



The intelligent online spare part system

Spare part sales on the internet: Simple, quick and safe.

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The object of a digital spare parts system is to take the workload off your customers and save time and money. In designing PlusParts we had one major aim: to make selecting and ordering spare parts as easy and efficient as possible for your customers.

The most important PlusParts functions are:

Freely configurable category model

However extensive your product range, PlusParts is able to display it in its entirety. Both single and multiple level hierarchies can easily be displayed. Even if you need to provide more than one spare parts diagram for every article, based on the year of manufacture, PlusParts can provide the right solution.



Integrated Search Engine for Equipment and Spare Parts

PlusParts' easy-to-use search function allows you to quickly and comfortably select the right spare parts diagram. Depending on what information you already have about the product in question, there is either a category-oriented *guided search* or a *free search* which will identify the item you are looking for by specific attributes, e.g. colour, size, shape, etc.





Direct Access for Experienced Customers

Even for experienced service professionals, who know which spare parts to order without the aid of a spare parts diagram, PlusParts' *quick order* offers a time-saving ordering option.

Zoom In on Spare Parts Diagrams

In PlusParts, the zoom ratio of spare parts diagrams is indefinitely variable. This allows you to zoom in on a certain part of the drawing and see every detail of the product. In designing the operation of the drawing functions, special focus was put on adjusting it to existing Internet standards so that you intuitively know how to use it. You can of course also print out all the exploded-view diagrams.





Order Directly via the Illustration

Once you have located the required part in the drawing, simply click on it to order it. This means it is almost impossible to order the wrong part.

Consistent Bill of Material with Spare Parts Search Function

In addition to the exploded-view diagram, the appropriate spare parts bill of material will be displayed for each product. All spare parts are listed by name and article number. This lets you identify the required part via the bill of material. If you click on an item in the bill of material, the system repositions the diagram automatically so that the appropriate part appears at the centre of the spare parts drawing.





Highly Efficient Order Management

After selecting the required spare parts, you will have at your disposal a highly efficient order management tool for subsequent processing of items that are ready to be ordered. Before submitting orders, you can save, edit, update, extend or delete orders that are ready for submission using the order management tool. On the basis of the order you have created, optional PlusParts extras allow you to create quotations and warranty applications.





Variable Ordering Process

Even the ordering process is extremely flexible. PlusParts makes it possible either to order directly from the manufacturer or to display multiple-level sales structures (e.g. by including wholesalers). Under the heading customer management you can even determine exactly how and where user groups can submit their orders.



Its major advantage, however, lies in the fact that it can display diagrams in a vector-based format on the Internet as vector graphics. This means that the quality of the drawing is greatly enhanced and there is no loss of clarity when you zoom in on the picture.

SVG-Display-Module: No Problems Zooming-in

At first glance, the SVG module is only slightly different from the Java version. Its major advantage, however, lies in the fact that it can display diagrams in a vector-based format on the internet as vector graphics. This means that the quality of the drawing is greatly enhanced and there is no loss of clarity when you zoom in on the picture. The quality and clarity of the source material is thus retained. The PlusParts SVG display module can of course also display GIFs, meaning that you can operate both formats at the same time. In this way, implementation of the SVG display module poses no problems to previously installed PlusParts applications.





Since the Macromedia Flash plug-in is widely used, it could be logical to use Flash as the display component. The PlusParts display module can of course handle pixel-based diagrams, which means that here, too, both can be operated simultaneously.

Flash-Display-Module: No Problems Zooming-in

The Flash display module offers the same advantages as the SVG display module, except that here, the display component has been realised using Flash, which means that you must also dispose diagrams in Flash format. Since the Macromedia Flash plug-in is more widely used than the Adobe SVG Viewer, it could be logical to use Flash as the display component instead.

The PlusParts display module can of course handle pixel-based diagrams, which means that here, too, both can be operated simultaneously.



The PlusParts SVG Parser Module links up with the Back Office and automatically generates map files. This reduces the time needed for referencing drawings (with a pointer) and the lengthy and error-prone process of manual pointer referencing is automated using the SVG parser module and thus faster.

SVG-Parsing-Module: Create Maps automatically via Back Office

This module makes use of the advantages of the XML-based file format "Scalable Vector Graphics" (SVG). The PlusParts SVG Parser Module links up with the Back Office and automatically generates map files. This reduces the time needed for referencing drawings (with a pointer) and the lengthy and error-prone process of manual pointer referencing is automated using the SVG parser module and thus faster. The user's function is thereby reduced to the role of 'controller' and he will only have to intervene manually when editing drawings in exceptional cases.



