

Selling Bundled Products

This case study deals with processing sales orders for companies selling products that are bought or manufactured and kept in stock as individual items but that are sold on as bundles.

Suddensource has helped solve this bundling problem for several clients. The following document provides a look at the solutions Suddensource has provided in two different instances, one more complex than the other.

Target Audience

This case study will be of interest to companies who:

- sell modular products;
- bundle items to order;
- use bills of materials in sales processing but have too many to maintain.

It is not aimed specifically at manufacturers as the process described is concerned only with the processing of sales orders. So, for example, it might apply to companies selling computer equipment to end users in the form of "computer + monitor + keyboard + mouse".

<u>Summary</u>

This case study shows how *P-Ex* and *P-2* can be used to process sales orders for bundles of items such that the order, despatch, paperwork and invoice shows a single bundled item, but all component allocations, stock transactions and other transactions, occur only on the individual items within the bundle.

<u>Note</u>

Whilst it is assumed that the reader is familiar with the concept of bills of materials (BOMs), this case study does not concern itself with BOMs as used in the manufacturing process. To see how *P*-*Ex* handles the process of using up to one or more items of stock to produce a finished item, the reader should refer to the *P*-*Ex* case study about the Works Orders process.

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1. The Sales Process

A company that manufactures electrical products asked the original authors of *P-2* to devise a system to process sales of bundled items.

1.1. Selling Individual Items

The company's sales process is a straightforward one when selling individual items: after a price is quoted and an order received, the necessary goods are picked, despatched and invoiced; the quantity of goods sold is removed from the stock balance and the value of both sales and cost of sales are transferred to the company's books as the cost of sales.

1.2. Selling Bundles

When the item being sold is a bundle, the customer is only interested in buying the bundle. The sales order, despatch note and invoice need to show just one (bundled) item, so that all parties to the transaction are clear on what's being sold and at what price.

The standard process of selling individual items needed to be altered in four ways:

- At the point of enquiry, the sales person needs to know the current stock-level of the items forming the bundle to check availability. The cost also needs to be verified so that profitability can be checked;
- At the point of order entry, the stock levels and costs need to be visible to the order processor, and the individual items need to be committed to the order, so that they are not sold again;
- At the point of picking, the warehouse needs to know which individual items to pick so that the bundle can be marshalled for despatch;
- When a despatch is processed by the system, the items in the bundle need to be removed from the stock balance, and the cost of those items needs to be transferred to the books as the cost of sales.

The table in <u>Annex A – Sales Process for Bundled Items</u>, illustrates the process in more detail.

2. The Brief

2.1. The extent of the problem

The company looked at several options for using BOMs to process its sales orders. All the options required that each product being sold should have its own unique bill of materials.

The modular nature of the company's products, however, meant that a relatively small number of components could be put together in a large number of different ways. At the time the system was designed, about 2500 components could be made up into over 500,000 distinct products.

Clearly normal BOMs could be used, but over half a million would need to be maintained.

2.2. An Example

To illustrate the requirement, the table below shows how the same components are used in several finished products.

To give a simplified example, the product's function is to be screwed into other electrical equipment, clamp some wires in place and seal the hole against the entry of dust or water. Products are of a generic type, e.g. Type A or Type B, and each generic type may have one or more of: a threaded part, a clamping part and a sealing part.

Figure 1 Component Use in Different Finished Products

Generic Type	Threaded Component	Clamping Component	Sealing Component
Туре А	Part 1	-	Part 6
Туре В	Type B Part 7		-
Туре С	Part 7	Part 10	Part 6
Type D	Part 1	Part 10	Part 6
Type E	Part 1	Part 10	Part 6

The Generic Type represents a product's design and hence defines its component make-up (BOM), but each individual product in the catalogue has three other key attributes:

- its finish (e.g. whether it was electro-plated or not)
- its product size (representing the number of wires which need to pass through it, and determining the outside dimensions of all the parts)
- its thread type/size (the type of thread on its front end, e.g. Metric 16, 1" USA, German 21)

A typical part code for a finished product would be something like: "Type E / NP / 20 / M25". This represents the code for a generic Type E product, nickel plated, in product size 20 (for 20 wires to pass through) and using a metric size 25 thread on its front end.

2.3. The Reality

As can be seen from the example above, the Part 6 and Part 10 components can be used in several of the generic types. Each component exists for each **product size**, but a component can be used in many generic **types** and with any of the available **finishes** (e.g. nickel plated).

The Part 1 and Part 7 components would need to exist in each **product size** and for each **thread type/size** and **finish**. Even though there are more Part 1 and Part 7 component varieties than Part 10 varieties, the number of possible combinations is far greater than the number of components.

There are many hundred generic types, not just the five shown, and so there may be hundreds which use a Part 10 and a Part 1 or Part 7 component of any given product size.

