

## SECTION D — TEXTILES; PAPER

## D04 BRAIDING; LACE-MAKING; KNITTING; TRIMMINGS; NON-WOVEN FABRICS

## D04B KNITTING

**Note(s)**

1. In this subclass, groups designating machines, apparatus, devices, or implements include processes characterised by, or dependent on, their use, and the products of such processes.
2. Knitted products, i.e. fabrics, articles, are classified in this subclass only if they have constructional features which are of interest from the knitting aspect.

**Subclass index**

## WEFT KNITTING AND MACHINES THEREFOR

General processes or knitted articles.....	1/00
Hand tools or implements; knitting apparatus or machines for domestic use.....	3/00, 5/00, 7/08
Flat-bed knitting machines:	
with independently-movable needles; with fixed needles.....	7/00, 11/00
Circular knitting machines:	
with independently-movable needles; with fixed spring or bearded needles.....	9/00, 13/00
Details or auxiliary devices incorporated in the machines.....	15/00, 35/00

## WARP KNITTING AND MACHINES THEREFOR

General processes and knitted articles.....	21/00
Machines	

flat-bed; other types.....	23/00, 25/00
details or auxiliary devices incorporated in the machines.....	27/00, 35/00

## AUXILIARY APPARATUS USED WITH KNITTING MACHINES.....37/00

## CROCHETING AND APPARATUS THEREFOR

Processes; tools or implements.....	31/00, 33/00
Details or auxiliary devices incorporated in the apparatus.....	35/00

## REPAIRING; UNRAVELLING.....17/00, 19/00

## PROCESSES AND KNITTING MACHINES NOT OTHERWISE PROVIDED FOR.....39/00

**Weft knitting: Machines therefor**

<b>1/00</b>	<b>Weft knitting processes for the production of fabrics or articles not dependent on the use of particular machines; Fabrics or articles defined by such processes</b>
1/02	• Pile fabrics or articles having similar surface features
1/04	• • characterised by thread material
1/06	• Non-run fabrics or articles
1/08	• • characterised by thread material
1/10	• Patterned fabrics or articles
1/12	• • characterised by thread material
1/14	• Other fabrics or articles characterised primarily by the use of particular thread materials
1/16	• • synthetic threads
1/18	• • elastic threads
1/20	• • • crimped threads
1/22	• specially adapted for knitting goods of particular configuration
1/24	• • wearing apparel
1/26	• • • stockings

1/28 • • • gloves

**3/00 Hand tools or implements for weft knitting**

3/02	• Needles
3/04	• Finger protectors; Thread tensioners
3/06	• Ball holders or receptacles

**5/00 Weft knitting apparatus or machines without needles for domestic use** (with needles D04B 7/08)**7/00 Flat-bed knitting machines with independently-movable needles** (straight-bar machines with fixed needles D04B 11/00)

7/02	• with one set of needles
7/04	• with two sets of needles
7/06	• • for purl work or Links-Links loop formation
7/08	• for domestic use
7/10	• with provision for narrowing or widening to produce fully-fashioned goods
7/12	• with provision for incorporating pile threads
7/14	• with provision for incorporating internal threads in laid-in fabrics

## D04B

- 7/16 • for producing fabrics consisting of, or incorporating, elastic threads
- 7/18 • • incorporated as weft or inlaid threads
- 7/20 • with provision for changing the fabric construction, e.g. from plain to rib-loop fabric
- 7/22 • with special provision for commencing goods, e.g. with non-run edges
- 7/24 • for producing patterned fabrics
- 7/26 • • with colour patterns
- 7/28 • • with stitch patterns
- 7/30 • specially adapted for knitting goods of particular configuration
- 7/32 • • tubular goods
- 7/34 • • • gloves

### 9/00 **Circular weftknitting machines with independently-movable needles** (with fixed spring or bearded needles D04B 13/00)

- 9/02 • with one set of needles
- 9/04 • • with spring or bearded needles
- 9/06 • with needle cylinder and dial for ribbed goods
- 9/08 • • for interlock goods
- 9/10 • with two needle cylinders for purl work or for Links-Links loop formation
- 9/12 • with provision for incorporating pile threads
- 9/14 • with provision for incorporating loose fibres, e.g. in high-pile fabrics
- 9/16 • with provision for incorporating internal threads in laid-in fabrics
- 9/18 • with provision for splicing by incorporating reinforcing threads
- 9/20 • with provision for narrowing or widening; with reciprocity action, e.g. for knitting of flat portions
- 9/22 • with provision for changing the fabric construction, e.g. from plain to rib-loop fabric
- 9/24 • with special provision for commencing goods, e.g. with non-run edges
- 9/26 • for producing patterned fabrics
- 9/28 • • with colour patterns
- 9/30 • • • by striping
- 9/32 • • • • by wrap striping
- 9/34 • • • by plating
- 9/36 • • • Intarsia work obtained by reciprocity action
- 9/38 • • with stitch patterns
- 9/40 • with provision for transfer of knitted goods from one machine to another
- 9/42 • specially adapted for producing goods of particular configuration
- 9/44 • • elongated tubular articles of small diameter, e.g. coverings for cables (sheathing electric cables H01B 13/22)
- 9/46 • • stockings, or portions thereof
- 9/48 • • • non-run stockings
- 9/50 • • • • micromesh stockings
- 9/52 • • • surgical stockings
- 9/54 • • • welts, e.g. double or turned welts
- 9/56 • • • heel or toe portions
- 9/58 • • gloves

