

FORMAX[®]

7700 Series READING SPECIFICATIONS

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INTRODUCTION 1

1.1 ABOUT THIS SPECIFICATION

The purpose of this specification is to advise new users of Document Systems how to code their documents. The data contained herein is the most current known to the manufacturer at the time of preparation and is believed to be accurate.

This specification is published without any warranty. Improvements and changes necessitated by typographical errors, inaccuracies of current information, or improvements may be made at any time and without notice.

Such changes will, however, be incorporated into new editions of the PDF version of this specification (if applicable).

1.2 GENERAL

A Contact Image Scanner (CIS) reading device can be factory fitted to a Versatile Feeder (1 x top read only), or can be optionally fitted to a Flex Folder (with a maximum of 2 x CIS units).

It consists of a full portrait paper width unit capable of reading Barcodes (1D and 2D) and OMR marks (1-track and 2-track), with a maximum scanning width of 216mm.

1.3 TERMS USED IN THE SPECIFICATION

It is useful to ensure that the terms used in this specification are explained as to their meaning within this document. The terms listed below have the following meaning:

Document Systems:	Generic term for all mail inserting equipment produced by the manufacturer.
 inserter:	The specific machine chosen and being used by the customer.
Job:	The batch or complete set of material to be processed on the inserter.
Job Number Id:	Alphanumeric string which identifies the file reference for information relating to the job.
Label:	Linear or two-dimensional image which, when decoded by a suitable label reader provides a numeric or alphanumeric string of characters.

Piece Id:	Usually numeric but can be an alphanumeric string representing the identity of an individual mail piece within a job. The Piece Id is unique to the mail piece
Character:	Single letter or number in the label.
Machine Control Characters:	Characters used specifically to control the inserter and how the material is processed within the inserter.
Function:	Single character or group of consecutive characters used to perform a specific 'function' .
Customer Id:	The Customer Id is usually a unique number to the organisation using the inserter (i.e. unique beyond the job being processed). The Customer Id is sometimes used, and defined, as the Piece Id as well as being used and defined as the Customer Id.
AIMS:	Automated Insertion Management System (AIMS) is an optional data capture and management software solution.
OMS:	Output Management Software (OMS) is an optional print management software solution used to apply labels to customer documents and provide job information files for data management.
Statistics:	Basic information on how many mail pieces have been processed in a job run. Used when there is no unique mail piece identification.
Audit:	Recording details of the handling of each individual mail piece, when a Piece Id is included in the label. Used when there is no information available about the job or print run being processed.
Verification:	Verifying each Piece Id against a job/print run file.
Lookup:	Uses the information in the job/print run file to control the progress of each mail piece through the machine. Often referred to as 'File Based Mailing' .

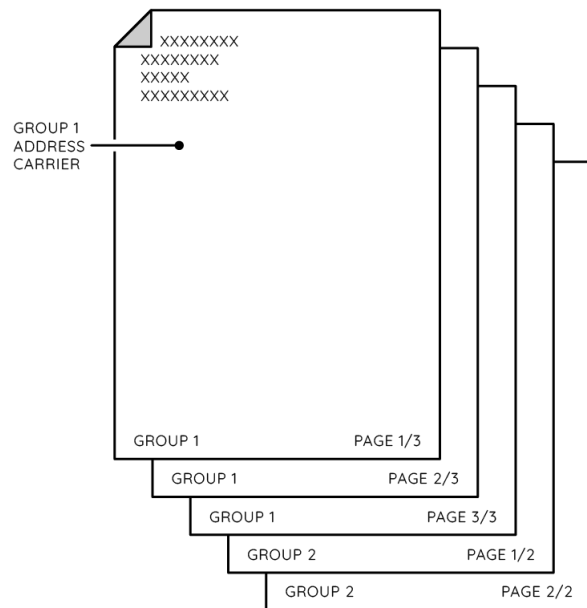
GUIDELINES FOR STATIONERY CREATORS 2

2.1 GENERAL GUIDELINES

Documents are defined in print order and run in reverse print order for face-down reading, or print order for face-up reading.

Documents should be printed in page order 1,2,3,4 etc. Page 1 being the address carrier of the group as shown in Figure 2.1.

The controlling document, with the coding printed on it, is sometimes referred to as the prime document.



QTL-RND-GEN-00000124-A-00

Figure 2.1 - Printing in page order

The following applies for all reading applications:

1. For Flex Folders, documents can be loaded face-up or face-down.
2. For Reading Versatile Feeders (bottom feeding), documents must be loaded face-up.
3. Feed order for Reading Versatile Feeders is reverse of print order.
4. Reading definitions are programmed in print order, i.e. If a grouping mark is printed on the first page of the set (page 1), this will be programmed as First of Group.
5. If a grouping mark is printed on the last page of the set (e.g. page 5 of 5), this will be programmed as End of Group.

2.2 FLEX FOLDER (FACE-DOWN READING)

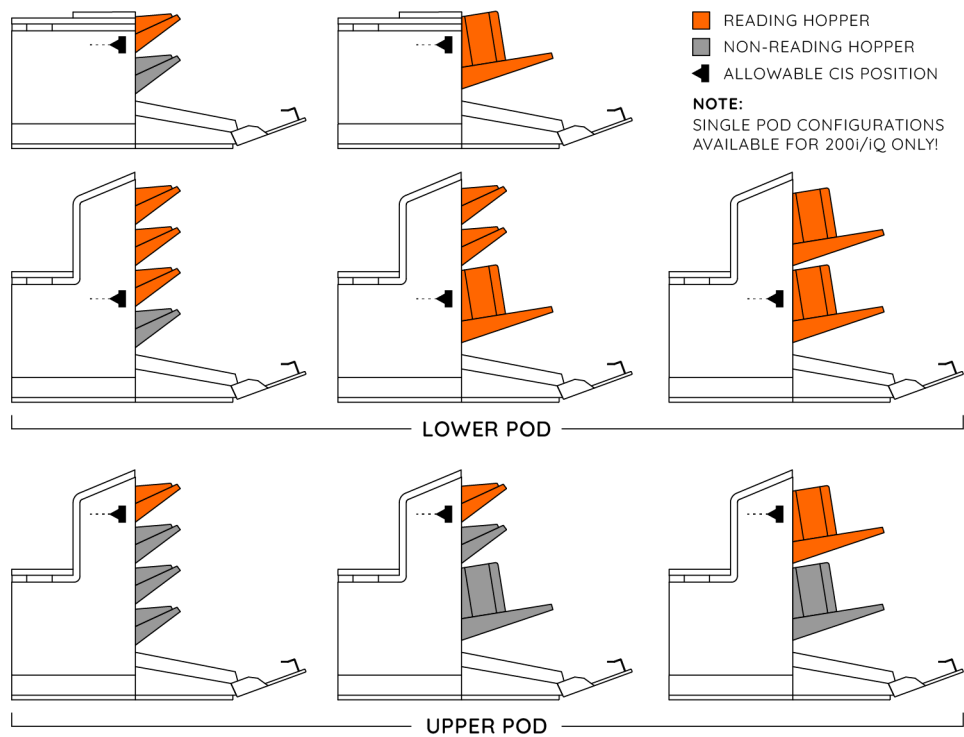


Figure 2.2 - Flex Folder face-down reading

1. Top feed system so mark reading documents are fed face-down, head first.
2. The documents are fed in reverse print order e.g. a 3 page set will be fed page 3, page 2, page 1 and finish on the address carrier page.
3. Preferably the grouping mark should appear on the address page (page 1) of a set, which gives first of group print definition.
4. Reading is not available on a lower standard capacity feeder.
5. If reading from multiple hoppers in the flex folder, in the same job, the reading definitions must be the same.

NOTE:

This is also applicable for Matching applications.

Reading definitions may differ between Flex Folder and Versatile Feeder.

6. When select feeding from Flex Folders the prime documents set can be printed First of Group (FoG) or End of Group (EoG) although FoG is preferable. The selectively fed documents:
 - a. Must be in fixed group sizes
 - b. Will not run via the accumulator
 - c. If running EoG the first document fed will be held in the accumulator, the selective documents fed and the rest of the set completed
 - d. Inserts must be programmed as '**Selective Feed**' when select feeding.

NOTE:

Selective feed and matching is not permissible when using a Flex Folder.

Machine must be programmed as '**Feed Always**' for matching in the same module.

7. Documents which have the feed mode set to '**Feed Always**' can only go via the accumulator if grouping in First Of Group (FoG) mode (print order).
8. The following information must be encoded on the last page of the document set, first page in feed order:
 - a. Envelope unseal and output divert
 - b. Halt.
9. The following must be encoded on all pages of the group:
 - a. Pulse conveyor
 - b. Divert sheet
 - c. Select item.



Face-down scanner will allow split pack folding.

2.3 FLEX FOLDER (FACE-UP READING)

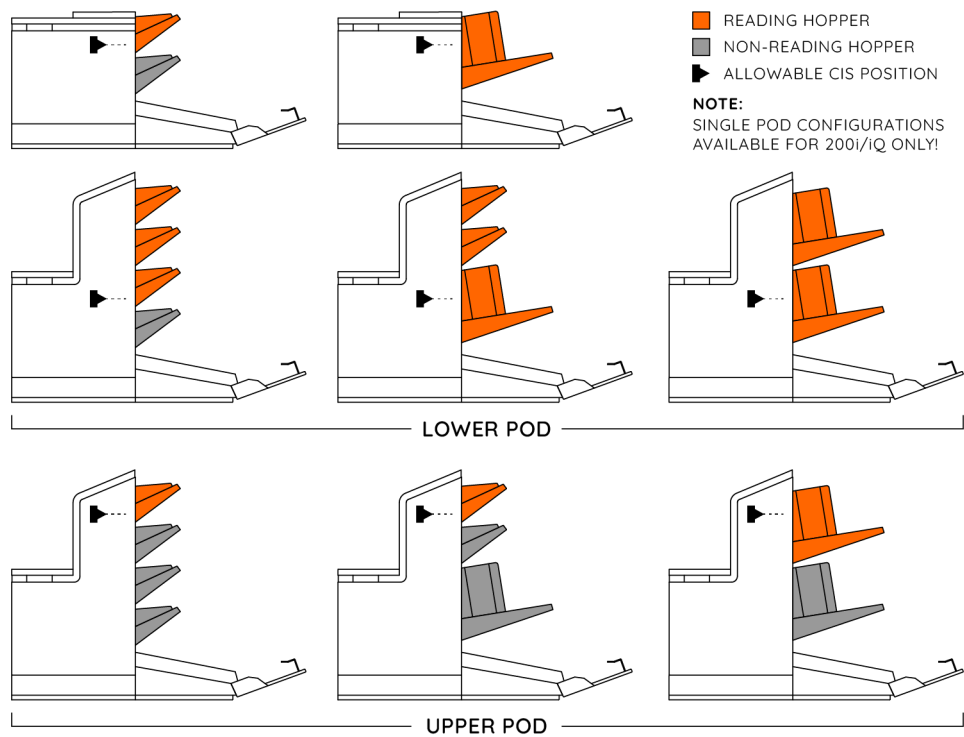


Figure 2.3 - Flex Folder face-up reading

1. Top feed system so mark reading documents are fed face-up, feet first.
2. The documents are fed in print order e.g. a 3 page set will be fed page 1, page 2, page 3, starting with the address carrier page.
3. Preferably the grouping mark should appear on the last page of a set, which gives end of group print definition.
4. Reading is not available on a lower standard capacity feeder.
5. If reading from multiple hoppers in the flex folder, in the same job, the reading definitions must be the same.

NOTE:

This is also applicable for Matching applications.

Reading definitions may differ between Flex Folder and Versatile Feeder.

6. When select feeding from Flex Folders the prime documents set can be printed First of Group (FoG) or End of Group (EoG) although EoG is preferable. The selectively fed documents:
 - a. Must be in fixed group sizes
 - b. Will be run via the accumulator with EoG printing
 - c. If running FoG, the first document fed will be held in the accumulator, the selective documents fed and the rest of the set completed
 - d. Inserts must be programmed as '**Selective Feed**' when select feeding.

NOTE:

Selective feed and matching is permissible when using a Flex Folder, but only with Face Up reading in End of Group coding.

Machine must be programmed as '**Selective Feed**' for selective feed matching in the same module.

7. Documents which have the feed mode set to '**Feed Always**' can only go via the accumulator if grouping in End Of Group (EoG) mode (print order).
8. The following information must be encoded on the last page of the document set, last page in feed order.
 - a. Envelope unseal and output divert
 - b. Halt.
9. The following must be encoded on all pages of the group
 - a. Pulse conveyor
 - b. Divert sheet
 - c. Select item.



Selective feed from the same module can be folded with the prime document set, up to the maximum fold setting.

2.4 VERSATILE FEEDER

1. Bottom feed system so reading documents are fed face up.
2. The documents are fed in reverse print order e.g. a 3 page set will be fed page 3, page 2, page 1 and finish on the address carrier page.
3. The grouping mark **must** appear on the address page (page 1) of a set, which gives first of group print definition.

NOTE:

Versatile Feeders do not support End of Group print definition.

4. If reading from multiple units in the same job the mark definitions can be different.
5. The following information must be encoded on the last page of the document set, first page in feed order.
 - a. Envelope unseal and output divert
 - b. Halt.
6. The following must be encoded on all pages of the group.
 - a. Pulse conveyor
 - b. Select item.



Flex Barcodes cannot be run from this module.

2.5 RECOMMENDED LABEL CONSTRUCTION AND POSITIONING

It is recommended to always use a 2D (two dimensional) label. This type of label is now the most popular due to its density (amount of information contained in the label) and reliability of reading

However, 1D BCR can still be used but they can make the label long in length if using Job and Mailpiece Id characters.

GROUP AND SEQUENCE MATRIX 3

3.1 CONDITIONS


Shown in Table 3.1 are guides to conditions of Grouping and Sequencing.

Print order	Face-down				Face-up							
	Feed order - Flex Folder (Face-down)		Page count in set (Face-down)		Feed order - Flex Folder (Face-up)		Page count in set (Face-up)		Feed order - Versatile Feeder		Page count in set - Versatile Feeder	
1	21	1	of	1	1	1	of	1	21	1	of	1
2	20	2	of	2	2	1	of	2	20	2	of	2
3	19	1	of	2	3	2	of	2	19	1	of	2
4	18	3	of	3	4	1	of	3	18	3	of	3
5	17	2	of	3	5	2	of	3	17	2	of	3
6	16	1	of	3	6	3	of	3	16	1	of	3
7	15	4	of	4	7	1	of	4	15	4	of	4
8	14	3	of	4	8	2	of	4	14	3	of	4
9	13	2	of	4	9	3	of	4	13	2	of	4
10	12	1	of	4	10	4	of	4	12	1	of	4
11	11	5	of	5	11	1	of	5	11	5	of	5
12	10	4	of	5	12	2	of	5	10	4	of	5
13	9	3	of	5	13	3	of	5	9	3	of	5
14	8	2	of	5	14	4	of	5	8	2	of	5
15	7	1	of	5	15	5	of	5	7	1	of	5
16	6	6	of	6	16	1	of	6	6	6	of	6
17	5	5	of	6	17	2	of	6	5	5	of	6
18	4	4	of	6	18	3	of	6	4	4	of	6
19	3	3	of	6	19	4	of	6	3	3	of	6
20	2	2	of	6	20	5	of	6	2	2	of	6
21	1	1	of	6	21	6	of	6	1	1	of	6

Table 3.1 – Conditions of Grouping and Sequencing

Using this table we can see that the Flex Folder will feed the documents in the reverse order to printing for face-down reading, or in print order for faceup reading.

For a Reading Versatile Feeder the documents are fed face up but from the bottom of the stack, so will be fed in reverse print order.



Groups are highlighted in orange and grey for clarification. This assumes documents are printed A-Z.

3.2 GROUPING MODES

'Y' shown in Table 3.2 indicates the grouping command for QTL and other group modes.

