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REVIEW SUB-COMMITTEE

-  
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O. Eng.

Brussels, 31 July 2002.

POSSIBLE AMENDMENTS TO THE NOMENCLATURE  
AND EXPLANATORY NOTE TO HEADING 84.42 AND RELATED PROVISIONS

(Item III.A.12 on Agenda)

Reference documents :

40.266 (HSC/17)	NC0139E1 (HSC/24)
40.726 (HSC/18)	NC0160E2, Annex G/16 (HSC/24)
40.600, Annex IJ/6 (HSC/18 - Report)	NC0196E1 (HSC/25)
40.885 (HSC/19)	NC0250E2, Annex H/6 (HSC/25)
41.124 (HSC/19)	NR0116E1 (RSC/22)
41.100, Annex G/19 (HSC/19 - Report)	NR0133E2, Annex D/6 (RSC/22 – Report)
41.315 (HSC/20)	NR0139E1 (RSC/23)
41.598 (HSC/20)	NR0165E2, Annex C/4 (RSC/23 - Report)
41.600, Annex F/20 (HSC/20 - Report)	NR0171E1 (RSC/24)
42.057 (HSC/21)	NR0200E1 (RSC/24)
42.105 (HSC/21)	NR0203E1 (RSC/24)
42.119 (HSC/21)	NR0205E2, Annex C/3 (RSC/24 - Report)
42.750, Annex G/30 (HSC/22 – Report)	NR0213E1 (RSC/25)
NC0048E1 (HSC/23)	NR0265E3, Annex C/3 (RSC/25 – Report)
NC0090E2, Annex H/8 (HSC/23 – Report)	

I. BACKGROUND

1. At its 25<sup>th</sup> Session, the Review Sub-Committee agreed that the Secretariat, in addition to drafting a new working document on possible amendments to the Nomenclature and Explanatory Note to heading 84.42 for the Sub-Committee's next session reflecting the text approved at the meeting and the issues requiring further examination, would also include, for the delegates' convenience, an annex similar to the annex found in Doc. NR0139E1, reflecting the changes approved by the Sub-Committee to date.

File No. 2618

## II. SECRETARIAT COMMENTS

2. Based on the Sub-Committee's instructions, the Secretariat has produced, in the Annex to this document, a text reflecting, in strike through and underline format, the deleted and amended texts as approved by the Sub-Committee to date.
3. The Secretariat would draw the Sub-Committee's attention to the fact that there are two instances where the Sub-Committee agreed to delete text and replace it with new text. The Secretariat has underlined the new text for ease of recognition. These can be found on the following pages :
  - On page 4 of the Annex, present Part (B), the Sub-Committee agreed to delete "Type-founding may be a hand operation, or may be done mechanically by means of more or less complex machines. The apparatus and machines covered include:" and replace it by "This heading includes :".
  - On page 10, item (I), present sub-item (C), first paragraph, the Sub-Committee has agreed to delete "Here the bed itself is replaced by " and replace it by "In their simplest form, these presses usually consist of".
4. The Sub-Committee's attention is also drawn to the fact that the Secretariat has made the corresponding changes to the various numbering schemes as agreed upon by the Sub-Committee.

## III. CONCLUSION

5. The Sub-Committee is invited to consider the text presented in the Annex to this document.

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**POSSIBLE AMENDMENTS TO THE NOMENCLATURE  
AND EXPLANATORY NOTE TO HEADING 84.42 AND RELATED PROVISIONS**

ARTICLE 16 PROCEDURE

A. AMENDMENTS TO THE NOMENCLATURE

CHAPTER 84.

Heading 84.42.

Machinery, apparatus and equipment (other than the machine-tools of headings 84.56 to 84.65), ~~for type-founding or type-setting~~, for preparing or making ~~printing blocks~~, plates, cylinders or other printing components; ~~printing type, blocks~~, plates, cylinders and other printing components; ~~blocks~~, plates, cylinders and lithographic stones, prepared for printing purposes (for example, planed, grained or polished).

