

Specification for

A6-size microfiche for the motor industry

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- Library Association
- Microfilm Association of Great Britain
- National Coal Board
- National Reprographic Centre for documentation
- Public Services Microfilm Liaison Group
- Society of British Aerospace Companies
- Society of Motor Manufacturers and Traders

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Contents

	Page
Cooperating organizations	Inside front cover
Foreword	ii
1 Scope	1
2 References	1
3 Definitions	1
4 Physical characteristics	1
5 Format	2
6 Microfiche quality requirements	2
7 Quality of originals	3
8 Presentation for microfilming	3
Figure 1 — Heading-area references	4
Figure 2 — Heading extended into rows A and B	5
Figure 3 — 270-frame format	6
Figure 4 — 420-frame format	7
Figure 5 — Illustration with separate text on one frame	8
Figure 6 — Illustration with text and part numbers identifying parts	10
Figure 7 — Illustration with part numbers identifying parts	11
Figure 8 — Illustration with clockwise numbering	12
Figure 9 — Illustration with anti-clockwise numbering	13
Figure 10 — Service parts list with grid reference of illustration	14
Figure 11 — Layout sheet for 270-frame format	15
Figure 12 — Layout sheet for 420-frame format	16
Figure 13 — Grid reference for 270-frame format	17
Figure 14 — Grid reference for 420-frame format	18
Figure 15 — Grid reference for COM	19
Publications referred to	Inside back cover

Foreword

Microfiche used in the motor industry are at present very varied. Organizations that undertake maintenance of several different makes of vehicle may need several different microform readers to enable them to use the catalogues on microfiche that the vehicle manufacturers supply. Microfiche supplied by different manufacturers, and sometimes by different departments within one organization, are likely to differ from each other in size, number of images, layout, headings, grid numbering and reduction ratio.

One reason for the great diversity is that so far there has been no standard designed specifically for motor-industry microfiche. The introduction of this British Standard should gradually produce greater uniformity. Those who are just beginning to use microfiche will now be able to work to this standard from the start. Those who have already established non-standard systems may not be able to change their systems immediately, but they will have a standard to follow when they come to renew their present systems.

Although the main reason for preparing this British Standard has been to reduce the variety of formats at present in use, the standard also deals with quality. Some motor-industry microfiche simply reproduce hard-copy catalogues that were not designed for microfilming. In microform copies of such catalogues, drawings can sometimes become blurred and lettering illegible. The standard therefore includes requirements both for the quality of originals and for the quality of images.

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

Compliance with a British Standard does not of itself confer immunity from legal obligations.

Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 20, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

1 Scope

This British Standard specifies the physical characteristics and layout of transparent A6-size microfiche for use in the motor industry, and the quality of originals and microimages. This standard applies to specifications and service-parts information only. It does not apply to technical manuals, operators' handbooks, etc.; BS 4884-2 already specifies requirements for their presentation and BS 4187-2 a method of recording information on microfiche at a reduction ratio of 1 : 24.

2 References

The titles of the standards publications referred to in this standard are listed on the inside back cover.

3 Definitions

For the purposes of this British Standard the following definitions apply.

3.1

frame

a geometric subdivision of a microfiche grid, designed to contain an image and its margins (see Figure 2 to Figure 4)

3.2

generation

a measure of the remoteness of the copy from the original. The film taken of the original is first generation microfilm (camera microfilm). Copies made from this first generation are second generation, etc.

3.3

image

the area of film that, after exposure and processing, contains the representation of a whole unit of information, such as a page of text or a drawing

3.4

microfiche

a flat rectangular sheet of photographic film bearing a number of images, arranged in horizontal rows and vertical columns, and a heading area

3.5

negative-reading

of microfiche that has clear images on an opaque background

3.6

reduction ratio

the ratio of the linear measurement of the image of a document to the linear measurement of the document itself, expressed as, e.g., 1 : 48

3.7

reference corner

the intersection of the bottom edge and the left-hand edge of a microfiche

3.8

reference edges

the bottom edge and left-hand edge of a microfiche

3.9

right-reading

directly readable, as opposed to laterally reversed

4 Physical characteristics

4.1 Dimensions. All measurements shall be made from the reference edges and the reference corner. The dimensions of the microfiche shall be

105 + 0 mm, – 0.25 mm × 148 + 0 mm, – 0.5 mm.