### 11/00 **Straight-bar knitting machines with fixed needles** (flat-bed machines with independently-movable needles D04B 7/00)

- 11/02 • with one set of needles
- 11/04 • with two sets of needles
- 11/06 • with provision for narrowing or widening to produce fully-fashioned goods

- 11/08 • with provision for incorporating pile threads
- 11/10 • with provision for incorporating internal threads in laid-in fabrics
- 11/12 • for producing fabrics from, or incorporating, elastic threads
- 11/14 • with provision for changing the fabric construction, e.g. from plain to rib-loop fabric
- 11/16 • with special provision for commencing goods, e.g. with non-run edges
- 11/18 • for producing patterned fabrics
- 11/20 • • with colour patterns
- 11/22 • • with stitch patterns
- 11/24 • with provision for transfer of knitted goods from one machine to another
- 11/26 • specially adapted for producing goods of particular configuration
- 11/28 • • stockings, or portions thereof
- 11/30 • • • non-run stockings
- 11/32 • • • welts, e.g. double or turned welts
- 11/34 • • • heel or toe portions
- 11/36 • • other wearing apparel

### 13/00 **Circular weft knitting machines with fixed spring or bearded needles, e.g. loop-wheel machines** (with independently-movable needles D04B 9/00)

- 13/02 • with horizontal needles

### 15/00 **Details of, or auxiliary devices incorporated in, weft knitting machines, restricted to machines of this kind** (details or auxiliary devices not so restricted D04B 35/00)

- 15/02 • Loop-transfer points
- 15/04 • • for straight-bar knitting machines
- 15/06 • Sinkers
- 15/08 • Needle latch openers; Brushes
- 15/10 • Needle beds
- 15/12 • • Shogging devices therefor
- 15/14 • Needle cylinders
- 15/16 • • Driving devices for reciprocity action
- 15/18 • Dials
- 15/20 • Needle bars
- 15/22 • • Driving devices therefor
- 15/24 • Sinker heads; Sinker bars
- 15/26 • Slurcocks
- 15/28 • Needle pressers
- 15/30 • Driving devices for thread-carrier rods
- 15/32 • Cam systems or assemblies for operating knitting instruments
- 15/34 • • for dials
- 15/36 • • for flat-bed knitting machines
- 15/38 • Devices for supplying, feeding, or guiding threads to needles
- 15/40 • • Holders or supports for thread packages
- 15/42 • • • Frames for assemblies of two or more reels
- 15/44 • • Tensioning devices for individual threads
- 15/46 • • • for elastic threads
- 15/48 • • Thread-feeding devices
- 15/50 • • • for elastic threads
- 15/52 • • • for straight-bar knitting machines
- 15/54 • • Thread guides
- 15/56 • • • for flat-bed knitting machines
- 15/58 • • • for circular knitting machines; Thread-changing devices
- 15/60 • • • • with thread-clamping or -severing devices
- 15/61 • • • • arranged within needle circle

- 15/62 • • • • with thread knotters
- 15/64 • • • for straight-bar knitting machines
- 15/66 • Devices for determining or controlling patterns
- 15/68 • • characterised by the knitting instruments used
- 15/70 • • • in flat-bed knitting machines
- 15/72 • • • in straight-bar knitting machines
- 15/74 • • • Pattern drums
- 15/76 • • • Pattern wheels
- 15/78 • • • Electrical devices
- 15/80 • • characterised by the thread guides used
- 15/82 • • characterised by the needle cams used
- 15/84 • • Jacquard cards or mechanisms (stamping apparatus therefor D03C)
- 15/86 • • • in flat-bed knitting machines
- 15/88 • Take-up or draw-off devices for knitting products
- 15/90 • • for flat-bed knitting machines
- 15/92 • • pneumatic
- 15/94 • Driving-gear not otherwise provided for
- 15/96 • • in flat-bed knitting machines
- 15/98 • • in straight-bar knitting machines
- 15/99 • • electrically controlled

### **Repairing or unravelling knitted fabrics**

#### **17/00 Repairing knitted fabrics by knitting operations**

- 17/02 • by darning
- 17/04 • by picking-up dropped stitches

#### **19/00 Unravelling knitted fabrics**

### **Warp knitting: Machines therefor**

#### **21/00 Warp knitting processes for the production of fabrics or articles not dependent on the use of particular machines; Fabrics or articles defined by such processes**