- ~~8442.10~~ - ~~Phototype setting and composing machines~~
- ~~8442.20~~ - ~~Machinery, apparatus and equipment for type-setting of composing by other processes, with or without founding device~~
- 8442.30 - ~~Other~~ Machinery, apparatus and equipment
- 8442.40 - Parts of the foregoing machinery, apparatus or equipment
- ~~8442.50~~ - ~~Printing type, blocks, Plates~~, cylinders and other printing components; ~~blocks~~, plates, cylinders and lithographic stones, prepared for printing purposes (for example, planed, grained or polished).

Heading 84.43.

Printing machinery used for printing by means of the ~~printing type, blocks~~, plates, cylinders and other printing components of heading 84.42; ink-jet printing machines, other than those of heading 84.71; machines for uses ancillary to printing.

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B. AMENDMENTS TO THE EXPLANATORY NOTES

CHAPTER 84.

Page 1501. Heading 84.41. Exclusions.

- (a) Drying stoves for drying made up articles of cardboard (heading 84.19).
- (b) Packing machines (e.g., for chocolate) that also make and print paperboard containers (cartons, etc.) (heading 84.22).

- (e) ~~Presses for preparing printing flongs, and type setting machines operating by perforating paper bands (heading 84.42).~~
- (d) ~~Platen presses including non-inking platen presses (heading 84.43).~~
- (e) (c) Machines for twisting paper strips into yarn (heading 84.45).
- (f) (d) Jacquard card punching machines (heading 84.48).
- (g) (e) Sewing machines for the manufacture of paper bags (heading 84.52).
- (h) (f) Card or tape punching machines of heading 84.71.
- (i) (g) Punching machines used for punching holes in paper cards or documents and paper shredders of a kind used in offices for destroying confidential documents (heading 84.72).
- (k) (h) Eyeletting machines and machines for waxing paper cups and containers, etc., by immersion (heading 84.79).

Pages 1501 to 1506. Heading 84.42.

84.42 - MACHINERY, APPARATUS AND EQUIPMENT (OTHER THAN THE MACHINE-TOOLS OF HEADINGS 84.56 TO 84.65), ~~FOR TYPE FOUNDING OR TYPE-SETTING, FOR PREPARING OR MAKING PRINTING BLOCKS, PLATES, CYLINDERS OR OTHER PRINTING COMPONENTS; PRINTING TYPE, BLOCKS, PLATES, CYLINDERS AND OTHER PRINTING COMPONENTS; BLOCKS, PLATES, CYLINDERS AND LITHOGRAPHIC STONES, PREPARED FOR PRINTING PURPOSES (FOR EXAMPLE, PLANED, GRAINED OR POLISHED).~~

- 8442.10 - ~~Phototype setting and composing machines~~
- 8442.20 - ~~Machinery, apparatus and equipment for typesetting or composing by other processes, with or without founding device~~
- 8442.30 - ~~Other Machinery, apparatus and equipment~~
- 8442.40 - Parts of the foregoing machinery, apparatus or equipment
- 8442.50 - ~~Printing type, blocks, Plates, cylinders and other printing components; blocks, plates, cylinders and lithographic stones, prepared for printing purposes (for example, planed, grained or polished)~~

Apart from certain exclusions referred to later, this heading includes :

- (1) ~~Printing type and~~ The printing parts of printing machinery, for example, ~~separate characters,~~ plates, ~~blocks~~ and cylinders, engraved or otherwise prepared for printing, used to print texts or illustrations (by hand or by the machines of heading 84.43); and prepared lithographic stones, cylinders, ~~blocks~~ and plates (i.e., those prepared so as to be suitable for engraving or otherwise receiving an image for subsequent use in printing).
- (2) The machines, apparatus and accessories used to make the ~~type or other~~ printing parts referred to above, or used to assemble (compose ~~or set~~) it for use in printing, whether by hand or mechanically.

