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DATA MANAGEMENT
2007

A Practical Approach to Data Management

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Autodesk

In today's manufacturing environment, accelerating product development cycles is the key to staying ahead of the competition. By efficiently managing valuable design data in key areas such as design re-use, collaboration, and automation of key processes, your company can shorten its development cycles and get your product to market faster.

Autodesk provides a modular approach to data management that comprises several powerful Autodesk software products, services, and technologies—including Autodesk® Productstream™, Autodesk® Vault, the Autodesk Streamline® on-demand collaborative project management solution, and Autodesk® DWF™—that enable manufacturers to accelerate product development cycles while avoiding the complications and expense of other solutions. In addition, the Autodesk approach to data management includes a worldwide network of services and partners focused on manufacturing to help with training, installation, and integration.

Autodesk Productstream

Autodesk Productstream software automates the release-management process by managing engineering changes and bills of materials (BOMs), which allows engineering departments to maintain control over the design data after release to adjacent departments. Autodesk Productstream also enables your company to define a formal and automated process for release, tracking changes, and managing bills of materials for designs. These processes help reduce costly errors and delays by minimizing manual data entry, so that design changes are communicated directly back to engineering, and correct parts are ordered or manufactured for a specific design. Engineering can more easily share design information knowing released design information is secure and changes cannot be made without implementation of a formal engineering change order (ECO).

Implementing a highly visible release process with Autodesk Productstream further enables extended team members to receive and use correct design information. In addition to automating release management and tracking the change order process, Autodesk Productstream shares valuable design data with enterprise resource planning (ERP) and material requirements planning (MRP) systems, allowing downstream users to get the full value from design information.

Create and Organize Bills of Materials

NEW DWF Watermarking
DWF watermarking automatically includes current lifecycle state "purchased," "manufactured," and "approved" information on production documents so that downstream users know exactly where the project is in the design and manufacturing cycle. For more flexibility, administrators can customize the watermark by changing the text, font size, transparency, and location.
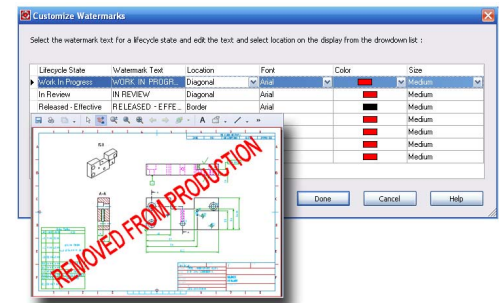

ENHANCED BOM Views
Choose a BOM view that helps you get the information you need to make educated decisions. View BOM detail in different views to quickly expose the exact information that you are looking to find. Use the hierarchical view to drill down on subassemblies or the flat view to see the rolled-up quantity of all items used on a product, or use date-specific filters to view BOM information for a specified date, current effective state, or the default "today" view.
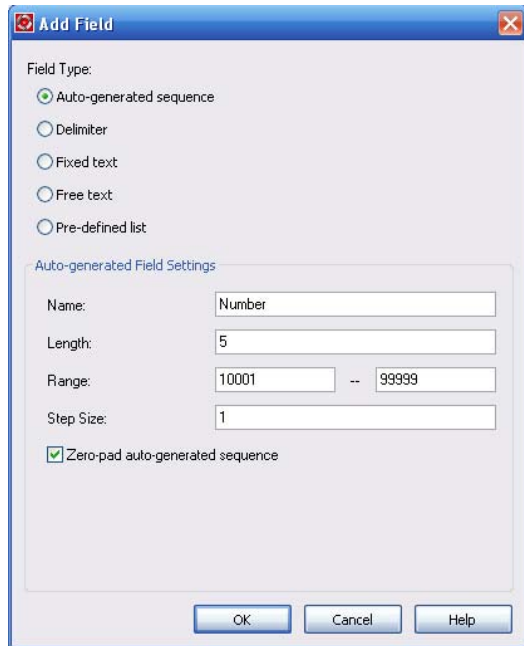
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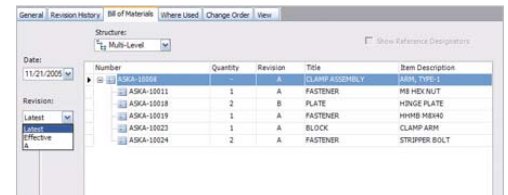
Assign and Update Items from Autodesk Vault

Create and maintain an engineering item master using the design data stored in the Autodesk Vault application. Automatically create items by promoting selected design data. Changes to designs result in the creation of new items or updating of existing items, while maintaining all existing relationships.
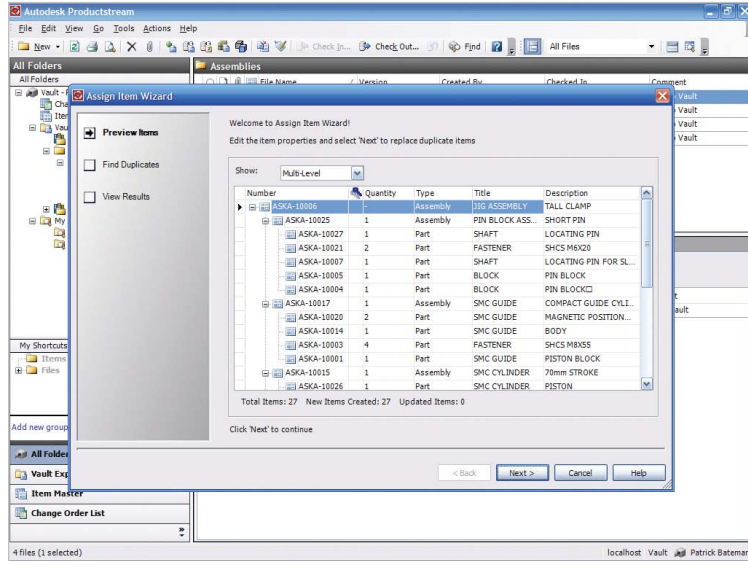
Automated Item Numbering

Manage and enforce part numbering by automatically assigning a unique number to items according to your corporate standard. Numbering can be sequential, predefined list, delimited, fixed, or free text format.


Create Items Not Related to Files

Create and add new items in Autodesk Productstream to create complete product BOMs. Add packing materials, fluids, and documentation to manage complete BOMs right from Productstream software. The ability to add items not designed in the CAD system makes it easy to keep a complete record of all items included with a product.

User-Defined Properties

Customize fields in item records without the need for special access or technical skills. Fields can contain numeric, text, yes/no, or even a list of predefined values to capture important manufacturing or production information.
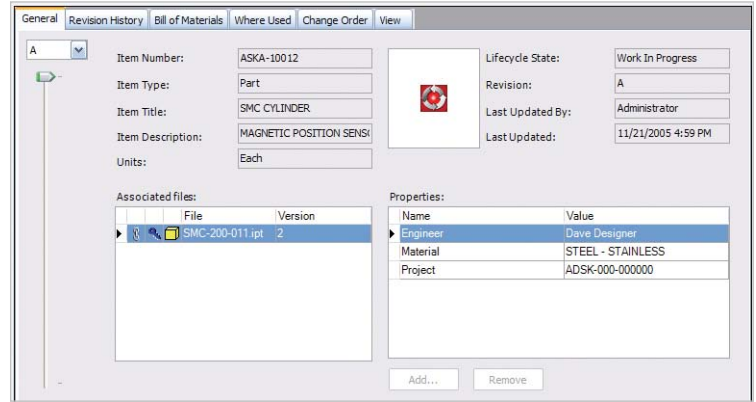

BOM Compare

Quickly identify the differences between BOMs by automatically comparing them. Graphical cues make it easy to view the history of revisions between any two BOMs.
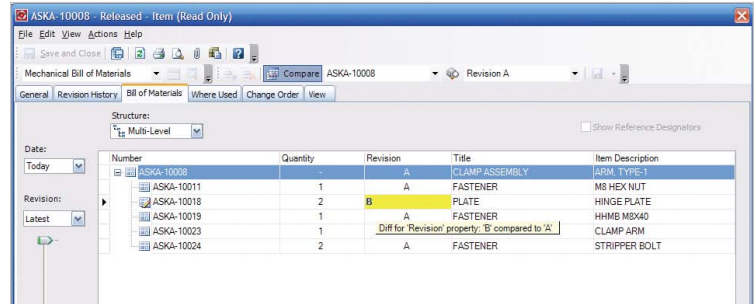

BOM Editing

Gain complete control over materials and quantities required for any design. Add, delete, or override quantities to maintain a true single product record.

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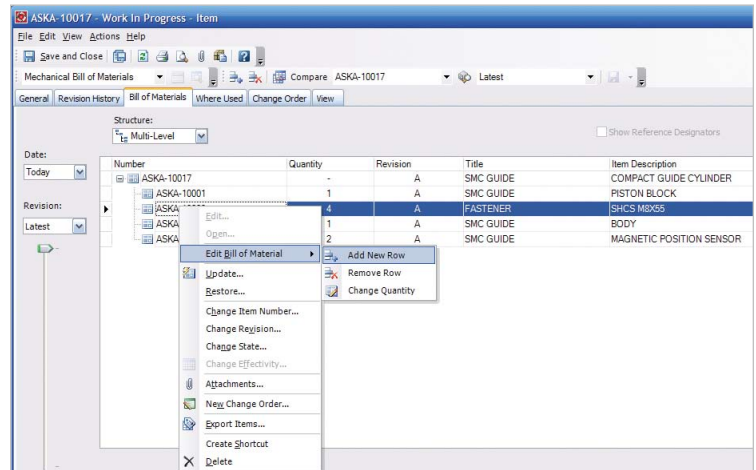
Property Mapping

Property mapping allows attributes from Autodesk Inventor® and AutoCAD® software applications to be carried over to Autodesk Vault and then promoted as BOM items from within Autodesk Productstream software. Maintain standard item properties in Productstream, and keep them synchronized with AutoCAD and Autodesk Inventor file properties, freeing users from having to enter the same values multiple times for different BOM formats.
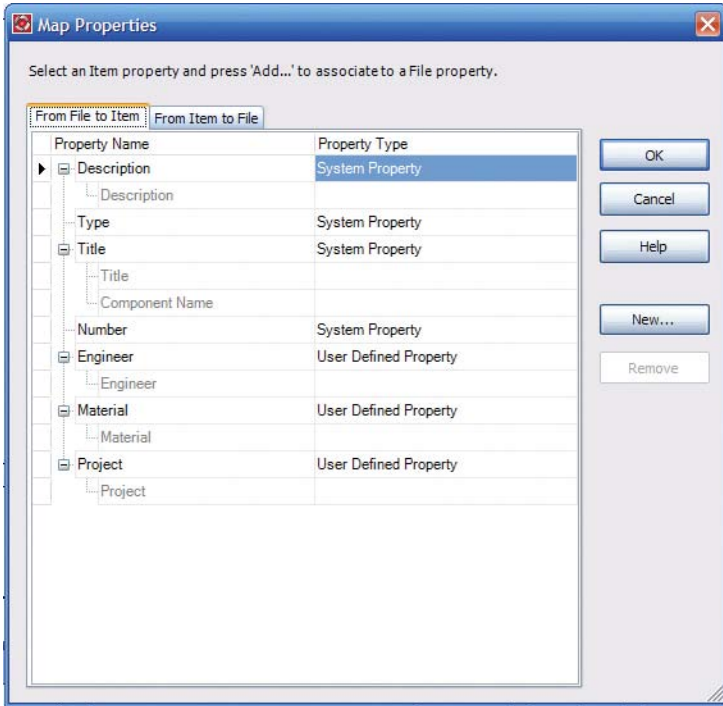

Item to File Attachments

Attach files such as Microsoft® Office documents to items. When design files are updated, attached items automatically update to maintain the link to the new version of the file. Designers and nondesigners can attach and consolidate related data to items to maintain a complete record of all documentation.

Unit of Measure Support

Specify the base measure of items, including mass, volume, quantity, and length. Accurately roll up BOMs, providing correct quantities and units of measurement for a complete product.
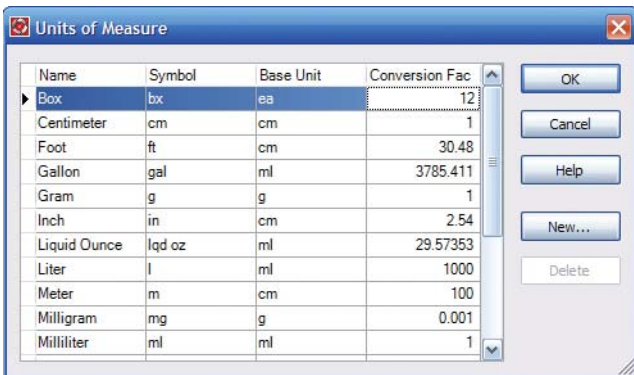

Manage Change

ENHANCED Automated ECOs

Automate the manual process of issuing and tracking engineering change orders (ECOs), remove process bottlenecks, and improve review and approval effectiveness. The automated ECO process in Autodesk Productstream manages engineering changes in parallel so stakeholders can approve or deny changes to all items and associated files before they are released to manufacturing.
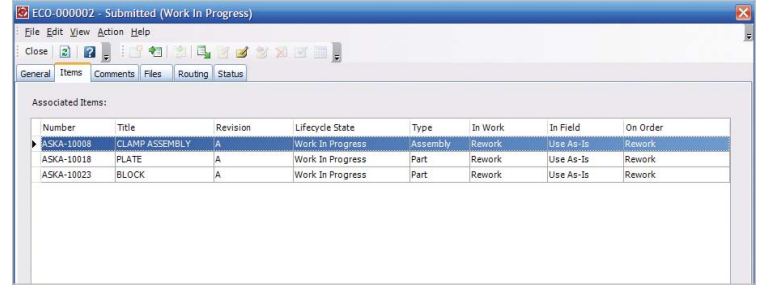
ENHANCED Change Management Workflow

Workflow features include automatic routing of engineering change orders throughout the company and alerting team members to changes or actions required via email. Emails can even be sent to notify downstream users when changes have been approved and new items released. The result is an electronic approval workflow that follows real-world business processes.
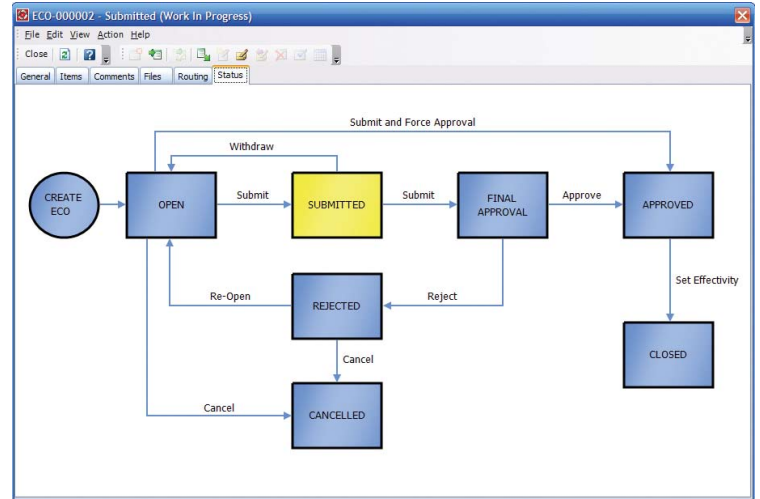

ENHANCED ECO Forms

Forms deliver standard and user-defined ECO information to participants for review, approval, or printing, reducing errors associated with paper-based processes and helping to ensure that decision makers have all the information they need.

