FAQs

Contents

1. General Product Information

1.1 What is System Pvex™ ?

System Pvex™ has been developed to design Pressure Vessels and Heat Exchangers using a default function as much as possible. Also, each design can be made by the same project conditions (philosophy) such as Material code, Seismic code, Nozzle code and Site condition.

By performing the Strength Calculation (output Lists, Calculation Sheets, 2D Drawings, 3D Models and so on), System Pvex™ will allow each engineering discipline (Piping, Civil, Construction etc.) and logistics section to estimate the quantities required using its unique database built up from our 30 years of experience.

This will give you a competitive advantage in project bids and when commencing Engineering design by allowing other engineering disciplines to get on with the design of supporting infrastructure.

1.2 Who designed and developed System Pvex™?

System Pvex™ was originally developed (hosted by IBM computer system) by one of the major engineering company (Equipment Design Department) in Japan. It has been assigned to Pvex Ltd. and was significantly improved and updated (employing Windows PC Operating System, latest calculation procedures and adding Search and Summation function). Pvex Ltd. has maintained a close relationship with the said engineering company.

1.3 What are the main features of System Pvex™?

System Pvex™ provides a competitive advantage for the Manager in charge of equipment design.

As a Manager in charge of equipment design, you have to perform the following urgent missions in the early stages of a project.

First, you have to prepare many engineering drawings, calculation sheets and 3D models. System Pvex™ will allow you to prepare these quickly and automatically with the minimum input by using the default function as much as possible. This will play an important role in making cost estimates in the succeeding stages.

Secondly, you have to provide the data needed by each engineering discipline and logistics section for their cost estimation. They can then estimate the material and manpower costs such as the concrete and steel structure, the bills of quantities and the number of trucks and cranes required. This will give you a competitive advantage in project bids and when commencing engineering design by allowing other engineering disciplines to get on with the design of the supporting infrastructure.

Finally, the greatest feature of System Pvex™ is the Search and Summation function. This will make the cost, delivery and manufacturing control much easier. For example, you can search make a summation table of the nozzles required by size, rating

and materials taken from several hundred pieces of equipment in a project. The shipping date of the equipment from each manufacturer can then be managed according to site construction schedules.

1.4 Is it possible to perform detailed calculation in addition to the estimation works in the early stage of the project?

A key characteristic of System Pvex^{TM} is to give the precision required for equipment design step by step. For example, in the early stages of a project, the nozzle orientation is not necessarily fixed. Also, the types of packing and the catalyst or the number of trays are not yet decided; and the shape and weight of a platform around a manhole has not been determined.

Of course, it is always possible to make a detailed design, but may be meaningless in the early stages of a design.

1.5 Why is System Pvex^{TM} easy and prompt to input?

System Pvex^{TM} will automatically design the equipment using default function as much as possible to make an initial estimate. These estimating procedures are built into the system based on over 30 years' experience.

1.6 Does System Pvex^{TM} design heat exchangers?

Yes, its functions will be released soon.

1.7 Does System Pvex^{TM} design tanks?

No, tanks regulated by API620, 650 or JISB8501 are outside of scope.

1.8 Does System Pvex^{TM} hold material data library?

The material data library shall be input by the user because they are protected by copyright laws and regulations. It is possible for Pvex Ltd. to input them on behalf of you. In this case, Pvex Ltd. will need the original copy (subcontracted data input operation). If you are a user of ASME digital library, Pvex Ltd. can provide you the program which can download and convert into System Pvex^{TM}.

1.9 What kind of software is used in the database?

System Pvex^{TM} owns it original database. It is not necessary to buy the special database such as Oracle.

2. Support and Training

2.1 Are there operation manuals for System Pvex^{TM}?

Yes, the following manuals are available.

A1 General
A2 Project Common
A3 Pressure Vessels

A4 Heat Exchangers
A7 Search and Summation
A12 Input Form
A13 DXF data creation
A14 Explanation for data files such as Allowable stress

2.2 How do I obtain technical support?
Please contact our support team at support@pvex.co.jp.

2.3 How can I get personalized support and training?
Pvex Ltd. can provide you with a training package both for equipment design and on how to use System Pvex™ upon request but with a corresponding charge (including training materials).