The actual process was more complex than our example in four important ways:

Complexities

- some generic types have different component make-ups for certain sizes
- some components cannot be accommodated within the rules in our example
- there are components which depend on the thread type/size rather than the product size
- some components which should exist according to the component make-up rules do not exist and need to be replaced by other components

2.4. The Requirement

The requirement was that the order processing system should:

- accept a product code ("Type E / NP / 20 / M25" in our example) which does not exist in the system's product master file
- work out a product description from the generic type code, the finish code, the size code and the thread type/size code
- work out what component make-up to use from the generic item's component make-up, a 'generation rule' for the generic type, the finish, the product size and the thread type/size
- provide the user processing the order with a breakdown of the components required, showing cost, stock availability or any non-existent components,
- check if any exceptions apply and change the component make-up if necessary
- check if any of the components are non-existent and replace the components as necessary
- allocate the necessary components to the order
- remove the components from stock when the order is despatched

3. The Solution

The solution was developed rapidly from the working model provided. It was called "Dynamic Kitting", because a kit of parts was worked out dynamically from the product codes a user entered into the system.

The solution depended on a strict set of rules about how part numbers worked, in that:

- the product size in the final product code forms a suffix to the component part's own code
- the thread type/size in the final product code forms a second or only suffix to the component part's own code

3.1. Changes to Data Structure

<u>Master Data</u>

The system allowed for the following new master data, as shown in <u>Annex B – Dynamic Item Data</u>, all of which is completely user configurable:

- 1. Generic Items, complete with description, costing codes and various other 'product master file' type data;
- 2. Part Code Elements, the Finish, Product Size and Thread Type/Size elements and what they affect (description or component make-up or both)
- 3. Element Values (the list of actual finishes, product sizes and thread types/sizes)
- 4. Component Types (the list of parts such as Part 1 or Part 6 in our example)
- 5. Item Components (the component make-up of each Generic Type)
- 6. Element Prices (this was never implemented but was to allow a price to be determined from the codes entered)
- 7. Special Items (where a complete override of the rules is required this is a standard BOM, noting that these show actual components not just a component 'stem')
- 8. Replacement Items (the list of items which must be replaced in a BOM because a derived item does not exist or is the same as another)
- 9. Extra Value Types used within the generation rules to handle components which are different for different product sizes
- 10. Extra Values, which are the data used in these overrides
- 11. Generation Rules (the rules which specify which suffixes are applied to which component stems, e.g. "Part 1" becomes "Part 1 / 20" for a Type 1 product in size 20, or "Part 7" is overruled using a particular Extra Value in product Type E)

Each of these data sets has its own bespoke data entry screen, accessible via a menu dedicated to 'Dynamic Kitting Maintenance''.

Transaction Data

The normal two-level *P-Ex* data hierarchy (document header and items) was increased to a three level hierarchy (document header, items and item components).

Each item on a document which was flagged as a 'Dynamic' item would have a set of components defined for the order, the despatch note and the stock transactions.

3.2. Implementation Requirements

This version of the system was originally implemented on 1st January 1999, and has worked effectively and efficiently since this date.

The system as implemented required that:

- when despatching bundled items, all the component items are dispatched from a single stock location;
- component items cannot be selected from named batches;
- components can only be added to a bundle in a quantity of one;
- assembly costs are not used in the data processing.

In any future implementation it would be possible to change these to suit a customer's individual requirements.

3.3. Changes to Data Entry

At the point of enquiry, a user can enter a dynamic item code (element by element) and see the component make-up, stock availability and costs (hidden to protect our client):

