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STANDARDISED CLASSIFICATION
AND
TERMINOLOGY IN THE
WOODWORKING MACHINERY INDUSTRY^{1/}

by

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I. INTRODUCTION

1. With the development of machines and tools in industrialised countries indexes were prepared for company catalogues, industry catalogues, for statistical and other purposes. The increasing number of various processing machines in the industry rendered it possible to systematize the indexing of all equipment available.
2. In 1920 the first classification for woodworking machines was prepared, based on the idea to apply a decimal system similar to the Dewey-Decimal Classification for bibliography purposes proposed in 1891 by Melvil Dewey, Boston USA.
3. The following survey of Woodworking Machinery Classification and Indexes views the necessity of establishing an

International Classification for
Woodworking Machines,
Woodworking Machinery Tools, and
Auxiliary Equipment for the Woodworking Industry.

II. AVAILABLE CLASSIFICATIONS AND INDEXES RELATED TO WOODWORKING MACHINES

4. Schmalz, Gustav
Die Methoden des Ordners und ihre Anwendung auf die Einteilung der Holzbearbeitungsmaschinen 1920
- Ministry of Supply, Great Britain
Standard Classification of Machine Tool Types
part 2 Woodworking Machines 1946
- V D M A Fachgemeinschaft Holzbearbeitungsmaschinen
Maschinenverzeichnis zum Fachbezugsquellennachweis 1950
- Index of woodworking machinery directory WGW Export 1960
- P N 54000 - Poland
Machines and Tools for Woodworking 1963

S I C Code 3522 - USA	1964
Woodworking Machinery	
British Standard 3997	1966
Classification of Woodworking Machines and Auxiliary Equipment	
AF NOR NFE 60013	1970
Classification des Machines-Outils: Machines à travailler le Bois et Machines Auxiliaires	
Statistisches Bundesamt	1970
Statistisches Warenverzeichnis für die Industriestatistik, Warengruppe 3217 Holzbe- und Verarbeitungsmaschinen, auch Werkzeugmaschinen zum Bearbeiten von Kork, Bein, Hartkautschuk, Kunststoff und Ähnlichen harten Stoffen	
S M S 989	1971
Trärbearbeitungsmaschinen Klassifizierung (Swedish, English, French, German)	
D I N 8800 Fachnormenausschuß Maschinenbau	1971
Holzbearbeitungsmaschinen Technische Klassifikation	
U.S. Forest Products Laboratory, Madison, Wisconsin	1971
Tentative Draft Copy of proposed Revision for Oxford System of Decimal Classification for Forestry, Section 8 - Forest Products and their Utilisation	
Verband Schweizerischer Holzbearbeitungs- Maschinen- und Werkzeugfabrikanten	1972
Technical Classification of Woodworking Machines Auxiliary Machines for Woodworking (including Tools)	

The Japan Woodworking Machinery Association Guide to Japanese Woodworking Machinery	1972
Woodworking Machinery Manufacturers of America Machine Index of Buyer's Guide and Directory	1972
Woodworking directory of Stankoimport, Russian woodworking machines	

III. THE DEVELOPMENT OF CLASSIFICATIONS IN INDUSTRIALIZED COUNTRIES

5. The German classification of 1920 indexed 10 groups:

1. Sawing machines
2. Planing machines
3. Shaping machines
4. Boring machines
5. Slot mortising machines, tenoning machines,
dadoing machines, corner jointing machines
6. Turning lathes
7. Sanding machines
8. Equipment and Machines for tool maintenance and
tool setting
9. Special machines
10. Others not specified

6. Due to the decimal system sub-groups can be indexed, viz.:

1. Sawing machines
 - 11 Reciprocating sawing machines
 - 111 Frame sawing machines
 - 1111 Gang sawing machines with subfloor drive
 - 1112 Gang sawing machines with overhead drive
 - 1113 Gang sawing machines with side drive
 - 1114

7. Features for sub-grouping can be: the drive, the special purpose (deal frame), the feed system, the direction of sawing operation (vertical, horizontal, tilted).

The British Standard Classification of 1946 applied the code system.

<u>Group:</u>	<u>Codes</u>
Sawing	40
Planing and Moulding	41
Mortising	42
Tenoning	43
Sanding	44
Routing and Recessing	45
Dovetailing and Corner Locking	46
Lathes	47
Boring and/or Drilling	48
Nailing	49
Universal	50
Veneer and Plywood	51
Cutter and Knife Grinders	52
Saw Doctoring Equipment	53
Miscellaneous	54

9. The code is divided into three sections to each of which two digits are allotted, thus:

(a) Group	42
(b) Class	03
(c) Type	00

All sections must be used when coding any machine tool. The following is a typical example:

Surface planing and moulding machine hand feed up to 6" width
Code number 410101

10. The code is built up in the following manner:

(a) Group	planing and moulding	41
(b) Class	surface	01
(c) Type and Size	hand feed up to 6" width	01

The Code 40 "Sawing" is subdivided into the following classes:

- 01 Circular Sawbenches
- 02 Dimension Sawbenches
- 03 Straight Line Edgers
- 04 Multiple Edgers
- 05 Rack Benches
- 06 Cross Cut Saws
- 07 Band Saws
- 08 Frame Saws
- 09 Reciprocating Saws
(Log Cross Cutting, Petrol or Electric Power)
- 10 Chain Saws
(Cross Cutting, Petrol or Electric Power)
- 11 Fretsaws
- 99 Not elsewhere classified

12. These two classification systems mirror the machines manufactured at that time, thus the development stage of equipment for machining wood.