3. Platform and System Requirements

3.1 What are the system requirements for System Pvex™?

For 32-Bit System

- Microsoft® Windows® 7 Professional, or Home Premium (compare Windows 7 versions)
- Microsoft Office 2010 Personal, Home and Business, Professional
- Microsoft.NET Framework 4
- DXF viewer (Autodesk DWG TrueView or SolidWorks eDrawings)
- CPU Intel Core i5 or equivalent
- 4 GB RAM
- 2 GB free disk space for installation
- 1,024 x 768 display resolution with true color

For 64-Bit System

- Microsoft® Windows® 7 Professional, or Home Premium (compare Windows 7 versions)
- Microsoft Office 2010 Personal, Home and Business, Professional
- Microsoft.NET Framework 4
- DXF viewer (Autodesk DWG TrueView or SolidWorks eDrawings)
- CPU Intel Core i5 or equivalent
- 4 GB RAM
- 2 GB free disk space for installation
- 1,024 x 768 display resolution with true color

To be updated later

3.2 Does System Pvex™ support 64-bit operating systems?
Yes. See the system requirements above.

4. Free Trial and How to Get the License

4.1 Can I try System Pvex™ for free?

Yes, you can try it out by requesting the software from Pvex Ltd. This fully functioning version of System Pvex™ is available as a free 30-day trial together with laptop PC (installed System Pvex™). This free trial is very important for you to verify its functions.

4.2 Why is free trial important?

System Pvex™ software will be provided to you "AS IS" which you can verify during the free trial period. Please refer to EULA for details.

4.3 What are the license and annual maintenance fees?

Please contact our sales department at info@pvex.co.jp.

5. Licensing

5.1 How does Pvex Ltd. grant a software license?

The software is licensed, not sold. So, you have to enter into an agreement with Pvex Ltd. (End User License Agreement). One license is provided to one PC.

5.2 What is EULA?

End-user license agreement (EULA) is a legal agreement between you (either an individual or a single entity) and Pvex Ltd. for System Pvex™, which includes computer software, electronic documentation and printed materials.

5.3 What is Dongle (ESL or Electronic Software Lock) for?

One Dongle will be provided to you together with one license. It shall be inserted to a USB port on your PC. System Pvex™ will not work without it.

6. Installation Options

6.1 How can I install System Pvex™ after licensing?

You have 3 options.

First, you can install System Pvex™ (for free) by yourself into your own PC. You can follow the installation procedures (A0 Introduction) based on the laptop PC that is for free trial use. However, please be sure to install the correct versions of related softwares such as Microsoft Office, DXF Viewer and Microsoft.NET Framework in addition to Windows 7 OS.

Second, you can send your PC to our office in order to get installation services by Pvex Ltd. with a corresponding fee. Pvex Ltd. will send your PC back as soon as they can. In this case, please send your Microsoft Office together with your PC.

Third, Pvex Ltd. can purchase a suitable PC and Microsoft Office on your behalf and install System Pvex^{TM} with a corresponding fee. Pvex Ltd. will send you the receipt of the above and will send them to you soon.

7. Compatibility and Operation

7.1 Is it possible to export the drawing files to AutoCad system?

Yes, you can export the drawing files in a form of DXF to AutoCAD system. Besides, it is possible to modify the drawing on the PC that is already installed in the Auto Cad system. Also, it is possible to output the results of modification in a form of DXF file.

7.2 Is it possible to export 3D models to another system?

Yes, you can export 3D models to InterGraph Smart Plant 3D, AVEVA PDMS (Piping CAD System) and Solid Works (Mechanical Design System) if you will prepare the interfacing program. At this moment 3D models in System Pvex^{TM} is developed to use internally.

8. Specific Features (Input and Output)

8.1 How do I specify the type of Pressure Vessel?

You have to specify the type by using 3 letters such as BEB. The first letter (B) means upper head type, the second letter (E) means the straight type cylinder and the third letter (B) means bottom head type. Please refer to Attachment 1 for details.

Besides, the supporting procedures such as Skirt, Leg, Lug and etc. are separately specified later.

8.2 What kinds of codes and standards does System Pvex^{TM} employ?

System Pvex^{TM} employs ASME section II-D and JISB8265 as the strength codes. Also, IBC, JPI, HPG and BSI are used as the wind codes.

8.3 Is it necessary to input (specify) data in detail?

No. Minimum items shall be input because System Pvex^{TM} deploys default function to estimate the detailed design conditions automatically.

The items such as Project name, Item name, Vessel type, Diameter, Length, Design temperature/pressure and Materials are indispensable. System Pvex^{TM} will assume other design conditions such as Nozzle, Manhole, Platform, Ladder and etc.

8.4 Is it necessary to input (specify) codes and standards in detail?

No. Common project data are specified once at the start of the project. So, there is no need to input again for each type of item.

The common project data consists of Strength code, Nozzle code, Wind code, Seismic code and Unit required.

8.5 If I want to input (specify) codes and standards in detail, how?
You can always input (specify) codes and standards in detail in each of the prepared pop-up window. Otherwise, it is not necessary to input whole data at first (the system assumes internally based upon the experience).

8.6 How do I specify the material?
You should specify the material for main body. The system automatically assumes other related materials such as a forged one internally based upon the experience.

8.7 How do I specify the Nozzle position?
You can specify it by using the distance from tangential line (TL) or by using relative distance from other Nozzle positions.