P-2							_		>
<u>E</u> dit <u>V</u> iev	w <u>T</u> ools	<u>Reports</u> <u>W</u> indow	/ <u>H</u> elp						
<u>)</u> 🦻 🖉	¢ 🖉 🖪	Y 🥏 🍝 🖂 🧱 🖞	8 🖬 🎽 🛍	ei M 🔞	🚵 🔬	🔗 🚺			
🗾 Dynar	nic Kittin	g Enquiry							×
Generic II	tem	Plating	Gland Size	Entru Thr	ead	Complete			
E3WBF	.cm	NP	205	M20					
Item Id		Description			Qua	antitu HoM	Price	Cost	
E3WBF/I	NP/20S/M	12 Exd-Exe-ExinB bras	s gland for swa da	ble-Nickel Pla	ated	l ea	0.00	1	
			- 3						
Compon	ent Type	Component Item	Unit Quantity	Quantity	UoM	Total Stock	Free On Site	Average F	Price
Compon Entry Boo	ent Type dy	Component Item 1M/NP/20S/M20	Unit Quantity	Quantity	UoM ea	Total Stock 2,198	Free On Site 1,546	Average F	Price
Compon Entry Boo Outer Se	ent Type dy al	Component Item 1M/NP/20S/M20 2MOS/20S	Unit Quantity 1	Quantity	UoM ea ea	Total Stock 2,198 9,703	Free On Site 1,546 8,365	Average F	Price
Compon Entry Boo Outer Se Outer Ski	ent Type dy al id	Component Item 1M/NP/20S/M20 2MOS/20S 11MO/20S	Unit Quantity 1 1 1	Quantity	UoM ea ea ea	Total Stock 2,198 9,703 19,083	Free On Site 1,546 8,365 10,526	Average F	Price
Compon Entry Boo Outer Se Outer Ski Outer Ca	ent Type dy al id p/Nut	Component Item 1M/NP/20S/M20 2M0S/20S 11M0/20S 6M/NP/20S	Unit Quantity 1 1 1 1 1	Quantity	UoM ea ea ea ea	Total Stock 2,198 9,703 19,083 10,512	Free On Site 1,546 8,365 10,526 9,188	Average F	Price
Compon Entry Boo Outer Se Outer Sk Outer Ca Inner Sea	ent Type dy al id p/Nut al	Component Item 1M/NP/20S/M20 2M0S/20S 11M0/20S 6M/NP/20S 2MIS/20S	Unit Quantity 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Quantity	UoM ea ea ea ea ea	Total Stock 2,198 9,703 19,083 10,512 10,870	Free On Site 1,546 8,365 10,526 9,188 10,402	Average F	Price
Compon Entry Boo Outer Se Outer Ski Outer Ca Inner Sea Cone	ent Type dy al id p/Nut al	Component Item 1M/NP/20S/M20 2M0S/20S 11M0/20S 6M/NP/20S 2MIS/20S 3M/NP/20S	Unit Quantity 1 1 1 1 1 1 1 1 1	Quantity	UoM ea ea ea ea ea	Total Stock 2,198 9,703 19,083 10,512 10,870 7,331	Free On Site 1,546 8,365 10,526 9,188 10,402 6,869	Average F	Price
Compon Entry Boo Outer Se Outer Ca Inner Sea Cone Clamp Ri	ent Type dy al id p/Nut al	Component Item 1M/NP/20S/M20 2M0S/20S 11M0/20S 6M/NP/20S 2MIS/20S 3M/NP/20S 10MW/NP/20S	Unit Quantity 1 1 1 1 1 1 1 1 1 1 1	Quantity	UoM ea ea ea ea ea ea ea	Total Stock 2,198 9,703 19,083 10,512 10,870 7,331 8,712	Free On Site 1,546 8,365 10,526 9,188 10,402 6,869 8,250	Average F	Price
Compon Entry Boo Outer Se Outer Ca Inner Sea Cone Clamp Ri Middle Ca	ent Type dy al id p/Nut al ng ap	Component Item 1M/NP/20S/M20 2M0S/20S 11M0/20S 6M/NP/20S 2MIS/20S 3M/NP/20S 10MW/NP/20S 5M/NP/20S	Unit Quantity 1 1 1 1 1 1 1 1 1 1 1 1 1	Quantity	UoM ea ea ea ea ea ea ea ea	Total Stock 2,198 9,703 19,083 10,512 10,870 7,331 8,712 4,056	Free On Site 1,546 8,365 10,526 9,188 10,402 6,869 8,250 3,394	Average F	Price
Compon Entry Boo Outer Se Outer Ca Inner Sea Cone Clamp Ri Middle Ca	ent Type dy al id p/Nut al ng ap	Component Item 1M/NP/20S/M20 2M0S/20S 11M0/20S 6M/NP/20S 2MIS/20S 3M/NP/20S 10MW/NP/20S 5M/NP/20S	Unit Quantity 1 1 1 1 1 1 1 1 1 1 1 1 1	Quantity	UoM ea ea ea ea ea ea ea	Total Stock 2,198 9,703 19,083 10,512 10,870 7,331 8,712 4,056	Free On Site 1,546 8,365 10,526 9,188 10,402 6,869 8,250 3,394	Average F	Price
Compon Entry Boo Outer Se Outer Ca Inner Sea Cone Clamp Ri Middle Ca	ent Type dy al id p/Nut al ng ap	Component Item 1M/NP/20S/M20 2M0S/20S 11M0/20S 6M/NP/20S 2MIS/20S 3M/NP/20S 10MW/NP/20S 5M/NP/20S	Unit Quantity 1 1 1 1 1 1 1 1 1 1	Quantity	UoM ea ea ea ea ea ea	Total Stock 2,198 9,703 19,083 10,512 10,870 7,331 8,712 4,056	Free On Site 1,546 8,365 10,526 9,188 10,402 6,869 8,250 3,394	Average F	Price