ENHANCED **ECO Routing**

Automated routing of electronic ECOs allows all participants in the design review process to work with the most current design information. With electronic routing of ECOs decision makers can quickly receive, review, and approve the most current information and release designs to manufacturing in less time.
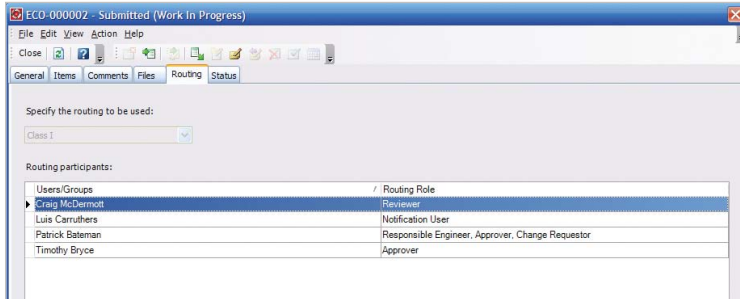
Revisions

Control and review the history of items using a flexible revision numbering scheme that conforms to your company standard.
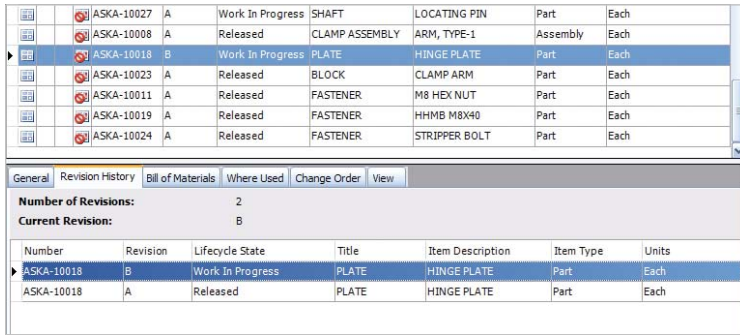

Autodesk Vault Platform

Autodesk Productstream builds on Autodesk Vault, enabling nonengineering departments to access design data for approval or planning purposes. The tight integration between Vault and Productstream software makes deploying this solution easy.

Where Used and Uses for Items

Analyze where items are included in existing BOMs before making changes to the item. By revealing dependencies before making changes, avoid unanticipated, potentially costly consequences.
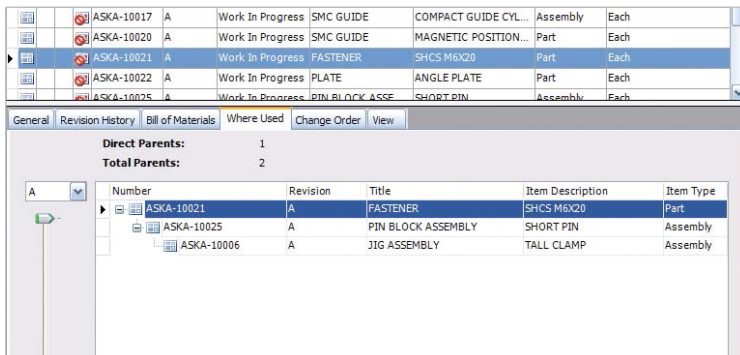

Lifecycle State Control

Track and communicate an item's lifecycle state using a built-in scheme ("Work in Progress," "Released," "Purchased," "Manufactured," "Approved") to help ensure that products are not released before the design is final. In addition, users can assign indicators that automatically increment when an item changes state.
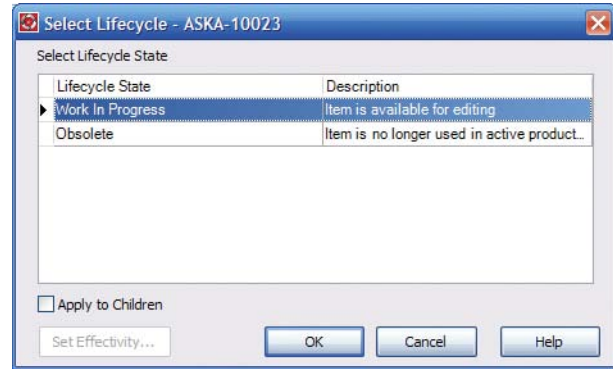
Easily Use, Administer, and Share

NEW **Groups**

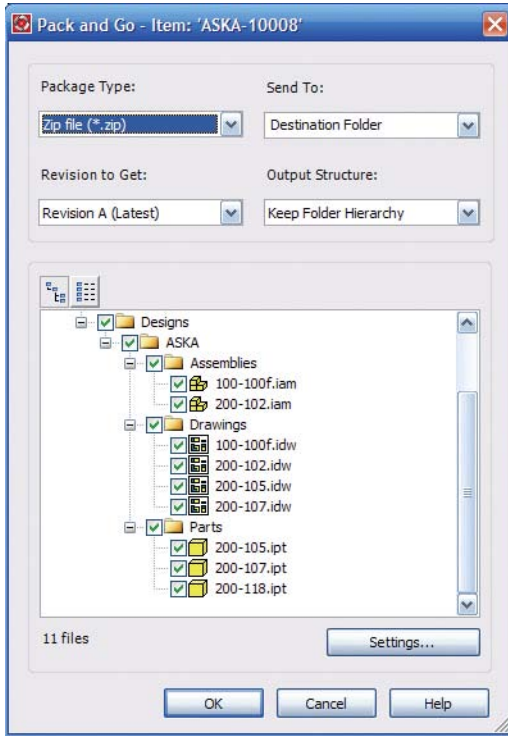Group users based on their department, position, and role using Autodesk Productstream software's flexible, role-based security model. Selectively provide access to items and folders based on these groupings for maximum control. Users can even create personal groups for ad-hoc use without special administrative rights. Group-based rights management is a simple way to improve security and reduce administration headaches.
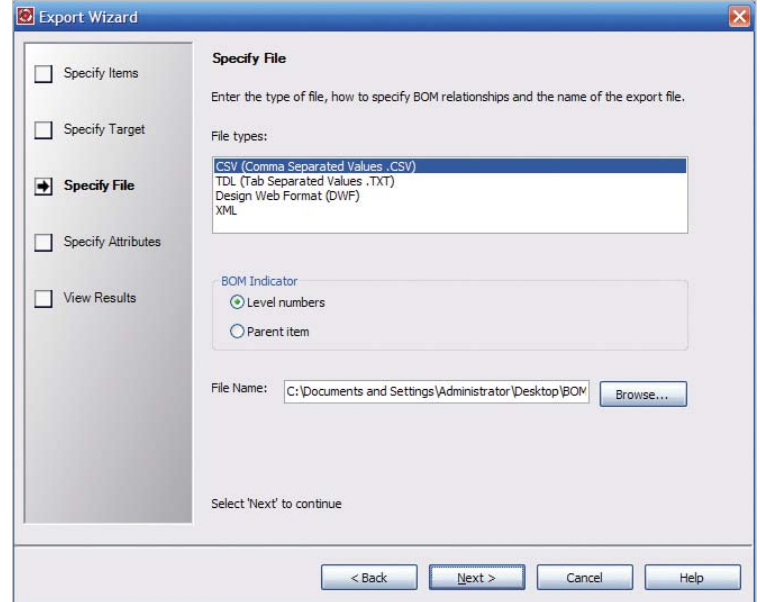
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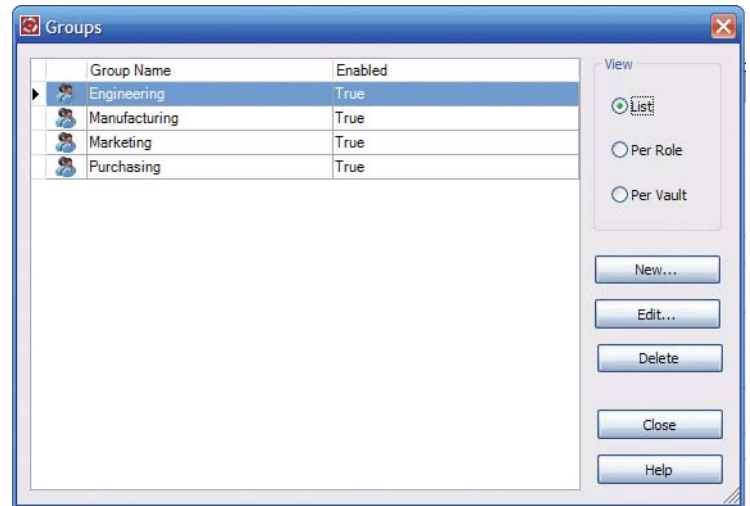
NEW Pack and Go for Items

Maintaining an archive of all product designs preserves important information for historical and regulatory purposes. The Pack and Go feature enables manufacturing teams to create a package of all design-related data in a single, compressed file for archival purposes.

NEW Item Property Policies

Maintain company standards for item descriptions, so that users can search item properties with confidence. Administrators can create rules that govern formatting and inclusion of required information for item properties and bills of materials. These rules then validate that forms are complete and properly formatted before adding an item to the item master.

NEW Application Programming Interface (API)

Create customized applications or integrate with other systems to meet customer needs using the powerful Web Services–based API. Programmatic access to data via the API means you can safely read and write data to items stored in Autodesk Productstream.

Synchronization with ERP

Easily import or export item data and related files using universal formats, including CSV, XML, and DWF. This capability enables users to synchronize the Autodesk Productstream item master with other business systems such as ERP, without the risk of manual data entry errors.
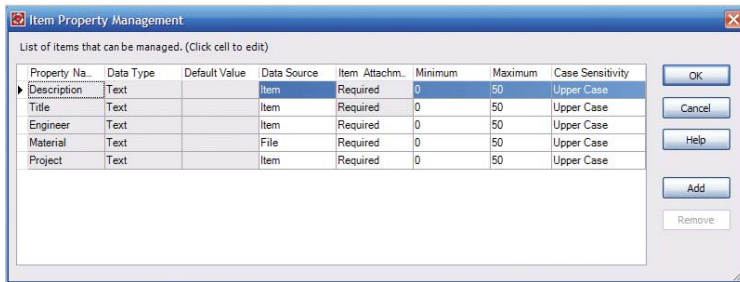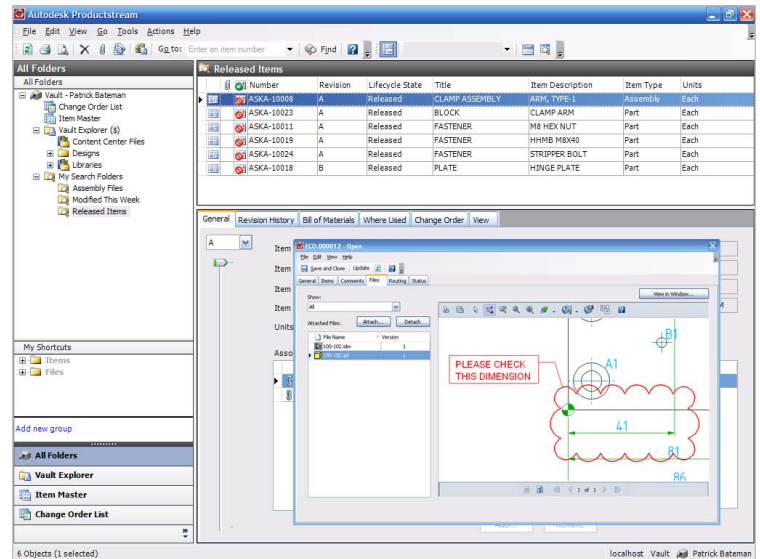
NEW ERP Integration Templates

Integrate Autodesk Productstream with existing manufacturing and planning systems to share valuable product information. Integration templates provide connectivity to specific ERP vendor systems like Great Plains.

2D and 3D Viewing and Markup with Autodesk Design Review

Shorten review cycles and reduce communication errors using electronic markups integrated into your change process and related workflow. Autodesk® Design Review software, formerly known as Autodesk® DWF™ Composer, makes it easy to view and mark up 2D and 3D designs as part of an engineering change process.

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Permission Model
Item-level security restricts access based on the user's security level, not on the file level. Allow access to design data only to those users who require it, protecting your designs from inadvertent change or deletion.

Web Services (.NET) Foundation
Autodesk Productstream software is built on Microsoft's high-performance, scalable .NET architecture and Web Services foundation. Web Services enable you to create custom solutions that integrate with other enterprise systems.

Saved Searches
Save your most-often-used search criteria as favorite searches and save time when reusing them.
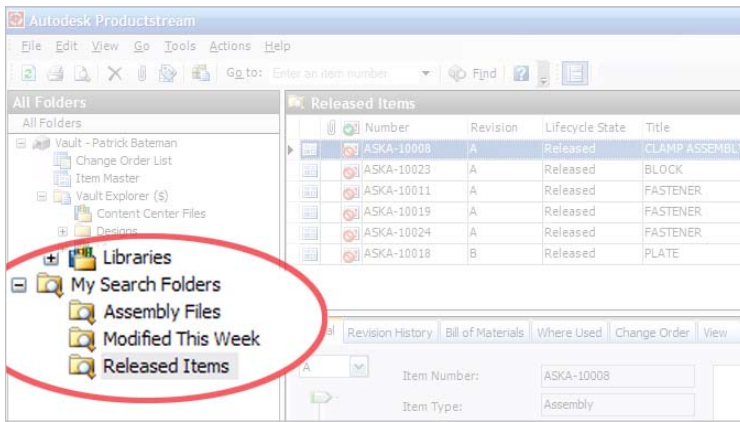
Shortcuts (Favorites)
Organize frequently used items by creating shortcuts. Save time by linking shortcuts to any frequently used files, folders, or ECOs.

Advanced Find
Refine searches by designating particular locations to search. Select one or more folders to focus and accelerate results.