8.8 How do I specify the auxiliary parts such as Platform?
The system automatically assumes other auxiliary parts such as Platform, Ladder, Manhole, Insulation and Fire protection internally and performs mass calculations (for turnover) based upon the experience.

8.9 How do I specify internals?
The system automatically assumes the mass and liquid mass (for turnover calculation) internally based upon the experience, if you specify data of internals (distance and height of it) or data of trays (type and number of trays).

8.10 How long does it take to finish the calculation?
The strength calculation can be made in 15-30 seconds. The system will output the drawings, calculation sheets and 3D models automatically.

It will take additional time for Excel Macro calculation and AutoCAD calculation.

8.11 What is the difference between the List and CalSheet?
The contents included are the same. CalSheet is easy to read since it utilizes the sketch as much as possible using Excel Macro. Also, List includes various kinds of detailed data in each part basis.

8.12 What is the main feature of 2D drawings?
On-scale 2D drawings are output in DXF format after the system automatically processes hiding of dimension lines at the line crossing point. It greatly helps the designer to comprehend the image of correct design.

8.13 What kind of drawings will be output?

Besides the overall drawing, the interface to civil foundation drawing, Nozzle orientation drawing, Flange part drawing and others are output.

9. Specific Features (Search and Summation)

9.1 How many attributes does the system have?

Approximately 200 standard attributes have already been defined. The data for each item of equipment is created by System Pvex^{TM} (strengths calculation portion). It is possible for users to add attributes; however, System Pvex^{TM} will not be able to supply data for them automatically.

9.2 Does an attribute handle alphanumeric data only?

Besides alphanumeric, you can define the character data and graphic data (not exceeding Excel cell size).

9.3 How do you handle multiple attributes such as Nozzles?

You can define attribute data for each Nozzle (e.g. N-1, N-2, N-3…) so there are plural numbers of attributes for each item.

9.4 Does attribute data created automatically?

Yes, you can find them in the Excel table (provided automatically). Furthermore, you can revise them in the Excel table. Also you can provide graphic data there.
It is possible to provide the data for each item which are not the items of strength calculation.

9.5 Is it possible to define (change) equipment order?

Yes, it is.

9.6 Is it possible to group the item of equipment?

Yes, it is. Also, you can arrange the item in the Excel table.

9.7 What is the Search function?

If you want to find out the Nozzles, for example, larger than 30in, you can search the items of equipment by using this function. Also, you can find Nozzles meeting your specific requirements (e.g. Size, Material name (character) and others). Furthermore, you can specify the grouping as a search condition.

9.8 How do you output the results of Search function?

You can specify the condition in the Excel table (e.g. using rows and columns).

9.9 How many conditions can I specify?

You can specify conditions up to 7 levels (i.e. Condition A1 and Condition A2 and Condition A3 up to Condition A7 for both rows and columns).

9.10 Is it possible to setup "other than" the existing conditions?

Yes, it is. For example, System Pvex™ will search the Nozzles of whole items of equipment and report results in each size of Nozzles.

9.11 Is there a relation between Search condition and Output setting?

You can output the results in addition to the Search conditions. For example, if you want to search Nozzles larger than 30in, you can arrange the output together with item such as equipment weight.

9.12 Can you register the specific list format?

You can prepare the list format with the Search condition and output format. For example, you can register the list condition for Civil design, Construction, Logistics and Procurement disciplines.

10. Specific Features (Engineering Firms)

10.1 How about the workflow in the estimation stage?

According to the equipment datasheet from upstream (process) design section, you can design the equipment and output;

1) Equipment engineering drawings for Layout section
2) Basic dimensional data, Loading data and Turnover moment data

Also, you can provide the following from the database;

1) Bills of quantities including the Materials of Main body, Internal and External for Estimation section
2) List including Dimensional data, Weight and Sketch for Logistics section
3) List including Bills of Quantity (Painting and Insulation material) and Weight for Construction section

The above data are output automatically if you specified the standard format.

10.2 How about the workflow in the early stage of the project?

In addition to the item 10.1, you can create and output the following data;

1) Additional cost adjusting list (for benders) in each order placement stage using equipment engineering drawings
2) Shipping control list including Manufacturers' names, Delivery dates and Shipping ports
3) Interchangeability spare parts list for Gaskets, Bolts and others

10.3 What is the image of design structure?

System Pvex™ considers the design work structure as follows:

1) Section Manager who organizes design standard and human resource assignment

2) Person in charge of the project who is responsible for each project's operation
3) Plural number of members who design each item of equipment

11. Specific Features (Manufacturers)

11.1 How about the workflow in the estimation stage?

You can estimate quickly the cost of equipment in detail (in each part basis)

11.2 How about the workflow in the early stage of the project?

You can employ the function of strength calculation based upon natural vibration of tall towers and each Mass condition.