Figure 2 A Dynamic Kitting Enquiry Screen

The data entry screen was altered as little as possible. An option was added (which requires a system setting to make it accessible to users) so that a 'dynamic' item can be entered element by element as per the first line or a normal item can be entered as a single product code as per the second line:



Figure 3 Data Entry Screen

The user can right-click and see a product's component make-up: **Figure 4 Component Make-up**

Dynamic Items					x
Dynamic Item	Component Type	Component Item	Quantity	UoM	Close
E3WS/ZP/20S/M20	Entry Body	1MS/20S/M20	10	lea	
	Outer Seal	2MOS/20S	10	lea	Help
	Outer Skid	DUMMY	10	lea	
	Outer Cap/Nut	6MS/20S	10	lea	
	Inner Seal	2MIS/20S	10	lea	
	Cone	3MS/20S	10	lea	
	Clamp Ring	10MWS/20S	10	lea	
	Middle Cap	5MS/20S	10	lea	

All the other elements of bundled item processing are handled behind the scenes using code within the application or processes that run on the server during or after a document is saved.

3.4. Later Developments

In *P-Ex* (formerly Proactis Extra) two key changes have been made for the company within the last year:

Dynamic Item Enquiry

The screen below now confirms:

- whether a special item BOM was used
- whether any replacement items were used
- whether the derived description is too long
- which generation rule was used
- the product mass (not implemented when this graphic was made)
- the stock at each main location (not shown)

Figure 5 Dynamic Item Enquiry

(?	Generic Item Type	e Pl	ating	Gland Size	Entry Thr	ead	Complete	Sp	pecial BOM:	No			
	E3WBF	N	IP	205	M20		\sim	R	eplacements:	No			
/nai 3W	namic Item ID: Dynamic Item Description: Quantity: Description Truncated: No WBF/NP/20S/M20 Exd-Exe-Ex nR brass gland for swa cable-Nickel Plated Rule Met: Standard Plated Glands												
Cost: 2.2578 Costs are in GBP at a rate of 1.00													
mp	onent List (double-	click item ID	to see des	cription):				М	ass (Kg):	0.1611			Rebuild
	Component Type	Compone	nt Item	Item Desc	cription	Unit Qty	Quantity	UoM	Total Stock	Free On Site	Total	Total	
E	Entry Body	1M/NP/20)S/M20	1m 20s x 1	420 N	1		ea	2198	1546	2198		0
(Duter Seal	2MOS/20	s	20s Outer	White	1		ea	9703	8365	9703		0
(Duter Skid	11MO/20	S	11m 20s C	uter N	1		ea	19083	10526	19083		0
(Outer Cap/Nut	6M/NP/20)S	6m 20s NF	Brass	1		ea	10512	9188	10512		0
1	nner Seal	2MIS/20S		20s Inner	White	1		ea	10870	10402	10870		0
(Cone	3M/NP/20)S	3m 20s NF	Brass	1		ea	7331	6869	7331		0
(Clamp Ring	10MW/NF	P/20S	10m 20s S	WA N	1		ea	8712	8250	8712		0
++-	Middle Cap	5M/NP/20)S	5m 20s NF	Brass	1		ea	4056	3394	4056		0

Automatic BOM Maintenance

In order to allow the company to bulk maintain bills of materials we added the following functionality to the program:

- copy generic items meeting certain criteria to new generic item codes
- do the same for special items with specified 'stems'
- copy normal items and (optionally) create a related generic item
- delete any unwanted items created as part of the copying of normal items (by means of applying a more detailed filter after the copy operation)

Figure 6 shows the implementation of the automatic BOM maintenance.



🛃 Maintain Bills of Materials						-		8
Maintain the bills of materials used in Works Order proces	sing or Dynamic Kittin	g. What this screen show	vs depends on yo	our system lice	ence and how the scre	en was	open	ed.
Maintain what?								
Manufacturing Bills of Materials O Sales Bills o	f Materials 🛛 🔽 Bulk	Maintain O Mass rep	ace BOMs in ord	lers 🔿 Sp	ecial BOMs via Excel			
Select Items	Sales BOMs to Proc	ess						
 Generic Items (using DK rules) 	Generic Item	New Generic Item	Status	Result				
 Special Items (DK exceptions) 	E3WBF		Leave Active					
 Normal Sales Items (and create BOMs) 	E3WBF31		Leave Active					
 Normal Sales Items (just copy items) 	E3WBF3H1		Leave Active					
Full item IDs Only copy stock record	E3WBF3HS1		Leave Active					
 Delete unwanted items 	E3WBF3K1		Leave Active					
Active generic items only	E3WBF3KS1		Leave Active					
Generic item 'LIKE' E3WBF*	E3WBF3T1		Leave Active					
Search may require at least one wildcard (*)	E3WBF3V1		Leave Active					
	E3WBF3VS1		Leave Active					
Search	E3WBFC1		Leave Active					
	E3WBFCK1		Leave Active					
	E3WBFCKS1		Leave Active					
	E3WBFCN1		Leave Active					
	E3WBFCV1		Leave Active					
	E3WBFCVS1		Leave Active					
	If an entry in 'Statu	s' reads 'Leave Active' yo	ou can double-cli	ck to make th	nis 'Make Inactive' and	vice-ve	ersa	
					Process		Print	
					Flocess		TITIC	

4. <u>A Modified Implementation</u>

This system has recently been implemented for another *P-Ex* user.