Intuitive User Interface
A Microsoft® Windows® "look and feel" provides a familiar, easy-to-learn interface. Use drag-and-drop editing, and customize menus and toolbars to match your work style.

Autodesk Vault

Maximize return on your company's investment in design data by driving design re-use with Autodesk Vault. A centralized data management application that securely stores and manages design data, Autodesk Vault functionality is included at no additional cost with all Autodesk manufacturing design software. Tightly integrated with each design application, Autodesk Vault organizes all engineering data in a centralized location and reduces the time needed to find, reference, and reuse design data. As product designs evolve, version-management features in Autodesk Vault provide protection from unintentional overwriting of good designs. In addition, users can save hours of valuable design time with the powerful copy and reuse capabilities that reduce the time required to start a new design.

Manage Work-in-Progress Data

**NEW Third-Party CAD Support (available only in English)**
Users of Pro/ENGINEER® and SolidWorks® software can now store, version, and manage their native parts, assemblies, and drawings using Autodesk Vault. Smooth the production process and keep projects on track by ensuring that all your CAD data is secure and can be used for manufacturing.

NEW Support for Autodesk Inventor Configurations
Autodesk Vault provides support for the configurations of product families created in Autodesk Inventor software. The support for product family configurations in Autodesk Vault enables designers to store, find, and reuse complete product families in a fast and flexible format.

NEW Advanced Find on Open and Place
Users can save time by searching the entire vault for files directly from within the Open or Place command in Autodesk Inventor or AutoCAD software. This ability to take advantage of the advanced search capabilities of the vault directly from the CAD application boosts design reuse and increases individual productivity.
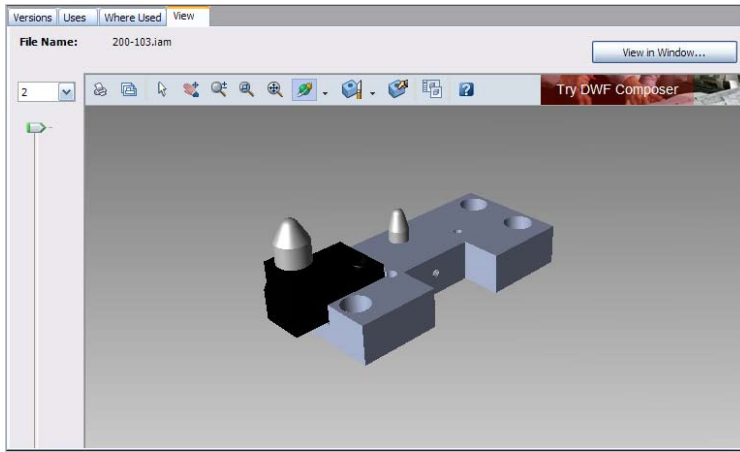
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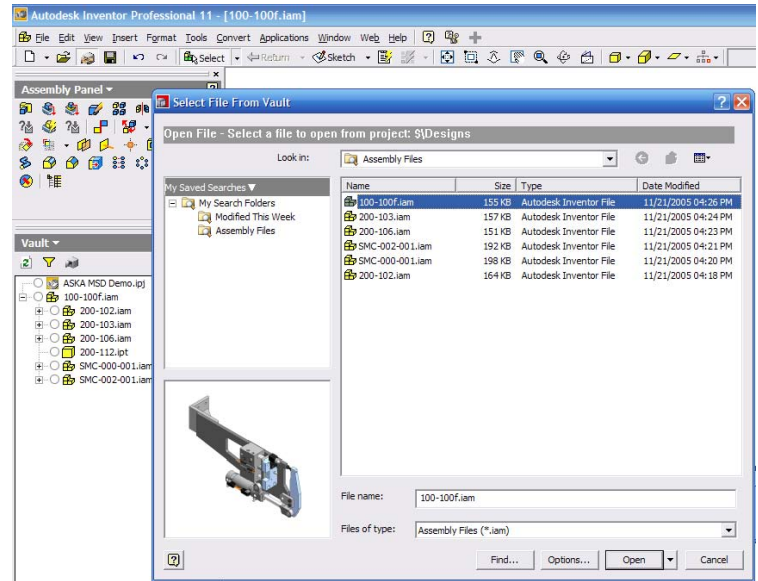
NEW **Backward Compatibility**

With Autodesk Vault you don't have to worry about upgrading your CAD applications when you upgrade Autodesk Vault to the latest version. Autodesk Vault is compatible with the current shipping version of any Autodesk manufacturing application as well as the previous version, so you can upgrade at your own pace.

ENHANCED **Automated DWF Publishing**

Autodesk Vault automatically creates a DWF file for each file checked into the vault and updates the DWF version with any subsequent changes, enabling project teams to easily share the latest design information in a compact, noneditable, secure format. With automated DWF publishing, design teams help eliminate the extra work required to create and manage DWF files and reduce the errors inherent in the manual updating process.

ENHANCED **Autodesk Inventor, AutoCAD Mechanical, and AutoCAD Electrical Add-Ins**

Continue to work in a familiar 2D or 3D CAD environment, and use Autodesk Vault for secure storage, file protection, versioning, and retrieval. Vault access is built into Autodesk manufacturing software, providing application-specific design management that maintains the design structure for all referenced and associated files used in AutoCAD® Electrical, AutoCAD® Mechanical, or Autodesk Inventor projects.
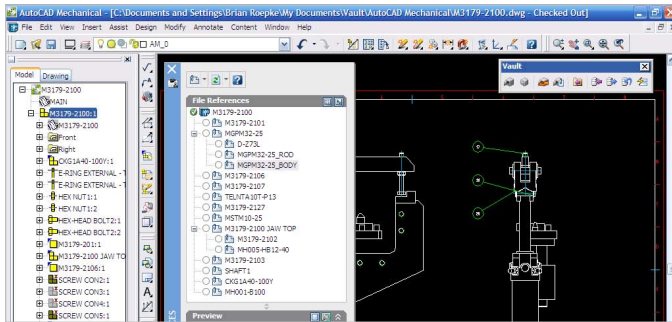

Version Management

Autodesk Vault offers safe storage for all versions of data, so you can track design data and prevent overwriting good work. Autodesk Vault offers complete dependency management to help prevent mistakes, such as deleting related drawings or other files. Plus you can track file versions as well as dependencies such as assemblies, parts, or drawings.

Multiuser File Management

Multiple users can simultaneously interact with the same design data set, but only one user at a time can edit a file. File management enables users to add files, check them in or out, and move them.
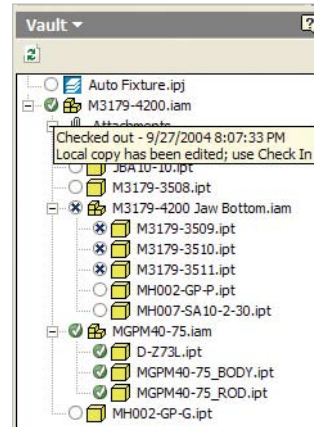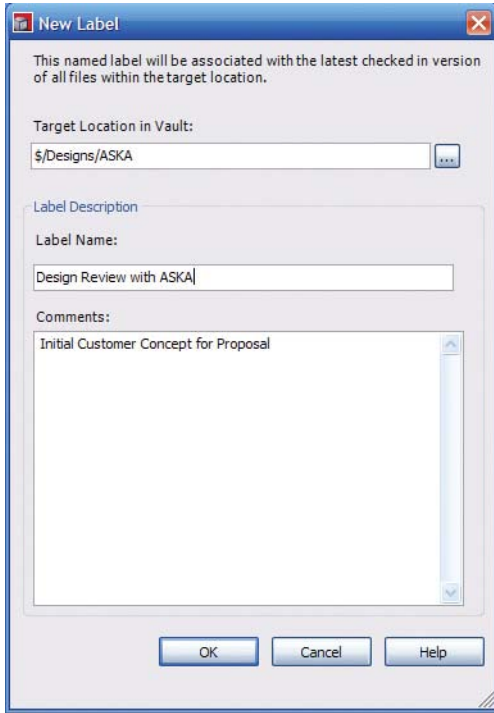

Microsoft Office Integration

Access files stored in Autodesk Vault directly from Microsoft Office applications. Now all team members can easily access and store supporting engineering documents from their desktop environment.

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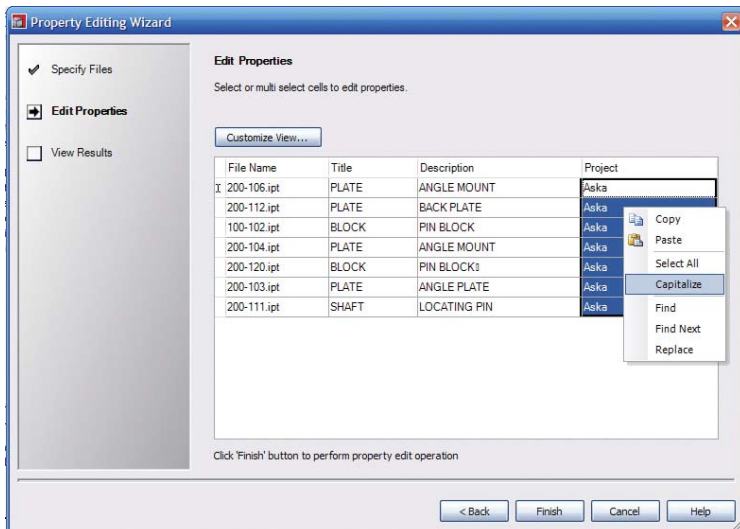## 2007

Labeling

Labels—such as "Design Review" or "Sent to Prototype"—provide a quick way to take a snapshot of your complete design data at any phase of the project. Using labels enables you to capture the exact state of your project data at specific milestones and restore the project from any of those milestones if required.

NEW Full Content Search

If it's easy to find, it's easy to reuse. Autodesk Vault technology automatically extracts and indexes the complete contents of most files, enabling advanced searching of all CAD and non-CAD file types, including documents created in Microsoft® Word, Excel®, PowerPoint®, AutoCAD, and Autodesk Inventor software applications.

NEW Global File Replace

No longer do you need to struggle to replace Autodesk Inventor files or repair file relationships. A simple wizard provides step-by-step instructions that save you time by quickly replacing or automatically repairing file relationships with design management tools in Autodesk Vault.

Organize and Reuse Your Data

NEW File Property Editing

Your design information stays up-to-date with new file property editing capabilities. A step-by-step wizard makes it easy to select and edit properties like a description or the name of the engineer for data stored in the vault. For fast results, users can even change the properties for multiple files with a single command.
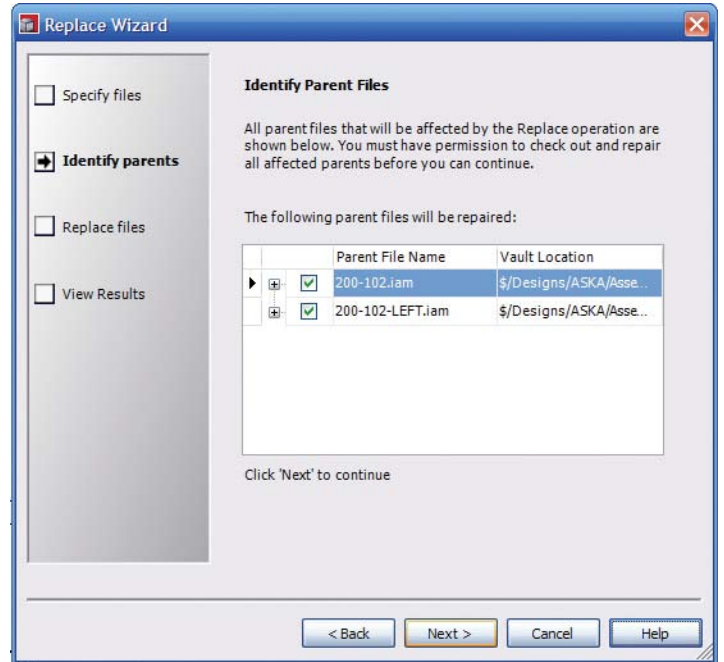
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ENHANCED **Rename**

Rename files as needed to conform to part-numbering conventions or other processes, and export a complete report to document the process. Rename Autodesk Inventor and AutoCAD files without breaking dependencies with other files.
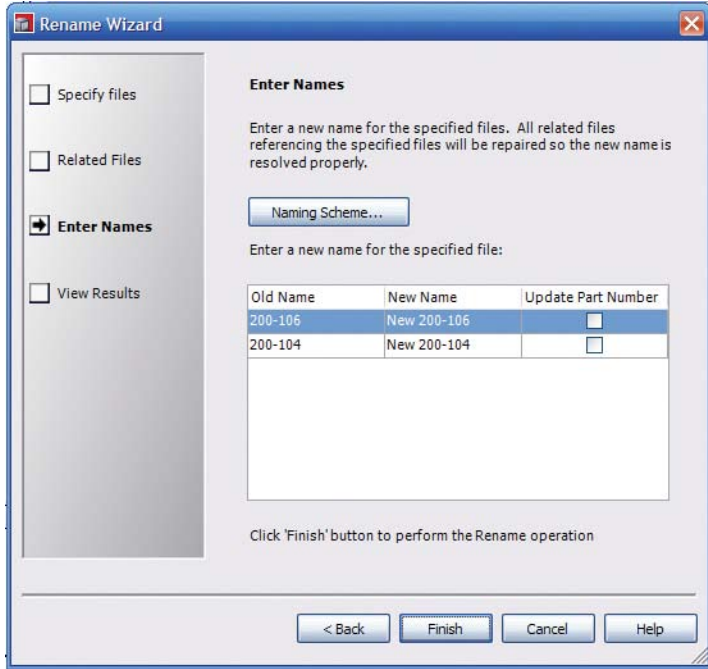
Support for Any File Type

Consolidate product data in one place. Manage versions of any file type, including Microsoft Word, PowerPoint, and Excel.

Attachments

Manage all related product information by creating parent-child relationships between files. For example, create a relationship between an assembly file and a corresponding specification in Microsoft Word.