This heading covers equipment used in the printing of texts, illustrations or repetitive designs, etc., whether on paper, textiles, linoleum, leather or on other materials, by printing processes, viz. :

- (I) Relief printing : ~~by means of type characters, stereotype or electrotype plates, wood engravings, or by using relief photo-engraved plates. In these processes~~ this process, the relief parts of the ~~type character or image~~ are inked.
- (II) Planographic printing : by lithography, photo-lithography or by offset printing. The printing ink is applied only to certain specially prepared parts of the plane surface of the printing plate, etc. This category of printing also includes stencilling.
- (III) Intaglio printing : ~~by photogravure or rotogravure, or by means of etched or engraved metal plates. The printing ink is accumulated in the engraved or etched parts.~~

~~(A) PRINTING TYPE, BLOCKS, PLATES, CYLINDERS  
AND OTHER PRINTING COMPONENTS;  
BLOCKS, PLATES, CYLINDERS AND LITHOGRAPHIC STONES,  
PREPARED FOR PRINTING PURPOSES  
(FOR EXAMPLE, PLANED, GRAINED OR POLISHED)~~

This heading includes :

- ~~(1) Printing type of all kinds (individual letters, figures, signs, florets, ornaments, rules, etc.), of wood, metal lead tin antimony alloys, brass, etc.) or plastics, usually for hand composition. Small blocks which do not actually print, but which are inserted in the composition to provide spaces (furniture and spacing materials) are also included in this group.~~
- ~~(2) Typographic plates (clichés), lead castings in one block, flat or semi-cylindrical (stereotypes), often electroplated with copper, nickel or chromium. They are obtained by making a casting of a paperboard or paper pulp flong previously moulded from a hand-composed block of type (forme). Other plates called "electros" are obtained by electroplating a wax or plastic mould of the forme or of the relief plate to be reproduced; the metal shell obtained in this way is then filled with lead and nailed to a wooden supporting plate.~~

~~Similar plates are produced in plastics by moulding the plastics over flongs in heated presses.~~

- ~~(3) Photogravure plates. In the manufacture of these plates, the matter to be printed (usually illustrations) is photographically reproduced, using half tone screens for shade illustrations, and then transferred on to a copper or zinc plate which is then acid etched. The plates are usually nailed to a wooden support, with or without a lead lining.~~
- (4) (1) Relief or intaglio plates engraved by hand, mechanically or by acid. These may be of wood, linoleum, copper, steel, etc.
- (5) (2) Lithographic stones. The illustration is either hand-drawn or photographically transferred and prepared with acid.

- (6) (3) Offset printing plates of zinc or aluminium or similar flexible metal sheets on which the design is reproduced in the flat, i.e., neither in relief nor intaglio.
- (7) (4) Engraved or etched cylinders.
- (8) (5) Plates and dies for relief stamping or printing, e.g., for machines which emboss, with or without also inking, letter heads, visiting cards, etc.

Provided they have been treated so as to render them suitable for engraving or impressing, lithographic stones, ~~wooden blocks~~, metal plates and cylinders, even though not engraved or impressed, are also included in this heading, e.g. :

- (9) (6) Planed or grained lithographic stones.
- (10) ~~Prepared wood blocks for the manufacture of wood-cuts. These are generally small plates, perfectly planed to a thickness equal to the height of printing type.~~
- (11) (7) Metal plates or sheets prepared for engraving (by planing, graining or polishing).
- (12) (8) Perfectly polished or grained surface metal cylinders. These cylinders, usually of cast iron, are generally electroplated with copper, or else have a copper covering consisting of assembled removable sleeves.
- (13) (9) Metal or plastic masters for use on office-type offset printing machines. The top edge of the sheets has usually been processed to permit attachment to the drum of the machine.

Sensitised plates (e.g., consisting of metal or plastics, coated with a sensitised photographic emulsion, or of a sheet of photosensitive plastics, whether or not affixed to a support of metal or other material) are excluded (heading 37.01).