NOTE The tolerances are manufacturing tolerances for unexposed film.

The bottom and left-hand margins of the microfiche shall each be 4 mm wide.

4.2 Thickness. The thickness of the film used for the microfiche shall be not greater than 0.22 mm.

4.3 Corner rounding. The corners of the microfiche may be rounded, with the exception of those corners that have been subjected to a corner cut. When corners are rounded, the process shall remove not more than 3 mm of either of the two edges forming the corner.

4.4 Identification of sensitized side. To facilitate microfiche-to-microfiche copying, a notch or a corner cut may be used to identify the sensitized layer of the microfiche. The notch or corner cut shall be in the upper right-hand corner when a sheet of unexposed film or microfiche is held with the long sides vertical and the sensitized side towards the observer.

The notch shall be made in the shorter side of the sheet near the appropriate corner. The notch may be of any shape but it shall penetrate not more than 1.6 mm inward from the edge of the microfiche.

The corner cut shall be made in the appropriate corner of the heading area only. It shall extend a nominal 6 mm along the longer side of the microfiche and a nominal 9 mm along the shorter side.

4.5 Distribution copies. The heading area of distribution copies may have an opaque or translucent backing which shall not increase the thickness of the microfiche by more than 0.01 mm.

NOTE Microfiche with negative-reading images are preferred for distribution copies.

4.6 Safety film. The film used shall comply with the requirements of BS 5550-5.1.1.

5 Format

5.1 Reduction ratio. The nominal reduction ratio shall be 1 : 48.

5.2 Heading area. The heading area above the image area of each microfiche shall be reserved for eye-legible identification references (see Figure 1) which should include the following:

- a) the identity of the organization issuing the information;
- b) the type of information contained in the microfiche, e.g. service parts;
- c) product or vehicle group information, e.g. fuel injection equipment, in-line injection pumps, MG A, MG B cars;
- d) microfiche number if more than one microfiche is required to accommodate the information, e.g. 121 (1 of 3);
- e) copyright statement, if appropriate;
- f) date or revision number.

Information in the heading area should be limited to three lines. If a larger area is required, the information may extend into the image area, but this shall not affect row numbering. If the heading extends into row A, the first row of images shall be row B, and if the heading extends into row B, the first row of images shall be row C (see Figure 2).

5.3 Division of image area. One of the two formats described below shall be used, of which a) is preferred, b) is an acceptable alternative.

- a) *Landscape frames.* The image area shall be divided into 270 landscape frames, each frame being 7.75 mm × 6.25 mm. The frames shall be arranged in 18 columns and 15 rows (see Figure 3).
- b) *Portrait frames.* The image area shall be divided into 420 portrait frames, each frame being 5.0 mm × 6.25 mm. The frames shall be arranged in 28 columns and 15 rows (see Figure 4).

The use of mixed landscape and portrait frames on one microfiche is not recommended.

5.4 Position of images. Each image shall appear within a single frame. When the microfiche is held with the heading upright and right-reading, the images shall be upright and right-reading. There shall also be a margin between the information area of an image and the frame boundary.

5.5 Sequence of images. When the microfiche is held with the heading right-reading and upright, the first frame shall be in the left-hand corner of the first row below the heading, e.g. A1, B1, C1.

Succeeding frames shall appear either in sequence from left to right and downward from row to row or, alternatively, in sequence from top to bottom of a column and left to right from row to row.

5.6 Frame identification. Every frame shall contain a grid reference. Letters shall identify rows and numerals shall identify columns. The row immediately below the heading area, if the heading does not extend into it (see 5.2), shall be row A and the column on the extreme left shall be 1 (see Figure 2). A 270-frame format will contain rows A to O and columns 1 to 18, and a 420-frame format will contain rows A to O and columns 1 to 28.

5.7 Index to microfiche. An index to the contents of the microfiche should be provided, giving a grid reference for each item. The index shall occupy the last frame of the microfiche (0–18 or 0–28, see Figure 2). If the index requires more than one frame, it shall be recorded in normal sequence, with the last page occupying the last frame of the microfiche.

5.8 Master index. If there are many microfiche in one series, and some series comprise more than 100 microfiche, a master index may be provided. The master index shall give the microfiche numbers [see 5.2 d)] for each section of information and may also give a grid reference and microfiche number for each part number in the series.

