

## Linked Orders

### Usage Notes, Interface Description

◆ **What Linked Orders are used for**

An order in PC-Topp is defined by a sheet of corrugated and one or several conversion steps. In the real world, however, an order sometimes consist of several components that each are an 'order' in the above sense and that then are converted or shipped together and jointly.

"Linked Orders" have been introduced to let PC-Topp handle such orders in an elegant and consistent way. The concept applies to multi-part boxes, assembled displays, or boxes made of two (identical or non-identical) sheets stitched together, and can be extended to cover other, equally interesting cases.

1. **Examples: Where Linked Orders are Useful**

**Assembly of separate components:** *A display order is assembled from several components, each requiring a different sheet size. Assembly can start when each of the components is ready, and that assembly is considered a separate conversion step.*

Order	Part	Required	Total
1234A	Font	1	1 x 50 = 50
1234B	Feed	2	2 x 50 = 100
1234C	Trays	6	6 x 50 = 300

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1234	Assembled Display	50
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**Large boxes stitched together from two parts:** *Such boxes can be made of non-identical parts (see example) or of two identical parts; in the latter case, just one order on the left side is needed, plus the information that this 'component' is required two times per box.*

4711A Corrugator Conversion >>>>



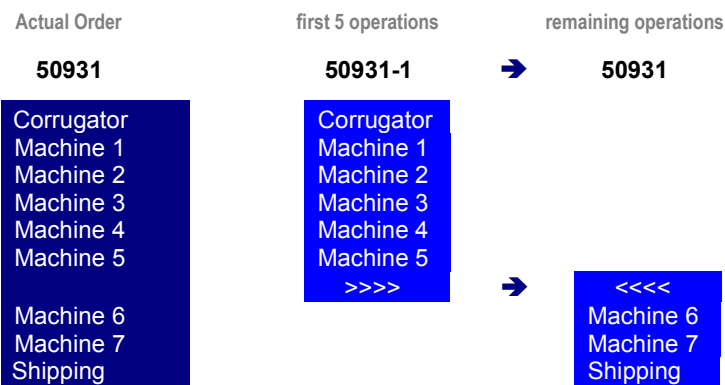
4711 <<<< Stitching Shipping

4711C Corrugator Conversion >>>>

**More than 5 operations in an order:** PC-Topp supports for an order the operations Corrugator, Conversion (up to 5 operations) and Shipping. Orders requiring more than five conversion operations can be modeled by two orders linked like this:

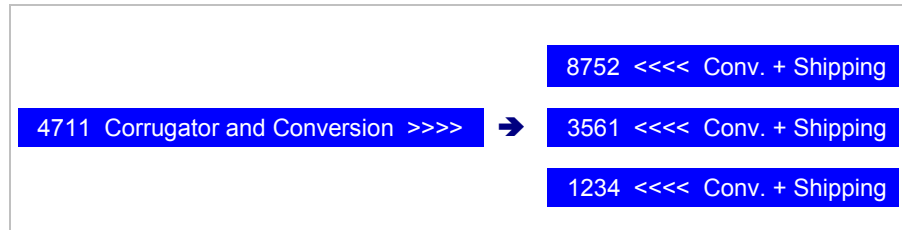
*The 7 operations required for this order are split in two orders with 5 and 2 operations, respectively. The orders 50931-1 and 50931 are linked by the entries >>>> and <<<<.*

*Order 50931 (running on machines 6, 7 and Shipping) is the successor of order 50931-1 (running on the corrugator machines 1-5).*

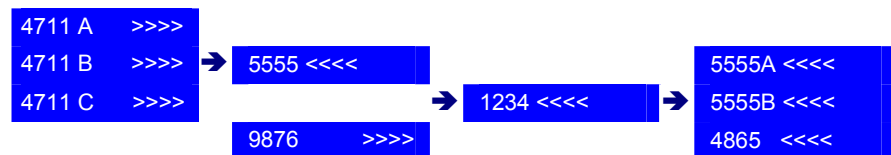


The above principle can be extended in the opposite direction, allowing one (or several) orders to deliver material for several daughter orders.

**One order with many daughter orders:** *Many identical orders for different customers can be produced on the corrugator (and in conversion) in one big run, feeding several daughter orders that may each have their own further conversion operations (different print for each customer).*



**Larger "Order Nets":** The system supports any kind of relationship between orders, if needed.



However, it is doubtful that such a complicated network of linked orders really makes sense and that it will be well understood by all users. Incorrect information in the order data transfer can lead to structures like the above (and much larger and more complicated) that are then difficult to master and to correct.

## 2. Describing Linked Orders in the Order Data Transfer (OTDATA)

### ◆ Predecessors and Successors

The orders to be linked are called "predecessors" and "successors". In a complicated case (like above), an order can be both a predecessor and a successor.

The relationship between predecessors and successors is defined by order keys pointing to the successor (OTDATA field 86) and/or to the predecessor order (OTDATA field 84).

It depends on the type of relationship in which of the two fields the successor/predecessor information must be given:

A Many to One-relationship (assembled display, stitched order) is described by giving the order key of the successor in field 86 of each predecessor order.

For a One to One-relationship (e.g. more than 5 operations), either field 84 or 86 can be used, or both together.

A (rare) One to Many-relationship is described by giving the order number of the predecessor in field 84 of each successor order.

### ◆ Number of Parts Needed

As shown in the example of a display order, several parts of a predecessor may be needed to make one successor order. That number of parts must be indicated in OTDATA field 85 (if field 84 is filled) or 87 (if field 86 is filled).

If field 85 or 87 are left blank, then the value 1 is assumed.

### ◆ Operation Codes

A predecessor order is never shipped by itself. Instead of Shipping, it must have the code >>>> as last operation.

A successor order is never produced on the corrugator, as it is made from components made under a different order number. Its first (corrugator) operation in OTDATA field 21 must be the code <<<< .

Those codes were chosen because they graphically indicate the relationships between linked orders.

### ◆ Order Numbers

Predecessors and successors have their own order numbers, which can be totally unrelated. In many cases, however, it may be useful to use the ERP's main order number (e.g. 1234) for the last production order (the last successor), and the same number plus a suffix (1234.01, 1234.02 etc.) for all the components that order 1234 requires.

### ◆ No checks - You are responsible!

In the most common (asymmetrical) relationships, just the successor's key is indicated, and of course all predecessor components must refer to the same successor order. PC-Topp therefore cannot check whether the relationships defined by filling fields 84 and 86 make sense.

Through programming mistakes, it can happen that huge (and confusing) order nets are created that are then impossible to understand and to handle.