric Equipment Modeling

CADWorx Equipment is a hierarchical parametric modeler that makes the complexities of building equipment as simple as entering values in an easy-to-use build tree.

For vessels, tanks and exchangers, items such as skirts, shells, reducing cones, heads, body flanges, nozzles, platforms, ladders and supports are just some of the choices that are available. For pumps, you can choose suction and discharge nozzles, impellers, motors, base plates and other items to ensure your equipment is created exactly as it should be.

Drop down lists speed the selection of items such as flange types and ratings and pump motor frames. The package's hierarchical nature makes it simple to identify and make modifications to any equipment component with these modifications instantly reflected in the model.

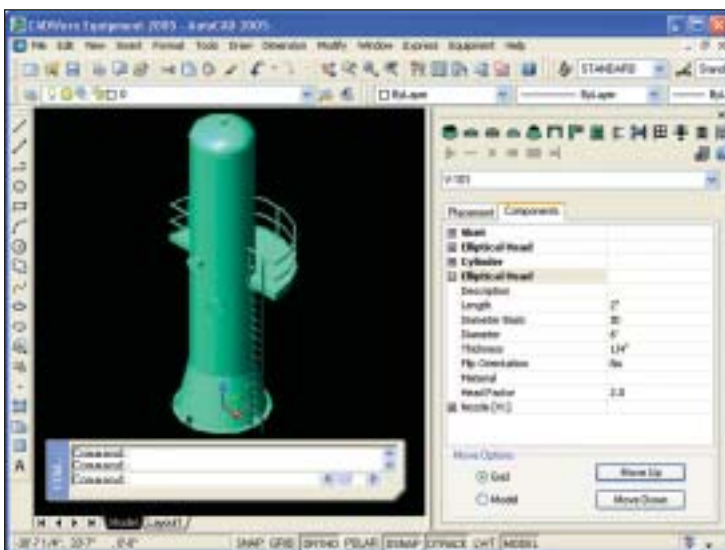
Bi-directional Links to Pressure Vessel Analysis

It has never been easier for your vessel engineers and plant designers to collaborate. Vessels, tanks or exchangers created in either CADWorx Equipment or COADE's PVElite pressure vessel analysis package can be passed from one to the other without information loss.

CADWorx Datasheets

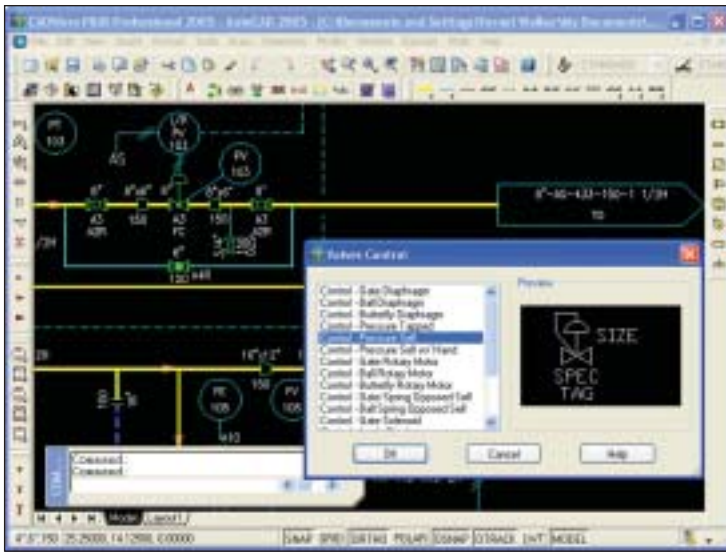
Instrument and Equipment Datasheets

The CADWorx Datasheets module is a customizable utility for generating intelligent instrument and equipment datasheets. The module can be used standalone or in conjunction with external databases, such as those linked to CADWorx P&ID Professional projects, to provide bi-directional links to instrumentation and equipment tables.



Parametric Equipment Modeler

The parametric equipment modeler instantly updates the equipment graphics and provides bi-directional links to pressure vessel analysis.



Intelligent Process Diagrams

Items are easily placed, and no programming is needed to add user symbols to menus that have full database capabilities.

CADWorx P&ID and P&ID Professional

CADWorx P&ID gives users the flexibility to easily create process diagrams with varying levels of information. CADWorx P&ID Professional also features CADWorx Loops, CADWorx IP (Internet Publisher) and live database links.

Intelligent Process Diagrams

You can create smart P&ID's without changing the way your drawings look or the symbols that you use. Powerful drafting and editing tools make it easy to incorporate drawing intelligence. With P&ID Professional you can add component information that links to external databases for further design and engineering collaboration.

Industry Standard Symbols

CADWorx P&ID comes with an extensive symbols library. You can easily add user symbols and assemblies that are automatically made intelligent with the same functionality as those supplied with the program. These tools also automatically add these symbols to the menus.

Specification Checking

CADWorx P&ID has optional piping specification checking capabilities built in, allowing designers to create process diagrams that access the same specifications used in CADWorx Plant. Shared specification checks make sure your designs are correct from conception to delivery.

Legacy Drawing Conversion

Your old drawings and the information they contain can still be useful! CADWorx P&ID includes powerful mapping routines that make linking valves, vessels, mechanical, instruments and process lines to your project databases easy.