13. The first German one followed the metalworking industry system and has as its principle advantage the fact that it is expandable to include new developments as they arise, whereas the second (British) aims at identifying individual pieces of equipment more rigorously. The former then is well-suited to grouping by operation types by defining machines whereas the latter represents a more ad hoc approach which lends itself to inventory control, for example.

14. New developments since 1945 in the field of derived wood products utilised in the furniture and prefab wood house trade, development of new adhesives, lacquers and fittings generated new ideas for developing adequate equipment. This era brought a real change in the make and shape of machines and tools.

15. When in 1960 the European Woodworking Machinery Manufacturers met for cooperating work, the technical committee started to prepare the EUNABOIS Classification. The author of this paper acted as consultant to the Eunabois Committee as Woodworking Machinery Expert.

16. The Eunabois system was based on manufacturing processes and tried to be comprehensive as well. It has included, for example, in its

first group a differentiation between cutting with and without removal of chips, i.e. a description of what the machine does.

17. The index of the WWW Export directory includes the following groups:

1. Gang sawing machines and equipment
2. Hand sawing machines
3. Other sawing machines
4. Veneer and plywood machinery
5. Planing and moulding machines
6. Shaping machines and lathes
7. Sanding machines
8. Boring machines
9. Special machines
10. Tool maintenance equipment

18. This is an individual listing of machines and equipment without any classifying character. Under Item 3 are log band mills, edging and ripping sawing machines, circular sawbenches and crosscut saws. If looking for a specific machine one has to go through several different columns to find out whether a given machine is included or not.

19. The Russian woodworking machinery index of the Stankoimport directory includes the following groups:

1. Log handling equipment
2. Gang saws
3. Lumber handling equipment
4. Circular sawing machines
5. Band sawing machines and scroll saws
6. Universal woodworkers
7. Planing and moulding machines
8. Shaping machines
9. Tenoning machines
10. Boring and mortising machines
11. Sanding and polishing machines

12. Turning machines and round stock milling machines
13. Parquetry machinery
14. Tool maintenance equipment

20. The sequence of the different classified groups are applied especially to the Russian woodworking machine industry. There are, for example, log band saws and no re-saws. Multi-purpose machines are only under the heading of tenoning machines. As soon as the Russian industry group specialises in other woodworking machines and equipment they will have to follow a more detailed classifying system.

IV. PROPOSALS TO SET UP AN UP-TO-DATE INTERNATIONAL WOODWORKING MACHINERY CLASSIFICATION

21. Similar to the proposals of the French Machine Tool Manufacturers the ISO proposes to establish a far ranging classification whose basis can be common to all industrial fields.

1. Machine Tools
 - 1.1 Metal Working Machines
 - 1.2 Wood and Plastic Working Machines

22. Both groups should be subdivided into a similar way, viz.:

Wood and Plastic Working Machines

1. Cutting machines changing the shape or dimension of a workpiece without or with removal of chips.
2. Deforming machines mechanically changing the form and/or physical characteristics of the workpiece by action on its structure.
3. Joining machines fixing two or several pieces together.
4. Wood conditioning equipment modifying the characteristics of the wood by extraction, impregnation or other processes.

5. Auxiliary machines and equipment are specifically used in the woodworking industry.
 6. Portable machines and machining heads.
 7. Woodprocessing machines operating with non-cutting means.
 8. Multi-purpose machines applying processes of the groups 1-7, the workpiece after initial entry is fully processed without further manual assistance.
23. As has been mentioned elsewhere in this report, the EUMABOIS system (Annex I) is already in wide use by leading equipment-producing countries in Europe; its technical terms have already been translated into English, French, German, Italian, Spanish and Swedish, and its format is one that lends itself to continual revision and expansion to meet future needs. It is particularly important that specifiers and makers of machinery have a means of ensuring complete understanding when discussing various models, and that a universally accepted classification number appear with every catalogue, brochure or advertisement entry.
24. This is even more important for equipment buyers from developing countries who can readily compare bids issued on the basis of a firm code system from several suppliers, and not be misled by competing claims of uniqueness and superiority.
25. It is hereby recommended that the existing EUMABOIS classification system (Annex I) with the indicated additions appearing thereunder */ be accepted for universal use by equipment makers, sellers, purchasers and research personnel in the woodworking industry.
26. It is further proposed that future revision work by EUMABOIS and/or National Standards Committees include consideration of the changes described in Annex II since major developments have
- */ marked with an asterisk

occurred in the fields of sanding (12.7), veneer applying (31.11), auxilliary (59) and multi-purpose (81) machines.