(B) MACHINERY, APPARATUS AND EQUIPMENT (OTHER THAN  
THE MACHINE-TOOLS OF HEADINGS 84.56 TO 84.65)  
~~FOR TYPE-FOUNDING OR TYPE-SETTING,~~  
FOR PREPARING OR MAKING PRINTING-BLOCKS, PLATES,  
CYLINDERS OR OTHER PRINTING COMPONENTS

~~Type founding may be a hand operation, or may be done mechanically by means of more or less complex machines. The apparatus and machines covered include :~~

This heading includes :

- (1) ~~Matrices, small plates, usually of copper or nickel, impressed by means of a punch. They are used for casting separate printing types.~~
- (2) ~~Tables for levelling, by hand planing, the face of printing type. These consist essentially of a perfectly smooth table slit down the centre and fitted with a clamping device which holds the type in place.~~

- (3) ~~Automatic type founders. In these the printing type is made letter by letter, but is not set. They usually consist of an electrically heated crucible containing the molten metal, of a mould cooling device to accelerate the hardening, and of mechanisms for planing and levelling the type.~~
- (4) ~~Type-casting machines for rules, spacing material "furniture", etc., operating by extrusion.~~
- (5) ~~Composing sticks (or setting sticks) used to start the composition, and on which one or more lines of type are set by hand. They consist mainly of a small well-planed wooden or metal plate, with flanges on two adjacent sides and often with a mobile clamping slide. The heading includes galleys, similar, but larger, which hold the type for a whole page.~~
- (6) ~~Chases, cast iron or steel frames to hold several pages for printing. One, two or four pages are held in place in the chase by means of metal quoins (special metal wedges) or by mechanical wedging devices (nut or screw type, etc.) which also fall in this heading.~~

~~In addition to the above mentioned type-founding and type-setting machines and apparatus, there is a whole group of other machines which mechanically cast the type and also set it. This is done either as two distinct operations on two different but complementary machines (the first machine produces a perforated paper band which controls the second machine whose function is to cast the type either separately or in line blocks), or as one operation on the same machine. These machines, often very complex, include :~~

- (7) ~~Casting and setting machines for separate types (monotype) which, operating from a band previously perforated on a precomposing machine, select, by means of pneumatic relays, special matrices contained within the machine which produces the individual type characters and sets them in a galley (itself incorporated in the machine).~~

~~These machines are used in conjunction with a precomposing machine having a keyboard perforator which produces the precomposition on a paper tape. These precomposing machines are also classified here.~~

- (8) ~~Keyboard machines for casting and setting separate types, all operations being carried out on the same machine (Rototype, etc.).~~
- (9) ~~Type founders for line-set type. The matrices, after being set in lines by hand, are incorporated in the machine which casts the type and delivers it in the form of a line of type (slug).~~
- (10) ~~Machines for setting and founding lines of type. These are complex keyboard machines of various types (Intertype, Linograph, etc.) which both set and cast the type in the form of lines on the same machine. Some of these machines are fitted with a device to enable them to operate from paper bands previously perforated on a separate machine which is also covered by this heading.~~
- (11) ~~Machines of the office typewriter type, but with justifying devices and multiple fonts, used to type out copies for photographic reproduction, or used with photolithographic or offset printing machines.~~

~~In the case of hand set types, when a large number of copies is required, the types themselves are not always used for the printing. Hand or mechanically made lead castings (stereos) or electroplated castings (electros) are used instead. These plates may then be kept for further editions. The equipment used for this purpose includes:~~

- ~~(12) Special moulding presses used to make mouldings of the forms in paperboard, wax or plastics (flongs).~~
- ~~(13) The impressed flongs referred to in the previous item.~~
- ~~(14) Machines for casting stereotyping plates. These are used for casting flat or curved stereos from the moulded flong. Machines with a furnace, to keep the metal in a molten state, remain in this heading provided the furnace is an integral part of the machine.~~
- ~~(15) (1) Machines for making printing plates by direct reproduction from a document. In these machines, a photocell scans the document, and the impulses transmitted by an electronic device from that cell activate a tool which engraves a plate of plastics.~~
- ~~(16) Black-leading machines used to black-lead a wax or plastic moulding, which will be used to produce electros by electroplating. The powdered graphite is applied by a set of mobile brushes, the excess black-lead being removed by spraying with water.~~