Libraries

Managing commonly used components in Autodesk Vault makes them easier to find—and easier to reuse. Autodesk Vault provides library functionality to handle reusable components such as iParts and content libraries.
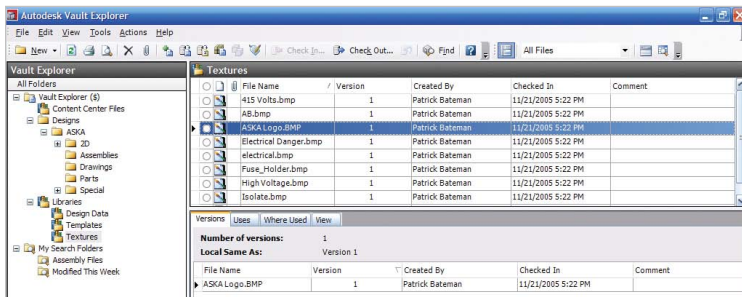
Where-Used Feature

Analyze which files (CAD and non-CAD) a particular assembly or drawing uses. If a related data set is being modified, enable change management and quickly learn the impact of changing a data set.
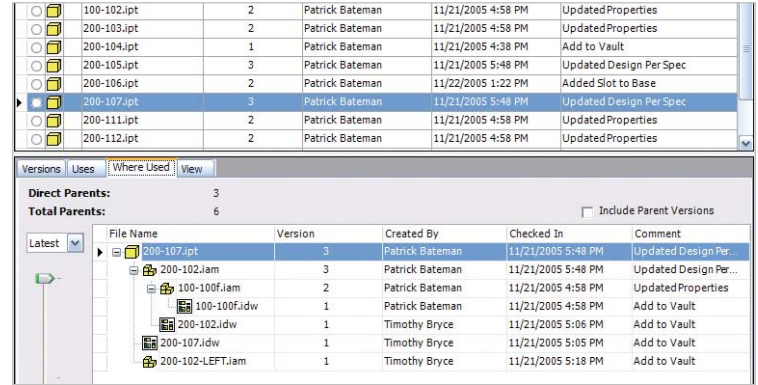
History

Audit the change history of a file to make informed decisions when going back to a previous version of a file. Use this feature to display a file's complete version history. Quickly view any version by selecting it and using Autodesk Vault technology's built-in viewing capabilities.

Copy Design

Design reuse keeps your team productive. Now you can copy an entire design, including all related files, to create a new design. You choose which files to copy, which to rename, and which files will be reused as they are, saving hours of unnecessary effort.

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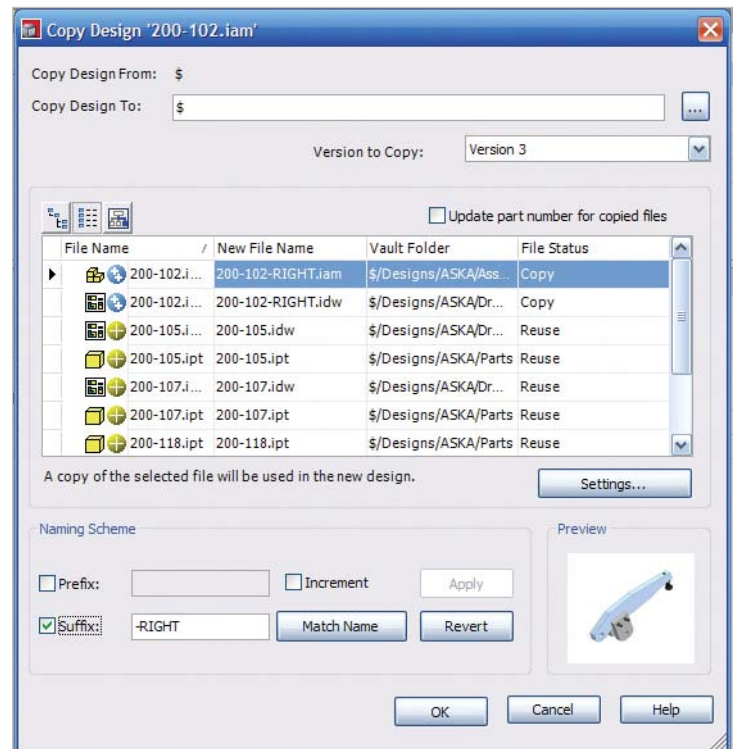
Easily Use and Administer

NEW Autoloader

When you've been managing your Autodesk Inventor designs using the Windows file system, you know that occasionally files have been moved, copied, or even accidentally deleted. The Vault Autoloader utility provides tools to gather, analyze, prepare, and load Autodesk Inventor designs into the vault rapidly and efficiently. To reduce rework, users can detect and repair duplicate files and missing references before adding them to the vault.
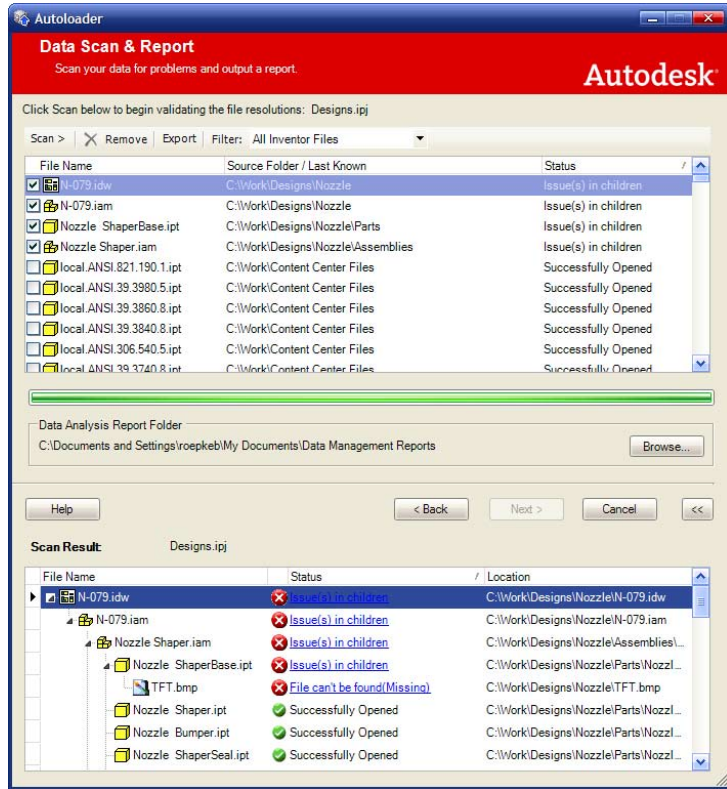
NEW Direct Editing

Right-click any file in Vault Explorer and choose Edit from the menu to launch the application that created that file. Now designers can spend less time launching applications and waiting for files to load and more time on design.
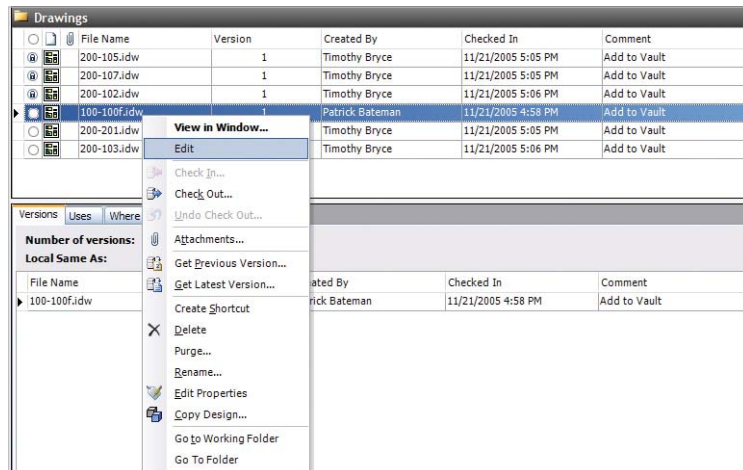

NEW Email of Vault Data

Email original design data or DWF files directly from Autodesk Vault using the Send To command in Vault Explorer. This capability significantly reduces the steps required to share design data with team members and other stakeholders.

NEW Administrative Reporting

Reporting tools in Autodesk Vault make it easier to understand and monitor the data profile of the vault. As a result, administrators can quickly identify common maintenance problems—such as database fragmentation—and correct them on the spot.
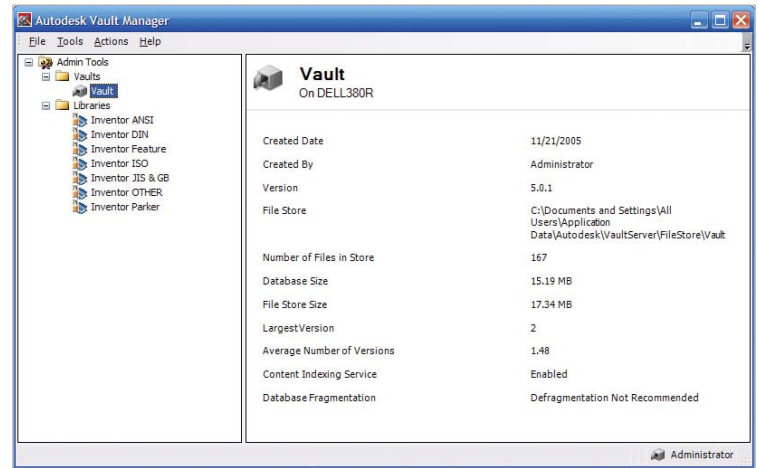
NEW Seamless Vault

You can customize the amount of information you receive when checking files in and out of the vault, increasing productivity and minimizing disruptions. Users can choose the level of prompting within the design interface.

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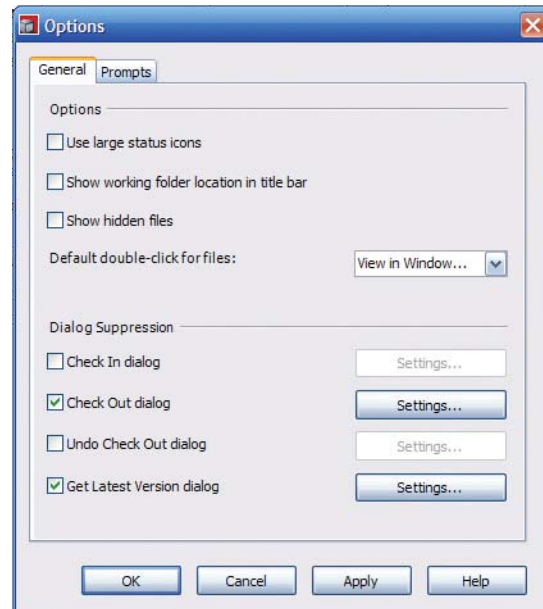
NEW **Hidden Working Folder**

Administrators can hide and enforce the location of the working folder for Autodesk Vault users. By standardizing the location of the working folder, CAD managers can ease administrative tasks, such as data backups and troubleshooting.
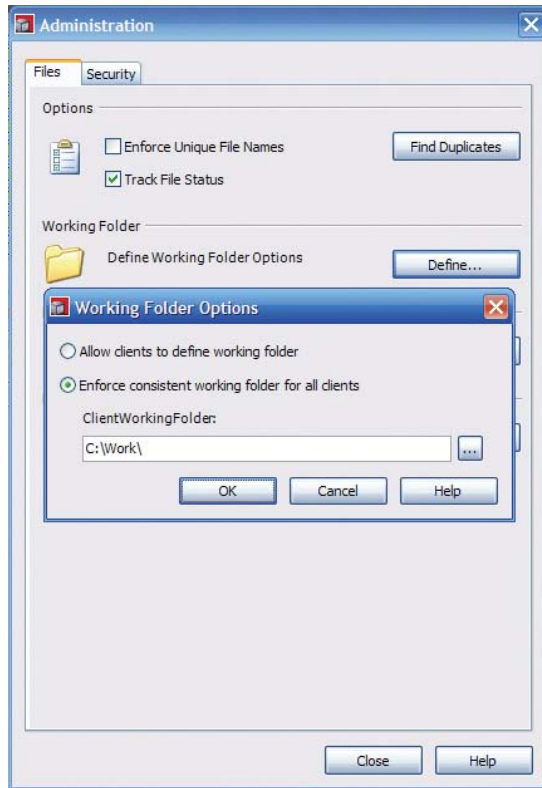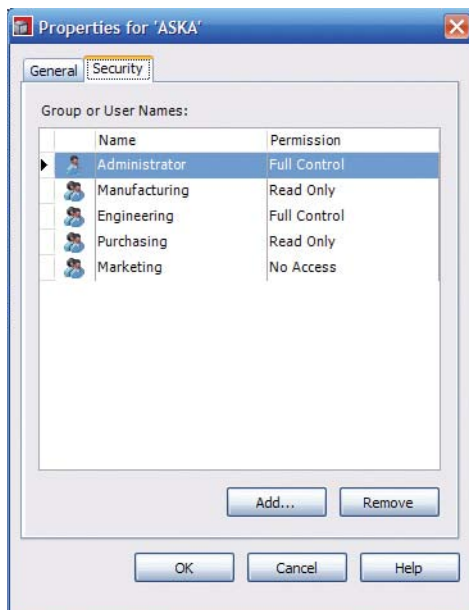

ENHANCED **Access Control**

Control access to designs by assigning permissions to users and groups of users. Quickly and easily implement customer-specific access rights, and allow access to design information based on need and job function.

ENHANCED **Vault Manager**

Managing the Autodesk Vault server is easier with built-in tools for common functions such as backup and restore. A Windows interface provides a familiar environment, shortening learning time and increasing ease of use.
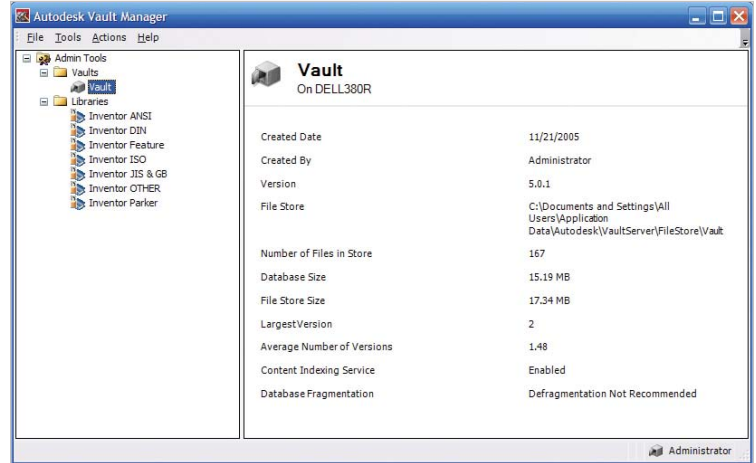
Intuitive User Interface

Familiar Windows features such as drag-and-drop editing and customizable menus and toolbars make the Autodesk Vault interface easy to learn and use.

Application Programming Interface (API)

Create customized applications or integrate with other systems to meet customer needs using the powerful Web Services–based API. Programmatic access to data via the API means you can safely read and write data to items stored in Autodesk Vault.

Saved Searches

New search functionality in Autodesk Vault enables you to quickly view project information by saving commonly used searches. Save any search criteria to either a saved search or a new search folder for easy access to all files currently in design or related to a particular project.