Main Data

27. The FUMABOIS system uses processing actions and machine configurations to classify equipment, but there still remains many other features to specify before an individual item has been fully described. These other data are often referred to as "Main Data" and include such parameters as horsepower, capacity (width, length, thickness etc.) feed speed range and variability, and power type. Many manufacturers, when they receive a firm offer for a machine, will send a questionnaire specifically for that type of equipment that allows the extras and individual characteristics to be built in.

28. It is proposed that an attempt be made to systematize the listing of main data to help both suppliers and purchasers to avoid misunderstandings.

Tool Classification

29. Just as the machinery population requires a classification system to assist in the rational development of the woodworking industry, so does the machining tool population. The reasons are the same, basically, as discussed above, but there is no universally accepted basis to begin from. It is hereby recommended that a machining tool classification be established to complement the existing FUMABOIS machinery system as modified hereunder.

30.. Existing systems are discussed under Section V.

V. THE MOST USED CLASSIFICATIONS AND INDEXES FOR WOODWORKING MACHINES

1. Classifications

31. Derived from the Dumabois Classifications are the following national standards:

DIN 8800; SMS 989; BS 3997; NFF 60013

32. The Swiss Woodworking Machine manufacturers reprinted the Dumabois classification and included the Tool classification (Tools used on Woodworking machines). Only one classification exists for tools. It was developed in Switzerland and covers the operation - i.e. it can be used for "all" materials (wood, plastics, light alloys, etc.).

33. Machining tools for wood and plastic working as classified in Switzerland.

- 101 Boring tools high speed steel quality or carbide tipped
 - 101.1 boring bits
 - 101.2 routing bits
- 102 Milling and tenoning tools high speed steel quality or carbide tipped, also with indexable tips
 - 102.1 Solid moulding cutters
 - 102.2 cutterheads
 - 102.3 tenoning discs
- 103 Sawing tools
 - 103.1 circular saw blades, high speed steel
 - 103.2 circular saw blades, carbide tipped
 - 103.3 hogging tools, carbide tipped
 - 103.4 band saw blades
 - 103.5 log band saw blades
 - 103.6 gang saw blades
- 104 Machine knives
 - 104.1 planer knives, high speed steel
 - 104.2 planer knives, carbide tipped
 - 104.3 chipper knives
 - 104.4 general machine knives

34. This is just a possible grouping of tools. In connection with the wood-working machinery classification one should classify:

1. in the sequence of the machines or
2. according to their crosssections and type of tool holders (bars, blades band or circular shaped inserts etc.).

35. In this view the following machining tools classification is proposed for woodworking machining tools and tool holders:

1. Machining tools
 - 1.1 Machining knives
 - 1.11 Knives for veneer production machines
 - 1.12 Knives for planing machines
 - 1.121 stationary knives
 - 1.122 outterblock knives
 - 1.13 Knives for moulding machines
 - 1.131 moulding profiles
 - 1.132 matching profiles
 - 1.14 Turning tools
 - 1.141 turning chisels
 - 1.142 turning gouges
 - 1.143 shaped turning gouges
 - 1.144 profiled turning tools
 - 1.2 Machining blades
 - 1.21 Straight saw blades
 - 1.211 Gang saw blades
 - 1.211.1 for vertical gangsaws
 - 1.211.2 for horizontal gangsaws
 - 1.212 Cross cut saw blades
 - 1.213 Jig saw blades
 - 1.22 Endless saw tools
 - 1.221 Band saw blades
 - 1.221.1 narrow blades
 - 1.221.2 wide blades
 - 1.222 Saw chains
 - 1.223 String saws

- 1.23 Circular saw blades
 - 1.231 Solid circular saw blades
 - 1.232 Circular saw blades with teeth inserts
- 1.24 Circular ring saw blades
- 1.25 Coned circular saw blades
- 1.26 Cylinder saws
- 1.3 Milling cutters
 - 1.31 Solid moulding cutters
 - 1.32 Assembled moulding cutters
 - 1.321 Moulding cutter sets
 - 1.322 Multiple moulding cutters
 - 1.33 Cutterheads with inserted tools
 - 1.331 Cutterheads with profiled blades
 - 1.332 Cutterheads with adzing blades
 - 1.333 Cutterheads with bit inserts
 - 1.333.1 Cutterheads for surface planing with staggered bits
 - 1.333.2 Cutterheads for profiling with bits inserts
 - 1.334 Disc cutters
 - 1.334.1 Tenoning discs
 - 1.334.2 Dadoing heads
 - 1.334.3 Hogging sets
 - 1.335 Rounding heads
 - 1.335.1 for continuous rounding
 - 1.335.2 for end rounding (chucking)
- 1.4 Routing cutters
 - 1.41 Profile routing bits
 - 1.42 Straight routing bits
 - 1.43 Dovetailing bits
 - 1.44 Slot mortising bits
- 1.5 Boring tools
 - 1.51 Drills
 - 1.52 Countersink drills
 - 1.53 Dowel hole borers
- 1.6 Abrasives
 - 1.61 Sanding belts
 - 1.611 Narrow belts
 - 1.612 Wide belts
 - 1.62 Sanding discs
 - 1.63 Sanding sheets