Print order	Group Modes																	
	Face-down		Face-up		Neo 3						QTL & Others							
	Feed order - Flex Folder (Face-down)	Page count in set (Face-down)	Feed order - Flex Folder (Face-up)	Page count in set (Face-up)	Page count in set - Versatile Feeder	Accumulate command only (1 = accumulate)	Insert command only (1 = insert)	Insert/Accumulate (1 = insert/2 = accumulate)	M Value	N Value	Customer Id (i.e. Account number)	Demand Feed End of Group as printed	Demand Feed First of Group as printed	End of Group as printed	First of Group as printed			
1	21	1 of 1	1 of 1	1 of 1	1 of 1	0	1	1	1	1	1		Y	Y	Y			
2	20	2 of 2	2 of 2	2 of 2	2 of 2	1	0	2	2	1	2	Y			Y			
3	19	1 of 2	3 of 2	2 of 2	1 of 2	0	1	1	2	2	2		Y	Y				
4	18	3 of 3	4 of 1	3 of 3	3 of 3	1	0	2	3	1	3	Y			Y			
5	17	2 of 3	5 of 2	3 of 3	2 of 3	1	0	2	3	2	3	Y	Y					
6	16	1 of 3	6 of 3	3 of 3	1 of 3	0	1	1	3	3	3		Y	Y				
7	15	4 of 4	7 of 1	4 of 4	4 of 4	1	0	2	4	1	4	Y			Y			
8	14	3 of 4	8 of 2	4 of 4	3 of 4	1	0	2	4	2	4	Y	Y					
9	13	2 of 4	9 of 3	4 of 4	2 of 4	1	0	2	4	3	4	Y	Y					
10	12	1 of 4	10 of 4	4 of 4	1 of 4	0	1	1	4	4	4		Y	Y				
11	11	5 of 5	11 of 1	5 of 5	5 of 5	1	0	2	5	1	5	Y			Y			
12	10	4 of 5	12 of 2	5 of 5	4 of 5	1	0	2	5	2	5	Y	Y					
13	9	3 of 5	13 of 3	5 of 5	3 of 5	1	0	2	5	3	5	Y	Y					
14	8	2 of 5	14 of 4	5 of 5	2 of 5	1	0	2	5	4	5	Y	Y					
15	7	1 of 5	15 of 5	5 of 5	1 of 5	0	1	1	5	5	5		Y	Y				
16	6	6 of 6	16 of 1	6 of 6	6 of 6	1	0	2	6	1	6	Y			Y			
17	5	5 of 6	17 of 2	6 of 6	5 of 6	1	0	2	6	2	6	Y	Y					
18	4	4 of 6	18 of 3	6 of 6	4 of 6	1	0	2	6	3	6	Y	Y					
19	3	3 of 6	19 of 4	6 of 6	3 of 6	1	0	2	6	4	6	Y	Y					
20	2	2 of 6	20 of 5	6 of 6	2 of 6	1	0	2	6	5	6	Y	Y					
21	1	1 of 6	21 of 6	6 of 6	1 of 6	0	1	1	6	6	6		Y	Y				

Table 3.2 – Grouping modes

3.2.1 NEOPOST 3

When using Neopost 3 scheme, the BCR label length is automatically determined whenever the reading function is enabled.

N of M - Uses a page count comparison:

- When N equals M the set is complete
- Must be printed with the N=M numbers on the last page of the set
- N and M characters can be swapped to form M of N
- Again document set is inserted when M=N.

NOTE:

Takes precedence over Insert/Accumulate if printed.

Insert/Accumulate - Uses Neo 3 numeric coding:

- 1 = Insert
- 2 = Accumulate.

Insert command only - Uses Neo 3 numeric coding:

- 1 is printed on the last page of the set in print order
- 0 is printed on the pages to be accumulated.

Accumulate command only - Uses Neo 3 numeric coding:

- 1 is printed on the pages to be accumulated
- 0 is printed on the last page of the set in print order.

Customer Id - Uses a number, Account number, phone number, in the barcode.

This number is checked on the documents and when the number changes the document set in the accumulator is complete. It can also be used for matching within the same module.

NOTE:

If using the the scheme with AIMS Job Number Id and Mailpiece Id, the Customer Id characters listed in the Neopost 3 Function List must be populated to 'Disable' to achieve the correct label length.

3.2.2 QTL CODING (STANDARD BCS)

First of Group as printed

Requires an insert/grouping command to be printed on the first page of the set as printed.

End of Group as printed

Requires an insert/grouping command to be printed on the last page of the set as printed.

Demand feed First of Group as printed

Has a mark on every page in the set except the First page of the set as printed.

The command tells the machine to pull another document to the accumulator. When no mark is present, the set is inserted.

Demand feed End of Group as printed

Has a mark on every page in the set except the Last page of the set as printed.

The machine feeds paper until no mark is seen and then inserted.

When running Face-down Reading, the machine grouping will effectively be the reverse of the printed grouping. i.e. if the document set is printed as End of Group, the machine sees this as First of Group. This is automatically transposed by the machine.

3.3 FORM SEQUENCE WITHIN A JOB

Print order	Face-down				Face-up				Sequence in Job							
	Feed order - Flex Folder (Face-down)		Page count in set (Face-down)		Feed order - Flex Folder (Face-up)		Page count in set (Face-up)		Feed order - Versatile Feeder		Page count in set - Versatile Feeder		Neo 3	QTL		
1	21	1	of	1	1	1	of	1	21	1	of	1	20	0	U	A
2	20	2	of	2	2	1	of	2	20	2	of	2	19	1	T	B
3	19	1	of	2	3	2	of	2	19	1	of	2	18	2	S	C
4	18	3	of	3	4	1	of	3	18	3	of	3	17	3	R	D
5	17	2	of	3	5	2	of	3	17	2	of	3	16	4	Q	E
6	16	1	of	3	6	3	of	3	16	1	of	3	15	5	P	F
7	15	4	of	4	7	1	of	4	15	4	of	4	14	6	O	G
8	14	3	of	4	8	2	of	4	14	3	of	4	13	7	N	H
9	13	2	of	4	9	3	of	4	13	2	of	4	12	8	M	I
10	12	1	of	4	10	4	of	4	12	1	of	4	11	9	L	J
11	11	5	of	5	11	1	of	5	11	5	of	5	10	10	K	K
12	10	4	of	5	12	2	of	5	10	4	of	5	9	11	J	L
13	9	3	of	5	13	3	of	5	9	3	of	5	8	12	I	M
14	8	2	of	5	14	4	of	5	8	2	of	5	7	13	H	N
15	7	1	of	5	15	5	of	5	7	1	of	5	6	14	G	O
16	6	6	of	6	16	1	of	6	6	6	of	6	5	15	F	P
17	5	5	of	6	17	2	of	6	5	5	of	6	4	16	E	Q
18	4	4	of	6	18	3	of	6	4	4	of	6	3	17	D	R
19	3	3	of	6	19	4	of	6	3	3	of	6	2	18	C	S
20	2	2	of	6	20	5	of	6	2	2	of	6	1	19	B	T
21	1	1	of	6	21	6	of	6	1	1	of	6	0	20	A	U

Table 3.3 – Sequence in Job

To ensure correct processing of the documents in the correct order we can have a rolling sequence count through the document set.

This can be in the form of A-Z, 0-999, or for OMR a binary count based on the marks printed (0-63).

The count can start at 0 or 1 for OMR.

The sequence can be counting up or down and is programmed in print order.

3.4 FORM SEQUENCE WITHIN A GROUP

Print order	Face-down								Face-up								Sequence in Group			
	Feed order - Flex Folder (Face-down)				Page count in set (Face-down)				Feed order - Flex Folder (Face-up)				Page count in set (Face-up)				Neo 3		QTL	
	1	2	3	of	1	2	3	of	1	2	3	of	1	2	3	of	Decrementing Numeric (assuming count starts at 0)	Incrementing Numeric (assuming count starts at 0)	Decrementing Alpha A-Z (assuming count starts at Z)	Incrementing Alpha A-Z (assuming count starts at A)
1	21	1	of	1	1	1	of	1	21	1	of	1	0	0	A	A				
2	20	2	of	2	2	1	of	2	20	2	of	2	1	0	B	A				
3	19	1	of	2	3	2	of	2	19	1	of	2	0	1	A	B				
4	18	3	of	3	4	1	of	3	18	3	of	3	2	0	C	A				
5	17	2	of	3	5	2	of	3	17	2	of	3	1	1	B	B				
6	16	1	of	3	6	3	of	3	16	1	of	3	0	2	A	C				
7	15	4	of	4	7	1	of	4	15	4	of	4	3	0	D	A				
8	14	3	of	4	8	2	of	4	14	3	of	4	2	1	C	B				
9	13	2	of	4	9	3	of	4	13	2	of	4	1	2	B	C				
10	12	1	of	4	10	4	of	4	12	1	of	4	0	3	A	D				
11	11	5	of	5	11	1	of	5	11	5	of	5	4	0	E	A				
12	10	4	of	5	12	2	of	5	10	4	of	5	3	1	D	B				
13	9	3	of	5	13	3	of	5	9	3	of	5	2	2	C	C				
14	8	2	of	5	14	4	of	5	8	2	of	5	1	3	B	D				
15	7	1	of	5	15	5	of	5	7	1	of	5	0	4	A	E				
16	6	6	of	6	16	1	of	6	6	6	of	6	5	0	F	A				
17	5	5	of	6	17	2	of	6	5	5	of	6	4	1	E	B				
18	4	4	of	6	18	3	of	6	4	4	of	6	3	2	D	C				
19	3	3	of	6	19	4	of	6	3	3	of	6	2	3	C	D				
20	2	2	of	6	20	5	of	6	2	2	of	6	1	4	B	E				
21	1	1	of	6	21	6	of	6	1	1	of	6	0	5	A	F				

Table 3.4 - Sequence in Group

We can also add a similar sequence count for each group. This can also apply to OMR and be counting up or down.

The count resets at the change of group to the starting count, ensuring that all the pages are in the group. For OMR the count is 0-15.

3.4.1 FORM SEQUENCE WITHIN A GROUP LIMITATIONS

End of Group

If any of the underlined pages are missing this will not be recognised with a sequence error when the documents are printed in End of Group orientation.

Print Sequence	Face-Up						
	Feed Sequence	Customer	Page	Grouping as printed	End of Group	Forward Sequence	Reverse Sequence
	1	1	A	1		A	C
2	2	A	2		B	B	
3	3	A	3	Y	C	A	
4	4	B	1		A	B	
5	5	B	2	Y	B	A	
6	6	C	1		A	D	
7	7	C	2		B	C	
8	8	C	3		C	B	
9	9	C	4	Y	D	A	
10	10	D	1	Y	A	A	
11	11	E	1	Y	A	A	
12	12	F	1	Y	A	A	
13	13	G	1		A	B	
14	14	G	2	Y	B	A	

Print Sequence	Face-down						
	Feed Sequence	Customer	Page	Grouping as printed	End of Group	Forward Sequence	Reverse Sequence
	1	14	A	1		A	C
2	13	A	2		B	B	
3	12	A	3	Y	C	A	
4	11	B	1		A	B	
5	10	B	2	Y	B	A	
6	9	C	1		A	D	
7	8	C	2		B	C	
8	7	C	3		C	B	
9	6	C	4	Y	D	A	
10	5	D	1	Y	A	A	
11	4	E	1	Y	A	A	
12	3	F	1	Y	A	A	
13	2	G	1		A	B	
14	1	G	2	Y	B	A	

Table 3.5 - Form Sequence in group printed as End of Group

First of Group

If any of the underlined pages are missing this will not be recognised with a sequence error when the documents are printed in First of Group orientation.

Face-Up								Face-down							
Print Sequence	Feed Sequence	Customer	Page	Grouping as printed	First of Group	Forward Sequence	Reverse Sequence	Print Sequence	Feed Sequence	Customer	Page	Grouping as printed	First of Group	Forward Sequence	Reverse Sequence
1	1	A	1	Y	A	C		1	14	A	1	Y	A	C	
2	2	A	2		B	B		2	13	A	2		B	B	
3	3	A	3		C	A		3	12	A	3		C	A	
4	4	B	1	Y	A	B		4	11	B	1	Y	A	B	
5	5	B	2		B	A		5	10	B	2		B	A	
6	6	C	1	Y	A	D		6	9	C	1	Y	A	D	
7	7	C	2		B	C		7	8	C	2		B	C	
8	8	C	3		C	B		8	7	C	3		C	B	
9	9	C	4		D	A		9	6	C	4		D	A	
10	10	D	1	Y	A	A		10	5	D	1	Y	A	A	
11	11	E	1	Y	A	A		11	4	E	1	Y	A	A	
12	12	F	1	Y	A	A		12	3	F	1	Y	A	A	
13	13	G	1	Y	A	B		13	2	G	1	Y	A	B	
14	14	G	2		B	A		14	1	G	2		B	A	

Table 3.6 - Form Sequence in group printed as First of Group

3.5 GROUP SEQUENCE

	Face-down				Face-up				Group Sequence				
	Print order	Feed order Flex Folder (Face-down)	Page count in set (Face-down)	Feed order Flex Folder (Face-up)	Page count in set (Face-up)	Feed order Versatile Feeder	Page count in set Versatile Feeder	Decrementing Numeric (assuming count starts at 0)	Incrementing Numeric (assuming count starts at 0)	Decrementing Alpha A-Z (assuming count starts at Z)	Incrementing Alpha A-Z (assuming count starts at A)	Neo 3	QTL
1	21	1 of 1	1	1	1 of 1	21	1 of 1	5	0	F	A		
2	20	2 of 2	2	2	1 of 2	20	2 of 2	4	1	E	B		
3	19	1 of 2	3	3	2 of 2	19	1 of 2	4	1	E	B		
4	18	3 of 3	4	4	1 of 3	18	3 of 3	3	2	D	C		
5	17	2 of 3	5	5	2 of 3	17	2 of 3	3	2	D	C		
6	16	1 of 3	6	6	3 of 3	16	1 of 3	3	2	D	C		
7	15	4 of 4	7	7	1 of 4	15	4 of 4	2	3	C	D		
8	14	3 of 4	8	8	2 of 4	14	3 of 4	2	3	C	D		
9	13	2 of 4	9	9	3 of 4	13	2 of 4	2	3	C	D		
10	12	1 of 4	10	10	4 of 4	12	1 of 4	2	3	C	D		
11	11	5 of 5	11	11	1 of 5	11	5 of 5	1	4	B	E		
12	10	4 of 5	12	12	2 of 5	10	4 of 5	1	4	B	E		
13	9	3 of 5	13	13	3 of 5	9	3 of 5	1	4	B	E		
14	8	2 of 5	14	14	4 of 5	8	2 of 5	1	4	B	E		
15	7	1 of 5	15	15	5 of 5	7	1 of 5	1	4	B	E		
16	6	6 of 6	16	16	1 of 6	6	6 of 6	0	5	A	F		
17	5	5 of 6	17	17	2 of 6	5	5 of 6	0	5	A	F		
18	4	4 of 6	18	18	3 of 6	4	4 of 6	0	5	A	F		
19	3	3 of 6	19	19	4 of 6	3	3 of 6	0	5	A	F		
20	2	2 of 6	20	20	5 of 6	2	2 of 6	0	5	A	F		
21	1	1 of 6	21	21	6 of 6	1	1 of 6	0	5	A	F		

Table 3.7 - Group Sequence

Each group of documents can have a sequence count. The count increases or decreases at the change of each group ensuring that the groups are processed in the correct order. For OMR the count is 0-15