~~This heading also includes the machines used in preparing printing blocks, plates and cylinders, e.g.:~~

- ~~(17) (2) Machines for acid etching plates or cylinders. These consist of special vats fitted with stirrers.~~
- ~~(18) (3) Machines for sensitising offset zinc plates (horizontal whirlers), generally fitted with an electric heating device.~~
- ~~(19) Electrolysis and polishing vats for photogravure cylinders. In these agate polishers smooth out and keep even the layer of copper forming on the revolving cylinder during electrolysis.~~

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~~The heading also includes phototype setting and composing machines, which compose by successively photographing characters mounted on revolving discs or the face of special matrices or the characters created on a cathode ray tube by a matrix of very small overlapping dots. The heading also includes composing machines using a laser beam projected onto photographic film.~~



~~Some of these machines incorporate a keyboard or similar device or are programmed to operate from a paper band or other carrier of coded information, previously produced on a separate machine.~~

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The heading covers only phototype-setting or composing machines which actually set type even if the type is photographed after it has been set. However the heading excludes photographic cameras, photographic enlargers or reducers, photographic contact printers and similar photographic apparatus for preparing printing plates or cylinders (Chapter 90), for example :

- (a) Apparatus used for the photographic reproduction of drawings, texts, etc., e.g., vertical or horizontal process cameras; enlarging or reducing apparatus; light tables for planning layouts or for contact printing, half tone or similar screens of glass or plastics finely marked with a close series of lines intersecting at right angles, colour screens, and frames for such screens.
- (b) Apparatus which photographs blocks of type previously set by hand or by machine (including separately presented supplementary photographic devices which convert a normal lead casting type-setting and composing machine into a machine which operates by photographing the matrices as they are set).

## PARTS

Subject to the general provisions regarding the classification of parts (see the General Explanatory Note to Section XVI), the heading also covers parts of the machines of this heading.

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The heading also excludes :

- (a) Stencils of zinc, plastics, cardboard, etc., for use in stencil printing machines (classified according to the constituent material).
- (b) ~~Special paperboard for making printing flongs (usually heading 48.05, 48.10 or 48.11);~~ Copying or transfer papers, bearing texts or designs for reproduction (heading 48.16).
- (c) Silk screens for silk screen printing, whether or not coated (heading 59.11); metal wire cloth, mounted on a frame, whether or not prepared, for use in screen printing (classified according to the constituent material).
- (d) ~~Hand punches and other hand tools (heading 82.05).~~
- (e) ~~Type melting furnaces (heading 84.17 or 85.14).~~
- (f) ~~Flong dryers, including drying presses with heated plates (heading 84.19).~~
- (g) (d) Marking irons for gilding machines (heading 84.40).
- (h) (e) Metal, stone or wood working machine-tools (for example, matrix planing and finishing machines, machines for planing and cutting rules; disc or ball graining machines; engraving machines; milling cutters; routing machines; trim saws) (headings 84.56 to 84.65).
- (ij) ~~Electro-mechanical hand graining machines (heading 84.67).~~

- (\*) (f) Machines for cutting stencils or embossing sheets of metal, plastics, etc., for use on duplicators, addressing machines, etc. (heading 84.72).
- (+) (g) Type and other printing parts of typewriters, calculating or other machines of headings 84.69 to 84.72 (heading 84.73).
- (m) (h) ~~Moulds, other than type matrices and moulds forming an integral part of type founding machines (heading 84.80).~~
- (n) ~~Electrically heated crucibles (heading 85.14).~~
- (o) ~~Telegraphic or radio equipment for transmitting or receiving the perforation pattern of the type setting paper bands (heading 85.17, 85.25 or 85.27).~~
- (p) (j) Laser photoplotter for creating latent images, on photosensitive film, generally from digital formats, by means of a laser beam (heading 90.06).
- (q) (k) ~~Measuring or checking instruments (e.g., matrix measuring or controlling instruments, set squares, type gauges and line gauges) (heading 90.17 or 90.31).~~
- (r) ~~Furniture specialised for printing use, with cases, drawers or trays for type, punches, matrices, etc. (heading 94.03).~~
- (s) ~~Hand-operated inking rollers (classified according to the constituent material).~~

Pages 1507 to 1511. Heading 84.43.

