



“PRODUCT DESIGN ASSISTANT”

The “Product Design Assistant” (PDA) is a two part software utility, aimed at mechanical engineers/machinery manufacturers, that can reduce or even eliminate time consuming tasks faced by design engineering and/or purchasing departments!

Part: 1 - AutoDesk Inventor

When the **AutoDesk Inventor** "SAVE" button is pressed, PDA automatically creates all the relevant files necessary, for processing using part: 2, detailed below quietly without any performance loss.

Assemblies (IAM)

PDA Creates a top level "Bill of Materials" and saves it into a "Public" folder.

Drawings (IDW/DWG)

PDA Creates a "PDF" copy of the detail drawing and saves it into a "Public" folder.

Parts (IPT)

A dialog box opens that allows you to specify the following, prior to saving:

1. Part Type (Machined, Fabrication, Sheet Metal, Weldment, Laser Cut, Flame Cut etc)
2. Part Description.
3. Part Material (This gets set as default every time the save button is pressed)
4. Heat Treatment, if required.
5. Surface Finish, if required.

This above information gets transferred to the **AutoDesk Inventor** document “File Properties”.

If the part type is a "Laser Cut", "Flame Cut", “High Def Plasma”, or "Water Jet Cut" profile, PDA creates a 2D AutoCAD "DWG" of the part and saves it into a "Public" folder. Part material and thickness gets checked against a database of standards.

If the part is a "Sheet Metal" component, PDA will firstly flatten the part before creating the 2D AutoCAD "DWG" file.

If the part is a “Weldment” a material cutting list gets generated.

The part number is automatically generated, when enabled, see below.

If the part is a machined or sheet metal component, you can specify **AutoDesk Inventor** to automatically create a mirrored part. Again, the part number is automatically generated when enabled.

The part number and description are stored in a database so that a search for a particular part can be done in the future using key words.

Part: 2 - The “Product Design Assistant” Processor

The second part of the PDA software allows the user to easily do the following:

- A] Automatically generate and send an email to a customer for drawing approval.
- This email will have a PDF copy of the GA drawing attached, In a "Zip" file, that is firstly stamped:
- APPROVED FOR MANUFACTURE BY: SIGNED DATE**
- This email will then be automatically sent to your customer using Microsoft Outlook.
- B] Automatically generate and send detail drawings to upto six separate suppliers for quotations.
- These emails can have any number of PDF drawings attached, in a "Zip" file, that are firstly stamped:
- ISSUED FOR QUOTATION PURPOSES ONLY - DO NOT USE FOR MANUFACTURE**
- The email header can be either be to "Sales", or be to a specific person specified in the Supplier details data file. This data file can be edited by a built in data editor.
- These emails will then be automatically sent to your suppliers using Microsoft Outlook.
- C] Print any number of detail drawings for checking purposes. This option is only available if **AutoDesk Inventor** is installed on the same computer and allows the design engineer to check their work prior to manufacture.
- The "PDF" file is firstly stamped with the following, prior to sending to the default printer.
- CHECKING PRINT ONLY - DO NOT USE FOR MANUFACTURE**
- D] Print any number of detail drawings for in-house manufacture/assembly.
- Firstly the "PDF" file is stamped with the **JOB NUMBER, REQUIRED QUANTITY** and **CUSTOMER NAME**, prior to sending to the default printer. Customer name can be disabled, if required, so that the shop floor does not know who the customer is.
- E] Print purchase order request forms. These forms include all the part information required by your purchasing department.
- F] Send detail PDF or AutoCAD DWG drawings to specific supplier for manufacture.
- Detail drawings are firstly stamped with the following, prior to sending them to the supplier.
- ISSUED FOR MANUFACTURE DATE: ???/??/2018**
- This email will then be automatically sent to your customer using Microsoft Outlook.

Emails automatically get appended with the user name, department, email address, company and contact details. These can include company website and mobile phone number if required.

Part: 2 can be used without **AutoDesk Inventor** being installed, therefore it can be used on a different computer, in a different department or even a different location.

Data Security:

AutoDesk Inventor documents (Assemblies, Parts and Drawings) are stored in a "Private" folder that can only be accessed by authorised personnel.

Data files, used by PDA, such as customer & supplier details (contact name and email address) are also stored in a "Private" folder that, again, can only be accessed by authorised personnel.

Additional Features:

- 1] Old copies of revised drawings, in PDF file format, are stored in a "Private" folder, for reference purposes, just in case they need to be accessed in the future.
- 2] A built in BOM editor that allows you to add/edit part costs and supplier.
- 3] A built in text editor allows you to add/edit both customer and supplier details.
- 4] You can set individual default printers for all paper sizes (A0, A1, A2, A3 & A4)
- 5] Double clicking on a part, that has an associated detail drawing, opens the drawing in "Full Screen" mode for a clearer view of the drawing.
- 6] Right mouse clicking on a "bought out" (purchased) component allows you, if required, to easily search for that part using the "**Google**" search engine rather than typing in the information manually.
- 7] **AutoDesk Inventor** Parts, that have been created using PDA, can be searched for, using the database created when saving the part document.
- 8] Export all the part details from a specific "Bill of Materials" to "SAGE" using a "csv" file.
- 9] AutoCAD drawings for profiles are grouped into files using the material thickness and material type.
For example: **12.5mm Stainless Steel Grade 316L**
This makes it easier, for suppliers, to convert the AutoCAD drawings into parts ready for manufacture.
- 10] Standard, bought out, parts are installed and can be accessed using the **AutoDesk Inventor** "Design Library".

Part Numbering:

Part numbers are automatically generated by PDA, if the feature is enabled, in the following format:

1000	Main Assembly or Sub-Assembly
1000-001	Part Document/Detail Drawing
1000-002	Part Document/Detail Drawing
1000-003	Part Document/Detail Drawing

Etc

Planned Future Enhancements:

- 1] Ability to automatically "Nest" laser, flame, high def plasma and water jet profiles for optimal material usage prior to sending to your suppliers for quotation.
- 2] 64 Bit Version is planned for release later this year.