3.6 ALL GROUPING AND SEQUENCE MARKS

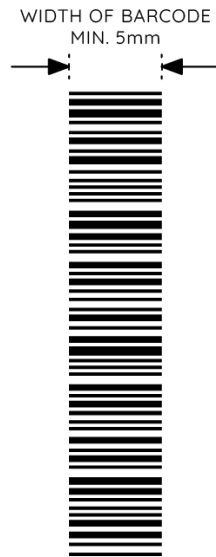
Print order	Face-down										Face-up										Group Modes								Sequence in Job		Sequence in Group		Group Sequence				
	Feed order Flex Folder (Face-down)					Page count in set (Face-down)					Feed order Versatile Feeder					Page count in set Versatile Feeder					Neo 3				QTL & Others				Neo 3		QTL		Neo 3		QTL		
	1		2		3		1		2		3		1		2		3		1		2		3		1		2		3		1		2		1		2
1	21	1	of	1	1	1	of	1	21	1	of	1	0	1	1	1	1	1	Y	Y	Y	20	0	U	A	0	0	A	A	5	0	F	A				
2	20	2	of	2	2	1	of	2	20	2	of	2	1	0	2	2	1	2	Y			Y	19	1	T	B	1	0	B	A	4	1	E	B			
3	19	1	of	2	3	2	of	2	19	1	of	2	0	1	1	2	2	2		Y	Y		18	2	S	C	0	1	A	B	4	1	E	B			
4	18	3	of	3	4	1	of	3	18	3	of	3	1	0	2	3	1	3	Y			Y	17	3	R	D	2	0	C	A	3	2	D	C			
5	17	2	of	3	5	2	of	3	17	2	of	3	1	0	2	3	2	3	Y	Y			16	4	Q	E	1	1	B	B	3	2	D	C			
6	16	1	of	3	6	3	of	3	16	1	of	3	0	1	1	3	3	3		Y	Y		15	5	P	F	0	2	A	C	3	2	D	C			
7	15	4	of	4	7	1	of	4	15	4	of	4	1	0	2	4	1	4	Y			Y	14	6	O	G	3	0	D	A	2	3	C	D			
8	14	3	of	4	8	2	of	4	14	3	of	4	1	0	2	4	2	4	Y	Y			13	7	N	H	2	1	C	B	2	3	C	D			
9	13	2	of	4	9	3	of	4	13	2	of	4	1	0	2	4	3	4	Y	Y			12	8	M	I	1	2	B	C	2	3	C	D			
10	12	1	of	4	10	4	of	4	12	1	of	4	0	1	1	4	4	4		Y	Y		11	9	L	J	0	3	A	D	2	3	C	D			
11	11	5	of	5	11	1	of	5	11	5	of	5	1	0	2	5	1	5	Y			Y	10	10	K	K	4	0	E	A	1	4	B	E			
12	10	4	of	5	12	2	of	5	10	4	of	5	1	0	2	5	2	5	Y	Y			9	11	J	L	3	1	D	B	1	4	B	E			
13	9	3	of	5	13	3	of	5	9	3	of	5	1	0	2	5	3	5	Y	Y			8	12	I	M	2	2	C	C	1	4	B	E			
14	8	2	of	5	14	4	of	5	8	2	of	5	1	0	2	5	4	5	Y	Y			7	13	H	N	1	3	B	D	1	4	B	E			
15	7	1	of	5	15	5	of	5	7	1	of	5	0	1	1	5	5	5		Y	Y		6	14	G	O	0	4	A	E	1	4	B	E			
16	6	6	of	6	16	1	of	6	6	6	of	6	1	0	2	6	1	6	Y			Y	5	15	F	P	5	0	F	A	0	5	A	F			
17	5	5	of	6	17	2	of	6	5	5	of	6	1	0	2	6	2	6	Y	Y			4	16	E	Q	4	1	E	B	0	5	A	F			
18	4	4	of	6	18	3	of	6	4	4	of	6	1	0	2	6	3	6	Y	Y			3	17	D	R	3	2	D	C	0	5	A	F			
19	3	3	of	6	19	4	of	6	3	3	of	6	1	0	2	6	4	6	Y	Y			2	18	C	S	2	3	C	D	0	5	A	F			
20	2	2	of	6	20	5	of	6	2	2	of	6	1	0	2	6	5	6	Y	Y			1	19	B	T	1	4	B	E	0	5	A	F			
21	1	1	of	6	21	6	of	6	1	1	of	6	0	1	1	6	6	6		Y	Y		0	20	A	U	0	5	A	F	0	5	A	F			

Table 3.8 - All Grouping and Sequence Marks

BARCODE LABEL DETAILS 4

4.1 LINEAR BARCODES

Barcode Labels should be of the following dimensions shown in Figure 4.1 to ensure reliable reading.



QTL-RND-GEN-00000127-A-00

Figure 4.1 - Barcode Label dimension

Narrow Bar Thickness (Codes 3 of 9, 2 of 5, & 128)

The minimum acceptable thickness for the narrow bar should be 0.01" (0.25mm)

Ratio of Wide Bar to Narrow Bar (Codes 3 of 9 & 2 of 5)

The minimum acceptable ratio between the wide bar and narrow bar thicknesses should be 2.2. However, to achieve a higher level of read reliability the ratio should be increased to 3.

Quiet Zone

There should be a clear area all round the label of at least 6.5mm (0.25"). There should be no graphics or text printing or background colour changes on the form in this quiet zone.



When running Label on first or last page only, a quiet zone is also recommended to be on the pages without labels. If there is text where the barcode would be, this will take time to decode and can slow down the machine.

Start and Stop Characters (Code 3 of 9 only)

The barcode label requires the printing of an asterisk '*' at the beginning and also at the end of the label. These are the start and stop characters, which are used in the decoding of the label.

NOTE:

Asterisks are not included in the number of characters count.

4.2 2D DATAMATRIX AND QR BARCODES

Figure 4.2 shows typical 2D Datamatrix Label and QR barcodes.



Figure 4.2 – Typical 2D Datamatrix and QR Barcodes

2D Datamatrix and QR barcodes should be of the following specifications:

- Cell size 0.35mm (0.014”) minimum for each edge
- Label size 30mm (1.18”) square maximum
- Preferred print quality of 600dpi
- Print drift from page to page +/- 2mm maximum
- Colour background: White.



Size, quality, density and position of the barcode effect decode times. The higher the decode time, the more likely the machine speed will slow.

4.3 BOTH LINEAR AND 2D DATAMATRIX

Reading Modules

Barcode labels can be read only on the following modules:

- Flex Folder Top and Bottom Read
- Versatile Feeder Top Read only.

Maximum Number of Characters

The maximum number of characters in the bar code label that can be read is 60. This includes the start and stop characters for linear barcodes.

NOTE:

This limit may be adjusted depending on the barcode scheme.

Orientation of the Barcode Label

The barcode label can be printed vertically or horizontally, see section [4.4 Barcode Label Placement](#) for further information.

Position of the Barcode Label

The barcode label should be positioned as indicated on the layout details, see section [4.4 Barcode Label Placement](#) for further information.

Printing Contrast

The label must be strongly printed in black on white background for maximum contrast. Other light backgrounds may be acceptable, subject to testing.

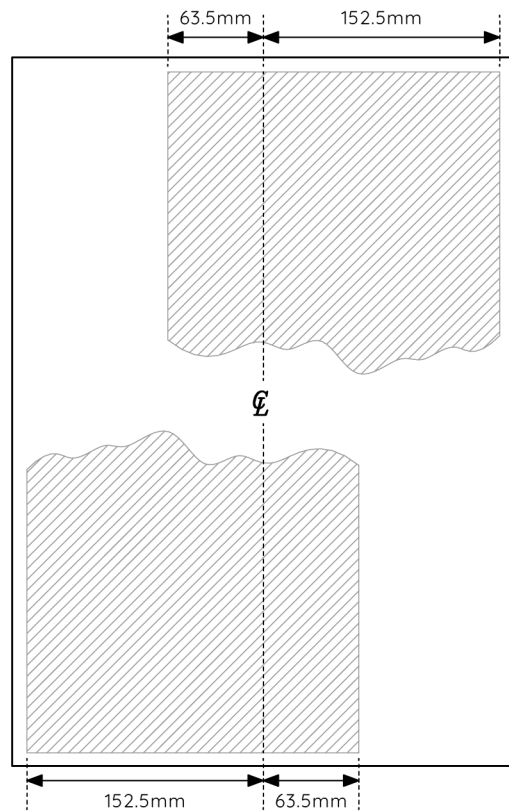
Position of Read Head

The position of the read head is operator adjustable to suit the required job. If other jobs are anticipated being run in the same unit, the label should be printed in the same position.

NOTE:

The reader has 2 positions, fully to the user side of the unit or fully to the non-user side.

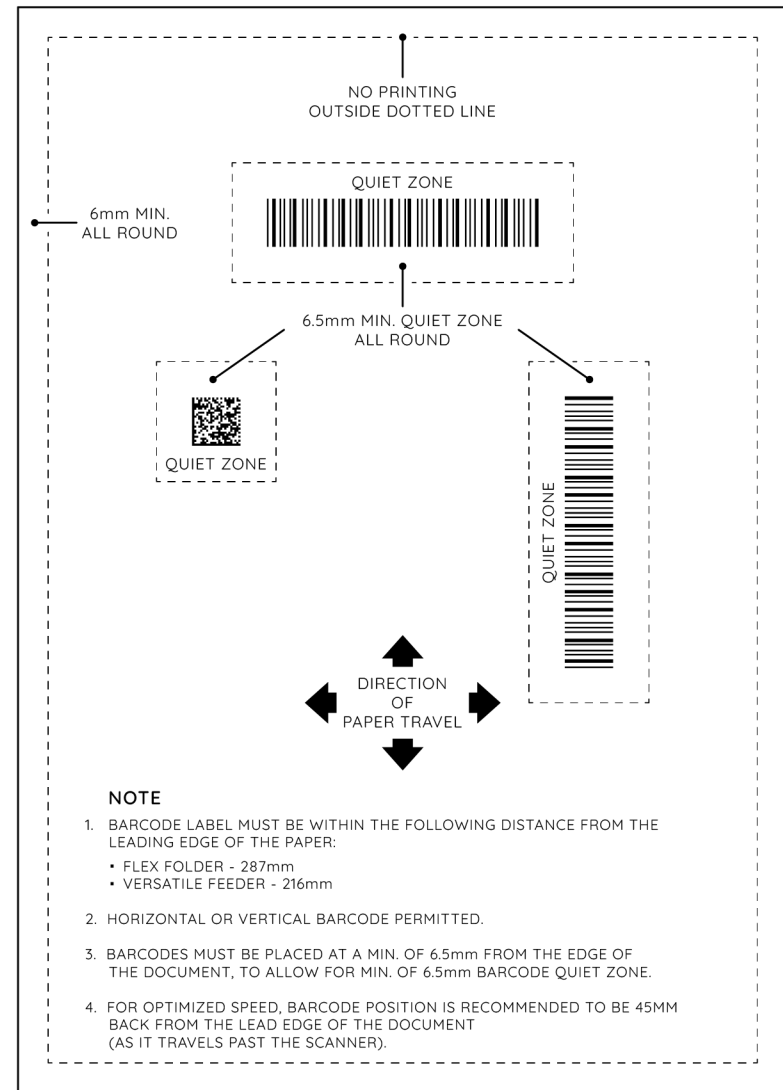
This will provide a reading range shown in Figure 4.3. It must be locked in position after adjustment.



QTL-RND-GEN-00000129-A-00

Figure 4.3 - Reading range

4.4 BARCODE LABEL PLACEMENT



NOTE

1. BARCODE LABEL MUST BE WITHIN THE FOLLOWING DISTANCE FROM THE LEADING EDGE OF THE PAPER:
 - FLEX FOLDER - 287mm
 - VERSATILE FEEDER - 216mm
2. HORIZONTAL OR VERTICAL BARCODE PERMITTED.
3. BARCODES MUST BE PLACED AT A MIN. OF 6.5mm FROM THE EDGE OF THE DOCUMENT, TO ALLOW FOR MIN. OF 6.5mm BARCODE QUIET ZONE.
4. FOR OPTIMIZED SPEED, BARCODE POSITION IS RECOMMENDED TO BE 45MM BACK FROM THE LEAD EDGE OF THE DOCUMENT (AS IT TRAVELS PAST THE SCANNER).

QTL-RND-GEN-00000130-A-00

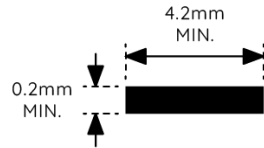
Figure 4.4 - Barcode label placement

OMR LABEL DETAILS 5

5.1 OMR LABELS

Mark size

The acceptable OMR mark size are shown in Figure 5.1.



QTL-RND-GEN-00000131-A-00

Figure 5.1 - Mark size

Mark Pitch

The following fixed mark pitches are acceptable, and custom pitches are also supported.

- 1/10", 1/8", 1/6", 1/5", 1/4", 1/3", 3mm, 3.8mm, 5mm, 5.3mm, 10 mm

NOTE:

Mark pitch is the distance from the top edge of one mark to the top edge of the next mark.

Gate Mark

The Gate Mark must be either the first mark to be scanned, or the last mark to be scanned.

Label on Pages

The OMR label must be printed on every page that is fed from the paper hopper.

Colours

Marks must be printed in black on preferably a white background. Non-white paper must be as pale as possible. The background behind the printed marks must be consistent in colour.

Reading Hoppers

Flex Folders can be fitted with up to 4 x 500-sheet hoppers or 2 x 1000-sheet hoppers. Reading is possible on all hoppers except for the lowest 500-sheet unit.

Reading Modules

Barcode labels can be read only on the following modules:

- Flex Folder Bottom Read only
- Versatile Feeder Top Read only.

Maximum Number of Marks

The maximum number of marks in the OMR label that can be read is 20.

Orientation of the OMR Label

The OMR label can be printed vertically or horizontally, see section [5.2 OMR Label Placement - Portrait Orientation](#) and section [5.3 OMR Label Placement - Landscape Orientation](#) for further information.

Position of the OMR Label

The OMR label should be positioned as indicated on the layout details, see section [5.2 OMR Label Placement - Portrait Orientation](#) and section [5.3 OMR Label Placement - Landscape Orientation](#) for further information.

Printing Contrast

The label must be strongly printed in black on white background for maximum contrast. Other light backgrounds may be acceptable, subject to test.

Position of Read Head

The position of the read head is operator adjustable to suit the required job. If other jobs are anticipated being run in the same unit, the label should be printed in the same position.

NOTE:

The reader has 2 positions, fully to either side of the unit.

This will provide a reading range shown in Figure 5.2. It must be locked in position after adjustment.

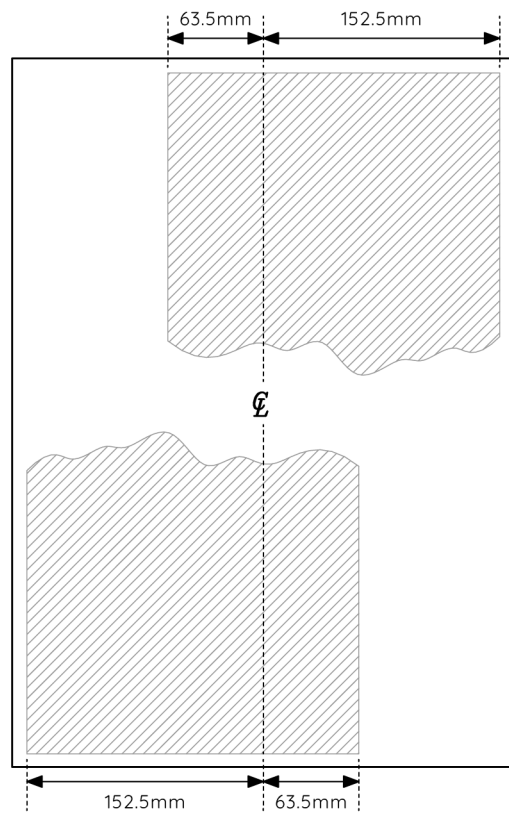
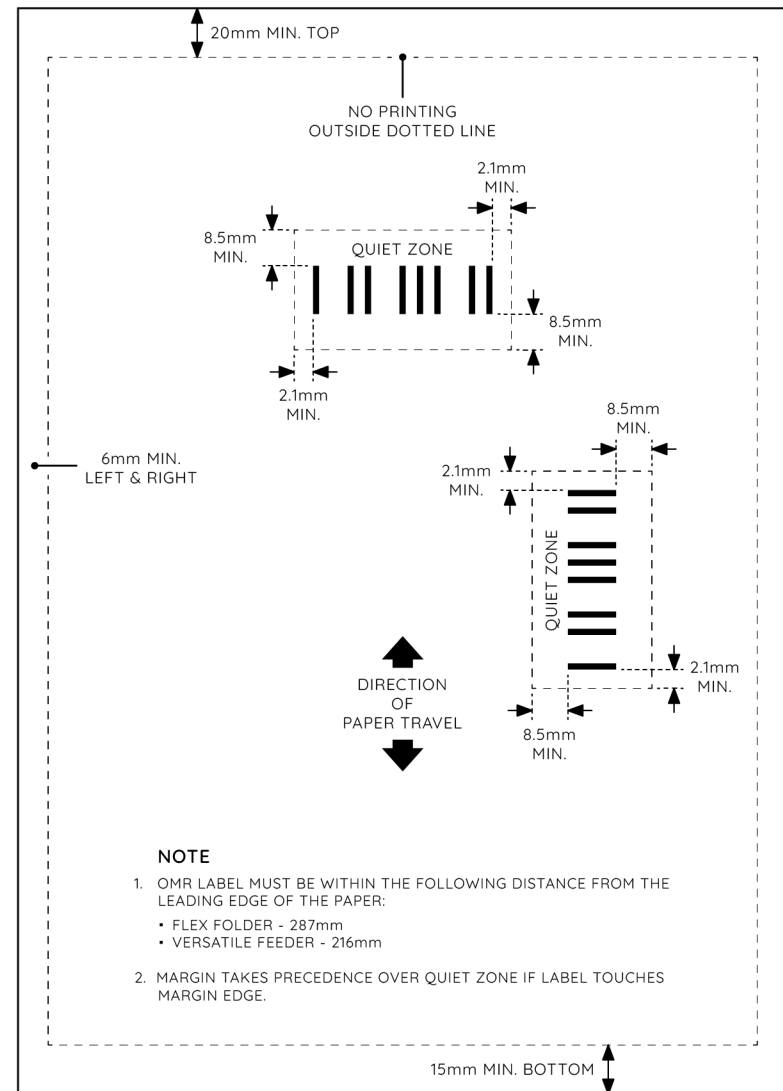