36. For better information in buying guides and exhibition catalogues, the following literature based the machinery index on the principles of the European classification.

- Group show catalogue for woodworking machines and
- Expobois exhibition catalogue
- Interbimall exhibition catalogue
- Who makes machinery?
- British woodworking machine manufacturers catalogue
- Eumabois catalogue
- Hannover Fair catalogue

37. Many technical headings of the standard classification are replaced in the above-mentioned catalogues to make this information source as a handy guide.

2. Indexes

38. The machine index of the buyer's guide and directory to woodworking machinery manufacturers of America is an alphabetical machine listing. It is not a fully detailed information source as compared to a decimal classification system.

39. The Guide to Japanese Woodworking Machinery includes three groups:

- Sawmill machinery
- Veneer and plywood machinery
- Woodworking machinery

40. Tracing for a special machine one has to look through the whole section. Because of the lack of subdivision in each section the items are viewed in the sequence of log breakdown. Bandsawing machines are used for both sawmills and veneer and plywood manufacturing, tool maintenance equipment appears in practically all sections, the heavy equipment being listed with the veneer and sawmill equipment and the lighter type of equipment being listed with secondary wood processing.

41. The core stock composer is mentioned under woodworking machines, but composers are primarily used in the plywood industry. Looking for tool maintenance equipment requires tracing in all three sections. Drum and wide-belt sanders are also mentioned in two different sections.

Saw mill machinery

Chain saw

Barker

Bandmill with autofeed carriage

Remote controlled carriage

Tandem bandmill with remote controlled carriage

Table bandsaw

Roller band resaw

Horizontal band resaw

Sash gang mill

Vertical slicer

Edger and ripper

Trimmer

Saw maintenance Equipment

Conveying Equipment

Veneer and Plywood machinery

Lathe charger

Veneer lathe

Veneer reeling and unreeling equipment

Veneer slicer

Veneer clipper

Veneer dryer

Veneer jointer

Veneer edge gluer

Glue spreader

Cold press

Lay-up system

Hot press

Double sizer

Drum sander

Wide-belt sander

Veneer knife grinder

Grooving machine

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VI. TERMINOLOGY

1. Terminology Working Groups

42. At present, to the knowledge of the author, the following groups are working on the subject of terminology:

- a) Fachnormenausschuß Holz im DWA within a joint group of the ISO working on wood terms
- b) The Technical Committee of Fumabois working on special terms of woodworking machines
- c) Terminology Group, Division 5, IUFRO working on uniform terminology for wood cutting operations.

2. Woodworking Terms, Different Words and the same Meaning

43. When looking at some different terms it is easy to find out there is a necessity to standardise terms for a common understanding. The German terms Holzbearbeitung und Holzverarbeitung can be compared to the English terms saw-milling and woodworking or similarly to primary woodworking and secondary woodworking. In each case the terms denote production following log breakdown and lumber conversion.

44. But within these manufacturing processes, British, American and Australian woodworkers use different words for the same item or the same words for different subjects; e.g.:

