

## IAPS Supported Finishing Operation Types

**Intermate A/S**

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## 1. Corner staple

Corner stapling a collection of sheets is normally done by driving a staple into one of the corners.

## 2. Fold in

Folding a single sheet or a collection of sheets is done along the finishing operation axis. The sheet or collection of sheets is folded inward on the front sheet side.

## 3. Separation cut and perforation cut

Cutting is done along the finishing operation axis. A separation cut separates each sheet of media into two pieces. A perforation cut leaves each sheet intact, but provides a means to easily tear off part of the sheet.

## 4. Z-fold

Z-folding causes the current sheet to be first folded in half inwards (so the front side of the sheet is now inside the fold) along a line parallel to the reference edge. The half of the sheet furthest from the reference edge is again folded in half outwards along a line parallel to the reference edge. For example, when applied to an 11"x17" sheet with the reference edge along the top (a short side), the result is an 8.5"x11" fold-out.

Note that if additional finishing operations are applied to the Z-folded sheet, the sheet is re-oriented so that the original reference edge becomes either the left or top edge for the additional finishing operations. This reorientation is done such that the new top edge is a short edge. For most media, the reorientation causes the reference edge to become the new left edge; however, when the reference edge is less than half the size of the other sheet dimension, the reorientation causes the reference edge to become the new top edge. In the previous example, the reference edge for the Z-fold was the top (11"). After Z-folding is applied, the sheet is re-oriented so that this reference edge now becomes the left edge for additional finishing operations. Therefore, if the Z-folded sheets are to be stapled to some number of 8.5"x11" sheets, the stapling reference edge for both sets of sheets is specified to be the left edge.

## 5. Centre-fold in

This operation causes a single-sheet or a collection of sheets to be folded inward along the centre line that is parallel to the finishing operation axis. After a centre-fold-in operation, the back of the single sheet (or last sheet of the group) is on the outside of the folded booklet.

## 6. Punch

This operation causes one or more holes to be punched or drilled into a single sheet or into each sheet of a group. The shape of the holes is device specific and cannot be controlled.

## 7. Saddle stitch and edge stitch

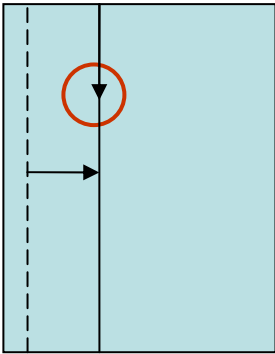
Stitching is a method of binding using one or more staples; saddle-stitching binds along a centre fold, edge-stitching binds along one edge. Note that saddle-stitching also centre folds the sheets either inward or outward depending on the operation type. An inward fold causes the front side of the first sheet of the group to be on the inside of the booklet; an outward fold causes the front side of the first sheet of the group to be on the outside of the booklet

**Note:** Finishing operations are inherently device specific; for example, not all stapling systems have the same capabilities in terms of positioning, thickness that can be stapled, and mechanism controls. The stapler might also work only with specific media destinations or specific kinds of media.

For more information about finishing, please refer to the online help or consult your printer/finisher manual and IPDS Finishing literature. One good place to look is IBM's Redbook Series about Data Stream and Object Architectures: "Intelligent Printer Data Stream Reference" (S544-3417-06).

**8. Finishing Operation Axis**

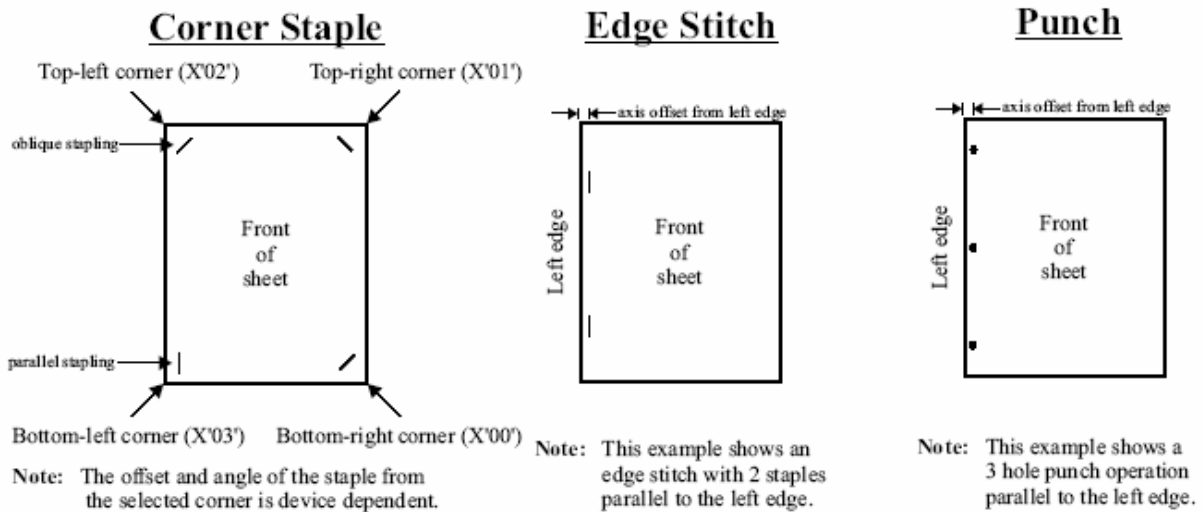
A logical axis from which a x- and a y-offset can be given to e.g. a staple position.