84.43 - PRINTING MACHINERY USED FOR PRINTING BY MEANS OF THE PRINTING TYPE, BLOCKS, PLATES, CYLINDERS AND OTHER PRINTING COMPONENTS OF HEADING 84.42; INK-JET PRINTING MACHINES, OTHER THAN THOSE OF HEADING 84.71; MACHINES FOR USES ANCILLARY TO PRINTING (+).

- Offset printing machinery :

8443.11 - - Reel fed

8443.12 - - Sheet fed, office type (sheet size not exceeding 22 x 36 cm)

8443.19 - - Other

- Letterpress printing machinery, excluding flexographic printing :

8443.21 - - Reel fed

8443.29 - - Other

8443.30 - Flexographic printing machinery

8443.40 - Gravure printing machinery

- Other printing machinery :

8443.51 - - Ink-jet printing machines

8443.59 - - Other

8443.60 - Machines for uses ancillary to printing

8443.90 - Parts

This heading covers all machines used for printing by means of the ~~type, printing blocks,~~ plates or cylinders of the previous heading, excluding therefore :

- (a) Office hectograph or stencil duplicating machines, addressing machines and other office machines of headings 84.69 to 84.72.
- (b) Photocopying or thermocopying apparatus (e.g., for the production of blue prints, plans, etc., or for the reproduction of documents, picture postcards, etc.) (Chapter 90).

The heading also covers :

- (1) Machines for printing a repetitive design, repetitive wording or overall colour on textiles, wallpaper, wrapping paper, rubber, plastics sheeting, linoleum, leather, etc.
- (2) Ink-jet printing machines, except those specifically designed to form a unit of heading 84.71 (see the paragraphs concerning printers in Part (I) (A) of the Explanatory Note to this heading).
- (3) Ancillary machinery (whether or not presented separately) such as feeders and folding machines, provided they are specially designed as ancillary machines to printing machines.

#### (I) PRINTING MACHINERY

This may be divided into ~~four main categories, viz. :~~

~~(A) Printing presses, including :~~

- ~~(1) Ordinary presses, used particularly for printing artists' engravings or proofs. In their simplest form they usually consist of a fixed horizontal slab (or bed) to hold the forme, cliché or plate to be reproduced, and a movable plate which is pressed against the bed by means of a screw or lever mechanism; the paper sheet is interposed and backed with a special material (blanket) to distribute the pressure evenly; inking is done by hand or mechanically.~~
- ~~(2) Platen presses, these are much more powerful but similar in principle. The movable pressure plate (or platen), with the blanket and paper sheet, is almost horizontal and closes like a jaw against the type matter held in position by the fixed vertical bed. Normally, such presses are equipped with a roller inking arrangement, but the group also includes non-inking platen presses for dry relief printing.~~

~~(B) Cylinder printing machines.~~

~~The special feature of these is that the platen is replaced by a rotating cylinder carrying the paper sheet and the blanket, while the bed is flat and receives an alternating transmission movement under the cylinder. This category of machines includes :~~

- ~~(1) Single cylinder machines which, like the presses described above, print one side of the sheet only; they make either one or two revolutions for each sheet printed.~~

~~(2) Machines with one or two cylinders and with a two forme bed for printing both sides of the sheet, the bed alternating automatically between one cylinder and the other in the case of the two cylinder machines.~~

~~Some presses of this kind combine several units on one frame, for multi-colour printing.~~

~~(C)~~ (A) Rotary presses.