The new client supplies and fits point of sale booths to supermarkets and is only concerned about selling standard bundles. A small proportion of the original program has therefore been implemented.

Only the 'Special Items' part of the process has been implemented, in effect just BOMs. Because this client makes up the sales bundles to order, the software is a good fit to the process.

The only change to the normal routine was the addition of a description field to the Special Items data. This was done because a default Generic Item is being used, and the description (normally retrieved from the Generic Item) cannot be the same for each Special Item.

4.1. The Complication

This Suddensource client requires stock used within bundles to be identified as stock that has been pre-allocated to their customers. The easiest way to allocate stock to customers is to use the standard *P-Ex* 'batch control' system whereby any incoming stock can be identified with a batch label.

The original Dynamic Kitting software does not support batches, but it has been added to the database so that it can be used by *P-Ex*.

P-Ex allows the use of 'standard batches', which are applied behind the scenes to a document as it is processed. This allows individual items to be taken from batches of stock that have been labelled as being 'red', 'Chinese', 'for Sainsbury' or similar.

Adding 'standard batches' to Dynamic Kitting was relatively quick and easy and the whole implementation was prepared in less than 4 days. This implementation is called 'Simple Kits'.

4.2. The implementation

<u>Annex C – A Second Implementation</u> shows some screens used in this implementation.

5. Conclusion

The handling of bundled sales in *P*-*Ex* is a cost-effective way of hiding the detail of bundled, kitted or assembled products from users and customers, and can be developed and supplied to many of our *P*-*Ex* customers. We at Suddensource can implement it because we developed the system.

Annex A – Sales Process for Bundled Items

Figure 7 A comparison of the Process for Bundled Items and Individual Items

Individual Items	Bundled Items
Sales enquiry received by phone	Sales enquiry received by phone
¥	¥
Price looked up on system or manual price list and stock and profitability checked before product quoted to customer	Price looked up on system or manual price list and stock of individual items and profitability of bundle checked before product quoted to customer
¥	¥
Order received from customer and entered on system and stock/profitability checked	Order received from customer and order for bundle entered on system and stock/profitability of individual items checked
¥	¥
Picking note generated for warehouse to pick items on order	Picking note generated for warehouse to pick individual items required for order
¥	¥
Items picked and packed	Individual items required for order picked and packed
¥	¥
Despatch paperwork raised and attached to items, client advised despatch is imminent	Despatch paperwork raised and attached to bundle , client advised despatch is imminent
¥	¥
Items sent out	Bundle sent out
¥	¥
Invoice raised	Invoice raised for Bundle
↓	V
Sales revenue and cost of items transferred to books	Sales revenue and cost of individual items used transferred to books

Annex B – Dynamic Item Data

Figure 8 Generic Items

eneric item types		Item type E3WBF	
All Active only	 Starting with E3WBF 	Description	
ltem type	Description	Brass thing for some purpo	ose.
E3WBF	Exd-Exe-Ex nR brass gland for sw		
E3WBF31	Exd-Exe-Ex nR brass gland for sw		
E3WBF3H1	Exd-Exe-Ex nR brass gland for sw		naeter
E3WBF3HS1	Exd-Exe-Ex nR brass gland for sw		
E3WBF3K1	Exd-Exe-Ex nR brass gland for sw	Status	Active \checkmark
E3WBF3KS1	Exd-Exe-Ex nR brass gland for sw	VAT code	Standard LIK VAT
E3WBF3T1	Exd-Exe-Ex nR brass gland for sw	With Code	Standard OK VAT
E3WBF3V1	Exd-Exe-Ex nR brass gland for sw	Commodity code	Double joints ~
E3WBF3VS1	Exd-Exe-Ex nR brass gland for sw	HeMture	I lata
E3WBFC1	Exd-Exe-Ex nR brass gland for sw	оомтуре	Units
E3WBFCK1	Exd-Exe-Ex nR brass gland for sw	UoM	Unit ~
E3WBFCKS1	Exd-Exe-Ex nR brass gland for sw	Newigal work	010001
E3WBFCN1	Exd-Exe-Ex nR brass gland for sw	Ivominal mask	010201 ~
E3WBFCV1	Exd-Exe-Ex nR brass gland for sw	Account mask	~
E3WBFCVS1	Exd-Exe-Ex nR brass gland for sw		
E3WBFCVS2	Exd-Exe-Ex nR brass gland for sw	COS nominal	030310 ~
E3WBFH1	Exd-Exe-Ex nR brass gland for sw	COS account	×
E3WBFK1	Exd-Exe-Ex nR brass gland for sw		
E3WBFKS1	Exd-Exe-Ex nR brass gland for sw	Certificate Number	No description entered.
E3WBFLN1	Exd-Exe-Ex nR brass gland for sw	Range	
F3WRFLTS1	Evd-Eve-EvinR brass pland for sw		
Add item type Con	v item type	Family	