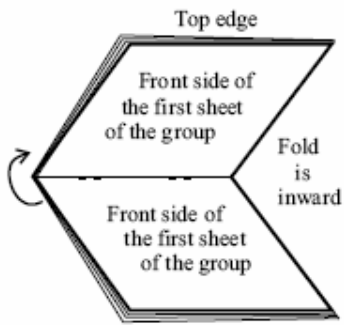
**9. Finishing Subgroups**

More than one type of finishing applied to various pages or one or more page range(s) in the job. E.g. Punch page 1 – 8, Corner staple page 4-6 and Z-fold page 8. Page 1-7 is A4 portrait and page 8 is A3 landscape.

**10. Illustrations**



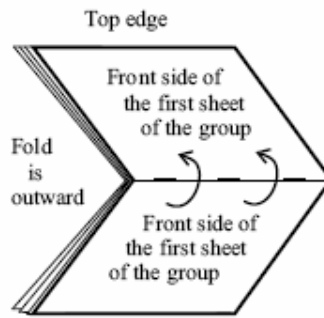
**Saddle Stitch In**



Note: This example shows a saddle stitch with 2 staples parallel to the top edge. The first sheet is on the inside of the booklet.

inside of the booklet.

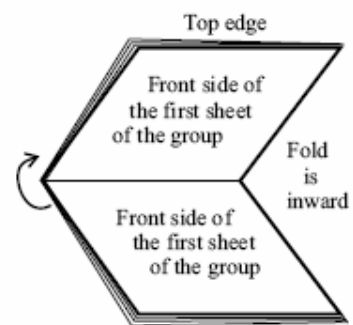
**Saddle Stitch Out**



Note: This example shows a saddle stitch with 3 staples parallel to the top edge. The first sheet is on the outside of the booklet.

outside of the booklet.

**Center Fold In**



Note: Center fold in is the same as saddle stitch in without the staples.

**Z-Fold**

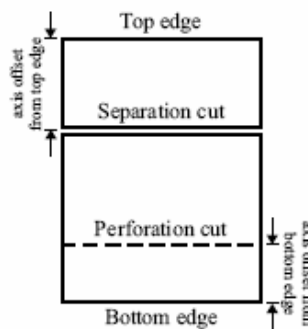
**Z-Fold**

**Fold In**

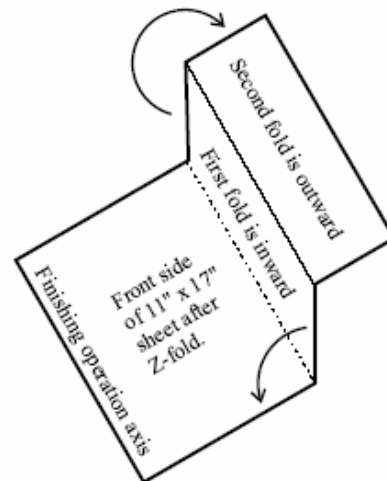


Note: This example shows a sheet folded inward at an offset of 4.4 inches from the top.

**Cuts**



Note: This example shows a sheet that has been cut using 2 different finishing operations.



**11. How does finishing work – in short?**

In the host application a given finishing command – e.g. corner staple – is specified. The AFP DataStream (AFPDS) get a finishing command "injected" into the data stream. This can also happen several other places (DDS, Printerfile etc.), please refer to your host documentation. The PSF carries this command from the AFPDS into the IPDS. The Intermate Print Server recognises the IPDS Finishing Command and replaces it with the appropriate printer language string. This string is then sent to the Printer as a command string.

The tricky part is usually in these two places:

Terminology:

The Printer's terminology doesn't always match the AFP/IPDS terminology - e.g. a Booklet command, on a given printer, may need to be put together by e.g. an n-UP operation on the host and a SaddleStitchIn command in the AFP/IPDS data stream, provided that the host application or the printer can remix the page sequences to fit the booklet page sequence. The choice usually depends on the printer's capabilities.

Please refer to host and printer documentation for further information.

Getting the printer language strings correct:

These printer language strings follow standards – but the printer manufacturer doesn't always use the same set of values for e.g. a given mailbox bin and sometime they have made extensions to the printer language, that doesn't cohere with the standards.

You should be able to refer to the manufacturer's documentation, but not always.

One other way of getting the right sequence (syntax) of commands and values is to install a windows driver and direct the output to a file. Then compose a simple document with the required finishing options. Write the document and browse the file with an ASCII editor. After a little bit of digging one can find the commands. This method is good for PJI but compiled printer command languages, such as PCL 6, can be almost impossible to figure out. Also windows applications that are capable of specifying finishing sub groups are – to our knowledge – not available.

The Postscript strings are – usually - much easier to get hold of. A file in the printer's windows driver holds these strings – ready to copy and paste.

Install the printer manufacturer's postscript driver. Locate the 'index' .inf file – usually called oemsetup.inf. Browse and search this file for the printers name. When you have found the part with the printer name, you should be able to see which .ppd file holds the finishing strings. Locate this file and browse for the desired finishing option - e.g. 'punch'. Once found it's a simple task of copying it to the Intermate Print Server.

An example of finishing strings, that produces a Corner Staple – TopLeft:

**In Postscript:**

Activation                    "<< /Staple 3 /StapleDetails << /Type 17 /Position 2 >> >> setpagedevice"

DeActivation:                "<< /Staple 0 /StapleDetails << /Type 17 /Position 0 >> >> setpagedevice"

**In PJI:**

Activation:                    "@PJI SET STAPLE=ONELEFTPORTHORIZ"

DeActivation:                "@PJI SET STAPLE=NONE"

Please note that PCL rarely is used - most often it's PJI, PostScript or a proprietary printer language

A short note about stapling:

AFP/IPDS allows stapling in all 4 corners, but in fact most printers can only staple in one or two of the corners – usually one or two of the upper edge or the left edge.

To reach the other corners the paper must be fed Short Edge or Long Edge and Face Down or Face UP, depending on the printers mechanics - so - again - refer to the manufacturer's manual