- 21/02 • Pile fabrics or articles having similar surface features
- 21/04 • • characterised by thread material
- 21/06 • Patterned fabrics or articles (open-work fabrics D04B 21/10)
- 21/08 • • characterised by thread material
- 21/10 • Open-work fabrics
- 21/12 • • characterised by thread material
- 21/14 • Fabrics characterised by the incorporation by knitting, in one or more thread, fleece, or fabric layers, of reinforcing, binding, or decorative threads; Fabrics incorporating small auxiliary elements, e.g. for decorative purposes (pile fabrics D04B 21/02; non-woven fabrics in general D04H)
- 21/16 • • incorporating synthetic threads
- 21/18 • • incorporating elastic threads
- 21/20 • specially adapted for knitting articles of particular configuration

#### **23/00 Flat warp knitting machines**

- 23/02 • with two sets of needles
- 23/04 • with independently-movable knitting needles
- 23/06 • for producing fabrics consisting of, or incorporating, elastic threads
- 23/08 • with provision for incorporating pile threads
- 23/10 • for knitting through thread, fleece, or fabric layers, or around elongated core material
- 23/12 • with provision for incorporating unlooped wefts extending from selvedge to selvedge

- 23/14 • with provision for incorporating small auxiliary elements, e.g. for decorative purposes
- 23/16 • specially adapted for producing fabrics, or article blanks, of particular form or configuration
- 23/18 • • with provision for narrowing or widening
- 23/20 • • for producing stocking blanks
- 23/22 • with special thread-guiding means
- 23/24 • with cut needle presser arrangements to produce patterns

#### **25/00 Warp knitting machines not otherwise provided for**

- 25/02 • Tubular machines
- 25/04 • Milanese machines
- 25/06 • Galloon crocheting machines
- 25/08 • • for producing pile fabrics
- 25/10 • • for producing patterned fabrics
- 25/12 • • • with independently-movable weft-thread guides controlled by Jacquard mechanisms
- 25/14 • • specially adapted for producing articles of particular configuration

#### **27/00 Details of, or auxiliary devices incorporated in, warp knitting machines, restricted to machines of this kind (details or auxiliary devices not so restricted D04B 35/00)**

- 27/02 • Warp-thread guides
- 27/04 • Sinkers
- 27/06 • Needle bars; Sinker bars
- 27/08 • • Driving devices therefor
- 27/10 • Devices for supplying, feeding, or guiding threads to needles
- 27/12 • • Tensioning devices for individual threads
- 27/14 • • Thread tensioning rod arrangements
- 27/16 • • Warp beams; Bearings therefor
- 27/18 • • • Warp beam braking devices for thread tensioning
- 27/20 • • • Warp beam driving devices
- 27/22 • • • • electrically controlled
- 27/24 • • Thread guide bar assemblies
- 27/26 • • • Shogging devices therefor
- 27/28 • • • • with arrangements to reduce the number of members of pattern chains
- 27/30 • • • • with driving-gear comprising force-multiplication devices
- 27/32 • • • with independently-movable thread guides controlled by Jacquard mechanisms
- 27/34 • Take-up or draw-off devices for knitted products
- 27/36 • • with temples

### **Crocheting: Apparatus therefor**

#### **31/00 Crocheting processes for the production of fabrics or articles**

- 31/02 • Crocheted strips or threads

#### **33/00 Crocheting tools or apparatus (galloon crocheting machines for warp knitting D04B 25/06)**

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- 35/00 **Details of, or auxiliary devices incorporated in, knitting machines, not otherwise provided for**
  - 35/02 • Knitting tools or instruments not provided for in group D04B 15/00 or D04B 27/00 (needle manufacture B21G 1/00)
  - 35/04 • • Latch needles

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- 35/06 • • Sliding-tongue needles
- 35/08 • • Spring or bearded needles
- 35/10 • Indicating, warning, or safety devices, e.g. stop motions
- 35/12 • • responsive to thread consumption
- 35/14 • • responsive to thread breakage
- 35/16 • • • with detectors associated with a series of threads
- 35/18 • • responsive to breakage, misplacement, or malfunctioning of knitting instruments
- 35/20 • • responsive to defects, e.g. holes in knitted products
- 35/22 • Devices for preparatory treatment of threads
- 35/24 • • by moistening or lubricating
- 35/26 • • by heating
- 35/28 • Devices for lubricating machine parts (in general F16N)
- 35/30 • Devices for controlling temperature of machine parts
- 35/32 • Devices for removing lint or fluff
- 35/34 • Devices for cutting knitted fabrics
- 35/36 • Devices for printing, coating, or napping knitted fabrics
- 37/00 Auxiliary apparatus or devices for use with knitting machines** (Jacquard cards, pattern chains, apparatus for punching same D03C)
- 37/02 • with weft knitting machines
- 37/04 • • for inserting or adjusting pattern pins or like elements in pattern drums or wheels
- 37/06 • with warp knitting machines
- 39/00 Knitting processes, apparatus or machines, not otherwise provided for**
- 39/02 • with work carrier in screw form
- 39/04 • adapted for combined weft and warp knitting
- 39/06 • adapted for combined knitting and weaving
- 39/08 • Sewing machines modified for knitting