Figure 5.2 - Reading range

QTL-RND-GEN-00000129-A-00

5.2 OMR LABEL PLACEMENT - PORTRAIT ORIENTATION



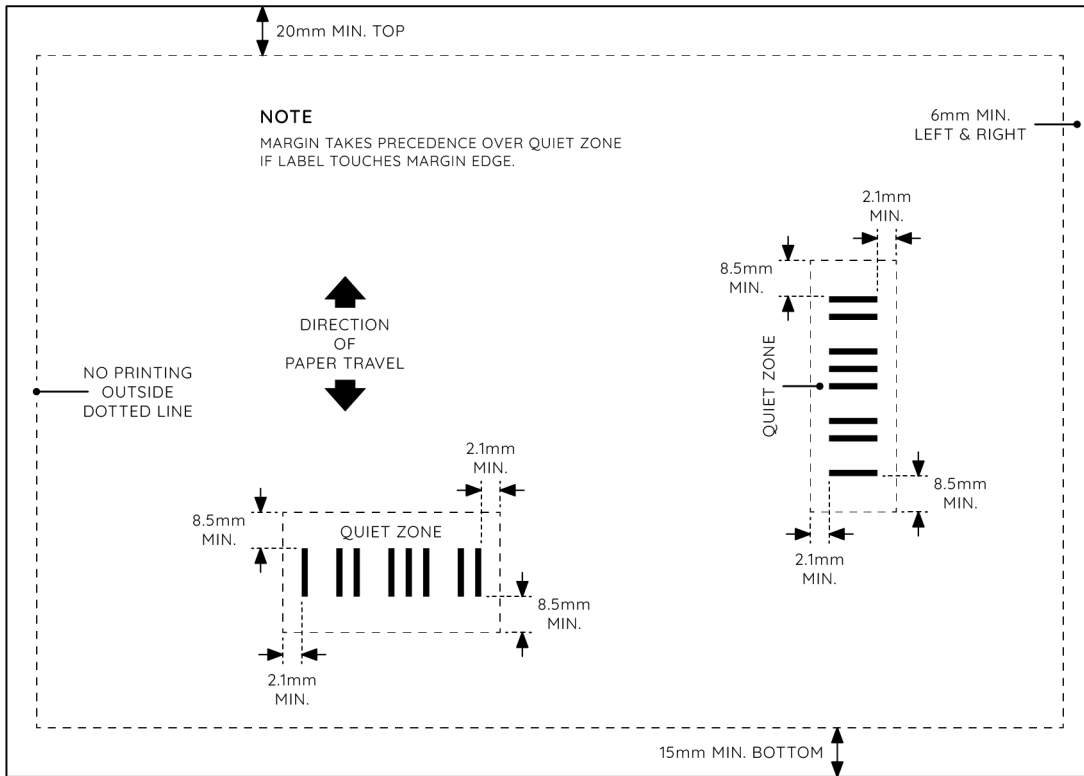
NOTE

1. OMR LABEL MUST BE WITHIN THE FOLLOWING DISTANCE FROM THE LEADING EDGE OF THE PAPER:
 - FLEX FOLDER - 287mm
 - VERSATILE FEEDER - 216mm
2. MARGIN TAKES PRECEDENCE OVER QUIET ZONE IF LABEL TOUCHES MARGIN EDGE.

Figure 5.3 - OMR label placement portrait orientation

QTL-RND-GEN-00000132-A-00

5.3 OMR LABEL PLACEMENT - LANDSCAPE ORIENTATION



QTL-RND-GEN-00000133-A-00

Figure 5.4 - OMR label placement landscape orientation

LICENSING 6

6.1 LICENSING INFORMATION

Licences for the use of label reading must be obtained according to the applicable unit and the label type.

These licenses are obtained using the part numbers shown in Table 6.1.

Part No.	Licence	Machine
9109954K	1 Track OMR - Flex Folder	DS-200i/iQ
9109955L	2 Track OMR - Flex Folder	DS-200i/iQ
9109956M	1D BCR - Flex Folder	DS-200i/iQ
9109957N	2D Datamatrix - Flex Folder	DS-200i/iQ
A0090454	Multi-Read Licence - Flex Folder	DS-200i/iQ
9109958P	1 Track OMR - Versatile Feeder	DS-200i/iQ
9109959Q	2 Track OMR - Versatile Feeder	DS-200i/iQ
9109960R	1D BCR - Versatile Feeder	DS-200i/iQ
9109961S	2D Datamatrix - Versatile Feeder	DS-200i/iQ
A0090455	Multi-read Licence - Versatile Feeder	DS-200i/iQ
A0082212	OMR Licence - Flex Folder (1 & 2 Track)	DS-600i/iQ
A0082213	BCR Licence - Flex Folder	DS-600i/iQ
A0082214	2D Licence - Flex Folder	DS-600i/iQ
A0082211	Multi-read Licence - Flex Folder	DS-600i/iQ
A0082174	OMR Licence - Insert Feeder	DS-600i/iQ
A0082175	BCR Licence - Insert Feeder	DS-600i/iQ
A0082210	2D.Licence - Insert Feeder	DS-600i/iQ
A0082173	Multi-read Licence - Insert Feeder	DS-600i/iQ
9112504R	Flex Licence - Flex Folder only	DS-200i/iQ * DS-600i/iQ *

Table 6.1 - Licences

NOTE:

* Flex Licence is a bespoke licence that allows a customer's existing barcode system to be used, and is purchased in addition to one or more of the Flex Folder barcode licences shown in Table 6.1.

QR codes can be read on the machine if a 1D or 2D unit license is present on the machine.

The barcode licences listed in Table 6.1 cover both Neopost 3 and legacy BCR barcode systems, and for OMR, both Neopost 3 and QTL coding schemes.

Each reading module requires at least one licence.

When a licence has been obtained, its number must be installed in the IMOS operating software.



If an existing unit is upgraded for reading, or further reading units are fitted, additional licences must be obtained.

QUAD ONE 7

7.1 LABEL ON FIRST PAGE ONLY / LABEL ON LAST PAGE ONLY

This is not recommended as a preferred coding method, but in some instances, customers struggle to apply a label to every page. This specification is aimed at best practice and requires a label on every page.

Quad One will support 'First/Last Page Only' labelling (as printed), however, it is only supported on some DS inserters. With label on 'First/Last Page Only' it is recommended it is used along with the total page count (M) to verify the page count.

In the event a customer can only print a label on the first page of a group please ask advice from your local service team on the appropriate machine, reading system and labelling method and codes already supported.

7.2 QUAD ONE CHARACTER FUNCTIONS

Character Function	Purpose	Category	DS-1200 G4i	DS-x00i	DS-180i	Values
Maximum label length for Quad One is 45 characters			✓	✓	✓	
Datalog	Integrity	Basic	✓	✓	✓	32 -max label length: Used for DEP lookup if PID is not defined
Job Number Id	Integrity	Basic	✓	✓	✓	1-25 digits
Mailpiece Id	Integrity	Basic	✓	✓	✓	1-20 digits
Customer Id	Integrity	Basic	✓	✓	✓	1-25 alphanumeric characters
Page Number (N)	Integrity/Grouping	Basic	✓	✓	✓	1-3 digits. Equivalent to N in page N of M
Total Pages (M)	Integrity/Grouping	Basic	✓	✓	✓	1-3 digits. Equivalent to M in page N of M
Sheet Divert	Input control	Basic	✓	✓	✓	1 digit: 0=no divert, 1=divert1, 2=divert2, 3=divert3(FFI), 5=divert1&halt
Select Feed	Input control	Basic	✓	✓	✓	1-4 hexadecimal characters, binary coded to program up to 16 select feeds
Exit	Output control	Basic	✓	✓	✓	1 digit: 0=none, 1=exit1, 2=exit2, 3=exit3, 4=halt, 5=exit1&halt, 6=exit2&halt, 7=exit3&halt
Autoend	Output control	Basic	✓	✓	✓	1 digit: 0=false, 1=true
Output Tag	Output control	Basic	✓	✓	✓	1 digit: 0=none, 1= Ink1/VS Jog, 2=Ink2/Conveyor Control
Sheet Sequence	Integrity	Advanced	✓	✓	✓	n digits
Group Sequence	Integrity	Advanced	✓	✓	✓	1-4 digits
No Seal	Output control	Advanced	✓	✓	✓	1 digit: 0/1 for false/true
Halt	Output control	Advanced	✓	✓	✓	Encoded as bit 4 of Exit Select or Sheet Divert Select
Matching	Integrity	Advanced	✓	✓	✓	1-4 digits (up to 8 digits on some mailers)
Force Fold	Input control	Advanced	✓	✓	✓	1 digit: 0=false, 1=true
Franker	Output control	Advanced	✓	✗	✗	1 digit: 0=false, 1=true
Franker (Dynamic)	Output control	Advanced	✓	✗	✗	2 digits: Franked value
Card Position	Integrity	Advanced	✓	✗	✗	1 alphanumeric character
Document Id	Integrity	Advanced	✓	✓	✗	1-20 alphanumeric characters
Break on Change	Output control	Advanced	✓	✓	✓	n alphanumeric characters
Header Divert	Input control	Advanced	✓	✓	✓	1 digit: 0=false, 1=true
Variable Select Feed	Input control	Advanced	✓	✓	✗	1-8 digits: Each digit contains inserts to be fed from corresponding feeder

Table 7.1 – Quad One Character Functions

7.3 MAIN LABEL CONTENT

The main label content refers to the characters and information coded into the label for the 3 basic levels of control, as follows:

- **Grouping:** Minimum level of label content to separate individual pages into groups within a job run.
- **Mail Piece Identification:** Unique number, referred to as the '**Piece Id**', which identifies the individual group within a job run.
- **Job Number:** Unique file reference, which identifies the job run within the organisation.

Allowable character values

It is recommended to limit the label characters to the following values:

- **Alpha characters:** A – Z (lower case alpha characters can be used but is not recommended as it can lead to confusion).
- **Numeric characters:** 0 – 9
- **Symbol characters:** - . \$ / + % _ (note that the '**space character**' should not be used).

7.4 DATA LOG

Data log characters is required to be defined when using the Dynamic Envelope Printer (DEP) with lookup if the Piece Id is not used.

7.5 JOB NUMBER ID

In most environments mail pieces are processed from a particular print run, which will have a controlling file reference. This file reference is referred to as the '**Job Number Id**'.

Adding the Job Number Id allows the manufacturer to add the following capabilities to the mailing process:

- Many of the DS inserters can detect the job number Id and automatically change the machine configuration to the correct settings linked to the job number.
- AIMS will be able to check to ensure the job being processed has a valid file associated with it.
- AIMS will be able to '**Verify**' the disposition of each mail piece within the job file.
- The label now has sufficient data to operate in '**Verification**' and '**Lookup**' modes (explained later in this specification).

It is recommended to use 10 characters of Job Number Id (in conjunction with AIMS-500 and OMS-500, the standardised versions of the manufacturer's software).

The Job number Id is defined as follows:

- **Job number Id:** 10 consecutive alphanumeric characters.

The job number is usually positioned directly before the Piece Id in the label (recommended).

For consistency across all DS inserters, the Job Number Id should be positioned after grouping and machine control characters.

A typical example of a 2D label containing a Job Number Id, Piece Id and the Grouping characters, NN of MM, is shown in Figure 7.1.



ABC123456701080000000001

Where '**ABC1234567**' is the Job Number added to the example previously used.

QTL-RND-GEN-00000137-A-00

Figure 7.1 – Label containing a Job Number Id, Piece Id, and Grouping characters

NOTE:

- a. The term '**Verification**' refers to what has happened to the individual mail pieces within the '**Job Number**' file.
- b. Including the Job Number Id, Piece Id and Grouping Characters is the minimum requirement for verification.
- c. Using the '**Verification**' mode of machine control of the DS inserters, AIMS will check the number of pages advised in the label matches the number of pages advised in the file.
- d. This type of label can also be used in '**Lookup**', where the machine control functions (including the number of pages in the set) is sent from AIMS, back to the inserter.
- e. The '**Lookup**' mode of machine control of the DS inserters allows additional functions to be used without adding further characters to the label, as these additional functions are referenced by AIMS from the job number file and sent to the DS inserter in real time. This allows additional inserts, output management (such as ink marking, jogging, dynamic franking, address printing, postal sorting, etc.), late diversion, etc. to be achieved without adding any further characters to the label.
- f. Using '**Lookup**' mode without adding additional characters to the label only allows the material to be processed when linked to AIMS. It does not allow for operation under '**Disaster Recovery**' (DR), where DR refers to the condition where the normal network or site Management Information System (MIS) is not available and printed material still has to be processed.
- g. If running Multi-job mode the Job Number and Piece Id fields must not be greater than 45 characters.

7.6 PIECE ID (UNIQUE DOCUMENT IDENTIFIER WITHIN A JOB RUN)

The purpose of the Piece Id is to make the specific document set unique within the job run. In most cases the Piece Id is a decimal number, incrementing from a value of 1.

It is recommended to use 10 characters of Piece Id (in conjunction with AIMS-500 and OMS-500, the standardised versions of the manufacturer's software).

The Piece Id is defined as follows:

- **Piece Id:** 10 consecutive numeric characters creating a decimal value. Usually starting from 1 with values of 0000000001 to 9999999999.

For consistency across all DS inserters, the Piece Id should be positioned after grouping and machine control characters

A typical example of a label containing just the Piece Id and the grouping characters, NN of MM, is shown in Figure 7.2.

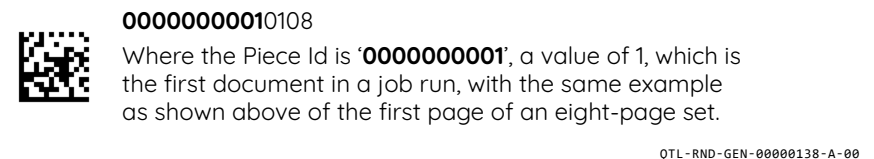


Figure 7.2 - Label containing the Piece Id, and Grouping characters

If a Piece Id is added to the label control, it allows:

- The machine to check that every page of the set belongs to the same document set (i.e. all pages must have the same Piece Id), providing complete document security within the job run.
- AIMS to record exactly what has happened to this individual mail piece within the job run (when it entered the machine, when it was completed and left the machine, any activity that happened while being processed by the machine). This is referred to as '**Audit**'.
- AIMS to apply '**Duplicate Detection**'. This is an important security discipline, preventing duplicate processing and delivery.
- Piece Id can be an existing customers account /invoice/statement number as long as it is unique (it does not have to be sequential).
- Some DS Inserters support cross module matching on Piece Id.

7.7 CUSTOMER ID

A 'Customer Id' usually refers to a unique identifier, similar to the Piece Id, where the value is unique to the organisation, not just the current job.

If a Customer Id is to be used and it is:

- A. Less than or equal to the number of characters recommended for the Piece Id (10).
- B. Is used as the primary key in the job number file.

When no grouping characters are available and Piece Id is required for AIMS, then it is recommended to define the Customer Id and Piece Id as the same characters in the barcode definition. This has two advantages:

1. Reduces the number of characters in the label.
2. Can be used to look up the mail piece in AIMS (using the optional search function) across all jobs, current or historic.

However, if the Customer Id is to be added to the label and is **not** the same as, or used as the Piece Id, and is defined as follows:

- **Customer Id:** Up to 16 consecutive, alphanumeric, characters.

NOTE:

The addition of a large Customer Id character set may increase the label size beyond that recommended by the manufacturer.

For consistency across all DS inserters, the Customer Id should be positioned after the machine control characters.

Some DS Inserters support cross module matching on Customer Id.

A typical example is shown in Figure 7.3 using the same sample label as previously used.



05311ABCDEF01234567890108

Where 'ABCDEF0123456789' is the Customer Id for the document.

QTL-RND-GEN-00000139-A-00

Figure 7.3 - Label containing the Customer Id

NOTE:

In this example, all the 'Other machine control' characters have been removed to reduce the label length.

If Job Id and Mailpiece Id are not used then it is recommended the Customer Id along with Page N/M grouping should be used for integrity, since the Customer Id part will ensure the mail sets of different recipients are not inserted in one envelope.

Although not recommended, a single Customer Id can be used as a grouping command (this function is not supported by all DS inserters and might have limitations in selective enclosures).