spindle moulder - spindle shaper

rail sleeper - railroad tie

moulder - matcher - sticker

multi - gang

jointing - planing

jointing - gluing

jointing - grinding

cut off - cross cutting - chopping

seasoning - drying - kiln

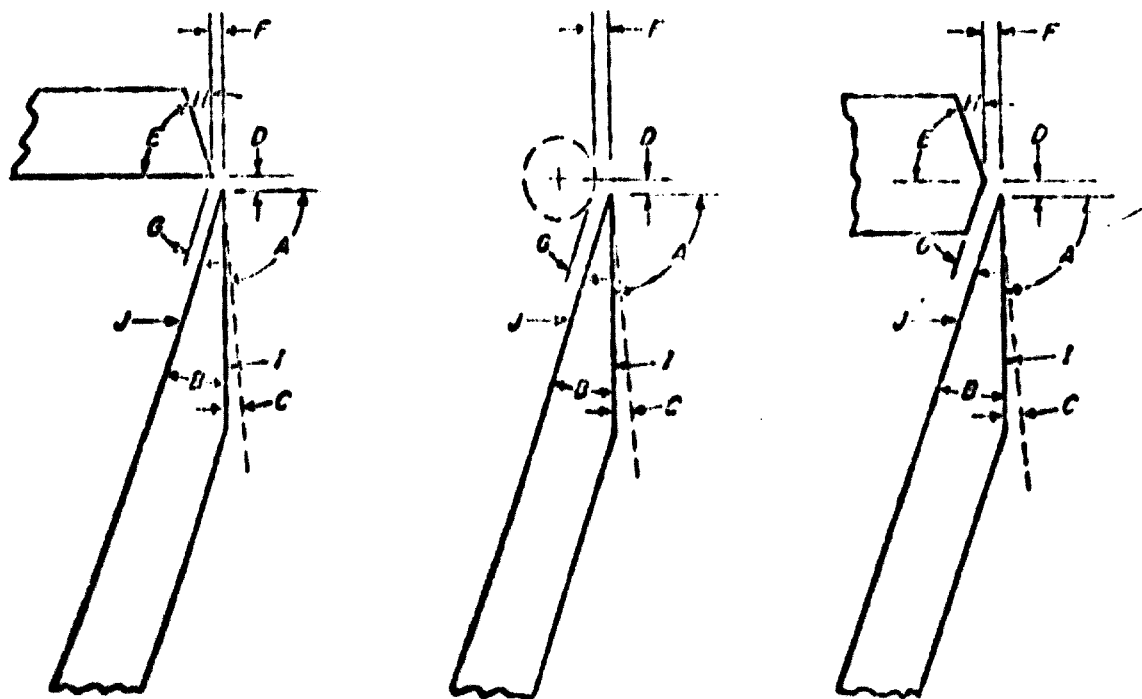
45. In some cases the different words exist in the one language with no comparable term in another language, e.g. resawing and ripcutting. These few examples show that words that have developed in carpentry, joinery and woodworking have to be standardised for better understanding.

46. The example of veneer cutting terminology (Figure 1) was prepared by one of the IUPRO members. The primary aim is to facilitate communication between research workers concerned with wood cutting. The procedure has been to take advantage of basic similarities in the various cutting operations to rationalise the terminology. The basic cutting situation is dealt with first, and additional terms are added to describe certain important cutting operations. Only essential terms are included in order to improve the chances of agreement. Thus, in writing, these terms can be defined by referring to the document of standardised terms, and any additional terms used could be defined as necessary.

VII. CONCLUSION

47. Classifications and terminology in their relations are basic means for understanding among industrialised countries. Standardised classifications will assist in simplifying statistics, indexes for directories and similar literature, and particularly in communications between buyers and sellers. Terms in woodworking, woodworking machinery, tools and related subjects have to be standardised, but in cooperation with the competent industry groups. This work will also assist the young experts of developing countries when looking for machines and equipment to be used in their factories and to follow the developments and research work in industrialized countries. An international information centre for this industry would be of great help in any respect.

Figure 1. Knife and Pressure Bar Technology



KNIFE AND FIXED BAR

KNIFE AND ROLLER BAR

**KNIFE AND DOUBLE-SURFACED
FIXED BAR**

<u>Symbol</u>	<u>Preferred Term</u>	<u>Alternate Term</u>
A	Knife angle	Knife pitch
B	Knife bevel	Knife sharpness angle
C	Clearance angle	--
D	Lead	Vertical opening*
E	Pressure bar bevel	Pressure bar sharpness angle
F	Gap	Horizontal opening*
G	Exit gap	Restraint
H	Nosebar compression angle	Bar angle
I	Knife face	--
J	Knife back	--

*Satisfactory for vertically operating lathe or slicer but misleading for horizontally operating slicers.

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Annex I

Existing Classification Including Proposed Additions */

- 1. Cutting machines
 - 11 CHIPLESS CUTTING MACHINES
 - 11.1 Cleaving Machines
 - 11.11 Round wood cleaving machines
 - 11.12 Firewood cleaving machines
 - 11.13 Root stock cleaving machines
 - 11.14 Osier-willow, bamboo and rattan splitting machines
 - *11.15 Tree shears
 - 11.19 Other cleaving machines
 - 11.2 Reducing Machines
 - 11.21 Chopping and chipping machines
 - *11.211 Round wood chipping machines
 - *11.211.1 Drum type chippers
 - *11.211.1 Disc type chippers
 - *11.211.3 Cone type chippers
 - *11.212 Veneer and wastewood chippers
 - *11.213 Log profile chipper
 - *11.214 Board chip blanker
 - 11.22 Flaking machines
 - 11.23 Defibrating machines
 - 11.24 Disintegrating machines
 - 11.25 Shredding machines for wool wool production
 - 11.29 Other reducing machines
 - 11.3 Stamping Machines (e.g. veneer stamping machines)
 - 11.4 Slicing Machines
 - 11.41 Slicing machines for board production
 - 11.411 with reciprocating tool
 - 11.412 with rotary disc
 - 11.413 with rocking tool beam
 - 11.42 Cutting machines for veneer production
 - 11.421 Veneer slicing machines
 - *11.421.1 Vertical slicing machines
 - *11.421.2 Horizontal slicing machines
 - *11.421.3 Tilted slicing machines