The zero-error principle: The SVG parser module is based on an AI-supported rule generator capable of handling 'mixed' drawings on which, for example, some items are not to be pointer-referenced. In addition to this, the system is capable of learning by itself, i.e. the more diagrams you work on, the quicker the system becomes. The entire workflow of the SVG parser module is built upon the zero-error principle, i.e. the system will attempt to intercept any errors the user may make during workflow and, failing that, notify the user of any errors that occur enabling him to rectify these in a single operation. This subsequently avoids the lengthy manual search for and rectification of possible errors.





More usability - less strenuous working: Our experience from major projects with over 10 000 drawings has left its mark on the design of our SVG parser module. When we designed the workflow, emphasis was put on usability; despite being potentially monotonous work, our design enables you to use it for lengthy periods without becoming too tired. Please remember that the SVG display module and SVG parser modules can only be implemented for spare parts diagrams which already exist in a vector-based file format.



The PlusParts application has been designed in such a way that its user interface can be presented in as many languages and for as many countries as you want. This enables you to maintain and organise your spare parts supply centrally.

Language and Country Extras: Organise your spare parts worldwide.

The PlusParts back office facilitates the translation of individual modules of text. Translators can use the web browser to do their translation work. This method is also advantageous considering that the application is continually being updated.

We are able to supply you with basic text components for the five world languages, English, French, Italian, Spanish and German, which you will, however, still need to edit to suit your individual requirements.

It is important to note, too, that you can **run the application in all these languages irrespective of the country** that the application is registered in. In this way PlusParts can help you to organise your spare parts suply successfully according to the situation in specific countries.

For example, almost all of the South American market uses Spanish. However, prices, currencies and dealer data will vary from country to country. The same applies to Europe and despite the introduction of the Euro as the official Europe-wide currency. It is very likely, for example, that despite having the same currency and language, France and Belgium will have different sales structures (wholesalers/ direct sales). Even so, PlusParts has no problems depicting these differences.





Due to the implementation of new EU guidelines, the guarantee or warranty period for consumer goods be lengthened in many european countries. Most manufacturers will therefore be forced to come up with more efficient ways of processing warranty applications. Even so, until now, an important factor in ensuring good customer relations has been to make sure that warranty processing ran smoothly.

Online Warrenty Module: Simplifies the warranty process between service agents and manufacturer

PlusParts makes the warranty process between service agents and manufacturers much easier and helps to lower costs thanks to the integrated warranty application feature:

Based on the application sent, with only a few mouse clicks, service agents can add any outstanding customer data, enter their estimated hours for labour and thus quickly generate a complete warranty application. This can then either be forwarded online directly to the manufacturer or printed out and signed by the customer and sent by post or fax. This ensures that manufacturers always receive fully completed and standardised warranty applications for subsequent processing.

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And this is how it works: Your service agent uses the spare part search feature to identify and order the part he needs for the repair. His purchase order then creates a new order in the order management tool.

Entering some more data into the online warranty application form then creates the warranty application. In addition to the customer's name and any product-related information, some more



information pertaining to the repair job will need to be filled in. The completed warranty application form is then ready to be printed out and can be sent on to the manufacturer after the customer has signed it.

Note: If the manufacturer does not require the application form to be signed, you can, of course, do all the above by electronic means.





Many customers request a detailed quote before returning a product to be repaired. Many service agents find the unavoidable task of writing quotes tiresome and time-consuming

Quotation Module: Makes PlusParts a welcome tool for your service partners

Now service agents can use the PlusParts quotation generation tool to properly generate suitable quotations without having to input too much additional data. These can then be sent on to the customer by post, fax or e-mail.

This is how it works: Your service agent has identified and ordered the spare parts needed to repair the product in question. The purchase order thus generated creates an order in the order management system.

Nun müssen nur noch die für die Reparatur veranschlagte Arbeitszeit und der individuelle Stundensatz des Servicepartners sowie Kosten für Kleinteile und eine eventuelle Fahrtkostenpauschale eingetragen werden.

Your service agent can then print out this quotation either on his own letterhead or blank paper. He only has to add the customer's address and it is ready. The completed quotation can now be printed out.

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In many ways, PlusParts represents the core of a web site's after-sales area. Besides selling spare parts, the central activity of many customer service departments is sending out user manuals and handbooks.

Manual-Module: After-Sales Service the perfect way.

The manual module extends PlusParts, adding to it a handbook, user manual and other technical documentation management and distribution function. This lets you manage all kinds of technical documentation via the Back-Office. As soon as PlusParts has made these documents available via the Internet, customers can find them using the standard product classification and then download them as PDF files when needed. To round off the customer service area, there is also a simple FAQ system in this module which you can maintain in the Backoffice.