7.8 N OF M FOR GROUPING (MINIMUM LABEL REQUIREMENT)

The minimum level of machine control is to group pages into document sets. Although there are other grouping methods used in the industry none of them provide the minimum security, advised for best practice in this specification, of N (Page number within a group) of M (Total Pages in group)

'N of M' is the recommended grouping technique advised by the manufacturer, where:

- **N:** Is the decimal page number within the group. Normally incrementing from a value of 1 (values can therefore be 1 to 9).
- **M:** Is the decimal number of pages in the set (values can therefore be 1 to 9).

It is recommended to use 2 characters for each function.

Users with a requirement for page counts greater than 99 pages can code the grouping characters to NNN of MMM (decimal values of 001 to 999).

Users who are certain they will never need a page count greater than 9 can code the grouping characters to N of M (decimal values of 1 to 9).

A typical label containing only the Grouping characters is shown in Figure 7.4.



0108

Where 'NN' is '01' and 'MM' is '08'.
This represents page 1 of an 8-page set.

QTL-RND-GEN-00000140-A-00

Figure 7.4 - Label containing the Grouping characters

NOTE:

When only using NN of MM in the label control, the only form of data capture will be basic 'Statistics'. There is no information available about individual mail pieces as there is no unique identifier for the document.

In cases where 'Label on First Page' or 'Label on Last Page' is used, the M value will verify the page count.

7.9 SHEET DIVERT (BEFORE FOLD) CHARACTER

DS inserters can divert (before fold), up to 3 different divert destinations, including diversion on DS-1200 models to a Full Format (flats)insertion unit.

The 3 different divert destinations are controlled by a single character.

In addition, for DS-180i products there is Sheet Divert with a Halt which is covered with the numeric values 5 to 7.

Table 7.2 shows the Sheet Divert characters.

Single character numeric value	Sheet Divert
0	No Divert or Halt (Default)
1	Sheet Divert 1
2	Sheet Divert 2
3	Sheet Divert 3 (FFPD)
4	Halt
5	Sheet Divert 1 / Halt
6	Sheet Divert 2 / Halt
7	Sheet Divert 3 / Halt

Table 7.2 - Sheet Divert characters

A typical label containing the Sheet Divert character is shown in Figure 7.5.



01080ABC123456700000000001

Where '0' is the Sheet Divert character, in this case not selected.

QTL-RND-GEN-00000141-A-00

Figure 7.5 - Label containing the Sheet Divert character

7.10 SELECTIVE FEED (CONDENSED) CHARACTERS

In the range of DS inserters, it is possible to select up to 15 additional inserts. If we used individual characters for each of these inserts the label would increase too much in size. Subsequently, we use 'condensed' characters.

Condensed characters are one where:

- A. A single character from the label is converted, by the software, from an alphanumeric character into a number of binary 'bits'.

Character value	Number of BITS	Common name
0 to 9 and A to F**	4	Base 16 or HEX

- C. Each binary 'bit' is used to control a single insert feeder.
 D. A binary value of 1 means the feeder is selected, 0 is unselected.

For this specification we will be using Base 16 (HEX) for the condensed characters, so that each character can control 4 selective feeders (1 feeder per bit).

As there are, potentially, up to 15 selectable feeders we can use up to 4 characters for selective feeding, where:

- Selective Feed character 1 controls feeders 1 to 4
- Selective Feed character 2 controls feeders 5 to 8
- Selective Feed character 3 controls feeders 9 to 12
- Selective Feed character 4 controls feeders 13 to 15.

The alphanumeric to binary conversion for a single condensed character is shown in Table 7.3.

Single character Alphanumeric value	BIT 3	BIT 2	BIT 1	BIT 0
	Item 4 (or 8, or 12, etc.)	Item 3 (or 7, or 11, etc.)	Item 2 (or 6, or 10, etc.)	Item 1 (or 5, or 9, etc.)
0	0	0	0	0
1	0	0	0	1
2	0	0	1	0
3	0	0	1	1
4	0	1	0	0
5	0	1	0	1
6	0	1	1	0
7	0	1	1	1
8	1	0	0	0
9	1	0	0	1
A	1	0	1	0
B	1	0	1	1
C	1	1	0	0
D	1	1	0	1
E	1	1	1	0
F	1	1	1	1

Table 7.3 - Alphanumeric to binary conversion

When Selective Feed characters are to be added to the label they are defined as follows:

- **Selective Feed:** Up to 4 consecutive alphanumeric characters, where each character controls 4 feeders. Each character has a value of 0 to 9 or A to F resulting in the above selective feed control.

For consistency with all DS Inserters, these characters should be positioned after the sheet diversion character.

NOTE:

For Neopost 3 users, only 2 HEX Selective Feed characters can be used.

A typical example (same as used above) of a label containing 2 Selective Feed characters, controlling 8 feeders, is shown in Figure 7.6.

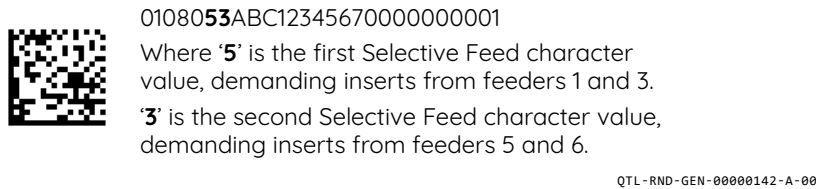


Figure 7.6 - Label containing 2 Selective Feed characters

7.11 EXIT SELECTION (ENVELOPE)

DS inserters can divert at the exit (after fold), there are up to 3 different divert destinations.

The 3 different divert destinations are controlled by a single character.

In addition, for DS-180i products there is Exit selection with a Halt which is covered with the numeric values 5 to 7.

Table 7.4 shows the Exit Selection characters.

Single character numeric value	Exit Selection
0	No Exit
1	Exit 1
2	Exit 2
3	Exit 3
4	No Exit / Halt
5	Exit 1 / Halt
6	Exit 2 / Halt
7	Exit 3 / Halt

Table 7.4 - Exit Selection characters

A typical example (same as used above) of a label containing an Exit Selection output divert character is shown in Figure 7.7.

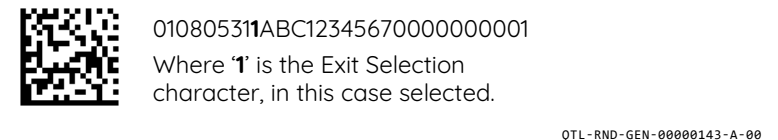


Figure 7.7 - Label containing an Exit Selection output divert character

7.12 AUTOEND

'Autoend' is a command that finished processing of the current job run. This function has several purposes as follows:

- A. Stops any further prime documents entering the machine.
- B. Clears all remaining documents out of the machine. This includes emptying any feeders of inserts and carrier envelopes.
- C. Prepares the machine for a job change.
- D. Completes the data exchange between the inserter and AIMS.
- E. Closes any network connections.

When the Autoend character is included in the label it is defined as follows:

- **Autoend:** Single numeric character, having a value of 0, not selected, or 1, selected.

A typical example (same as used above) of a label containing the Autoend character is shown in Figure 7.8.



010805311ABC123456700000000010

Where '0' is the Autoend character,
in this case not selected.

QTL-RND-GEN-00000144-A-00

Figure 7.8 – Label containing the Autoend character

7.13 SHEET SEQUENCE

Sheet Sequence is used to ensure that forms are processed through the inserter in the same order that they were printed, and that there are no missing forms. This is achieved by coding each form as it is printed with the numeric character incrementing from 1 to 999 (can start a 0 or 1).

After 999, the sequence restarts at 1 (or 0).

It is always recommended to have a type of Group/Form Sequence in the label. However, this does not have to be in a form of additional characters in the label (see section 7.14 Group Sequence for further information).

If every document is controlled by full security within a job, specifically, Piece Id/Group Sequence and N of M, then there is no need from the manufacturer's point of view to process the materials with sheet sequence.

- **Sheet Sequence:** Up to 3 consecutive numeric characters forming a decimal number. The group sequence should start at 001 and increment to 999 then roll over to 001.

7.14 GROUP SEQUENCE

Some organisations like to ensure that the work being processed is run in the same sequence as the original print file or data file.

It is always recommended to have a type of Group/Form Sequence in the label. However, this does not have to be in a form of additional characters in the label

There are two ways to handle Group sequence as follows:

- A. Piece Id is incrementing or decrementing:
If the Piece Id is incrementing or decrementing, then a portion of the Piece Id can be used as the group sequence and there is no need to add additional group sequence characters.
Some DS inserters are limited to 4 characters of Group Sequence, so it is recommended to only use the least significant 4 characters of the Piece Id when running in sequence.
- B. Additional Group Sequence characters:
If the Piece Id is not in sequence, then up to 4 additional characters of Group Sequence can be added (3 characters for Neopost 3 users).

When Group Sequence characters are to be added to the label they are defined as follows:

- **Group Sequence:** Up to 4 consecutive numeric characters forming a decimal number. The Group Sequence should start at 0001 and increment to 9999 then roll over to 0001, if more than 10K documents are to be processed in the job run.

For consistency with all DS Inserters the Group Sequence characters should be positioned after the grouping characters, NofM.

A typical example of a label using 3 Group Sequence characters is shown in Figure 7.9.



0108**001**ABC12345670000000001

Where '001' is the Group Sequence number added to the example previously used.

QTL-RND-GEN-00000145-A-00

Figure 7.9 - Label containing 3 Group Sequence characters

NOTE:

The Group Sequence numbers will not be shown in later examples as they are not recommended by the manufacturer.

7.15 NO SEAL

The No Seal function is used where subsequent inspection of the mail piece or hand insertion may be required.

When a No Seal character is to be added to the label it is defined as follows:

- **No Seal:** A single numeric character with a value of 0 for Seal and 1 for No Seal.

A typical example (same as used above) of a label containing a No Seal character is shown in Figure 7.10.



0108053**1**ABC12345670000000001

Where '1' is the No Seal character, in this case selected.

QTL-RND-GEN-00000146-A-00

Figure 7.10 - Label containing a No Seal character

7.16 HALT

The Stop or Halt function stops the cycling of the machine so that the operator can check the current document in process.

The Stop/Halt function is activated by the numeric values shown in Table 7.2 in section [7.9 Sheet Divert \(Before Fold\) Character](#), and also in Table 7.4 in section [7.11 Exit Selection \(Envelope\)](#).

7.17 MATCHING

Matching is used when the inserts being combined with the prime document are personalised (details relating to the customer printed on both documents).

When matching is required it is recommended to use the 8 least significant characters of the Piece Id. This is both to save space in the label and for consistency with tracking document information.

Using our sample label, the machine can be programmed to use the characters shown in bold as follows:

- 010805311ABC12345670000000**0001**00110

If the customer wants to use separate characters, then it is possible to add up to 8 additional characters in the label for matching. Bear in mind that the same matching characters must appear in the label of the matching insert.

When Match characters are included in the label they are defined as follows:

- Match: Up to 8, consecutive, numeric characters, used as a decimal number. The match characters can have values of 00000001 to 99999999

The position of the Match characters in the label is not important. A typical example (same as used above) is shown in Figure 7.11.



010805311ABC1234567000000000100110**1234**
Where '1234' is the Match character value.

QTL-RND-GEN-00000147-A-00

Figure 7.11 – Label containing the Match characters

NOTE:

Eight character matching is not available on all DS Inserters.

Cross-module matching: Match fields are truncated silently by the firmware, user to be made aware of implications.

7.18 FORCED FOLD

The Forced Fold function is used to separate the folded sub groups within a group by demand rather than by page count.

When the Forced Fold function is included in the label it is defined as follows:

- Forced fold:** Single numeric character with a value of 0, not selected, or 1, selected.

When the Forced Fold mark is selected the machine stops accumulating pages for the sub group and sends them to the folder. Page sequences are not reset.

The position of the Forced Fold character in the label is not important. A typical example (same as used above) is shown in Figure 7.12.



010805311ABC123456700000000010011A575342**0**
Where '0' is the Forced Fold character, in this case not selected.

QTL-RND-GEN-00000148-A-00

Figure 7.12 – Label containing the Forced Fold character

7.19 DOCUMENT ID

The Document Id function compares a string of characters pre-printed on the base material against a pre-defined string. The pre-defined string can be:

- Manually programmed into the job.
- Contained in a separate Doc Id label (printed on the document at the same time as the main label and other customer specific print data).
- Contained in the main label.

When the Document Id is included in the label it is defined as follows:

- Document Id:** Up to 20 consecutive, alphanumeric, characters.

NOTE:

When applied to the prime document it is important to minimise the length of the Document Id to prevent too many characters in the label.

The position of the Document Id characters in the label is not important. A typical example (same as used above) is shown in Figure 7.13 with just 2 Document Id characters.



010805311ABC12345670000000010011012341**A5**

Where '**A5**' is the Document Id.

QTL-RND-GEN-00000152-A-00

Figure 7.13 - Label containing the Document Id

There are 3 techniques of using the Document Id function as follows:

- Compare Document Id to a manually programmed string
- Compare Document Id to a Document Id label
- Compare Document Id with characters in a label.

7.19.1 COMPARE DOCUMENT ID TO A MANUALLY PROGRAMMED STRING

With this technique the only information on the document is a pre-printed Doc Id. The pre-defined data is manually programmed into the job parameters for the individual reading feeder station.

In the example shown in Figure 7.14 the Doc Id is a 2D barcode. However, this could be an OCR string, or even an image that generates the same string, returned to the inserter.



Doc Id '**A5**' pre-printed on base material and read from document.

Pre-defined Doc Id '**A5**' programmed in Job.

QTL-RND-GEN-00000153-A-00

Figure 7.14 - Compare Document Id to a manually programmed string

7.19.2 COMPARE DOCUMENT ID TO A DOCUMENT ID LABEL

With this technique the comparison is between a pre-printed Doc Id and a Doc Id label printed at the same time as the main label or other customer specific data as shown in Figure 7.15.

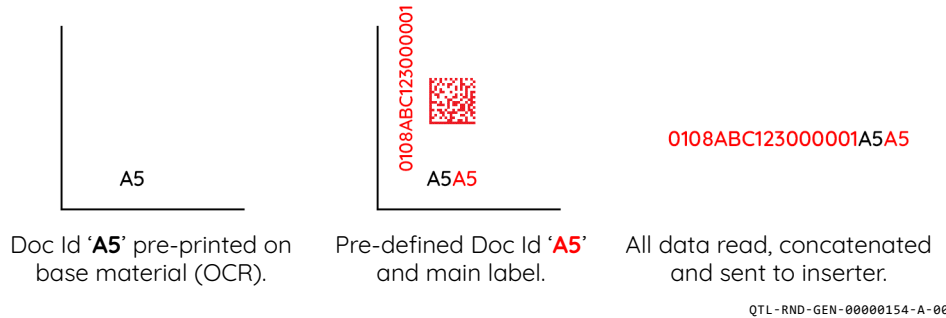


Figure 7.15 - Compare Document Id to a Document Id label

The comparison here is between 'A5' and 'A5' (true).

In this example the IMOS setup is as follows:

- Number of characters in label: 20
- Doc Id start: 17
- Doc Id length: 4
- Doc Id: ????

Where '????' defines the method of Doc Id comparison and total number of characters to be compared.

7.19.3 COMPARE DOCUMENT ID WITH CHARACTERS IN A LABEL

With this technique the comparison is between a pre-printed Doc Id and Doc Id characters contained in the main label as shown in Figure 7.16.

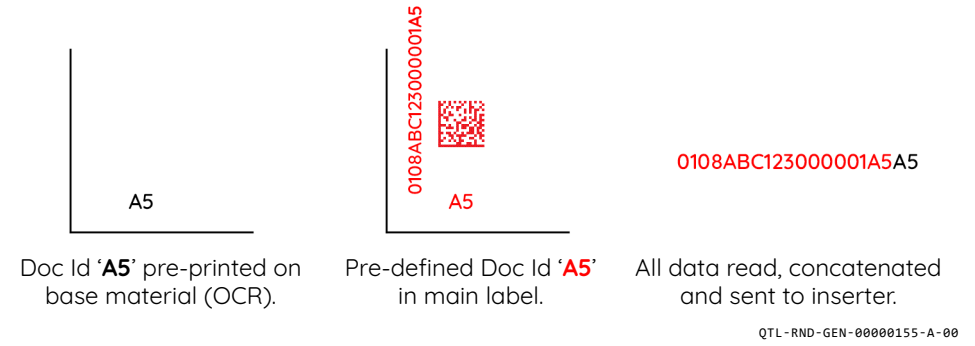


Figure 7.16 - Compare Document Id to Document Id characters in a label

The comparison here is between 'A5' and 'A5' (true).