* / An asterisk indicates a proposed change or addition

- 11.422 Veneer peeling lathes
- 11.49 Other slicing machines
- 11.5 Veneer Shearing Machines
- 11.51 Veneer clippers
- 11.52 Veneer back edge shears
- 11.53 Veneer contouring machines (nibblers)
- 11.59 Other veneer shearing machines
- 11.9 Other Chipless Cutting Machines (e.g. hard board circular shears, mitre trimming machines, mullion chipping machines, gas wood chipping machines)
- 12 **CUTTING MACHINES (BY REMOVAL OF CHIPS OR PARTICLES)**
- 12.1 Sawing Machines
- 12.11 Sawing machines with reciprocating tool
- 12.111 Log crosscut sawing machines
 - 12.111.1 non-transportable
 - 12.111.2 transportable
- 12.112 Fret sawing machines
- 12.113 Horizontal frame sawing machines
- 12.114 Vertical frame sawing machines
 - 12.114.1 non-transportable
 - 12.114.2 transportable
- 12.119 Other sawing machines with reciprocating tool
- 12.12 Sawing machines with continuous tool
- 12.121 Band sawing machines
 - 12.121.1 Log band sawing machines
 - 12.121.11 horizontal
 - 12.121.111 non-transportable
 - 12.121.111.1 stationary machines, mobile carriage
 - 12.121.111.2 stationary log, mobile machine
 - 12.121.112 transportable with mobile log carriage
 - 12.121.12 vertical
 - 12.121.121 non-transportable
 - 12.121.121.1 carriage with hand feed
 - 12.121.121.2 carriage with automatic feed
 - 12.121.122 transportable
 - 12.121.122 carriage with hand feed
 - 12.121.122.2 carriage with automatic feed
 - 12.121.2 Band sawing machines with carriage but without dogging

- 12.121.21 non-transportable
- 12.121.211 carriage with hand feed (push bench)
- 12.121.212 carriage with automatic feed (rad. bench)
- 12.121.22 transportable
- 12.121.221 carriage with hand feed
- 12.121.222 carriage with automatic feed
- 12.121.3 Band sawing machines with rollers or roller table
- 12.121.31 non-transportable
- 12.121.311 with push table
- 12.121.312 without push table
- 12.121.32 transportable
- 12.121.321 with push table
- 12.121.322 without push table
- 12.121.4 Band resawing machines
- 12.121.41 horizontal
- 12.121.42 vertical
- 12.121.421 self-centering and gauge cutting
- *12.121.421.1 Single band resaw
- *12.121.421.2 Twin band resawing machines
- *12.121.421.3 Quad band resawing machines
- 12.121.429 Others (e.g. for mine timber etc.)
- *12.121.43 diagonal
- 12.121.5 Table band sawing machines
- 12.121.51 non-transportable
- 12.121.52 transportable
- 12.121.9 Other band sawing machines (e.g. multi-blade band sawing machines for parquet strips, pulpwood cross-cutting band sawing machines, three pulley band sawing machines, band rip sawing machines)
- 12.122 Chain sawing machines
- 12.122.1 Cross-cutting chain sawing machines
- 12.122.2 Chain sawing machines for log breakdown
- 12.122.9 Other chain sawing machines
- 12.13 Sawing machines with rotating tool
- 12.131 Single blade circular sawing machines
- 12.131.1 Single blade stroke circular sawing machines for cross-cutting

- 12.131.11 with arcuate tool stroke
- 12.131.111 with axis of articulation above workpiece (pendulum)
- 12.131.112 with axis of articulation below workpiece
- 12.131.113 with axis of articulation level with workpiece
- 12.131.119 others with arcuate tool stroke
- 12.131.12 with straight-line tool stroke
- 12.131.121 parallel link sawing machines
- 12.131.122 overhead arm supporting moving saw carriage
- 12.131.129 others with straight-line tool stroke
- 12.131.19 Other single blade circular sawing machines for cross-cutting
- 12.131.2 Single blade stroke circular sawing machines for ripping
- 12.131.21 for boards
- 12.131.22 for veneer packs
- 12.131.29 other single blade stroke circular sawing machines for ripping
- 12.131.3 Single blade non-stroke circular sawing machines
- 12.131.31 Log circular sawing machines with carriage
- 12.131.32 Log circular sawing machines with roller table
- 12.131.33 Resawing machines with roller feed
- 12.131.34 Precision cut circular sawing machines with travelling table
- 12.131.35 Single blade edging circular sawing machines
- 12.131.351 edging circular sawing machines with roller or chain feed
- 12.131.352 edging circular sawing machines with moving table
- 12.131.36 Single blade circular saw benches with tilting and vertical saw adjustment with or without inboard moving table (dimension saws)
- 12.131.37 Single blade circular sawing machines for special purpose
- 12.131.371 sliding table circular sawing machines for cross-cutting
- 12.131.372 circular sawing machines with travelling table (panel saws)