~~Here the bed itself is replaced by~~ In their simplest form, these presses usually consist of a cylinder with two semi-cylindrical plates (typographical), or ~~by of~~ cylinders which may be either engraved (photogravure or rotogravure) or impressed (offset printing); rotary presses for colour-printing are equipped with several printing cylinders, their inking rollers being placed side by side. Since all the printing, pressing and inking mechanisms are rotary, these presses can be used for both sheet by sheet printing and continuous printing, in black or in colour, on both sides of paper fed by reels. Some large rotary presses which combine several printing units on a single frame, enable all the pages of a newspaper or periodical to be printed in one sequence of operations, so that, in the final result, all the pages are delivered, cut, folded, assembled, stapled and stacked by various ancillary machines working in conjunction with the printing machine.

~~(D)~~ (B) Ink-jet printing machines.

In these machines the desired characters are produced on paper by an ink-drop jet passing through a dot matrix.

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The above printing presses (particularly the small or medium-sized rotary presses) can be fitted with a series of making-up units arranged side by side with the printing units, so that, starting from say a single reel of paper, complex products (e.g., box shapes, packagings, labels, railway tickets) can be completed in one single and continuous operation.

In addition to the normal types of printing machines, this heading also covers special machines such as :

- (i) Machines for printing tin foil boxes or other containers.
- (ii) Machines for printing clock or watch dials or other articles of special shapes.
- (iii) Machines for printing on corks, tubes, candles, etc.
- (iv) Machines for marking clothing.
- (v) Machines for printing book page signatures.
- (vi) Numbering, dating, etc., machines (other than hand-operated date and similar stamps of heading 96.11) operating with irons, bands of letters or figures, etc., whether or not inked.
- (vii) Certain small office printing machines which operate by means of printing type or by the offset process, and which are improperly referred to as "duplicating machines" because their operating principles and appearance are similar to those of duplicating machines.

This group also includes colour printing machines, used to colour, after they have been first printed in black and white, special art editions, playing cards, children's illustrations, etc., by means of stencils or stencil-plates, the colour being applied by brushes, rollers or by spraying.

Machines for printing a repetitive design, repetitive words or overall colour on textiles, wallpaper, wrapping paper, linoleum, leather, etc., include :

- (1) Block printing machines in which blocks engraved with the design, generally in relief, are repeatedly pressed on the cloth, wallpaper, etc., as it passes through the machine, thus producing a continuous design; the same machines are also used for printing separate designs (e.g., on scarves or handkerchiefs).
- (2) Roller printing machines, usually consisting of a large central cylinder (pressure bowl) around the periphery of which is placed a series of engraved colour rollers, each with its colour trough, furnisher roller, doctor blades, etc.
- (3) Screen printing machines. The material to be printed passes through the machine together with a stencil-screen band, the colour being applied through the stencil.
- (4) Warp printing machines which, before weaving, print a design on the sheet of parallel warp yarns unrolled from the warp beam.
- (5) Yarn printing machines. These produce colour effects on the yarn (or sometimes on the roving before it is spun into yarn).

#### (II) MACHINES FOR USES ANCILLARY TO PRINTING

This group covers machines (whether or not presented separately) for uses ancillary to printing exclusively designed to operate with printing machines and used during or after the printing operation for feeding, handling or further working the sheets or rolls of paper.

These machines, which are usually separate from the printing machine itself, include :

- (A) Stock or pile elevators. These comprise a kind of frame fitted with a moving tray containing the pile of blank sheets; the tray rises progressively as the printing proceeds and keeps the pile at a constant height in relation to the machine.
- (B) Automatic feeders, used for sheet by sheet printing. Their function is to grip the sheets in the pile one by one (usually by means of an arm with pneumatic suction cups) and feed them into the press, perfectly centred. Frequently they are used in combination with a pile elevator.
- (C) Sheet delivery mechanisms, similar in design to feeders, but carrying out the reverse process (i.e., they deliver and pile the printed sheets).
- (D) Folders, gummers, perforators and staplers. These are often used, at the delivery end of the printing machine, to fold and staple or stitch printed pages (of newspapers, folders, periodicals, etc.).