5.9 Cutting mark. Each microfiche may carry a sensing mark to provide for automatic cutting of processed roll film into microfiche. The sensing mark shall be a square, 3.0 mm × 3.0 mm, and the centre of the square shall be 32 ± 0.2 mm from the reference corner, with the bottom edge of the square within 0.2 mm of the bottom edge of the microfiche.

6 Microfiche quality requirements

6.1 Curl and bow. After a fully processed microfiche, cut to distribution size, has been placed convex side down on a flat surface for at least 6 h at a temperature of 23 ± 2 °C and a relative humidity within the range 45 % to 55 %, no part of the microfiche shall be more than 6.5 mm above the surface.

6.2 Processing. The film shall be processed in accordance with the recommendations of BS 1153.

6.3 Legibility. The legibility of microfiche shall be determined in accordance with the requirements of BS 4657. The smallest test pattern to be resolved shall be:

- 1st generation: 2.5
- 2nd generation: 2.2
- 3rd generation: 2.0

NOTE To obtain the legibility expressed in line pairs per millimetre, multiply the pattern number resolved by 48 (the reduction factor).

6.4 Density. Normal background density on conventional silver negative film obtained from originals with dark characters on a light background shall be between 0.9 and 1.2. The photographic density of the characters and clear areas of film should be kept as low as possible to avoid increases in exposure times in subsequent duplication and printing.

If the quality of an original results in sub-standard images, and it is essential that these images be incorporated in the microfiche, a note explaining the reason for the deficiency may be included at an appropriate place in the filming sequence.

7 Quality of originals

7.1 Size. The maximum size of the original, whether text or drawings, shall be 355 mm × 279 mm for the 270-frame format and 210 mm × 297 mm (A4) for the 420-frame format. There shall be margins of at least 10 mm all round the page. If the document is to be issued in hard copy as well as in microfiche, a binding margin of 20 mm shall be allowed.

7.2 Typeface. The user should be guided by the recommendations of BS 5444 in selecting a typeface for text and illustrations. A suitable typeface is Univers Medium, using the alternatives of Univers Bold and Univers Italic for emphasis or headings and subheadings.

7.3 Drawings. In drawings, line thickness and character height shall comply with the requirements of BS 5536.

7.4 Illustrations

7.4.1 Exploded views. Illustrations should, if possible, be line drawings of the exploded-view type. Related text shall be arranged in one of the following ways:

- a) text separate from illustration but within the same frame (see Figure 5);
- b) text and part numbers identifying the different parts in the illustration (see Figure 6);
- c) part numbers identifying the different parts in the illustration (see Figure 7);

d) parts in illustration numbered for identification in a clockwise or anti-clockwise sequence, beginning at any convenient point (see Figure 8 and Figure 9) accompanied by a list giving the names of the different parts (see Figure 10).

Of the methods listed above, a) is preferred, b) and c) are acceptable alternatives, and d) should be used only if none of the others is feasible.

7.4.2 Photographs. If illustrations are in the form of half-tones or photographs, the user should consider filming them from back-lit plate negatives so that the distribution copies will be negative-reading (see note to 4.5).

8 Presentation for microfilming

8.1 Editing for microfiche. Documents to be reproduced on microfiche require careful editing. A clearly presented layout sheet shall be prepared, showing what is to appear on each frame of the finished master, including all the illustrations, and what information, if any, should be repeated. Sample layouts for the 270-frame format and the 420-frame format are shown in Figure 11 and Figure 12.

8.2 Grid references. Before a document is filmed a grid reference shall be added outside the text area, but within the image area, in the centre of the top of each page if the 270-frame format is to be used (see Figure 13). The grid reference shall be outside the text area, but within the image area, in the bottom left-hand corner of each page if the 420-frame format is to be used (see Figure 14). In computer output microfiche (COM) the grid reference may be included in the make-up of each page of text or illustration (see example in Figure 15).

8.3 Blank pages. Every page of a document to be reproduced on microfiche shall be filmed. Any blank page should be marked, e.g. with "X" or "BLANK", so that the user of the microfiche knows that the frame has been left blank intentionally.

Organization's name	Fuel Injection Licensee parts	OPA Fuel pumps (Hyd Gov) 'F' change non-reversible 3246F196 to 3266F798	240 Jan 1977

Figure 1 — Heading-area references