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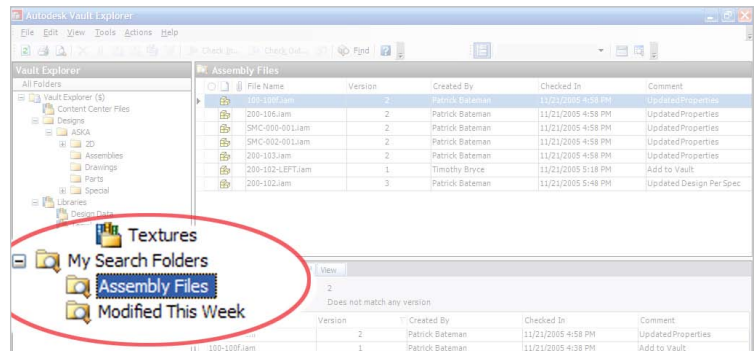
Shortcuts

Put design data at your fingertips by creating shortcuts to common files or folders stored in Autodesk Vault. Shortcuts are displayed in the user interface and provide easy access to stored files, parts, or assemblies at any time.
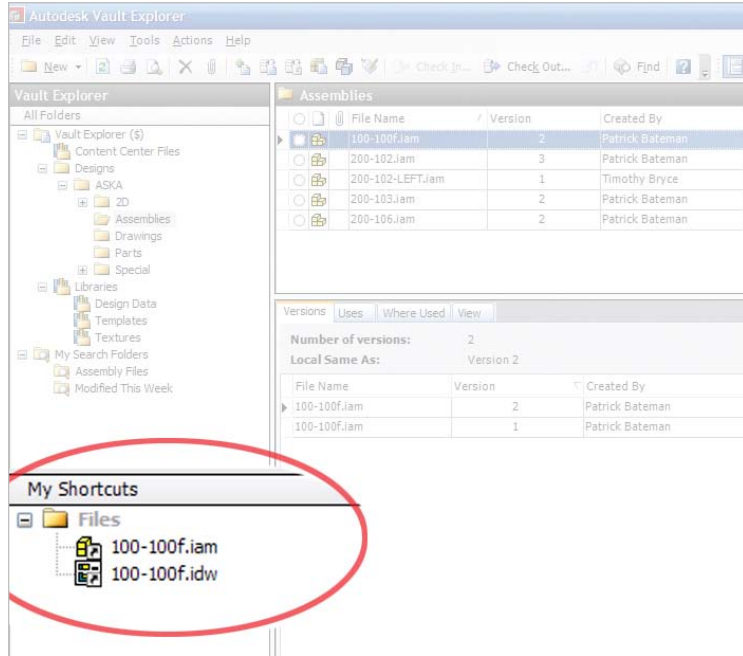

Quick Viewing

The Autodesk® DWF™ Viewer is integrated into Autodesk Vault Explorer and enables users to quickly view drawings, parts, and assemblies without loading the entire design.
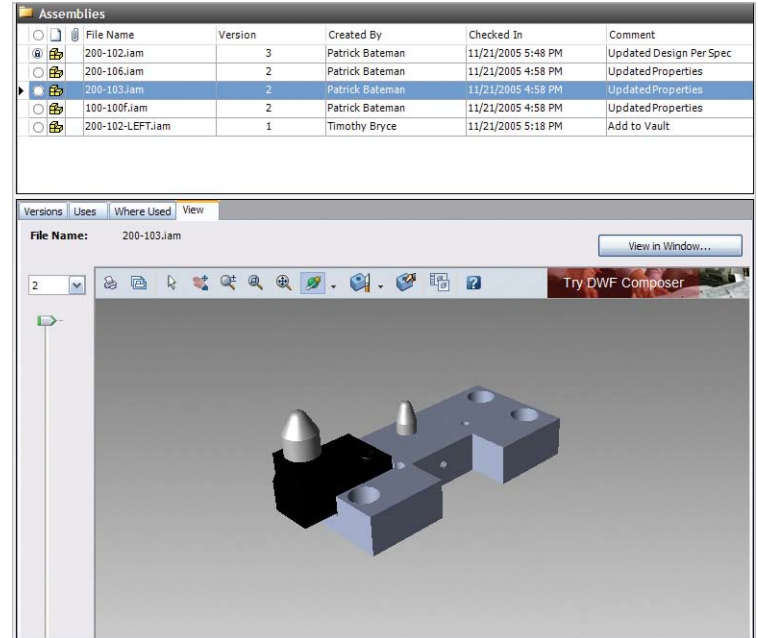

Purging of Unwanted Version History

Administrators can remove outdated and unwanted version histories from Autodesk Vault, improving both performance and scalability while reducing the amount of disk space required for data storage. This process automatically retains versions that have been marked with the label feature used to identify project milestones. In addition it recognizes files released to Autodesk Productstream software, to maintain accurate revision histories.

Unique File Names Option

Customize the Autodesk Vault environment to better fit the needs of your company. Vault administrators can configure the server to either prevent or allow duplicate file names.
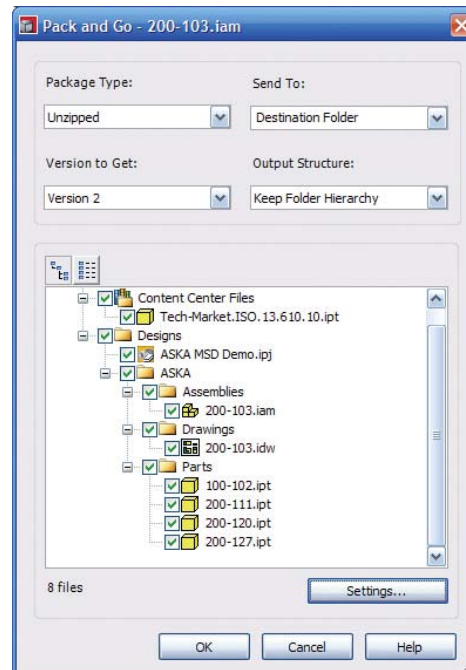
Pack and Go

Package all related files into a single location. This feature provides easy portability for users who don't have access to Autodesk Vault, as well as a way to manage archives of related data.
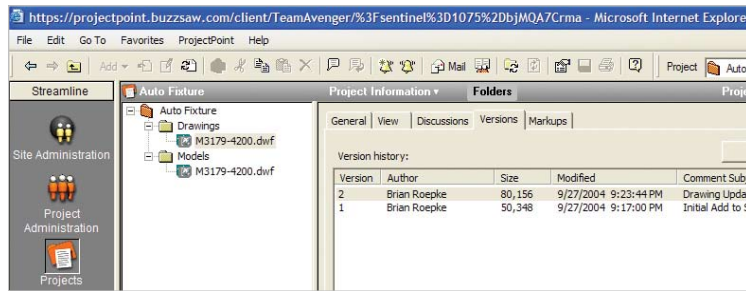
Autodesk Streamline

Efficient sharing of designs is crucial for maximum project visibility and collaboration. The Autodesk Streamline on-demand collaborative project management solution enables users to connect, share, and collaborate with external team members, all at minimal complexity and cost. By providing a single location to securely access shared files and collaboration tools, Autodesk Streamline makes up-to-date design information available to customers and suppliers from anywhere.

## Collaboration for Your Extended Manufacturing Team

Share Your Design Data
Share design data in a lightweight, easy-to-use, and secure format by exporting and publishing designs (including related properties such as mass and volume) in DWF format or Autodesk Streamline package format from all Autodesk manufacturing products.


DWF Format Support
Autodesk Streamline integrates Autodesk DWF Viewer software, making it easy to share, view, and print accurate and detailed 2D and 3D designs. Store, manage, and view all versions of designs as DWF format files. Autodesk Streamline users can review design details such as measurements and object properties exactly as the designer intended.
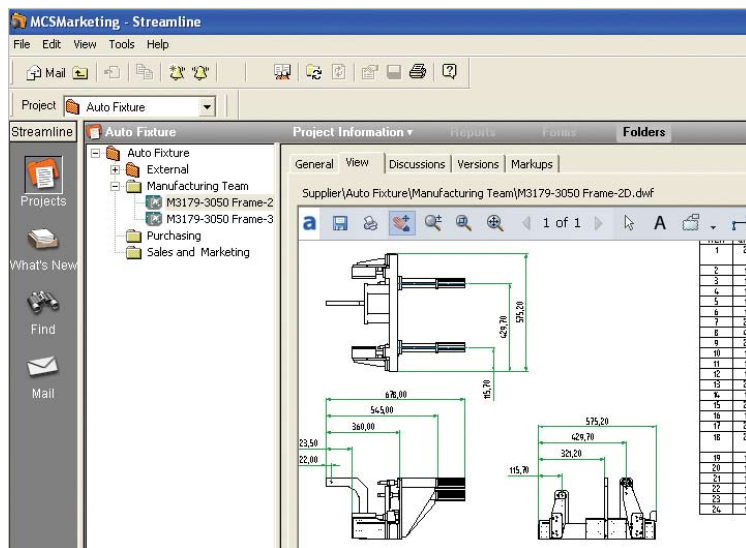
Integration with 3D DWF Format
Safely and securely publish 3D DWF format drawings from Autodesk Inventor software directly to the Autodesk Streamline service. View, rotate, and orbit 3D drawings containing thousands of components and parts to get a full understanding of the designer's intent.
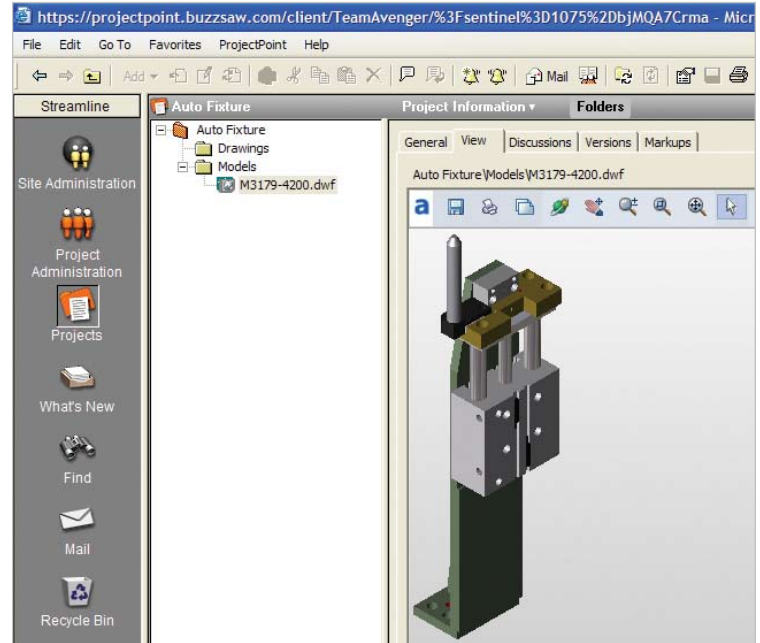
Integration with Autodesk Design Review
Add Autodesk Design Review to your Autodesk Streamline collaboration environment and enable users to mark up and provide feedback on designs directly in the DWF file. Using Autodesk Design Review, users can review and mark up designs and then save their DWF files with comments back into Autodesk Streamline, providing direct, in-context feedback.

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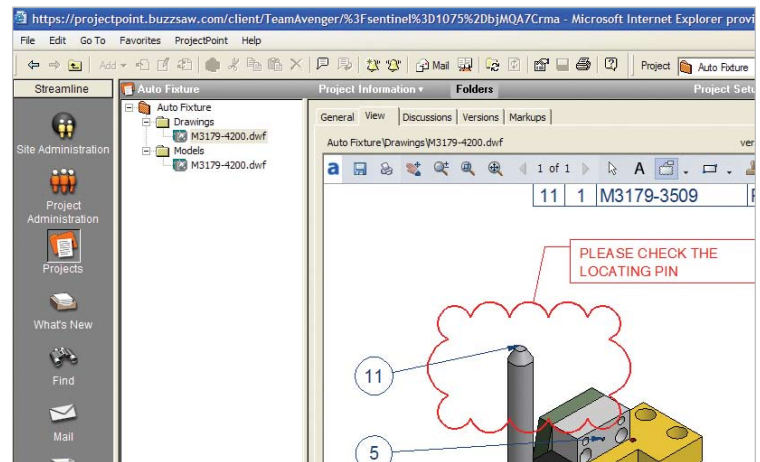
Easy Viewing and Markup
Using the Autodesk Streamline viewer, team members can view, mark up, and measure 2D and 3D designs containing thousands of components without needing a license for the corresponding CAD product. By relaying precise comments about design details, your team avoids miscommunication, so that projects stay on track for on-time completion.
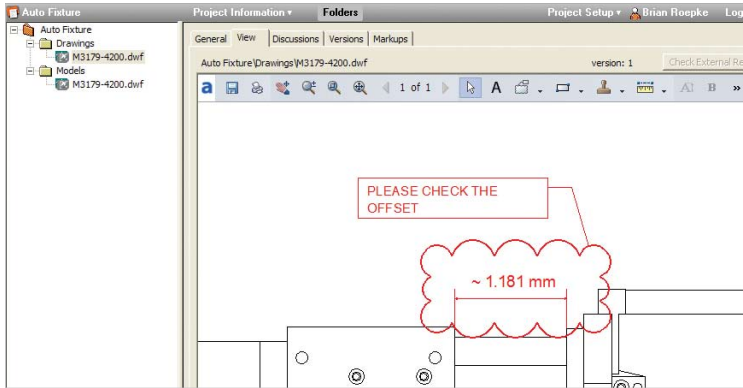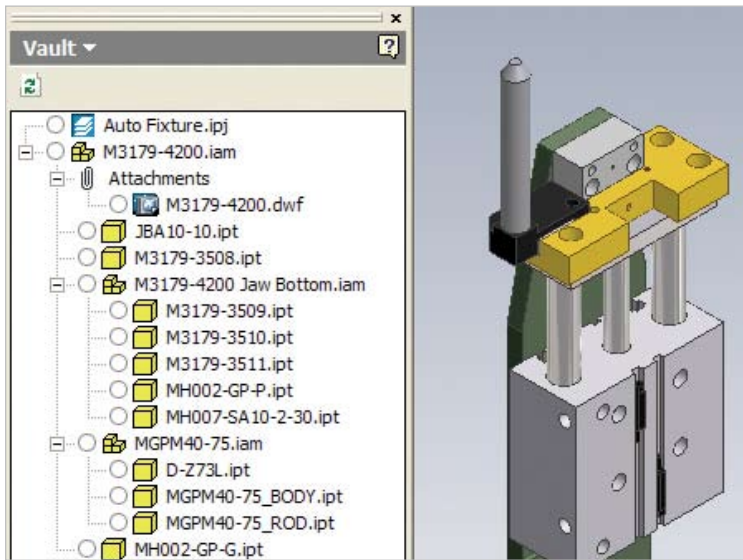
Autodesk Vault Integration
Instantly notify key people and offer suppliers and customers access to your latest design data. Autodesk Vault software automatically publishes and uploads design data to Autodesk Streamline when the engineering team makes updates.