Figure 9 Part Code Elements

Category	E	lement type	<select th="" <=""><th>Element Type></th><th>\sim</th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th></select>	Element Type>	\sim									
Element Types	Γ	Code	Seq	Description	Status		Required		Used In Desc		Used In Price		Used	
		1	1	Plating	Active	\sim	No	\sim	Yes	\sim	No	\sim	Yes	
		2	2	Gland Size	Active	\sim	No	\sim	No	\sim	Yes	\sim	Yes	
Extra Value Types	Ŀ	3	3	Entry Thread	Active	~	No	~	No	~	Yes	~	Yes	

Figure 10 Element Values

Category □@ DK Master List (info and codes)	Element type Plat	ing	~			
Element Types	Element Type	Code	Description	Status	Display Seq	
Element Values	Plating	✓ BBMP	Bead Blasted & Mixed Plating	Active	- 11	
Replacement Items	Plating	✓ CP	Chrome Plated	Active	~ 5	
Extra Value Types	Plating	V DNP	Dull Nickel Plated	Active	~ 9	
Extra Values	Plating	✓ EN	Electroless Nickel Plated	Active	~ 4	
	Plating	ENCC	Electroless Nickel Cone/Clamp	Active	- 13	
	Plating	√ LB	Blue [RAL5012] to DWG PCGAFBP	Active	~ 12	
			··· · · -· ·	i. i		

Figure 11 Component Types



Figure 12 Item Components

All () Active	only 💽 Starting with	E3WBF	Include qua	antity (in brackets)	Refresh Co	py Paste
Item Type	1:Entry Body	2:Deluge Seal	3:Inner Seal	4:Inner Skid	5:Cone	6:Clamp Ring
E3WBF	1M		2MIS		3M	10MW
E3WBF31	1M		2MIS		3M	10MW
E3WBF3H1	1M		2MIS		3M	10MW
E3WBF3HS1	1M		2MIS		3M	10MW
3WBF3K1	1M		2MIS		3M	10MW
E3WBF3KS1	1M		2MIS		3M	10MW
E3WBF3T1	1M		2MIS		3M	10MW
E3WBF3V1	1M		2MIS		3M	10MW
E3WBF3VS1	1M		2MIS		3M	10MW
E3WBFC1	1M		2MIS		3M	10MW
E3WBFCK1	1M		2MIS		3M	10MW
E3WBFCKS1	1M		2MIS		3M	10MW
E3WBFCN1	1M		2MIS		3M	10MW
	1	1			1	1

Figure 13 Special Items

Maintain Special It	ems							
Dynamic Item Id	Entry Body	Deluge Seal	Inner Seal	Inner Skid	Cone	Clamp Ring	^	Save
E2XFR/63SH/M63	1M/63S/M63		2MI/63S	LW2/63S	3MX/63	1000/63	1	Close
E3WF/90H/M90	1M/90/M90		2MIS790		3M/90	10MW/90		Incert
E3WF/NP/80H/M80	1M/80/M80		2MIS/80		3M/80	10MW/80		
E3WF/NP/90H/M90	1M/90/M90		2MIS790		3M/90	10MW/90		С <u>о</u> ру
E3WFCK1/NP/80H/	1M/80/M80		2MIS/80		3M/80	10MW/80		Delete
E3WFFTP/63SH/M6	1M/63S/M63		2MIS/63S		3M/63	10MW/63		Item S <u>e</u> arch
E3WFK1/80H/M80	1M/80/M80		2MIS/80		3M/80	10MW/80		
E3WFK1/90/M90	1M/90/M90		2MIS790		3M/90	10MW/90		<u>Print</u>
E3WFK1/NP/80H/M	1M/80/M80		2MIS/80		3M/80	10MW/80		Help
E3WFRFTP/75SH/M	1M/75S/M75		2MIS/75S		3M/75	10MW/75		
E3XFK1/25/M20	1M/25/M25		2MIS/25		3MX/25	10××/25		
E3XFK1/32/M25	1M/32/M32		2MIS/32		3MX/32	1000/32		
E3XFK1/40/M32	1M/40/M40		2MIS740		3MX/40	1000/40		
E3XFK1/50/M40	1M/50/M50		2MIS/50		3MX/50	1000/50		
E3XFK1/63/M50	1M/63/M63		2MIS/63		3MX/63	10XX/63		
E3XFK1/75/M63	1M/75/M75		2MIS/75		3MX/75	1000/75		
E53XF/20SH/M20	61M/20S/M20		62MS3/20S		63M/20S	1000/205		
1	< <u> </u>					•		