In this example the IMOS setup is as follows:

- Number of characters in label: 20
- Doc Id start: 17
- Doc Id length: 4
- Doc Id: #####

Where '#####' defines the method of Doc Id comparison and total number of characters to be compared.

7.20 BREAK ON CHANGE

This function uses multiple characters within the barcode label to set a **'Break'** event on a change of the defined string (portion of the label).

The break event can be used to control a machine function within the configuration of the job. Possible break functions are as follows:

- Nothing
- Autoend
- Halt
- Unseal

NOTE:

The Break function looks for a change in a defined string within the label. Therefore, the event will happen on the group after the change (or immediately for Autoend).

A typical example of the use of the Break function is to command a **'Jog'** from a change in the ZIP code. So, using our sample label we can define the break function characters as being the same as the ZIP code.

- 010805311ABC12345670000000010011A5**75342**

When the ZIP code changes the document showing the new ZIP code will be jogged to show the change of postal region.

NOTE:

There are no additional characters added to the label for **'Break'**. The function simply used characters already available in the label.

7.21 HEADER DIVERT

This function allows for a job run to be separated into batches.

The Header Sheet Divert function not only diverts the header sheet but also resets all sequences, restarting at the value on the next form after the header sheet.

When the Header Sheet Divert function is included in the label it is defined as follows:

- **Header Sheet Divert:** Single numeric character with a value of 0, do not divert, or 1, divert.

NOTE:

In all cases the header sheet is diverted to sheet divert 1. Header sheets can be coded with other machine control (e.g. Autoend) if required.

The position of the Header Sheet Divert character is not important. A typical example (same as used above) is shown in Figure 7.17.



010805311ABC12345670000000010011A575342**0**

Where **'0'** is the Header Sheet Divert value, in this case not selected.

QTL-RND-GEN-00000156-A-00

Figure 7.17 - Label containing the Header Sheet Divert character

7.22 VARIABLE SELECT FEED

This feature allows a customer to, not only, command a selective feeder to feed but also to command the number of inserts fed from the selected station (Variable Selects).

Typical uses of this feature are:

- Vouchers
- Coupons
- Tickets.

Where the number of items from a selected feeder may be customer dependent.

When Variable Selects are included in the label they are defined as follows:

- **Variable Selects:** Up to 8 consecutive numeric characters, each with a value of 0 (not selected) to 9, where the non-zero value is the number of inserts to be fed from that particular feed station.

NOTE:

The number of characters used must match the number of Variable Select Feed stations in the machine configuration.

The position of the Variable Select characters in the label is not important. A typical example (same as used above) is shown in Figure 7.18.



010805311ABC123456700000000010011A57534200**130**

Where, '**130**' is the 3, Variable Select, characters determining how many of each of 3 different inserts are required.

Here, insert 1 requires 1 document of its type, insert 2 requires 3 documents of its type and insert 3 requires 0 documents of its type, (i.e. is not selected).

QTL-RND-GEN-00000157-A-00

Figure 7.18 - Label containing the Variable Select characters

When programming the inserter the Variable Select feeders are in order of the barcode label, the first selective feed character applying to the feed station nearest to the inserter.

QTL CODING 8

8.1 QTL CODING INTRODUCTION

BCS is the barcode symbology previously used by QTL, and is fully supported.

The standard Barcode System used is Code 39 (3 of 9). Table 8.1 shows the allowable coding for Code 39.

	Characters / Symbols	Number of Symbols
Upper-case letters	A to Z	26
Numbers	0 to 9	10
Space character		1
Symbols	- . \$ / + %	6

Table 8.1 - Allowable coding for Code 39

The functions which the machine's Code System supports are:

- Grouping of multipage documents
- Selective feeding from all the feed stations (excluding the prime document station)
- Divert units (form divert and envelope diverts)
- Form security
- Group security
- Matching (within a document set)
- Data logging of customer's document identifier.

The barcode is composed of a variable number of characters to cater for the required functions above.

The minimum number of characters required will be two characters, which is the smallest size of barcode that code 39 accepts.

The barcode may contain additional characters as required by the customer for customer specific functions. Additionally, the barcode requires a stop and a start character to be printed (*).

The maximum number of barcode characters depends on the label details, up to a theoretical maximum of 25 excluding the stop and start characters.

8.2 QTL ENCODING TERMINOLOGY

The complete barcode as printed on the form is referred to as the **BAR CODE LABEL**.

Within the barcode label there are a number of coded characters; these will be referred to as **BAR CODE CHARACTERS**, and are numbered from the start of the barcode label to the end of the barcode label.

Within the barcode label there are a number of coded characters which have defined functions within the Barcode System; these will be referred to as **BCS CHARACTER #1**, **BCS CHARACTER #2** etc.

NOTE:

They can be in any position within the label and need not follow sequentially.

Finally, during the programming of the machine, the position of each **BCS CHARACTER** within the **BAR CODE LABEL** will need to be specified by start and length.

BAR CODE LABEL CHECKSUM CHARACTER may be printed if it is required by the customer. It will not be used by the machine, but is treated as part of the customer code.

**8.3 BCS CHARACTER DEFINITION
GROUPING OF MULTI-PAGE DOCUMENTS (CONTROL CHARACTER)**

BCS CHARACTER #1

This character is used for grouping document sets from one feed unit together.

NOTE:

Documents must be printed as First of Group if using a Versatile Feeder for reading.

= A	Demand Feed	Continues feeding forms
= B	End of Group or First of Group	Depends upon setting in Barcode setup, whether EOG or FOG. If set to EOG, stops feeding forms, as this form is the last form of the group to be fed, and requires insertion into the same envelope. Group is then folded and ejected. If set to FOG, when character is read, forms up to that point are folded, as this is the first document of the next set. See also section 8.4 BCS Character Definition Label on First Page Only for further information.
= C	End of Job	Stops feeding forms into the accumulator, as this form is the last form of the group which requires insertion into the same envelope, and additionally the machine goes into its Auto-end mode as this set of forms is the last of the job. This should be printed on the first page of the job run if running face down FOG, or on the last page if running face up EOG.
= D	Force Fold	This mark is used with multi-page documents, when it is required to break the document group into specific sets, earlier than the maximum fold limit which has been set. The action of force fold is shown in Figure 8.1.
= E to Y		Defined number of pages to be inserted into the envelope with no further barcodes printed on the continuation pages.

Table 8.2 - BCS CHARACTER #1

Figure 8.1 shows the action of force fold.

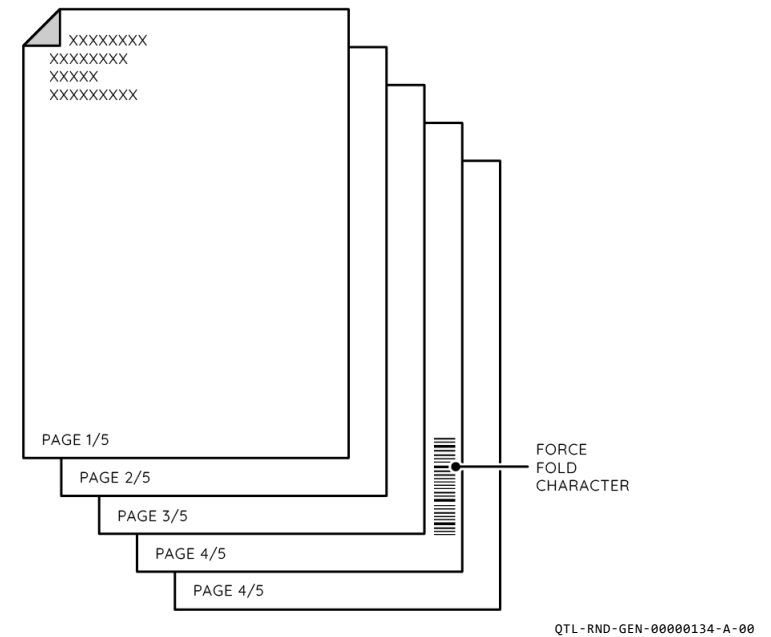


Figure 8.1 - Action of force fold

NOTE:

When the force fold character is read, pages 4 and 5 will be folded if running face down, pages 1 to 4 if running face up.

The barcode on the first page to be read defines the total number of pages to be inserted into the envelope.

The character definitions are as follows:

- BCS character value 'E' equals a group of 1
- BCS character value 'F' equals a group of 2
- BCS character value 'G' equals a group of 3
- BCS character value 'H' equals a group of 4 etc. to
- BCS character value 'Y' equals a group of 21.
- BCS character value 'Z' indicates that the document set is greater than 21.

NOTE:

If the first form of the next set does not have a barcode, this is treated as a bad read.

If a form within the set does have a barcode, this is treated as a form-sequence error.

Because the page count is known in advance, 'too many forms' groups can be diverted singly, preserving the page sequence.

There is an alternative selectable option, in which the page with the defining barcode label is not the first page to be read, but the last page of the document set.

8.4 BCS CHARACTER DEFINITION LABEL ON FIRST PAGE ONLY

Documents may also be grouped using the 'Label on First Page Only' or 'Label on Last Page Only' options in the software.

This function allows the group character to be printed only on the first page of the group, or last page of the group, thus avoiding printed labels on subsequent pages in the group.

The grouping character should be 'E' to 'Z' dependant on the number of pages in the group.

8.5 SELECTIVE FEEDING - ITEMS 1 TO 4

BCS CHARACTER #2

This character is used to control selective feeding of Items 1 to 4 in every combination. Must be printed in every label in the group.

NOTE:

There is a maximum of four characters used for Select Feeding. These should be consecutive characters.

Items	1	2	3	4
= A	--- No Feed ---			
= B	✓			
= C		✓		
= D	✓	✓		
= E			✓	
= F	✓		✓	
= G		✓	✓	
= H	✓	✓	✓	
= I				✓
= J	✓			✓
= K		✓		✓
= L	✓	✓		✓
= M			✓	✓
= N	✓		✓	✓
= O		✓	✓	✓
= P	✓	✓	✓	✓

Table 8.3 - BCS CHARACTER #2

8.6 SELECTIVE FEEDING - ITEMS 5 TO 8

BCS CHARACTER #3

This character is used to control selective feeding of Items 5 to 8 in every combination.

Items	5	6	7	8
= A	--- No Feed ---			
= B	✓			
= C		✓		
= D	✓	✓		
= E			✓	
= F	✓		✓	
= G		✓	✓	
= H	✓	✓	✓	
= I				✓
= J	✓			✓
= K		✓		✓
= L	✓	✓		✓
= M			✓	✓
= N	✓		✓	✓
= O		✓	✓	✓
= P	✓	✓	✓	✓

Table 8.4 - BCS CHARACTER #3

8.7 SELECTIVE FEEDING - ITEMS 9 TO 10

BCS CHARACTER #4

This character is used to control selective feeding of Items 9 to 10 in every combination.

Items	9	10
= A	--- No Feed ---	
= B	✓	
= C		✓
= D	✓	✓

Table 8.5 - BCS CHARACTER #4

8.8 DIVERT UNITS (FORM DIVERT AND ENVELOPE DIVERTS)

BCS CHARACTER #6

This character is used to control the destination of both unfolded forms into the forms divert facility and also the destination of filled envelopes into the envelope divert facility (where applicable).

The forms divert facility is the divert tray on the accumulator. Forms can be diverted into the tray without the need to stop the machine, or it can be set to stop to allow removal.

The envelope divert facility uses the Output Sorter.

= A	No diverts
= B	Form Divert
= E	Pulse Conveyor
= F	No Env Seal
= G	Do not divert
= H	Select Exit 1
= I	Select Exit 2
= J	Select Exit 3
= L	Select Exit 1 + Pulse Conveyor
= M	Select Exit 2 + Pulse Conveyor
= N	Select Exit 3 + Pulse Conveyor
= Q	No Env Seal
= R	No Env Seal + Select Exit 1 (see note)
= S	No Env Seal + Select Exit 2 (see note)
= T	No Env Seal + Select Exit 3 (see note)
= U	No Env Seal
= V	No Env Seal + Select Exit 1 + Pulse Conveyor (see note)
= W	No Env Seal + Select Exit 2 + Pulse Conveyor (see note)
= X	No Env Seal + Select Exit 3 + Pulse Conveyor (see note)
= Y	No Env Seal
= Z	No Env Seal

Table 8.6 - BCS CHARACTER #6

NOTE:

Due to loose envelope flap, 'No Env Seal' is subject to testing when using an Output Sorter.

Pulse Conveyor

When this character is set to any letter using Pulse Conveyor, it will cause the conveyor to move n number of steps as programmed in the job (the duration of each step will depend upon the speed setting of the conveyor) and then pause for 4 seconds before running resumes.

No Envelope Seal

When this character is set to any letter using 'No Env Seal' on the prime document will program the wetter inhibit function.

8.9 FORM SECURITY / FORM SEQUENCE WITHIN A JOB

BCS CHARACTER #7

This facility is used to ensure that forms are processed through the inserter in the same order that they were printed, and that there are no missing forms.

This is achieved by coding each form as it is printed with the alphabetic characters A,B,C through to Z. After the Z is printed the sequence restarts at A again.

NOTE:

The coding sequence continues A through to Z, regardless of changes of customer.

When the forms are read by the barcode reader any change from the correct order is detected and an alarm is produced.

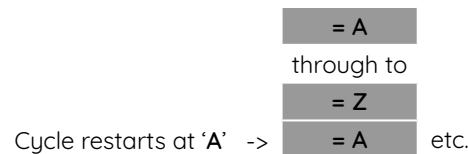


Table 8.7 - BCS CHARACTER #7

8.10 GROUP SECURITY / FORM SEQUENCE WITHIN A GROUP (1)
END OF GROUP IDENTIFIER - PAGE 1
PAGE SEQUENCE - REVERSE

BCS CHARACTER #8

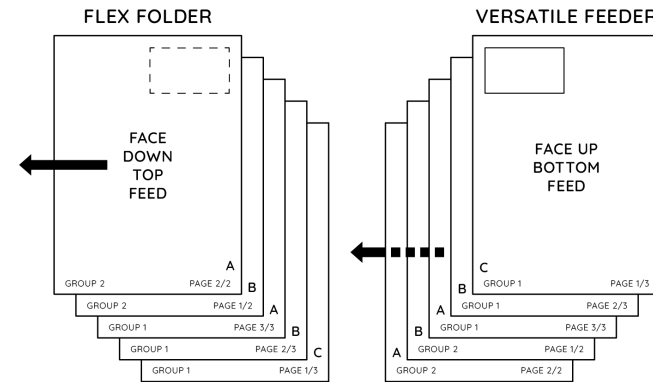
This facility is used to ensure that forms are processed through the inserter in the correct sequence, and that there are no missing forms.

This is achieved by coding each form of a group as it is printed with the alphabetic characters A,B,C through to Z. If the batch of forms in a group exceeds 26 pages, after the Z is printed the sequence restarts at A again.

When the forms are read by the barcode reader any change from the correct order is detected and an alarm is produced.

NOTE:

Forms are loaded and fed differently on a Flex Folder and Versatile Feeder, as shown in Figure 8.2.



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Figure 8.2 - Loading and feeding of Flex Folder and Versatile Feeder

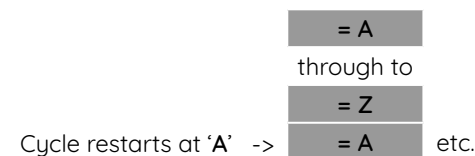


Table 8.8 - BCS CHARACTER #8

**8.11 GROUP SECURITY / FORM SEQUENCE WITHIN A GROUP (2)
FIRST OF GROUP IDENTIFIER - LAST PAGE
PAGE SEQUENCE - FORWARD**

BCS CHARACTER #8

This facility is used to ensure that forms are processed through the inserter in the correct sequence, and that there are no missing forms.

This is achieved by coding each form of a group as it is printed with the alphabetic characters A,B,C through to Z. If the batch of forms in a group exceeds 26 pages, after the Z is printed the sequence restarts at A again.

When the forms are read by the barcode reader any change from the correct order is detected and an alarm is produced.

NOTE:

Forms are loaded and fed differently on a Flex Folder and Versatile Feeder, as shown in Figure 8.2.