> Possibilities



PlusParts, with its flexible structure, can be used wherever spare parts information and exploded-view diagrams need to be retrieved online. Here are some possibilities:

Online parts identification and ordering system for service agents

This is the traditional application of PlusParts. Your service agents can use PlusParts in a passwordprotected area of your web site (Service-Extranet) to locate, identify and order spare parts they need to repair a specific product. Useful additional features such as the online warranty application and quotation generator offer your service representatives even greater value and guarantee prompt acceptance of this system for ordering parts.

In addition, you can accomodate a number of other interesting offers for your agents in the Service Extranet. We will be happy to provide more ideas if required.

Online spare parts shop for end customers

PlusParts lets you sell parts directly to the end customer. The online representation using explodedview diagrams and simple parts identification make it easy, even for less technically minded people, to find and order the right part. If you only want to, or are only allowed to sell a portion of the entire range of spare parts to end customers, then you can set the appropriate parameters in PlusParts. In order to make it easier for customers to carry out repairs themselves, you can set up a link for help with assembly and repairs for the appropriate spare part. All this provides your customers with an easy-to-use internet-based spare parts shop.

Wholesalers' Shop System

Are you a spare parts wholesaler and looking for a suitable online shopping system? PlusParts provides the perfect solution since this system lets you sell any number of spare parts of different makes to your customers via the internet. In terms of the way the spare parts diagrams are represented, PlusParts offers you possibilities different to those you would find in a conventional online shopping system. You can always keep your shop up-to-date yourself with an extensive back office. In connection with a link to your ERP system, PlusParts gives you the perfect e-commerce solution.



An extensive PlusParts back office allows you to easily keep your online spare parts application up-to-date at all times.

Fully maintainance via the internet

The back office too is 100% browser based. This means maintaining spare parts data is as easy as surfing on the internet. It means that you can update all data worldwide. Even foreign distributors are able to maintain specific data from abroad (e.g. customer data and addresses).



Parts Management

This is the heart of the back office where you can create and classify new parts diagrams, assign individual products to product groups, and change prices, article numbers and bill of material data. In order to simplify the search for the user, you can add additional information pertaining to the products in the system, e.g. enter individual product attributes which allow the user to clearly identify the product even if he does not know the article number.



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Drawings + Maps

The back office lets you easily integrate drawings and maps into the system that you have created using OCR and picture editing programs. This means that you can update the system without an additional FTP client. If you need to make changes to a larger number of files, there is always an easy time-saving batch function.

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Text + Translations

You can easily change any texts in the system and create different language versions using the translator function. Naturally, this includes the categories, article descriptions and names of spare parts.

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Dealer Management

This allows you to maintain data pertaining to wholesalers and update their address details. Customer data management allows you to edit your customers' user data. The users can also make changes to their data by themselves.

User Administration

In order to allow more than one user, other branches or external translators to work on your spare parts application, we also provide you flexible user administration for the Back Office. The master user can open an unlimited number of user accounts and give them individual access authorisation for specific functions. So you have maximum control on authorisations for access and alterations in the Back Office.





Easy digitalisation of exploded views

You can use special OCR software for the creation of exploded views. It can easily be operated by everybody after a short introduction (basic computer skills required).

> Advantages



PlusParts is designed differently to other electronic spare parts applications in that is it meant solely for online use. If you have customers who do not have access to the internet, then Plusparts is also available on CD ROM. For this purpose, we have developed the PlusParts Installer which simulates the online environment locally on the user's PC making it possible to use offline.

Internet saves you distribution costs

By using an online ordering application, you save the costs of manufacturing and distributing spare part diagrams on microfiche/CD Rom or with spare parts catalogues. In future you will be able to pass on spare parts data to service agents and customers effortlessly, saving you production and postage costs.

Available worldwide, 24 hours a day

With our online ordering application, you can offer your customers a worldwide 24-hour ordering service for spare parts. Via the Internet, your spare parts information is available everywhere and at any time of day or night.

Always up to date

An online spare parts application means that your customers will always have access to your current data. Any necessary changes can be made immediately. This means you no longer have to wait until your new set of microfiches or new catalogue is out in order to make price alterations or other modifications.

Simplified process for spare parts

Only online media allow you to display the entire selection and ordering process without resorting to other media. The manufacturer can copy all the details from a purchase order directly to an ERP system.