Figure 14 Replacement Items

Category	Element type <select< th=""><th>Element Type> 🗸 🗸</th><th></th><th></th></select<>	Element Type> 🗸 🗸		
Element Types	Generated Item	Replacement Item	Replace When	
Element Values	10MX/80	10XX/80	All Products	~
	10MX/85	10XX/85	All Products	~
Extra Value Types	10MX/90	10XX/90	All Products	~
Extra Values	10MX/NP/80	10XX/NP/80	All Products	~
	10MX/NP/85	10XX/NP/85	All Products	~
	10MX/NP/90	10XX/NP/90	All Products	~

Figure 15 Extra Value Types

Category	Element type Gl	and	Size	~		
Element Types	Element Type		Code	Description	Status	
Element Values	Gland Size	\sim	67M	BW Body Types	Withdrawn	\sim
Replacement Items	Gland Size	\sim	A2L	A2L Shroud Sizes	Active	\sim
Extra Value Types	Gland Size	\sim	A2LD	A2LDS Shroud Sizes	Withdrawn	\sim
Extra Values	Gland Size	\sim	BW	BW Shroud Sizes	Active	\sim
	Gland Size	\sim	CC	Conversion Cap	Withdrawn	\sim
	0.10		000			

Figure 16 Extra Values

Category	Element type Plat	ing	~		
Element Types	Element Type	Element Value	Extra Value Type	Extra Value	
Element Values	Plating	✓ NPET	NPET ~	NP	
Replacement Items					

Figure 17 Generation Rules

intain er wit	rules o h the a	one at a time. Rules do not self⊰ arrow buttons.	ave, so you MUS	T sa	ve bef	ore ma	intai	ning another rule.	Hov	vever, rule and cond	diti	on sequences a	uto-save when y	ou a	lter the	
les				Cr	iteria ((conditi	ons)									
ID	Seq	Description	Status		ID	Seq	(Туре		Element		Operator	Condition)	Logic	al
27	13	Plated Components	Active 💊		1	1		Element Type	\sim	Gland Size	4	s null 🗸 🗸			And	`
14	14	Customer Part Numbers	Active 🕓		2	2		Element Type	\sim	Entry Thread	7	s null 🗸 🗸				ŀ
21	15	UL Glands	Active N													
20	10	Distoid III. Clando	Activo	1												
nsert	rule nents	Delete rule Copy rule	00	0	Inse	ert crite	rion	Delete cr	iteri	on Verify c	rite	ria 🕜	0			
Con	nponer k Item	nt Seq Section Type ∨ 1 Stem Value ∨	Element Type	Extra	Value	; /							<select compor<="" td=""><td>nent> comp</td><td>onent</td><td></td></select>	nent> comp	onent	
Stoc																

Annex C – A Second Implementation

This screen shows the *P-Ex* maintenance screen for 'simple kits'.

Using this screen the items which make up a bundled product are added.

The red ring shows the special items. The blue ring shows the item components.

Figure 18 Simple Kits Maintenance Screen

🛃 Maintain Bills of Materials			- 0 ×
Maintain the bills of materials used in Works Order proce opened.	essing or Dynamic Kitting. What this screen s	shows depends on your system licence and how th	e screen was
Maintain what? Manufacturing Bills of Materials	s of Materials 🗌 Bulk Maintain 🔘 Mass	s repace BOMs in orders	
Select Item	Sales Bill of Materials Header		
Enter Item ID Search Generic Items	Item Type	TESTITEM1	
Select Existing Item with BOM	Description	Test Item 1	
Simple Kts TESTITEM1	New Item ID		Copy Item
	New Item Description		
	Sales Bill of Materials Details		
	Select Component SeqNo	Item ID Description Qty	
	First Bit 🔻 1	230050001 WASHER MUDGUARD Z 1	
	Next Bit 🔻 1	230050002 WASHER MUDGUARD Z 1	
			Del
			Add
		Help Sa	ve <u>C</u> ancel

This screen shows the order-processing screen for 'simple kits'.

The screen is a typical *P-Ex* 'Select and Basket' screen, showing the simple input option where items are typed in or special items selected from a dropdown, as shown ringed in red.

The edit area (ringed in blue) is used to set details for the item before it is added to the basket (ringed in green).

The bundled item (kit) selected is shown in the order processing basket.