File Version Tracking
Virtually eliminate the problem of overwriting work in progress and take advantage of past versions for reference. Autodesk Streamline technology automatically detects when a newer version of a file is uploaded to the system and prompts you to add comments or send email notifications.
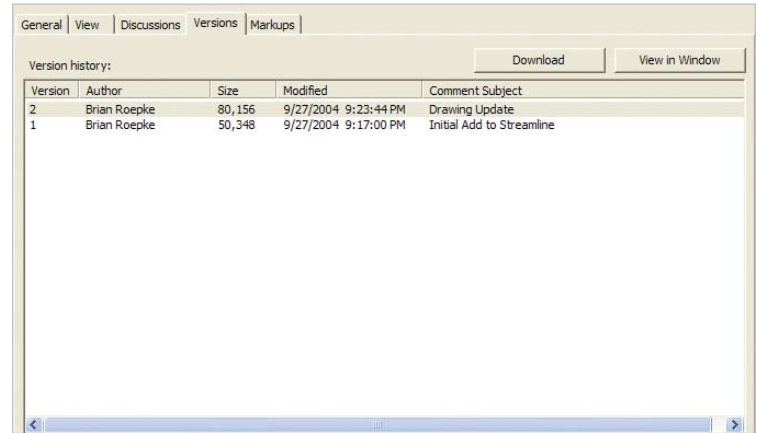
Fast Search
Quickly search through documents, designs, and logs for the information you need, when you need it. The Autodesk Streamline service can search files for content such as component name, mass, and volume.
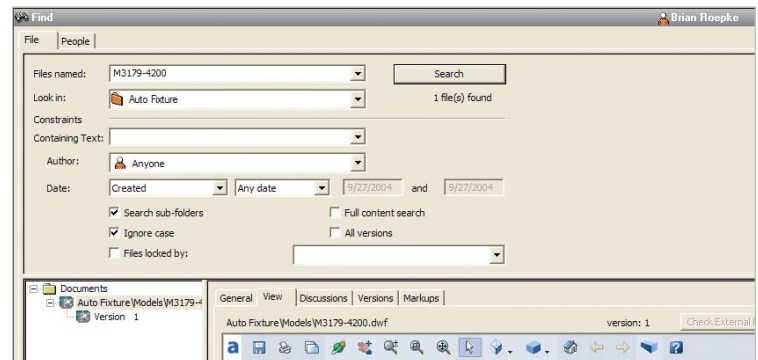
Maintain File-Level Threaded Discussions
Discuss and keep a record of changes and decisions about your documents. Initiate, participate in, and review discussion items related to a specific version of a document.

Centralized Online Project Management

Manage Multiple Projects Online
Manage projects in a single location, for consistent and accurate access to project data. Create a single site containing access-controlled projects for your entire extended team.

Use Flexible Group Types
Maintain confidentiality by creating groups for working with suppliers or customers who may compete with each other. An Autodesk Streamline group type, Private Groups, prevents members from seeing each other's data or identity.

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Reuse Standard Project Templates
Save time and maintain process consistency by reusing a standard project template to set up and start new projects. Copy an entire project—project folders, members, permissions, files, logs, forms, markups, discussions, and comments—and reuse it for another project.

Easy Installation, Use, and Maintenance

NEW Project Size Quotas
Make administration of multiple projects easier by balancing projects across multiple teams according to business needs. Site administrators can set "warning" and "hard" limits on projects and specify the behavior (notifications, prevention of additional uploads, and so forth) when these limits are approached or reached.

NEW Customizable Email
Administrators can tailor the welcome email to project members, including text, login information, and links, and then save emails as templates for future use. As a result, team members can get started on Autodesk Streamline projects quickly because email is not confusing or mistaken for SPAM.

ENHANCED Use Activity Log to Track Data
Use the activity log to easily monitor activity and maintain accountability when working with large groups of users. Track usage statistics, project and member activity, storage space used, documents uploaded or downloaded, and active or inactive projects. Administrators can view user information such as IP address, last logon, and activity level, and disable multiple users at one time.

Autodesk Streamline Web Access (Thin Client)
Access all Autodesk Streamline functions, including managing and communicating on product documents, notifications, workflow, and reporting, without downloading and installing a separate, bulky PC application. The Autodesk Streamline web-based, thin-client approach dramatically simplifies administration and maintenance. Since it runs within the browser, Autodesk Streamline supports diverse Windows versions and hardware platforms.
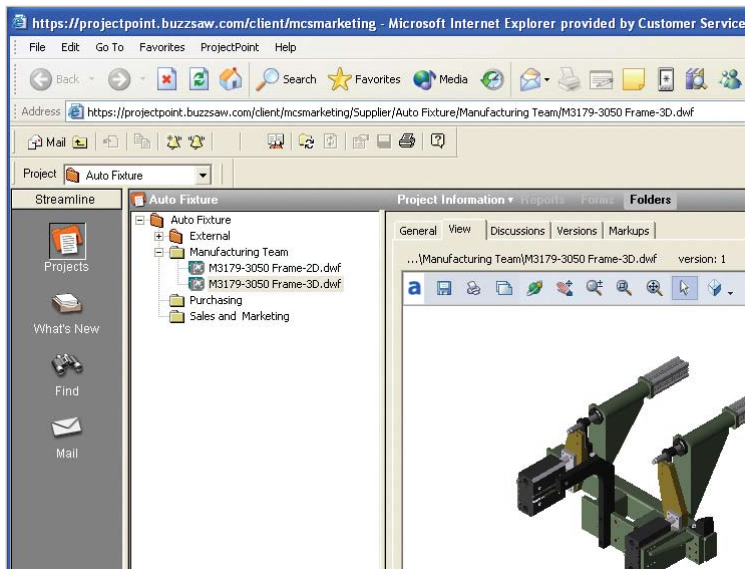
Easily Manage Permissions
Quickly and easily view and modify permissions for all site users from a single, central location. Graphically assign and view user permissions, including different permissions within a project; sort by user type or group; or export to CSV format for offline printing and viewing.

Install and Update Automatically Through Web
Minimize installation hassles and maintain updates without spending time on individual workstations. Use the web to automatically install and update clients without the need for a CD or other media.

Use Familiar Windows Explorer–Like Interface
Autodesk Streamline is easy to learn and use because it offers a familiar Microsoft Windows Explorer–like interface and includes functionality such as drag-and-drop editing and right-click menus.

Hosted by Autodesk
The Autodesk Streamline online service is hosted by Autodesk, so there's no need to worry about installing and maintaining hardware or software on your site, or performing software upgrades.

Standards-Based, High Availability, Secure Architecture

Application Programming Interface (API)
Customize your applications and extend their functionality with the Autodesk Streamline API. Use it to customize your applications to upload, download, copy, move, and delete files and folders.

Secure Sockets Layer (SSL) Transactions
Be confident that your data is secure when transmitted over the Internet. All data transferred to and from your Autodesk Streamline site is encrypted using SSL technology, providing up to 128-bit encryption.

Fault-Tolerant EMC Tier 5 System with Automatic Nightly Backups
Your company and project data is protected with some of the highest levels of fault tolerance and data redundancy available in any computing environment. In fact, Autodesk is a Tier 5 member of the EMC Proven™ program, offering the highest EMC® enterprise-level backup and restore, data migration, and remote mirroring capabilities.

Highly Secure Environment
Gain one of the highest levels of security with around-the-clock protection and constant monitoring. The data center is guarded and under video surveillance to enable maximum access control and data protection.

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Autodesk DWF Viewer

To keep design data from changing while sharing it with your extended team members, you need a secure format. The Autodesk DWF file format enables any member of the extended team to securely review 2D and 3D designs, and is included with Autodesk Vault. The free* Autodesk DWF Viewer is the simplest, most accurate way to share designs with these users.

Collaboration for the Extended Manufacturing Team

NEW BOM Support

Now designers can publish BOM information as part of the DWF file to quickly convey important design information. Just select an item in the DWF BOM to automatically highlight the item in the 2D or 3D DWF model for easy location.

NEW Assembly Instructions

Animated assembly instructions, exploded 2D views, and 3D models of complex designs can greatly simplify the work of downstream users. New in this release, designers can publish technical documentation and assembly instructions to a lightweight DWF file that contains these simplified views to help production and support teams assemble, maintain, and repair assemblies more effectively.

NEW Representations

Autodesk DWF Viewer supports user-created representations that can display predefined views, ranges of motion, or configuration information for a design. Review cycles are shorter when team members can focus on specific design information without having to reconfigure DWF views.

NEW Pull-Apart

Reviewers of design information can now quickly deconstruct designs to gain access to specific parts for inspection. The ability to interactively pull 3D models apart and then return them to the original position means that designs can be reviewed faster and more effectively.
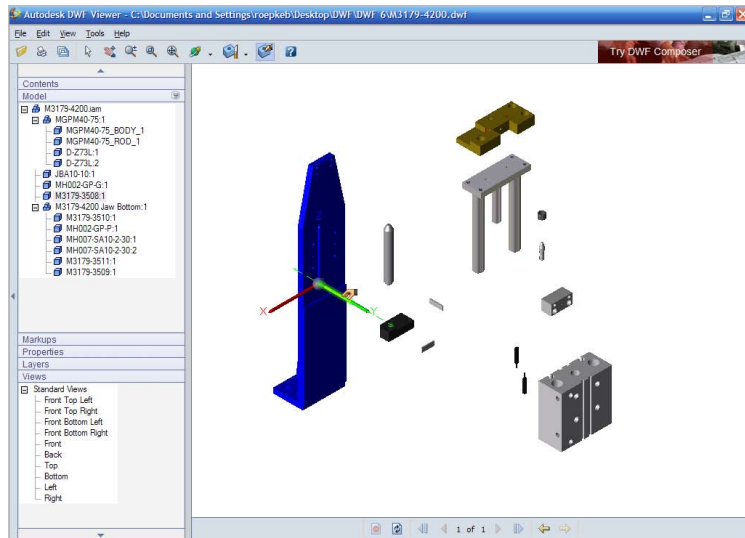
NEW 3D Cross Sectioning

A cutaway view of a 3D model could make the difference between catching a design flaw early in the process—or on the shop floor when it becomes an expensive problem. Now, designers can create dynamic cutaway views by simply orienting and dragging a cross section plane through any 3D part or assembly. Reviews are more efficient, and errors less frequent.
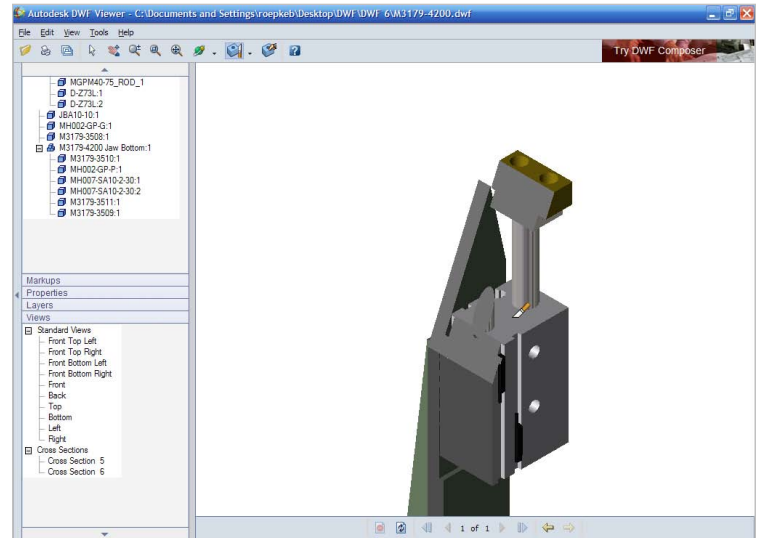
NEW View, Plot, and Publish Using DWG TrueView

Use the free* DWG TrueView™ application for unmatched accuracy in DWG file viewing. It allows you to view and plot native DWG and DXF™ files, or publish DWG files to DWF format to speed review cycles and protect the integrity of designs. You'll improve your processes—while saving time and money.

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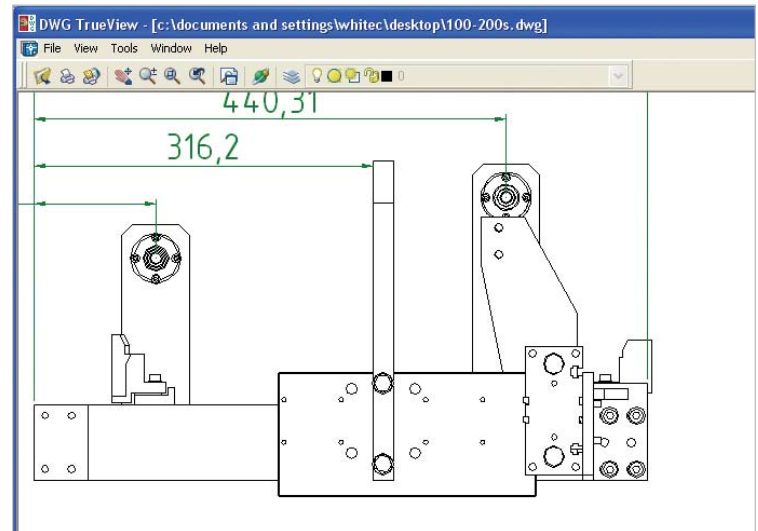
ENHANCED 3D Publishing, Viewing, and Printing
Publish 3D DWF files that enable team members who don't use CAD to pan, zoom, and orbit 3D Autodesk Inventor models while maintaining the assembly design structure. Show, hide, and isolate individual components. Print selected views from the 3D DWF model without additional object enablers, xrefs, special fonts, or other external components. The DWF file specification provides a fast and efficient way to easily share high-fidelity, 3D design data, including model structure and properties.
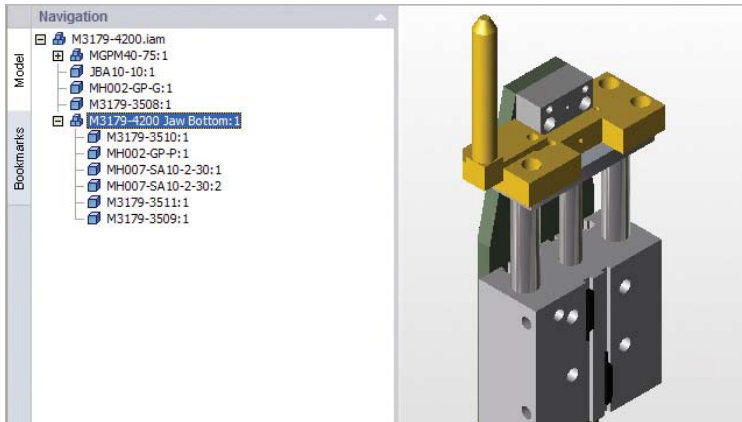

ENHANCED Printer Integration
Autodesk has partnered with leading printer hardware and software vendors to provide highly accurate, high-performance DWF printing of 2D and 3D design data. HP® Instant Printing is integrated into the main toolbar of the Autodesk DWF Viewer application.