If, however, they are not designed exclusively for use in conjunction with a printing machine, they are excluded (heading 84.40 or 84.41, as the case may be).

- (E) Serial numbering machines, small accessory machines operating with rolls of figures.
- (F) Bronzing machines for the printing industry. These deposit metal powder on sheets as they emerge from the printing machine in which they have just been mordant-printed.

## PARTS

Subject to the general provisions regarding the classification of parts (see the General Explanatory Note to Section XVI), the heading also covers parts of the machines of this heading.

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The heading also excludes :

- (a) Cylinder blankets and covers of textile fabric, rubberised textile fabric, felt, rubber, etc. (classified according to the constituent material).
- (b) Machines with an ancillary printing device, e.g., certain bag filling or packing machines (heading 84.22); certain machines for making up paper or paperboard (heading 84.41). If presented separately, the printing device remains classified in this heading provided it prints by one of the processes of the machines of this heading.
- (c) Anti-smudging spraying machines (heading 84.24).
- (d) ~~Teleprinters and similar telegraphic or radio apparatus (heading 85.17, 85.25 or 85.27).~~

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Subheading Explanatory Notes.

Subheadings 8443.11, 8443.12 and 8443.19

These subheadings cover printing machinery in which the impression is obtained by means of a printing plate on which the design is reproduced in the flat, i.e., in neither intaglio nor relief (offset printing process). The formation of the image to be printed is based on the principle of the mutual repulsion of water and fatty substances. The printing, always performed on a rotary machine, is not obtained by direct contact of the printing medium on the material to be printed, but by intermediate transfer onto a rubber cylinder called a blanket which, in turn, transfers the image onto the matter to be printed. The machinery of these subheadings is characterised by the presence of the blanket and of a device used to continuously dampen the non-printing parts of the printing plate which is fixed to a metal cylinder. Offset printing machines can be fed by rolls or sheets.

Subheadings 8443.21 and 8443.29

Letterpress printing is a process whereby the ink is transferred under pressure to the printing surface from the raised parts of the type. The type consists of individual characters, lines or image-bearing plates, all of the same height.

These subheadings do not, however, cover flexographic printing machinery.

Subheading 8443.30

Flexographic printing is a process employing the letterpress principle for simple work (printing of packaging, forms, leaflets, etc.), and in which the printing plate is of rubber or thermoplastic material bonded directly to the impression cylinder. These machines are simpler and lighter than other printing presses; they print continuous webs of paper in one or more colours, using an ink based on alcohol or other volatile solvents.

Subheading 8443.40

In gravure printing, the ink accumulated in different volumes in engraved or etched parts of the printing plate is transferred by pressure onto the surface to be printed. This form of printing has its origins in line engraving and etching, where a graver or an acid is used to incise lines of different depths in a polished copper plate. The surface of the plate remains free of ink, which collects in the lines in sufficient quantity to yield an impression.

The principle of gravure printing is similar to that of line engraving and etching. A rotary cylinder is used instead of the plate. The image or signs are transferred onto a cylindrical plate electroplated with copper by mechanical or photochemical means.

Page 1571. Heading 84.69. Exclusions.

The heading also excludes :

- ~~(a) Justifying or multiple font machines for use in photolithographic or offset printing (heading 84.42).~~
- (b) (a) Accounting machines (heading 84.70).
- (e) (b) Automatic data processing machines (heading 84.71).
- (d) (c) Machines for completing or signing cheques (heading 84.72).
- (e) (d) Teleprinters (heading 85.17).
- (f) (e) Toy typewriters (heading 95.03).

CHAPTER 90.

Page 1778. Heading 90.06. First paragraph after item (15).

~~On the other hand, phototype setting or composing machines which actually set type are classified in heading 84.42, even though the type is photographed after it has been set. These machines operate, for example, by successively photographing characters mounted on revolving discs, or by photographing the faces of special matrices. They either incorporate a keyboard or similar device, or are operated from paper bands previously perforated on a separate machine.~~