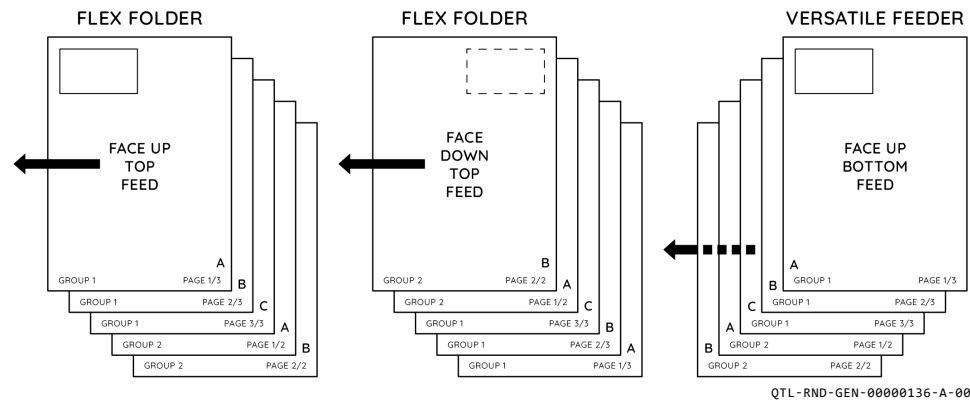


Figure 8.3 - Loading and feeding of Flex Folder and Versatile Feeder

= A
through to
= Z
= A etc.

Table 8.9 - BCS CHARACTER #8

8.12 MATCHING

BCS CHARACTER #9

This facility is used to ensure that each envelope is only filled with personalised items addressed to one recipient. Hence, if there are pages (single or grouped) being fed from more than one feed station each of these pages should have the same match code character.

The match codes that can be used are the characters A to Z. The characters do not need to be used in any particular sequence, as the machine will simply look at each page destined for one envelope, and ensure that all the coded pages carry the same Match code character.

In the event that there is a mismatch between the forms an alarm is produced.

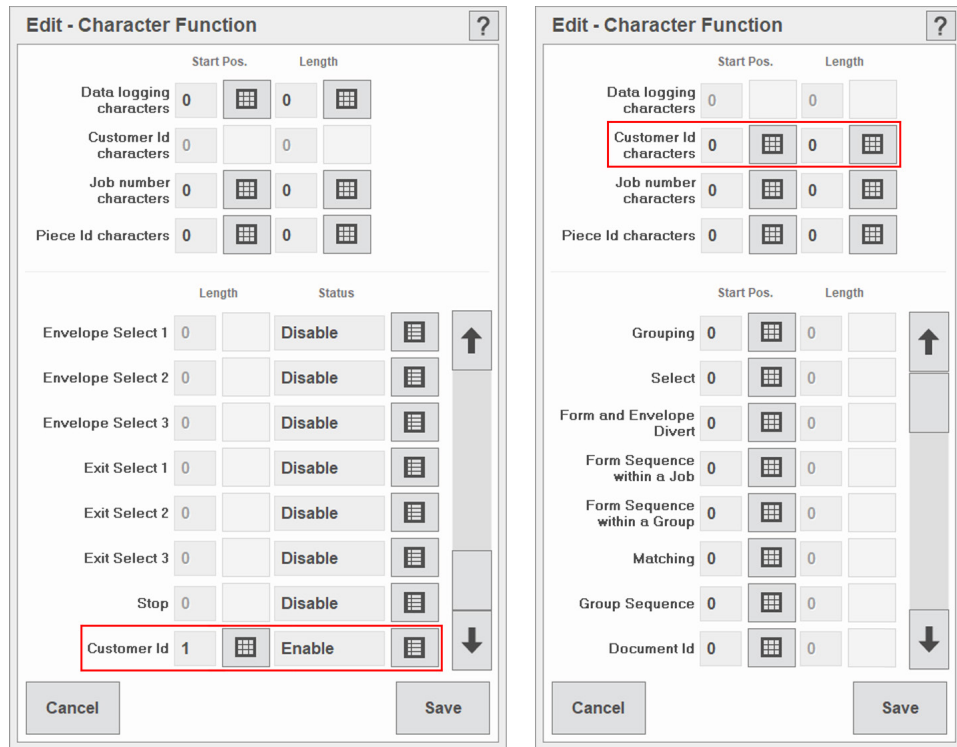
It is recommended to locate the matched station as close to the prime station as possible.

Matching on folder module with multiple hoppers (Main + Enclosure document integrity match)

- Documents to be matched and fed from additional hoppers **must** have the same barcode definition and position as printed on the prime document.
- The Match document must be set to Feed Always if running face-down. any grouping character will be read and acted on.
- The matched document can be selectively fed if running face-up.
- Matching is possible with FoG (as printed) on Flex folder with face-down reading, or EoG (as printed) on Flex Folder with face-up reading.
- Matching using QTL codification **only** (A to Z random; **one** Character).
- Possible to match using Customer Id/Piece Id characters (Both QTL and Neopost 3 coding).

Matching on folder module from same hopper (Main document integrity match):

- **Example 1:** Neopost 3 with Customer Id enabled
- **Example 2:** QTL Grouping plus Customer Id enabled



QTL - RND - SCR - 0000221 - A - 00

Figure 8.4 – Matching on Folder module from same hopper

Matching on single Versafeeder hopper (Main document integrity match)

- **Example 1:** Neopost 3 with Customer Id enabled
- **Example 2:** QTL Grouping plus Customer Id enabled

Matching on Folder module plus multiple reading Versafeeders (across modules) (Main + Enclosure document integrity match):

- Documents must be printed as First of group when using a Versafeeder. This is absolutely necessary for multiple page sets.
- The barcode may be different to the prime document if being fed from a Versatile Feeder.
- When matching documents from different modules the QTL match coding must be used. Neopost 3 code is not supported for matching.
- Barcode may be matched with OMR where A=0 to Z=25 using the marks as defined in Table 8.10.
- Possible to match using Customer Id characters (both QTL and Neopost 3 coding).

	Equivalent Numeric Values												
Mark No.	0	1	2	3	4	5	6	7	8	9	10	11	12
Match Mark 1		---		---		---		---		---		---	
Match Mark 2			---	---			---	---			---	---	
Match Mark 3					---	---	---	---					---
Match Mark 4									---	---	---	---	---
Match Mark 5													

Mark No.	13	14	15	16	17	18	19	20	21	22	23	24	25
Match Mark 1	---		---		---		---		---		---		---
Match Mark 2		---	---			---	---			---	---		
Match Mark 3	---	---	---					---	---	---	---		
Match Mark 4	---	---	---										
Match Mark 5					---	---	---	---	---	---	---	---	---

Table 8.10 – Defined Marks

8.13 VARIABLE GROUP SIZE

BCS CHARACTER #10

Variable Group Size allows the selection of variable numbers of forms from multiple feed hoppers to form the group.

11 new character types have been introduced:

- **Item Id n feed count** (where n = 2 to 12)

NOTE:

Each character refers to a document by its Item Id.

For each character definition, the feed quantity can range from 0 to maximum 25.

ADDITIONAL NOTES:

- The character value will remain the same for every label within a group.
- The character length will be 1.
- The '**label machine control**' will be BCS Control.
- The document can be placed on any reading hopper.

8.13.1 CHARACTER MEANING

Table 8.11 shows the following:

- Valid character value in the label range from 'A' through to 'Z'.
- Feed quantity up to a maximum of 25 documents.
- The character 'A' means that no select feed is required.
- The character 'F' means that 5 documents need to be selectively fed.

Character Value	Feed Count
A	0
B	1
C	2
D	3
E	4
F	5
G	6
H	7
I	8
J	9
K	10
L	11
M	12
N	13
O	14
P	15
Q	16
R	17
S	18
T	19
U	20
V	21
W	22
X	23
Y	24
Z	25

Table 8.11 – Character meanings

8.13.2 EXAMPLE BCR DEFINITION

Item Id feed count set to start position 2.

	Start Pos.	Length
Data logging characters	0	0
Customer Id characters	0	0
Job number characters	0	0
Piece Id characters	0	0
Document Id	0	0
Date change	0	0
Select Id 1 feed count	1	1
Select Id 2 feed count	0	0
Select Id 3 feed count	0	0
Select Id 4 feed count	0	0
Select Id 5 feed count	0	0
Select Id 6 feed count	0	0

Figure 8.5 - Example BCR definition

Character position 1: Grouping character - End of Group (out of view).

Character position 2: Item Id 2 feed count.

8.13.3 EXAMPLE DEFINE MAILSET

The document you want associated with the Item Id character control must be programmed with a matching Item Id and its feed mode must be set to 'Selective Feed' as shown in Figure 8.6.

This document may be placed on any reading feed hopper.

Figure 8.6 - Selective feed control mode

NOTE:

Document that uses the Item Id must be set up with the BCR definition.

A reading licence must be purchased in order to use a BCR definition.

8.13.3.1 FORMS IN GROUP

Copy the table from variable select feed table so it checks the correct number of forms are included in a complete group.

FLEX BARCODE 9

9.1 FLEX BARCODE INTRODUCTION

Flex Barcode allows a customised barcode scheme to be added to the machine,

NOTE:

Flex Barcode coding cannot be edited by the user.

- This tool will be available at QTL.
- This tool will allow programmer to specify how existing function are encoded.
- This tool will not allow programmer to create new machine functions.
- This will reduce costly SPR usage.
- This will give a new competitive advantage.
- This will give flexibility & reactivity to Opco's via QTL.
- This will help us to deal with service providers.

OMR FUNCTION DESCRIPTIONS **10**

10.1 GATE MARK - 1 MARK

The Gate Mark must be either the first mark to be scanned, or the last mark to be scanned by the OMR reader. It must be printed in the same position on every page of the print run and may be at the top, bottom, left or right of the form.

10.2 GROUPING OF MULTI-PAGE DOCUMENTS - 1 MARK

Multiple pages can be grouped together for insertion into the same envelope. The function mark required is one of the following:

1. First of Group Mark (FOG). Printed on the first page of a group: it is the last page to be fed and stops the next page being collated with the group.
2. End of Group Mark (EOG). Printed on the last page of a group: it is the first page to be fed but held at hold point while the previous group exits. Pages then feed until the next EOG mark is read, which again stops at the hold point.
3. Demand feed (FOG). Printed on all pages of the document group except for the first page. (Inverse of FOG).
4. Demand feed (EOG). Printed on all pages of the document group except for the last page. (Inverse of EOG).

NOTE:

The above assumes print order, not feed order. Documents are defined in print order and always run in reverse print order:

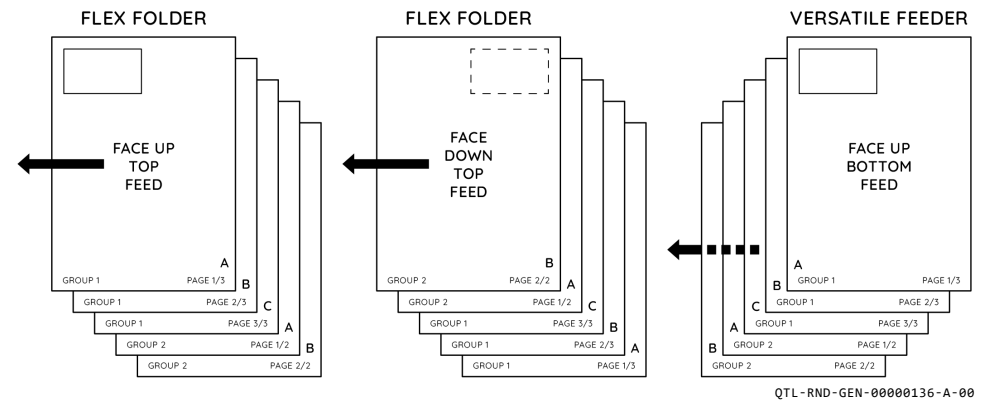


Figure 10.1 - Loading and feeding of Flex Folder and Versatile Feeder

10.3 PARITY MARK - 1 MARK

The function of the Parity Mark is to check if the correct number of marks have been read.

Options 'A' and 'B' are a basic form of printing security.

The options for the parity marking are:

- A. Even parity marking: the machine looks for an even number of marks.
- B. Odd parity marking: the machine looks for an odd number of marks.
- C. No parity marking: the machine does not look for a mark count.

10.4 SELECTIVE FEEDING OF ITEMS - 10 MARKS

The selective feed facility allows the selection of up to ten items to be added to the prime document depending on the OMR marks printed on the prime document. The maximum number of selective feeds is limited to the maximum number of additional feed units fitted.

The select feed mark(s) must be on the first document fed on the prime station when document is part of a group.

NOTE:

By default, the prime document is item 1, though items placement defaults can be overridden.

Table 10.1 shows Select Feed Marks for up to 10 selective feed stations (items 2-11), the maximum supported by the 200 Series.

Select Item	2	3	4	5	6	7	8	9	10	11
Select Feed Mark 1	—									
Select Feed Mark 2		—								
Select Feed Mark 3			—							
Select Feed Mark 4				—						
Select Feed Mark 5					—					
Select Feed Mark 6						—				
Select Feed Mark 7							—			
Select Feed Mark 8								—		
Select Feed Mark 9									—	
Select Feed Mark 10										—

Table 10.1 – Select Feed Marks

10.5 FORMS SEQUENCE WITHIN A JOB - 6 MARKS

The purpose of this mark function is to code each page of a print run with a number sequence running from 0 up to 63 and then restarting at 0.

This ensures that integrity of document sets is maintained, and that each envelope is filled correctly.

Up to six marks are used, in a binary sequence as shown in Table 10.2. If a smaller number of marks is required then it is possible to use five, four, three, two or one mark, in which case the numbering goes from 0 to 31, 0 to 15, 0 to 7, 0 to 3, or 0 to 1 respectively.

NOTE:

It is not generally recommended to use less than three marks.

		Page Sequence																																	
Mark No.	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31			
FSN Mark 1		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—	
FSN Mark 2			—	—			—	—			—	—			—	—			—	—			—	—			—	—			—	—			
FSN Mark 3					—	—	—	—					—	—	—	—					—	—	—	—					—	—	—	—			
FSN Mark 4									—	—	—	—	—	—	—	—										—	—	—	—	—	—	—	—	—	—
FSN Mark 5																	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
FSN Mark 6																																			

Mark No.	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63			
FSN Mark 1		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—	
FSN Mark 2			—	—			—	—			—	—			—	—			—	—			—	—			—	—			—	—			
FSN Mark 3					—	—	—	—					—	—	—	—					—	—	—	—					—	—	—	—			
FSN Mark 4									—	—	—	—	—	—	—	—										—	—	—	—	—	—	—	—	—	—
FSN Mark 5																	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
FSN Mark 6	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Table 10.2 - Binary sequence

10.6 DIVERTING FORMS - 1 MARK

The system allows programming of a divert mark to force a document set to be diverted into the divert bin, which may be fitted to the machine.

On the tower folder, this is the bin on the accumulator.

On the versatile feeder, forms are diverted to the insert head collate pocket for manual removal.

The machine will stop to allow this.

10.7 ENVELOPE NO SEAL - 1 MARK

A single mark may be used to program the wetter inhibit function.

If an OMR mark is detected in the Unseal position on the prime document, when that form is inserted into the envelope unsealed.

10.8 HALT FUNCTION - 1 MARK

The Halt function consists of one mark which when detected by the OMR system completes the collation of the document group and all other actions until the document set, including additional inserts is enveloped and held at the output rollers unsealed.

It then stops the inserter to allow operator intervention for whatever purpose, for example, to periodically confirm correct operation of the mailing run, or to add a non standard item to the envelope.

NOTE:

If the document with the halt mark also has a divert mark, then as that document never reaches the output, it will not cause the system to stop. Hence, the halt mark should not be used in a set of documents which are marked for diversion.

10.9 RESYNC FUNCTION - 1 MARK

The Resync function consists of one mark which when detected by the OMR system re-registers the paper to the remainder of the OMR marks to be read.

This assumes that the marks have been correctly printed on a fixed pitch and makes the required correction between the actual and apparent position of the marks.

This option is mainly used when the OMR marks are spread over a very large length of the document.

10.10 IGNORE FUNCTION

The Ignore function consists of any number of marks which when detected by the OMR system are read and counted with the other marks for the purposes of parity checking.

No other function is assigned to the marks, so functionally, they are ignored.

10.11 BLANK FUNCTION - 1 MARK

Used to indicate spaces in groups of marks on the page.

10.12 FORCE FOLD - 1 MARK

This mark is used with multi-page documents, when it is required to break the document group into specific sets, earlier than the maximum fold limit which has been set.

Figure 10.2 shows the action of force fold.