Integration with Autodesk Vault
The integration of the DWF Viewer into the Autodesk Vault allows designers to quickly view and manipulate 3D DWF files to ensure they are correct before incorporating the actual Autodesk Inventor part file into the designs.
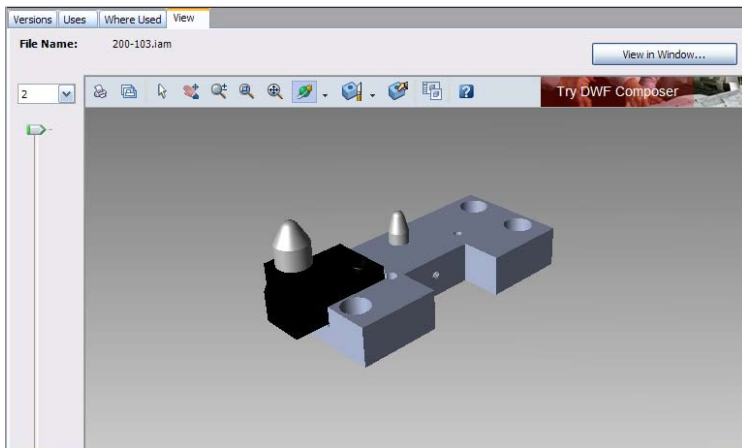
2D Viewing, Publishing, and Printing
Publish 2D drawings to 1/10th of their original size using DWF format. Users can pan and zoom the drawings as well as navigate sheets, views, and layers with ease. DWF renderings stand alone, so users can easily print to any Windows printer without additional object enablers, xrefs, or special fonts.
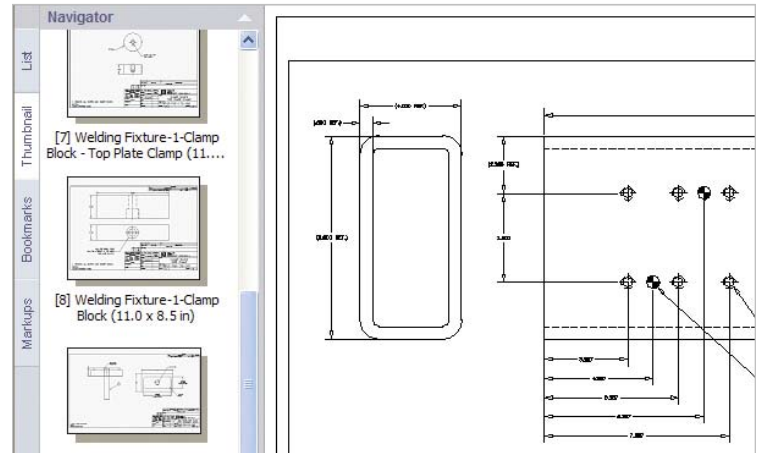

Free* Autodesk DWF Viewer and DWF Writer
Produce compact, lightweight design documents using the Autodesk® DWF™ Writer so that customers and suppliers can review and print using the free*, distributable DWF Viewer. With more than ten million copies downloaded, the DWF Viewer enables designers to share and collaborate on designs with the broadest possible audience.

View Autodesk Design Review Markup
Use the free* Autodesk DWF Viewer to review and navigate markups made on DWF files by Autodesk Design Review. The ability to share markups with any DWF Viewer user increases the efficiency of the design review process since no additional Autodesk Design Review license is required.

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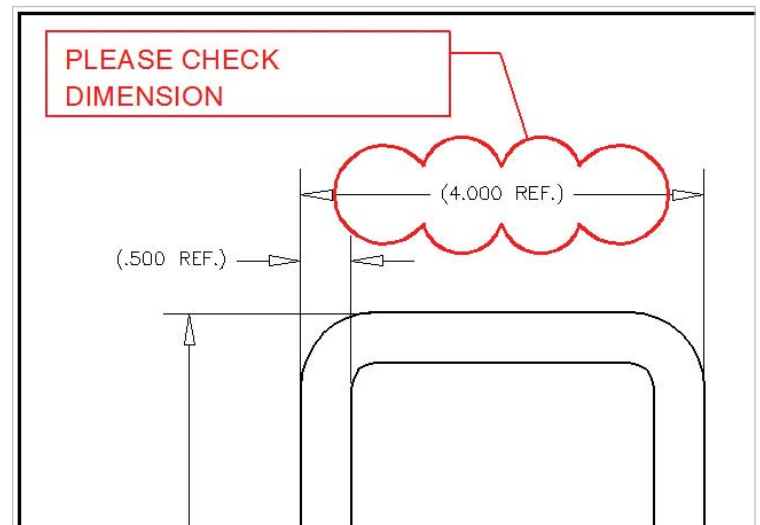
Access Properties

DWF files communicate all the design information needed to improve teamwork and efficiency. DWF format accurately captures properties such as part number, dimensions, materials, manufacturer, center of gravity, density, mass, and volume. Organize properties by grouping attributes as needed to facilitate the review process.

View Markup Details

Track the review status of documents by accessing the properties of markups made with Autodesk Design Review. Markup properties help you follow the review and markup process by saving information such as reviewer, project name, pull-down status (such as Question, Review, and Done), markup history, and notes.

Easy to Use

NEW Drag-and-Drop Office Support

Now designers can drop DWF files into Microsoft Office applications for enhanced sharing and communication with a broader audience of stakeholders and reviewers.

NEW Rotate Print Orientation

Flexible printing functions improve print efficiency and enable design information to be clearly communicated. The ability to rotate and print mixed landscape and portrait details in multiple drawing sheets, as well as the ability to center the drawing on paper, give designers more flexibility when printing drawing sets.

Direct Publishing from Autodesk Applications

Enhance team communication and accelerate workflow by sharing design data more easily and often. With just one click, publish 2D and 3D design data directly from AutoCAD Mechanical, AutoCAD Electrical, and Autodesk Inventor software.
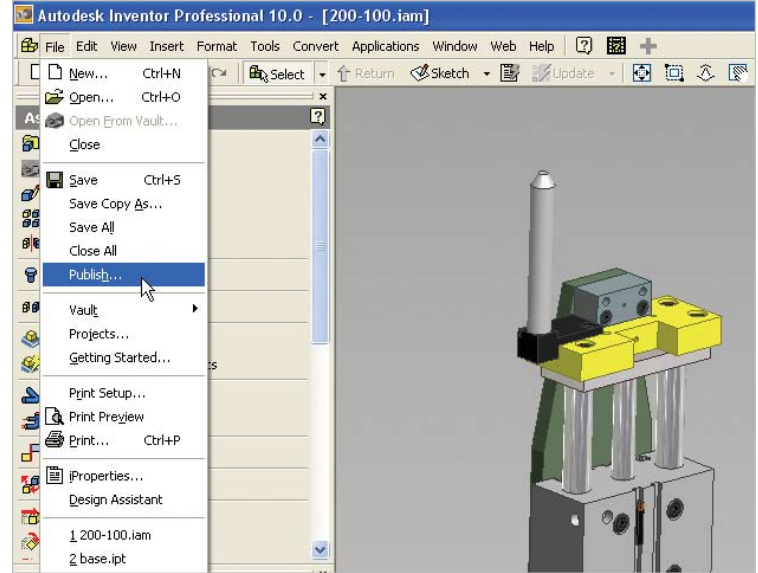

Multisheet Viewing

Page through multisheet DWF documents exactly as you would with a paper drawing set. Easily view multisheet documents using the sheet browser. DWF files maintain key information such as drawing size and descriptions for accurate communication.

Thumbnail Viewing

Use the thumbnail browser to navigate drawings quickly. Thumbnail views enable visual navigation to locate the information you need quickly without drilling down into each sheet separately.

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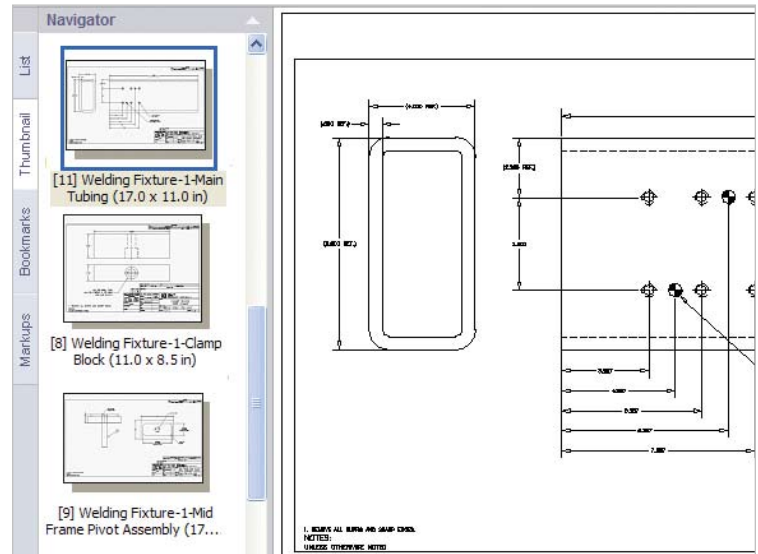
Markup Browser
Navigate all reviewers' markups more conveniently using the markup browser. Comments are organized in a simple tree view for fast scanning. Each item in the markup browser links directly to the drawing where the markup is located, making it faster to find the correct drawing and act on changes.

Intuitive Interface and Navigation
An intuitive, easy-to-use interface makes it simple for anyone to work with DWF files. No CAD experience is necessary. Anyone can quickly view and print drawings, making DWF ideal for communicating with the broadest possible audience.

Flexible Print Options
Flexible print options accommodate a variety of output sizes and settings for maximum compatibility. Choose paper size (including large-format paper) and scale, or tile larger prints.
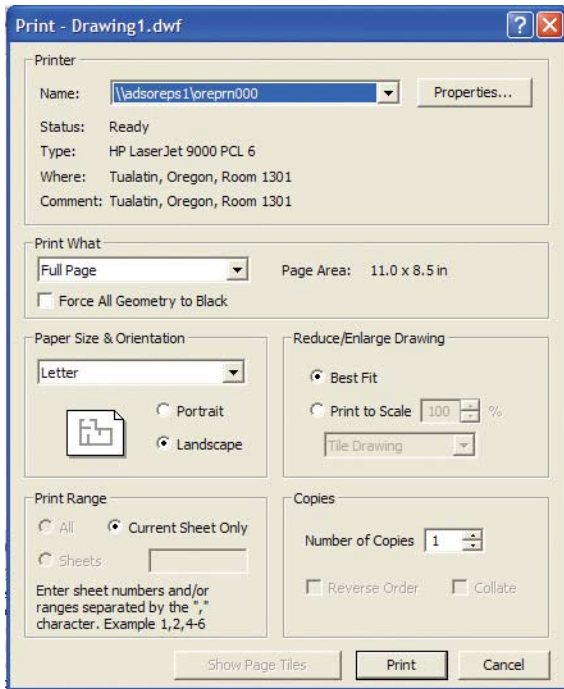
Sheet Properties
Use sheet properties to maintain information about projects. Track properties such as cost center, design status, approval state, or customer, or define additional fields to meet company standards. Gain rapid access to key drawing information using properties.
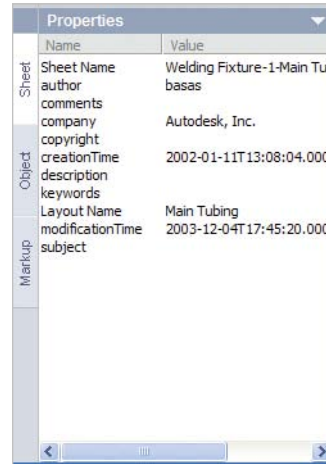
Secure and Extensible

ENHANCED Application Programming Interface
Customize, automate, and extend the capabilities of the Autodesk DWF Viewer for use within third-party applications. Now you can control the visibility of layers in a DWF file or control 3D views using camera APIs.

Layer Information, on or off
Control how much information you share during the DWF publishing step and prevent sensitive or unnecessary data from being included. Turn layer information on or off to enable or disable properties and block attributes as necessary.

DWF Toolkit for Developers
Developers can build on DWF technology using the Autodesk DWF toolkit, an open, published specification available to any developer for a license fee.

Hyperlink Support
DWF format enables automatic creation of hyperlinks when publishing from AutoCAD software. Hyperlinks conveniently associate a sheet index with other sheets, or drawings with related detail sheets for ease of navigation in the final DWF file.

Encryption and Password Protection
Protect your intellectual property by password-protecting and encrypting your DWF files.

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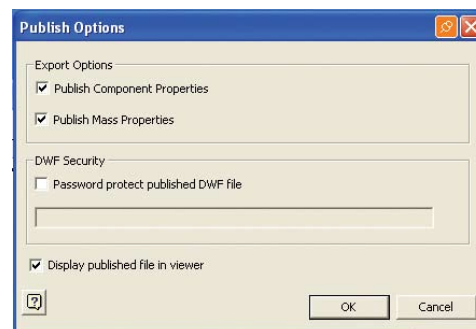
## Autodesk Design Review
(formerly Autodesk DWF Composer)

Autodesk Design Review includes all Autodesk DWF Viewer functionality and adds review and markup capabilities. Used alone or with Autodesk Productstream, Autodesk Design Review makes communication with extended team members even faster and more flexible.

Collaboration for the Extended Manufacturing Team

ENHANCED **Integrate Markups with Autodesk Design Applications**
Quickly review and respond to changes by round-tripping DWF markups and comments across sheet sets in Autodesk design products. An integrated review process combined with Autodesk Design Review software's powerful design review features speeds the review process and simplifies revisions.