- 12.131.373 circular sawing machines for building sites
- 12.131.374 circular sawing machines for firewood
- 12.131.39 Other single blade non-stroke circular sawing machines
- 12.131.9 Other single blade circular sawing machines (e.g. sawing machines for panel sizing)
- 12.132 Double and multi-blade circular sawing machines
 - 12.132.1 Double and multi-blade stroke circular sawing machines
 - 12.132.11 Panel sizing machines for parallel cuts
 - 12.132.12 Panel sizing machines for squaring cuts
 - 12.132.13 Panel sizing machines for parallel and squaring cuts
 - 12.132.2 Double and multi-blade stroke and non-stroke circular sawing machines
 - 12.132.21 Panel sizing machines for squaring cuts
 - 12.132.22 Panel sizing machines for parallel and squaring cuts
 - 12.132.3 Double and multi-blade non-stroke circular sawing machines
 - 12.132.31 Double and multiple trim sawing machines
 - 12.132.32 Double blade log and timber circular sawing machines
 - 12.132.321 sawblades in one plane
 - 12.132.322 sawblades in parallel planes
 - 12.132.33 Double edging circular sawing machines
 - 12.132.34 Multi-blade circular sawing machines
 - 12.132.39 Other double and multi-blade non-stroke circular sawing machines
 - 12.132.9 Other double and multi-blade circular sawing machines
- *12.139 Other sawing machines with rotating tool (e.g. concave sawing machines, tubular saws, stave sawing machines.)
- 12.2 Planing Machines
 - 12.21 Planing machines for one-side dressing
 - 12.211 Truing up machines
 - 12.211.1 Surface planing or edge jointing machines with cutterblock
 - 12.211.11 hand feed
 - 12.211.12 automatic feed
 - 12.211.2 Surface planing machines with cutter disc
 - 12.211.3 Jointers with travelling heads for veneer packs
 - 12.212 Thickness planing machines with rotary cutterblock
 - 12.213 Fixed knife planing machines

- *12.213.1 Single table fixed knife planing machines
- *12.213.2 Twin table fixed knife planing machines
- 12.219 Other planing machines for one-side dressing
- 12.22 Planing machines for two-side dressing
- 12.221 Surface planing and edge jointing machines for truing up and squaring in one operation
- 12.222 Thickness-jointing machines for thicknessing and edge jointing in one operation
- 12.223 Machines for planing and thicknessing in one operation
- 12.229 Other planing machines for two-side dressing
- 12.23 Planing machines for three-side dressing
- *12.231 Adjustable table, fixed horizontal cutterblock
- *12.232 With adjustable table or cutterblock
- 12.24 Planing machines for four-side dressing
- *12.241 Adjustable table, fixed upper horizontal cutterblock
- *12.242 With adjustable table or cutterblock
- 12.29 Other planing machines
- 12.3 Moulding (shaping) Machines
- 12.31 One-side moulding machines
- 12.311 Single-spindle moulding machines and double-spindle moulding machines with fixed spindle centres
- 12.312 Single end tenoning machines with one tool holder, or with detachable circular saw
- 12.313 Interlocking machines
- 12.313.1 Corner locking machines
- 12.313.2 Dovetailing machines
- 12.313.9 Other interlocking machines
- 12.314 Pattern milling and recessing machines
- 12.315 Copying machines
- 12.315.1 with template control of workpiece
- 12.315.11 spindle shaping machines
- 12.315.12 routing machines
- 12.315.19 other machines
- 12.315.2 with template control of tool
- 12.315.21 shaping machines
- 12.315.22 routing machines

- *12.315.221 radial arm router
- *12.315.222 optical tracer router
- *12.315.223 NC (controlled) router
- 12.315.29 other machines
- 12.315.3 with pattern control of feed
- 12.315.31 automatic rotary movement of workpiece
- 12.315.39 other pattern-controlled copying machines (e.g. carving machines)
- 12.316 Horizontal single-spindle moulding machines with power feed (e.g. picture moulding)
- 12.319 Other one-side moulding machines (e.g. grooving machines)
- 12.32 Two-side moulding machines
- 12.321 double-end spindle moulding machines (with laterally adjustable spindles)
- 12.322 double-spindle shaping machines, with template control
- 12.323 double-spindle moulding machines
- 12.329 other two-side moulding machines (e.g. tonguing and grooving machines)
- 12.33 Three-side moulding machines, fixed bed, adjustable spindles
- 12.34 Four-side moulding machines, fixed bed, adjustable spindles
- 12.35 Rounding machines
- 12.36 Profile-forming machines with form tools and workpiece rotation
- 12.39 Other moulding machines
- 12.4 Boring Machines
- 12.41 Single-spindle boring machines (also with multi-spindle boring heads)
- 12.42 Multi-spindle boring machines
- 12.421 with fixed spindle centres
- 12.422 with adjustable spindle centres
- 12.43 Boring machines for special purposes
- 12.431 knot hole boring machines
- 12.432 dowel hole boring machines
- 12.433 deep hole boring machines
- 12.434 boring machines for acoustic tiles