> Advantages



If you compare PlusParts with other online spare parts applications, you will soon recognise its unique strengths. Specifically ee would like to draw your attention to the following:

Almost infinitely upgradeable

PlusParts uses open source technologies. This means it is almost infinitely expandable. Any desired additional function can easily be integrated either from the very beginning or later on. Two interesting existing features that we already offer are the online warranty processing and quotation generation tools. A whole host of other interesting applications can also be implemented. In opting for PlusParts, you are opting for an application that offers ample investment security.

Any design possible

PlusParts can be designed according to your individual tastes. You can adjust the application completely to your corporate design requirements and even integrate it so that it harmonises with an existing Extranet or online shop. PlusParts provides you with an ideal combination of practicality and design.

Powerful diagram displays

The extraordinary versatility of the PlusParts display function leaves nothing to be desired. There is an infinitely variable zoom that allows you to zoom in and out of exploded view diagrams. You can even jump effortlessly from one drawing to the next within spare parts diagrams consisting of several pages. Plusparts is extremely easy to use.

Minimal technical requirements on the server end

The web server system requirements for PlusParts are comparatively small. It is possible to host PlusParts on almost any platform and in almost any technical environment: the application always works. This means PlusParts provides an application that is also ideally suited to your existing web architecture.

Application entirely supported by database

PlusParts is supported entirely by a database and therefore offers a very userfriendly search function and a superior order management tool. This also means that all texts can be easily and quickly changed with the back office. This is especially useful when additional translation work needs to be done.vor allem im Hinblick auf die Anfertigung von weiteren Übersetzungen.

> Advantages



Extremely simple and extensive back office

The extensive and easy-to-use back office included with PlusParts makes it possible for you to keep the entire application continually up-to-date yourself. You can change spare parts data and system texts, input new spare parts or delete old ones from any computer with online access, thanks to its browser-based application. PlusParts allows you to easily manage maintenance and updating costs.

> CD-ROM



PlusParts is designed differently to other electronic spare parts applications in that is it meant solely for online use. If you have customers who do not have access to the internet, then PlusParts is also available on CD-ROM.

Just as powerful offline

For this purpose, we have developed the PlusParts Installer, which simulates the online environment locally on the user's PC thereby making it possible to use offline.

The offline version, too, is shown as a web browser. It looks and feels like the online version and it is just as simple to use.

Obviously with the offline version the customer cannot order online. However, he can print out the order form that the application generates and fax it on to you. In order to keep the system up-to-date you should send the customers new versions at regular intervals.

Requirements: The CD-ROM version can be used with the following operating systems: Windows 95, 98, 98SE, ME, XP, 2000.

System requirements: Pentium II 400 MHz; 128 MB RAM, Network protocol TCP/ IP (Standard for Windows 98SE and above but can also be installed for earlier versions)



> Microfiche



Many companies still feel the need to deliver spare parts diagrams on microfiche in addition to CD ROM and on-line. PlusParts assists users in creating these microfiches. With its standard image management function and optimised processes PlusParts saves you a lot of time and effort in the production of these microfiches.

Today's technologie for yesterday's media: PlusParts for Microfiche

All operations until you create the file for the microfiche master are processed in the Back Office. What this means for you is: no more paper !!!

The Microfiche Module takes care of the automatic selection, make-up and preparation of the drawings. For this purpose, you have at your disposal all the information stored in the system, such as year of manufacture or product attributes to select from. This saves you the task of simultaneously selecting and making up the microfiche templates manually on paper.

Another advantage: the microfiche module obviously uses the same data as the online version of PlusParts, which guarantees that data is identical. No information is therefore redundant and this eliminates any possible sources of error. The PlusParts microfiche module also ensures that the drawings are positioned so that they make optimal use of space on each microfiche. You can, of course, intervene manually at any point in the operation if you want to change makeup, positioning, etc.



> Paper Catalogues



The catalogue module ensures that all media-independent information in PlusParts may also be output in printed form.

For a hussle-free pre-press: PlusParts for paper catalogues

A combination of pictures on the internet, CD-ROM and microfiche makes media integration complete. The catalogue module offers the same advantages as the microfiche module, but it is substantially more flexible in terms of layout adaptability.

Design is not as important with the microfiche as it is for the printed catalogues. There is a choice of two layouts for the catalogue: one in the Back Office, based on pre-defined style elements or simply in your favourite DTP program. Then you only need to be able to export your page template as a PDF file and the rest is processed as usual in the Back Office.

> Technology



PlusParts is designed to be implemented effectively on the Internet. When it was first developed, great emphasis was put on the use of open standards and a minimum of system requirements. Here are the most important technical details.