ENHANCED **Markup Creation**
Keep team members up-to-date with the latest design review status and changes throughout the design review process. Markups to 2D and 3D drawings are automatically recorded and can be viewed using the markup browser or the Markup Properties tab. They provide a convenient place to communicate status and comments during the design review process.
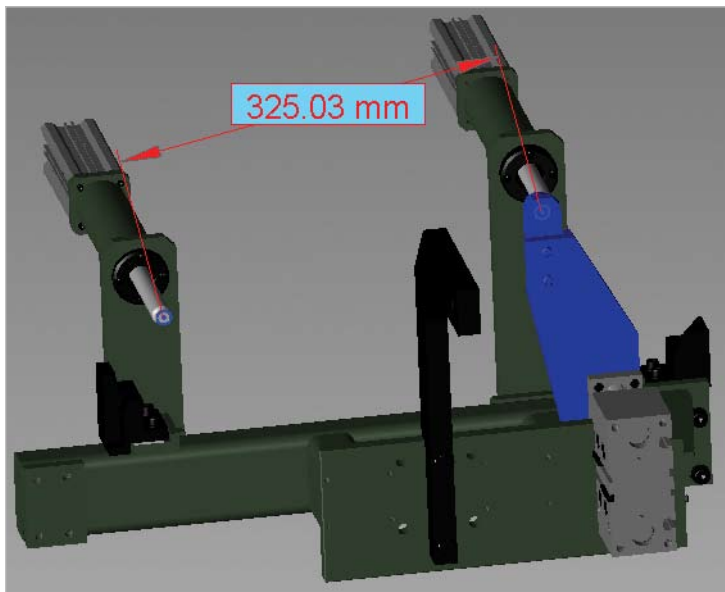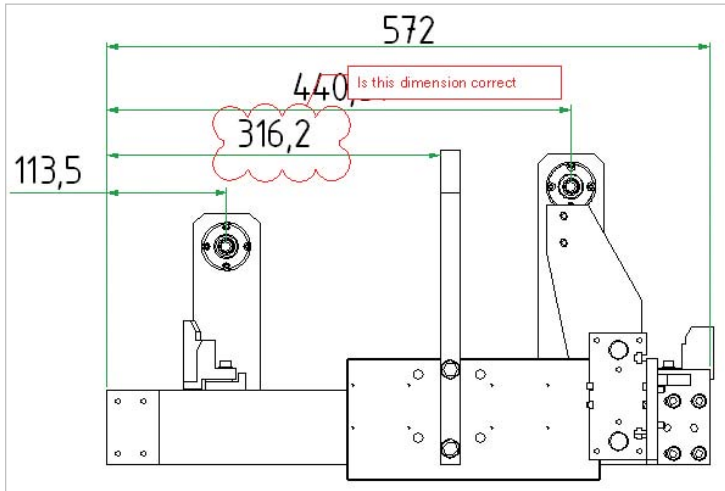
ENHANCED **Dimension Tool**
Measure the length, area, and angle of design features in both 2D and 3D parts and assemblies, to help ensure correctness and accuracy. The dimensioning tool provides auto-snapping for precise measuring from point to point.
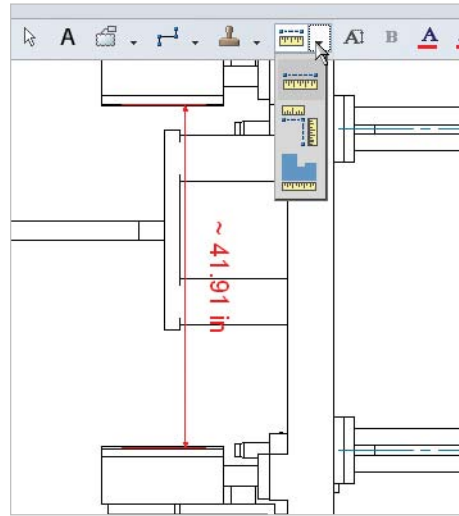

View and Plot Autodesk Inventor Files
View and plot Autodesk Inventor files with the Autodesk Inventor View application included with Autodesk Design Review. Product teams can work with a range of popular design formats in a single, easy-to-use application.

View, and Measure Raster Images
Use the Open Raster Images command to view, scale and measure up raster images, and then save them as DWF files in the sheet set. Supported raster file formats include BMP, CAL, CALS, CG4, FLC, FLI, FLIC, GIF, GP4, IG4, JFIF, JPE, JPEG, JPG, MIL, RST, PCT, PCX, PICT, PNG, RLC, TGA, TIF, and TIFF (including multisheet TIFF).
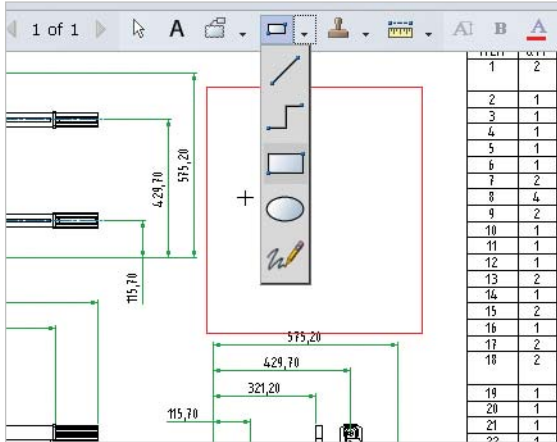
Text Tools
Add comments to a document or format existing ones using a familiar interface that includes text formatting tools like color, bold type, and font sizes.
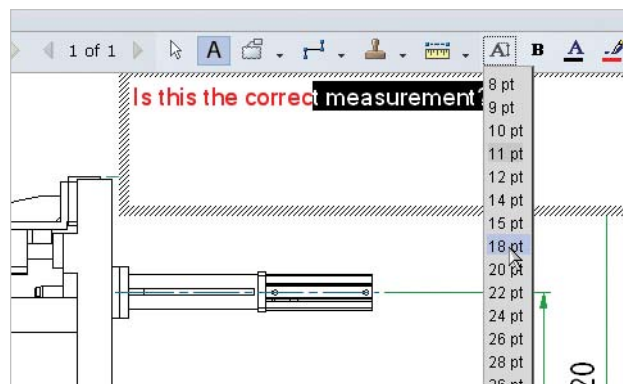
Shape Tools

Add shapes as needed to communicate better and improve the quality of review cycles. Use shape tools to draw lines, rectangles, or ellipses, or sketch freehand to indicate your thoughts.

Stamp Tools

Facilitate reviews and communicate with greater clarity by selecting from preconfigured stamps that indicate the status of the design review. Choose from preliminary through final stages, making the status of a design instantly clear.
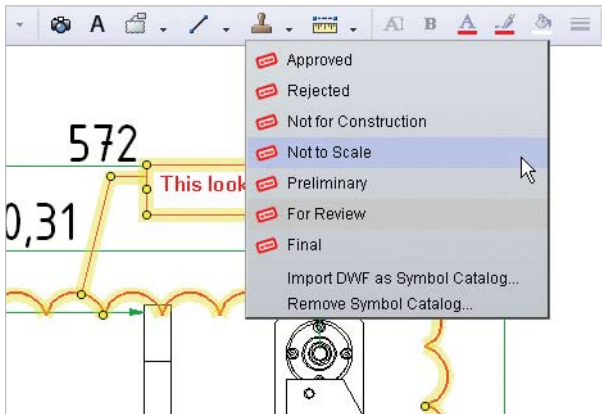

Custom Symbols Tool

Annotate drawings from a library of custom symbols imported from AutoCAD software or any DWF file.

Snapshot Tool

Use this tool to quickly and easily capture any graphical information on your display and automatically publish that information to DWF format. The Snapshoot tool simplifies sharing of rich design information by integrating graphical information from a range of sources into a single DWF file.
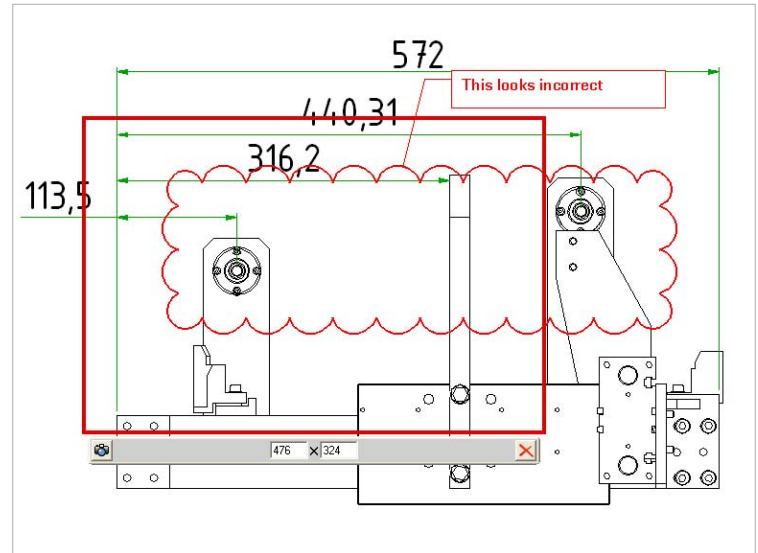

Status Tracking

Improve the quality of communication and decision making by automatically tracking the status of ECOs. Review and status information is automatically preserved and presented to the recipient of the reviewed DWF file along with any notes, keeping all communication in the context of the drawing or model.

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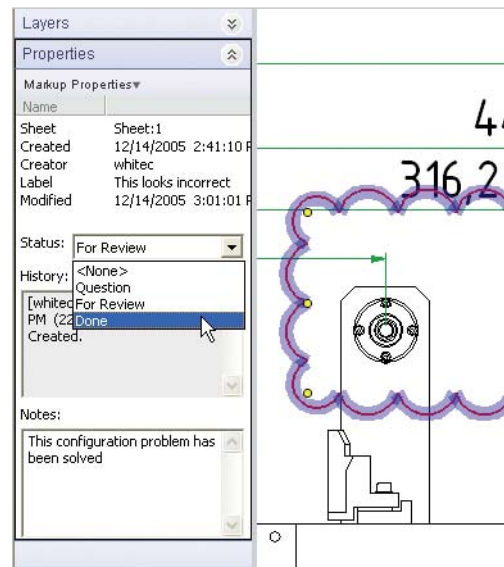
Easy to Use

Integration with Autodesk Streamline
Open and save DWF files in the secure Autodesk Streamline environment to instantly communicate changes to the project team.
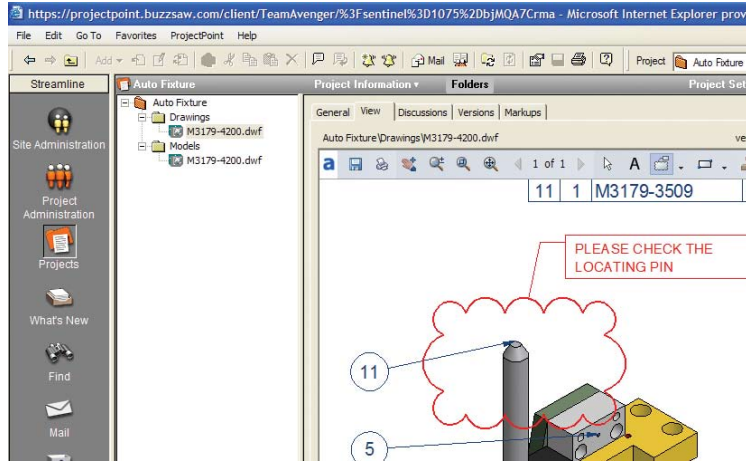
Integration with Autodesk Productstream
Tightly integrated with Autodesk Productstream, the Autodesk Design Review application facilitates view and markup as part of the ECO process.
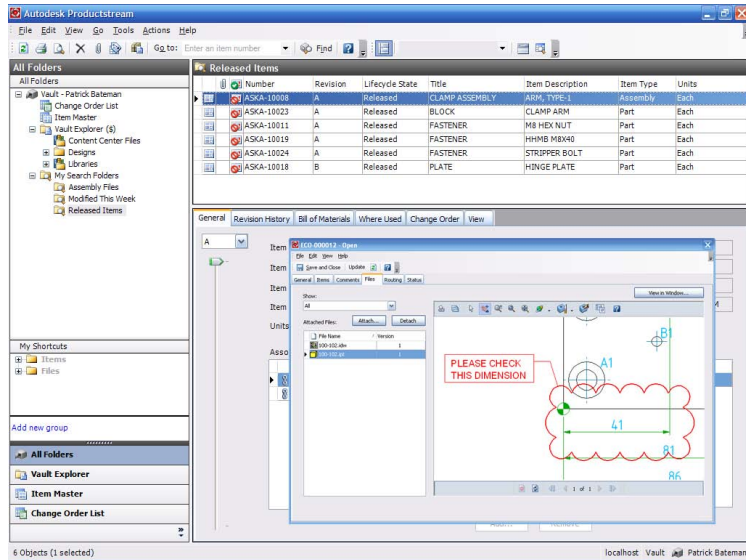
Open and View Raster Images
Scale, measure, and mark up raster images, and then save them as DWF files that the entire team can view and include in sheet sets.

Add DWF Drawings to Files
Quickly combine DWF documents by adding and deleting 2D and 3D drawings and sheets to create a consolidated, complete DWF file suitable for reviewers. Drag drawings or individual sheets into the Sheet Set Navigator pane to add them, or delete by selecting and deleting the sheet from the Navigator.

Autodesk DWF Writer

The free*, downloadable Autodesk® DWF™ Writer enables designers to securely share 2D and 3D data with DWF format—no matter what design application they are using.

NEW Email a DWF File
Send DWF files through email to rapidly communicate design information to the extended team. Users can now email a DWF file from Autodesk DWF Viewer or Autodesk Design Review, keeping all stakeholders up-to-date with the click of a button.

NEW Export DWF Files from Other CAD Applications
SolidWorks, Pro/ENGINEER, CATIA®, and UGS® SolidEdge® and NX™ software users now have access to free plug-ins that export model and drawing information to the DWF file format. The result: designers can use DWF to share and communicate CAD data irrespective of source.

ENHANCED Export DWF from Microsoft Office
Microsoft Office users can publish DWF files from PowerPoint, Word, Excel, Visio®, and Internet Explorer applications and integrate them into the sheet set. Use this printer driver to share and communicate all document data relevant to product development in the flexible and accessible DWF format.

The Autodesk Solution for Manufacturing

Never before have design applications and data management tools come together to simplify the way manufacturers design products and drive them through the manufacturing design process. The Autodesk solution for manufacturing comprises a complete, interoperable line of industry-leading software integrated with a worldwide network of services and partners. Gain access to technical expertise for implementation, and utilize training and support programs direct from Autodesk to help use your design and data management software more effectively. Software maintenance programs allow you to stay up-to-date with the latest product releases and upgrades for your software. Designed to be deployed incrementally for minimal business disruption, the Autodesk solution provides the most effective way to stay ahead of the competition and achieve maximum return on your software investment.

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