The modules and capabilities that follow are included with CADWorx P&ID Professional:

User-defined Project Databases

CADWorx P&ID Professional provides a dynamic solution for defining and maintaining the structure of project databases. This capability requires no database knowledge, and open database connectivity (ODBC) links ensure the best performance while maintaining data integrity and synchronization. Because you choose your ODBC database, you can create exactly the reports you want in the form that suits your needs.

Bi-directional Database Links

Your data is never compromised regardless of how many drawings are linked to your project databases. Whether common information is changed in the drawing or from within the database, all relevant drawings are current. CADWorx P&ID Professional makes sure that drawings and database are always in sync.

Project Document Links

CADWorx P&ID Professional allows users to link an unlimited number of documents to their P&ID components and store this information in

project databases. Once linked, you can click on any component to access or view the documents pertaining to it. Now, maintaining and accessing your project documents just got easier!

CADWorx Loops

When hundreds or thousands of instrument loop diagrams need to be created, CADWorx Loops makes it easy to produce them automatically and quickly, taking seconds for what would normally take hours to produce. See CADWorx Loops section for more information.

CADWorx IP (Internet Publisher)

CADWorx IP lets you publish P&ID projects in a web-based format, allowing users access to drawings, reports, linked documents and underlying database information from a browser. See CADWorx IP section for more information.

CADWorx Loops

CADWorx Loops allows you to automatically produce instrument loops diagrams from project databases via user-defined templates.

Instrument Loop Table Creation

CADWorx Loops uses template drawings to automatically add loop tables in the project database. Further information can be added to individually created loop diagrams without any CAD or database knowledge required.

Links to Third-party Packages

The CADWorx Loops open architecture allows you to create templates

that may include any attribute data desired. This means that templates can be created using information that third-party instrumentation or electrical modules need for intelligent post processing of CADWorx Loops diagrams.

CADWorx IP (Internet Publisher)

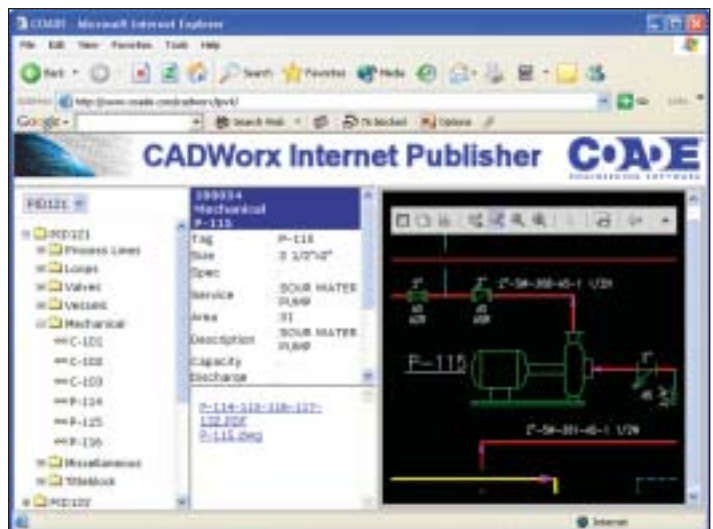
CADWorx IP is the first product on the market that lets you automatically publish your P&ID and their associated data in a format that can be viewed and accessed via any browser. Distributive design and information sharing has finally come of age in the plant design world!

Project Publishing Wizard

CADWorx IP uses intuitive capabilities and wizards to allow you to publish your CADWorx P&ID Professional projects to a web-based format, allowing users access to drawings, reports and underlying database information from any browser. Users can also mark up drawings and send comments to colleagues about any component that is in a viewed drawing.

Browser Accessible Drawings and Linked Data

If you want to make sure that everyone has the latest design information at their fingertips, then CADWorx IP is the tool that replaces uncoordinated pieces of information and centralizes it in the easiest and most accessible form to date.



Distributive Intelligence

Publish your P&ID projects, complete with drawings, databases and linked document, to anyone with a browser. Distributive design is finally here!



CADWorx is full featured yet easy to use, which makes it an ideal tool for a wide range of jobs, from simple modifications to complex and sophisticated plants.

Hardware/Software Requirements:

- Intel Pentium processor (or equivalent)
- Microsoft Windows (95, 98, ME, NT 4.0, 2000, XP or later) Operating System
- 128 Mbytes RAM (recommended)
- 32 Mbytes Video RAM (recommended)
- 60 Mbytes of disk space
- CD ROM Drive
- Microsoft Internet Explorer (5.0 or later)
- AutoCAD 2000, 2000i, 2002, 2004, 2005 or later

CADWorx Licenses:

All CADWorx software licenses provide the following as standard:

- Perpetual single license with no limit on the amount or duration of use
- Complete program (each CADWorx program is licensed separately)
- One set of program documentation
- One full year of extended maintenance and support that includes:
 - Build updates and product upgrades
 - Telephone, e-mail, fax, user group and web-based technical support
 - Technical newsletter subscription



COADE, INC.

12777 Jones Road, Suite 480

Houston, Texas 77070 USA

Phone: +1 281-890-4566

Fax: +1 281-890-3301

Toll Free: +1 800-899-8787

E-mail: sales@coade.com

Web: www.coade.com

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