Architecture

A multi-tiered architecture, is incorporating the web server, PHP and RDBM, forms the basis of PlusParts. A database abstraction layer allows for any relational database to be used. When using the CD-ROM version of PlusParts, we recommend that you use MySQL for cost reasons and easier administration. The CD-ROM and internet versions generally use the same components in order to ensure that appearance and functions remain the same and to minimise the probability of errors. Companies that use both systems will experience considerable cost reductions in maintenance, since there is really only one system to maintain.



Server system requirements

On the server end, Plusparts requires a Unix/Linux server with an installed web server, PHP and relational database. Hardware requirements remain moderate, so that it can even be implemented on a shared server. The Apache HTTP web server is used as standard, although any other server working with PHP can be used, e.g. AOL server, Xitami, PWS or Netscape server. The memory required depends largely on the amount of exploded-view diagrams being used.

> Technology



Client system requirements

The Internet version of PlusParts requires only internet access, as well as a 4th generation browser (e.g. Internet Explorer 4, Netscape 4.x). PlusParts can therefore be used worldwide. The CD ROM version requires Microsoft Windows with version 98 or higher (98, 98SE, ME, NT4 SP6, 2000, XP), a CD ROM drive, 128 MB Ram and at least an Intel Pentium II 400 Mhz. All other components needed are supplied with the CD and installed if necessary.

Flexibility and expandability

The combination of Apache, PHP and MySQL has stood the test of time and is already being used by millions on the Internet. It also provides PlusParts with a sound base for continually reliable operation. And makes it easy to expand and update PlusParts. Anything that can be done with PHP can theoretically also be done with PlusParts including more complex functions such as links to existing ERPs.

> Process



We have developed a standardised process to help implement PlusParts as quickly and as cost-effectively as possible in your company. We can also fully implement the application for you if you want. However, it is also possible for you to carry out individual steps yourself or have another company do it for you.



1. Create concept

It is our aim that PlusParts provides you with a tool that will fully meet the requirements of your company and your customers. This is why a detailed concept is developed at the start of every PlusParts project. There will be two half-day workshops with representatives of your company during which time we will work together to determine your exact requirements for an online spare parts application. It would be useful to also invite any service agents to these meetings, who will later actually be using the application

2. Customise templates

PlusParts can be designed according to your individual tastes and requirements. After we have determined the actual navigational structure and the elements to be integrated into your online spare parts application, the templates (sample pages) will have to be adapted to the design samples (CD). If you have no specific design requirements, you can choose from one of our sample templates and customise these by adding your company logo.

> Process



3. Adapting the Backoffice

Whilst we are developing the look and feel of your spare parts application, we will at the same time, adapt the application back office to your special needs and requirments. You can use the Plusparts back office to maintain and update all data yourself. Data in and output is carried out via web pages. In order to make your work with the back office easier, the application structure will have to be designed at this point in the proceedings.

4. Data transfer

Spare parts data, such as prices, part designations and article numbers will be copied from the ERP system. Thanks to Plusparts' open database structure, it is irrelevant which system is used, since you can easily import any data with it. Should you require a live link to the ERP system with data update, then an appropriate interface will have to be developed. The same is true for customer data.

5. Classify/prepare diagrams

Depending on the form of your exploded-view diagrams, they will have to be prepared in such a way that the application can display them. Exploded-view diagrams which already exist in digital form, will have to be cleansed (remove logos and any unneeded graphics). Any diagrams that are not yet in digital form will first have to be scanned in. The data size of the drawing will then have to be optimised so that it appears on the user's PC without delay.

6. Create Maps

A special OCR software then imports the optimised drawings and and extracts all spare part information. The software carries out almost all of this automatically. However, it is usually necessary to make careful manual corrections afterwards.

7. Adjust functionality

Finally, any functions that are additional to the PlusParts standard package and which are included in the overall concept have to be programmed in.

8. Create CD ROMs

If you want to distribute PlusParts on CD Rom in addition to having it on-line, you will need to create a glass master to make the CD and to print templates for the accompanying booklet. We can, of course, take care of the entire CD production for you.

> Process



9. Updates

You can input new drawings at any time using the PlusParts back office. This means that, in future, you yourself can carry out regular updates for your company.

10. Training

It is our aim to get you to update your spare parts application on your own. This is why we will provide your members of staff with training in using back office and the accompanying software. The course takes one day and can be conducted either at your company or at our office.

11. Internationalise

If you want to use PlusParts on a worldwide scale, all system texts will have to be translated into the appropriate languages. We can provide you with sample translations in German, English, French, Italian and Spanish for the most important functions. However, these will always have to be individually adapted and edited for each project. The PlusParts back office allows translators to use any web browser to translate, change or create texts in other languages.

> Contact





The intelligent Online Spare Parts System

is a product of



Marketing in Computer-Mediated Environments

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