Figure 19 Order Processing for Simple Kits

🎲 Sales Order proces	sing - new order							
Set up "Vista' type sales	orders using kitted items.							
Order								
Order Type and Re	ferences							
Order Type	VORD (Vista Sales Order)	T	Order Date	09/01/2011		Cluster/Region	Cluster 7	
Customer	MISC: Miscellaneous Custor	mer 🔹	Delivery Date	25/12/2010		Plan Size	4.0m	
Reference	PO 5456732-09865		Department	Installation	_	Plan Valid From	01/01/2011	
Stock Allocation	Tesco	-	Division	North	•	Laminated POG	No	
						Carrier	<select carrier=""></select>	•
Use Simple Input	t to select standard items 15	Item Details						
Use Simple Input Simple Input Option Item ID	t to select standard items is	Item Details	Description	1			Reference	
Viee Simple Input Simple Input Option Item ID	t to select standard items	Item Details Quantity	Description UoM Price 0	Discount	Delivery Date		Reference	Add
Lee Simple Input Simple Input Option Item ID	t to select standard items 15 Use item	Item Details Quantity	Description UoM Price 0	Discount	Delivery Date		Reference <u>R</u> epeat	t <u>A</u> dd
Use Simple Input Simple Input Option Item ID	t to select standard items 15 Use item	Item Details Quantity Item ID	Description UoM Price 0 Description	Discount	Delivery Date Delivery Date Delivery Date Reference	Quantity 20	Reference Repeat Price Discount U	t <u>A</u> dd
Use Simple Input Simple Input Option Item ID Select Kit ID: TESTITEM1	t to select standard items 15 Use item	Item Details Quantity Item ID TESTIFICM1	Description UoM Price 0 Description Test Item 1	Discount 0	Delivery Date	Guantity 20	Reference Repeat Price Discount U 0 0 U	t Add
Use Simple Input Simple Input Option Item ID Select Kit ID: TESTITEM1 No Kit Selected	t to select standard items	Item Details Quantity Item ID TESTIFEM1	Description UoM Price 0 Description Test Item 1	Discount 0	Delivery Date Delivery Date Delivery Date Reference	Quantity 20	Reference Repeat Price Discount U	t Add
Use Simple Input Simple Input Option Item ID Select Kit ID: TESTITEM1 No Kit Selected	t to select standard items 15 Use item	Item Details Quantity Item ID TESTFEM1	Description UoM Price 0 Description Test Item 1	Discount 0	Delivery Date	Quantity 20	Reference Repeat Price Discount U	t Add hits hit
Use Simple Input Simple Input Simple Input Select Kit ID: TESTITEM1 No Kit Selected	t to select standard items	Item Details Quantity Item ID TESTIFEM1	Description UoM Price 0 Description Test Item 1	Discount 0	Delivery Date	Quantity 20	Reference Repeat Price Discourt U 0 0 U	t Add Inits
Use Simple Input Simple Input Option Item ID Select Kit ID: TESTITEM1 No Kit Selected	t to select standard items	Item Details Quantity Item ID TESTIFICM1	Description UoM Price 0 Description Test Item 1	Discount	Delivery Date I 10 January 2011 Reference	Quantity 20	Reference Repeat Price Discourt U 0 0 U	t Add hits
Use Simple Input Simple Input Option Item ID Select Kit ID: TESTITEM1 No Kit Selected	t to select standard items 15 Use item	Item Details Quantity Item ID TESTIFEM1	Description UoM Price 0 Description Test kem 1	Discount 0	Delivery Date 10 January 2011 Reference	Quantity 20	Reference Repeat Price Discourt U 0 0 U	t Add
Use Simple Input Option Item ID Select Kit ID: TESTITEM1 No Kit Selected	t to select standard items	Item Details Quantity Item ID TESTITEM1	Description UoM Price 0 Description Test Item 1	Discount 0	Delivery Date	Quantity 20	Reference Repeat Price Discourt U 0 0 U	t Add Inits Init I
Use Simple Input Option Item ID Select Kit ID: TESTITEM1 No Kit Selected	t to select standard items	Item Details Quantity Item ID TESTIFEM1	Description UoM Price 0 Description Test Item 1	Discount 0	Delivery Date I 10 January 2011 Reference	Quantity 20	Reference Repeat Price Discourt U 0 0 U	t Add

This screen shows the component make-up for TESTITEM1. This is available via a right-click menu on the screen above.

Figure 20 A Component Make-up Screen

C	Component Items for TESTITEM1										
Γ	This screen shows the component items which make up kit item 'TESTITEM1'.										
Ŀ											
L	Γ	Component Item	Item Description	Unit Qty	Quantity	Total Stock	Status				
i.		230050001	WASHER MUDG	1	20	2232	A				
		230050002	WASHER MUDG	1	20	2023	A				
L											
L											
L											
L											
L											
	ŀ	PROAC				[Done				