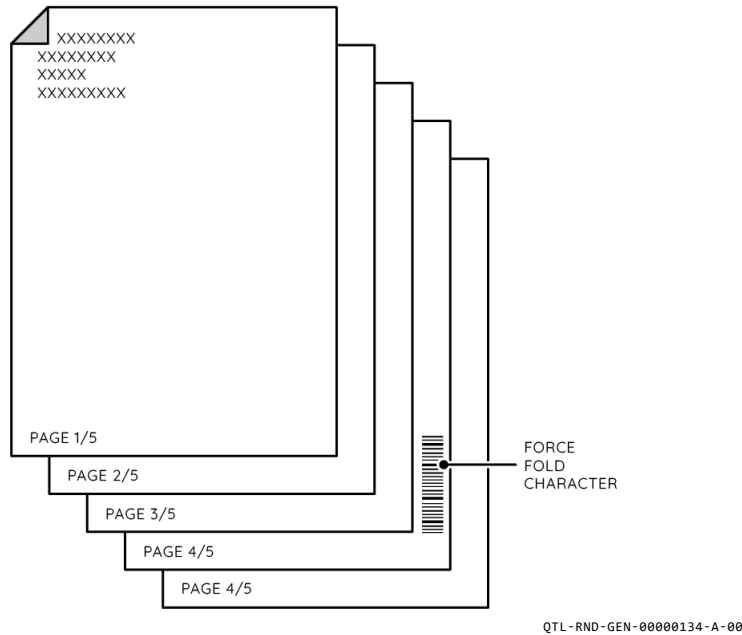


Figure 10.2 - Action of force fold

NOTE:

When the force fold character is read, pages 4 and 5 will be folded.

10.13 FORM SEQUENCE WITHIN A GROUP - 4 MARKS

The purpose of this function is to code each page of a document set with a number sequence running from 0 up to 15 and then restarting at 0 for the next document set.

In the event that a document group exceeds 16 pages, then the numbering goes from 0 to 15, restarting at 0 and incrementing to the last page. This number sequence is printed on each page of a set or group, which is to be inserted into an envelope.

Therefore, as soon as a loss of sequence is detected, it indicates an error in the page order and stops the machine so that the operator can rectify the fault. This ensures that integrity of document sets is maintained, and that each envelope is filled correctly.

This function is achieved by programming up to four marks and printing them as a binary sequence as shown in Table 10.3.

Mark No.	Page Sequence in the Group															
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
GSN Mark 1		—		—		—		—		—		—		—		—
GSN Mark 2			—	—			—	—			—	—			—	—
GSN Mark 3					—	—	—	—					—	—	—	—
GSN Mark 4									—	—	—	—	—	—	—	—

Table 10.3 - Page Sequence in the group

Due to the fact that the forms may be fed 'face up' or 'face down' from the form stack on the machine infeed unit, it means that the forms may be processed either in the order they were printed, or the reverse order.

However, the OMR system on the machine checks the numbering in a count up sequence. Additionally, if the forms are printed with no zero, for example, 1 to 15, then the checking system can be programmed to exclude zero from the number sequence.

NOTE:

The normal security system for ensuring that all the printed pages are processed correctly through the machine is 'Form Sequence within a Job'.

'Form Sequence within a Group' should only be considered when Form Sequence within a Job cannot be used.

10.14 MATCHING - 5 MARKS

When personalised documents are being fed from more than one OMR station for insertion into the same envelope, it is possible to code the individual pages with the same 5 mark pattern to indicate that the pages belong together.

In this situation the OMR marks are read on each individual page at each of the OMR stations. When the two or more personalised sets of marked documents are merged on the insert track, the control system checks if the match marks are the same. If there is a mismatch of the match marks the machine stops with an error message displayed.

For the system to continue operation, all the forms with OMR match marks which are to be inserted together into one envelope must have the same match code.

Any difference in the match code on any page indicates that that page does not belong with the others and stops the inserter until the operator corrects the problem and restarts the system. The match codes can be generated randomly, no particular sequence or order is required.

Table 10.4 shows all of the 32 possible mark combinations with their numerical values.

NOTE:

It is recommended to locate the matched station as close to the prime station as possible.

If a fixed number of forms is being fed in the matched station, use multiple feed, or the machine will run more slowly.

	Equivalent Numeric Values															
Mark No.	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Mark Mark 1		—		—		—		—		—		—		—		—
Mark Mark 2			—	—			—	—			—	—			—	—
Mark Mark 3					—	—	—	—					—	—	—	—
Mark Mark 4									—	—	—	—	—	—	—	—
Mark Mark 5																

Mark No.	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Mark Mark 1		—		—		—		—		—		—		—		—
Mark Mark 2			—	—			—	—			—	—			—	—
Mark Mark 3					—	—	—	—					—	—	—	—
Mark Mark 4									—	—	—	—	—	—	—	—
Mark Mark 5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Table 10.4 - Possible Mark combinations

Matching on folder module with multiple hoppers:

- Documents to be matched and fed from additional hoppers **must** have the same barcode definition and position as printed on the prime document.
- All other marks except the match mark will be ignored on secondary documents.
- The Match document must be set to Feed Always and be of a fixed multiple, usually just single sheet. The matched document cannot be selectively fed.
- Matching is only possible with FoG (as printed) on Flex Folder.
- Matching using QTL codification **only** (A to Z random; ONE Character).
- Possible to match using Customer Id characters.

Matching on Folder module plus multiple reading versafeeders:

- Documents must be printed as First of group when using a Versatile Feeder.
- This is absolutely necessary for multiple page sets.
- The OMR may be different to the prime document if being fed from a Versatile Feeder.
- Barcode may be matched with OMR where A=0 to Z=25 using the marks as defined in Table 10.4.

10.15 PULSE CONVEYOR - 1 MARK

This mark will cause the conveyor to move a number of steps (the duration of each step is set in the operating software) and then pause for 4 seconds before running resumes.

10.16 GROUP, DIVERT AND CONTINUE - 1 MARK

This mark is for compatibility with legacy jobs from machines other than 200 Series.

It is printed on the last page of the group (print-order) and tells the machine that:

- This is the last page of the group.
- The group accumulated thus far will be diverted.
- The machine will continue to run after the group has been diverted.

NOTE:

This feature applies to a Flex Folder fitted with a divert tray. If the divert tray is not fitted, the machine must stop to allow the operator to manually remove the group from the accumulator.

On modules which do not support a divert tray, the group will be accumulated in the collate pocket of the head and the machine will again stop and ask the operator to remove the group.

10.17 GROUP DIVERT AND STOP - 1 MARK

As defined in section **10.16 Group, Divert and Continue - 1 Mark**, however the machine will stop after the group has been diverted and display an appropriate message.

10.18 AUTOEND - 1 MARK

This mark may be used at the end of the job when it is required to automatically enter the 'Autoend' mode.

The system operates by detecting this mark in the last document set, and then setting the 'Autoend' mode so that the marked document set is the last to be enveloped and ejected on to the output conveyor.

This mark may also be used when there is a requirement to interrupt a job into well defined parts, for example to batch work by post code, or any other defined criterion.

This must be printed on the first page of the job or batch.

10.19 EXIT SELECTION

Choices for Exit selection are:

- Exit 1
- Exit 2
- Exit 3 (at one mark per exit)

10.20 BANNER PAGE

'Banner Page' diverts the blank page, resets form sequence and carries on running.

10.21 GROUP SEQUENCE WITHIN A JOB

This function is not supported, i.e. if a group is removed within a job, the machine will not stop and display an error.

NEOPOST CODING (2-TRACK OMR) **11**

11.1 NEOPOST CODING (2-TRACK OMR) INTRODUCTION

Support for 2-Track OMR is provided to accommodate existing jobs that use this system.

Marks may be printed in either both tracks, or only one (referred to as 1-Track OMR).

Function	Specification
Min mark length	4.2mm
Min mark thickness	0.2mm
Min track separation (two track only)	2.1mm
Divert & Stop function	Supported
Exit Control function	Supported
Hopper Selection	Not supported

11.2 2-TRACK

Reading Code parameter	A	B		A	B		A	B		A	B	
Basic 1	-	x	= accumulate	x	-	= insert	x	-	= divert & continue, divert & stop, or ignore the divert (set in software)	-	x	= divert & continue, divert & stop, or ignore the divert (set in software)
Basic 2	x	-		-	x		x	-		-	x	
Selective feed 1	-	x	= Feed from station 1				x	-	= Do not feed from station 1			
Selective feed 2			= Feed from station 2						= Do not feed from station 2			
Selective feed 3			= Feed from station 3						= Do not feed from station 3			
Selective feed 4			= Feed from station 4						= Do not feed from station 4			
Selective feed 5			= Feed from station 5						= Do not feed from station 5			
Selective feed 6			= Feed from station 6						= Do not feed from station 6			
Selective feed 7			= Feed from station 7						= Do not feed from station 7			
Exit Control			= Pulse conveyor						= Pulse conveyor			
Pres. on Deck and continue			= Halt						= Halt			
Pres. on Deck and stop			= Halt						= Halt			
Sealing control			= Do not seal						= Seal			

	0		1		2		3		4		5		6		7	
Sequence check 4	x	-	x	-	x	-	x	-	-	x	-	x	-	-	x	-
Sequence check 2	x	-	x	-	-	x	-	-	x	-	x	-	-	x	-	-
Sequence check 1	x	-	-	x	x	-	-	x	x	-	-	x	x	-	-	x
Parity (even parity)	-	x	or						x	-						

Table 11.1 - 2-Track

NOTE:

A = First Track, B = Second Track, - = Mark, x = No mark

11.3 1-TRACK

Reading Code parameter	A		A
Start mark	-	Always present	- Always present
Selective feed 1	-	= Insert	= Accumulate
Selective feed 2	-	= Divert & continue	= Do not divert & continue
Selective feed 3	-	= Divert & stop	= Do not divert & stop
Selective feed 4	-	= Stop machine	= Stop machine
Selective feed 5	-	= Feed from station 1	= Do not feed from station 1
Selective feed 6	-	= Feed from station 2	= Do not feed from station 2
Selective feed 7	-	= Feed from station 3	= Do not feed from station 3
Exit Control	-	= Feed from station 4	= Do not feed from station 4
Pres. on Deck and continue	-	= Feed from station 5	= Do not feed from station 5
Pres. on Deck and stop	-	= Feed from station 6	= Do not feed from station 6
Selective feed 3	-	= Feed from station 7	= Do not feed from station 7
Selective feed 4	-	= Pulse conveyor	= Pulse conveyor
Selective feed 5	-	= Halt	= Do not Halt
Selective feed 6	-	= Halt	= Do not Halt
Selective feed 7	-	= Do not seal	= Seal

	0	1	2	3	4	5	6	7
Sequence check 4	-	-	-	-	-	-	-	-
Sequence check 2	-	-	-	-	-	-	-	-
Sequence check 1	-	-	-	-	-	-	-	-
Parity (even parity)	-	or			-			
Parity (even parity)	-	Always present			-	Always present		

Table 11.1 - 1-Track

NOTE:

A = First Track, - = Mark, x = No mark

NEOPOST 3 BARCODE LABELS 12

12.1 COMPATIBILITY

The machine is capable of accommodating Neopost 3 barcode labels, thus existing stationery printed with these labels can be used. Table 12.1 defines the characters.

Reading Code Parameter	Code Length	Default Setting	Description
Page N of M	M: 0 - 2 N: 0 - 2	D, 0 D, 0	N < M: Accumulate N = M: Insert N > M: Invalid, Sequence error, Divert. The field Characters shows the number of character positions available for N /M: <ul style="list-style-type: none"> ▪ 1, 2: 1 or 2 character positions 1 S ▪ 2 S: 1 or 2 character positions with N and M in reverse order (M first, then N)
Sheet Seq	0 - 3	E, 3	Sheet counter. If a sheet number is missing, an error is generated.
Group Seq	0 - 3	D, 0	Set counter. If a set number is missing, an error is generated.
Insert / Accumulate	1 bit*	E	Insert and accumulate command.
Divert 1	1 bit	E	Divert and continue. Divert and stop.
Divert 2	1 bit	E	
Selective Feeds	1 bit each	E	A maximum of 10 feeders are available for selective feed.
Do not glue	1 bit	E	Sealing control: Enable or disable sealing
Envelope selection 1 - 3	1 bit each	E	Not possible on 200 Series.
Exit. Sel. 1	1 bit	E	Select Exit 1
Exit. Sel. 2	1 bit	E	Select Exit 2
Exit. Sel. 3	1 bit	E	Select Exit 3
Stop	1 bit	E	Stops the Inserter.
Customer Id	0 - 16	D, 0	If Customer Id equals the Id on the previous page: Accumulate If Customer Id is different from the Id on the previous page: Insert the set.

Table 12.1 – Neopost 3 barcode labels compatibility

NOTE:

E = Enabled, D = Disabled

*4 bit values represent one barcode character.

12.2 INTERPRETING THE HEXADECIMAL BIT FIELDS

The hexadecimal bit fields contain at most four functions that can be controlled. The generic interpretation/encoding is shown in the Table 12.2.

‘No’ means that the field is not active and ‘Yes’ means it is active. For some fields the system behaviour may be mapped differently, e.g. Exit Selection.

Position Char Value	Function 1	Function 2	Function 3	Function 4
0	No	No	No	No
1	Yes	No	No	No
2	No	Yes	No	No
3	Yes	Yes	No	No
4	No	No	Yes	No
5	Yes	No	Yes	No
6	No	Yes	Yes	No
7	Yes	Yes	Yes	No
8	No	No	No	Yes
9	Yes	No	No	Yes
A	No	Yes	No	Yes
B	Yes	Yes	No	Yes
C	No	No	Yes	Yes
D	Yes	No	Yes	Yes
E	No	Yes	Yes	Yes
F	Yes	Yes	Yes	Yes

Table 12.2 - Generic interpretation/encoding

For example, when the Controls Feeding from Logical Station 1,2,3 and 4 character contains the character ‘7’ this is interpreted as follows:

- Control Feeder 1 = Yes
- Control Feeder 2 = Yes
- Control Feeder 3 = Yes
- Control Feeder 4 = No.

Table 12.3 indicates the relationship between the BCR functions and the character bit; each character contains 4 bit functions.

If it is required to move to the next character when the previous one has fewer than 4 functions ascribed, unused functions can be allocated but set to ‘ignore’ so as to create ‘dummy’ functions to fill up the character.

E	Divert 1	D	Insert	Function 1
I	Selective Feed 1	D	Accumulate	Function 2
E	Selective Feed 2	E	Divert 1	Function 3
I	Selective Feed 3	D	Divert 2	Function 4
I	Selective Feed 7	I	Selective Feed 1	Function 1
I	Selective Feed 8	E	Selective Feed 2	Function 2
E	Exit Select 1	I	Selective Feed 3	Function 3
		D	Selective Feed 4	Function 4
		D	Selective Feed 5	
		D	Selective Feed 6	
		I	Selective Feed 7	
		I	Selective Feed 8	
		D	Do not Glue	
		D	Env Select 1	
		D	Env Select 2	
		D	Env Select 3	
		E	Exit Select 1	
		D	Exit Select 2	
		D	Exit Select 3	
		D	Stop	
		D	Reserved 1	
		D	Reserved 2	
		D	Reserved 3	
		D	Reserved 4	
		D	Reserved 5	
		D	Reserved 6	
		D	Reserved 7	
		D	Reserved 8	
		D	Reserved 9	
		D	Reserved 10	
		D	Reserved 11	
		D	Reserved 12	

E = Enabled & Printed
 I = Printed & Ignored
 D = Disabled, not Printed

Table 12.3 - Relationship between BCR functions and Character bit

When a Command is enabled in the Character Function barcode label screen as shown in Figure 12.1, then this will become a 'function' in the table.

	Length	Status	
Page N of M	0	Disable	↑
Sheet sequence	0	Disable	
Group sequence	0	Disable	
Insert	1	Enable	
Accumulate	1	Enable	
Divert 1	1	Continue	
Divert 2	0	Disable	
Select Id 1	1	Enable	↓

Cancel Save

QTL-RND-SCR-0000220-A-00

Figure 12.1 – Barcode label screen

For example:

- If the barcode character 1 was printed this would indicate that the first enabled function would be triggered, causing the document to be inserted.
- If a 2 was printed then the second enabled function would be enabled causing the document to be accumulated.
- If a 9 was printed this indicates that functions 1 and 4 needed to be enabled causing an insertion and selective feed.

Neopost 3 available commands:

- **Insert command** Forces accumulated pack to be folded and inserted.
- **Accumulate command** Indicates the document is to be accumulated.
- **Divert 1 command** Diverts the complete document set.
- **Divert 2 command** Diverts the complete document set.
- **Select feed item 1-10** Causes selective feed documents to be pulled.
- **No Seal** Leaves the completed envelope unsealed.
- **Envelope select** Not used.
- **Exit select (exits 1-3)** Selects the exit required if output sorting is available.
- **Stop** Halts the machine but does not Autoend.