- 12.439 other boring machines for special purposes
- 12.49 Other boring machines
- 12.5 Mortising Machines
- 12.51 Mortising machines with oscillating tool action
 - 12.511 single tool
 - 12.512 multi-tool
- 12.52 Mortising machines with continuous tool
 - 12.521 chain mortising machines
 - 12.521.1 single-chain mortising machines
 - 12.521.2 multi-chain mortising machines
 - 12.522 combined chain and chisel mortising machines
- 12.529 other mortising machines with continuous tool
- 12.53 Mortising machines with rotating tool
 - 12.531 slot mortising machines
 - 12.531.1 Single tool
 - 12.531.2 Multi-tool
 - 12.531.9 Special machines (e.g. for shutters)
- 12.532 hollow chisel mortising:
- 12.539 other mortising machines with rotating tool
- 12.59 Other mortising machines
- 12.6 Turning Machines
- 12.61 Turning lathes
- 12.62 Facing lathes
- 12.63 Lathes with non-rotating profile forming tools
- 12.64 Copying lathes with template control of tool (back-knife lathes)
- 12.69 Other turning machines
- 12.7 Sanding Machines- Buffing Machines
- 12.71 Sanding machines with oscillating action
- 12.72 Belt sanding machines
 - 12.721 belt sanding machines with fixed table (finisher type)
 - 12.722 overhead belt sanding machines with sliding table or frame
 - 12.722.1 non-automatic
 - 12.722.2 semi-automatic
 - 12.723 fully-automatic overhead belt sanding machines
- 12.724 wide belt sanding machines
- 12.73 Disc sanding machines

- 12.731 disc sanding machines with spindle in fixed position
- 12.732 disc sanding machines with spindle in articulated arm
- 12.74 Sanding machines with cylindrical sanding tool
- 12.741 bobbin sanding machines (extended spindle no outboard bearing)
 - 12.741.1 hand feed
 - 12.741.2 automatic feed
- 12.742 drum sanding machines (drums mounted between bearings)
 - 12.742.1 single-drum sanding machines
 - 12.742.11 hand feed
 - 12.742.12 automatic feed
 - 12.742.2 multi-drum sanding machines (automatic feed)
- 12.75 Special purpose sanding machines
 - 12.751 edge, rebate and profile sanding machines
 - 12.752 curve and form sanding machines
 - 12.753 round stock centreless sanding machines
 - 12.754 automatic variety sanding machines
 - 12.755 two-side sanding machines (e.g. for drawers)
 - 12.759 other special purpose sanding machines
- 12.76 Buffing or polishing machines
 - 12.761 belt buffing or polishing machines
 - 12.761.1 hand feed
 - 12.761.2 automatic feed
 - 12.762 bobbin buffing or polishing machines
 - 12.763 drum polishing machines
 - 12.763.1 hand feed
 - 12.763.2 automatic feed
 - 12.769 other buffing or polishing machines
- 12.8 Combined Machines (universal woodworkers)
 - 12.81 Surface planing and thicknessing machines
 - 12.82 Surface planing (without thicknessing) machines with one or several other operations
 - 12.83 Surface planing and thicknessing machines with one or several other operations
 - 12.84 Circular sawing-moulding - mortising operations
 - 12.89 Other combined machines
 - 12.9 Other Cutting Machines with Removal of Chips

- 2. Deforming machines
 - 21. COMPRESSING MACHINES FOR SOLID WOOD
 - 22. BENDING MACHINES
 - *22.1. Solid Wood Bending Machines
 - *22.2. Plywood Bending Machines
 - 23. EMBOSSING MACHINES
 - *23.1. Roller Embossing Machines
 - *23.2. Platen Press Embossing Machines
 - 29. OTHER DEFORMING MACHINES
- 3. Joining and assembling machines including coating
 - 31. JOINING AND ASSEMBLING MACHINES USING BINDING AGENTS (ADHESIVES)
 - 31.1. Edge Bonding Machines
 - 31.11. Veneer splicing machines
 - 31.111. taping type
 - 31.111.1. lengthwise
 - 31.111.2. crosswise
 - 31.119. other veneer splicing machines
 - 31.119.1. lengthwise
 - 31.119.2. crosswise
 - 31.12. Solid wood edge joining machines
 - 31.121. longitudinal joining
 - 31.121.1. by direct application of the edges (clamps)
 - 31.121.2. by sliding interlock of the edges
 - 31.122. end joining
 - 31.122.1. finger joining clamps
 - 31.122.2. scarfing clamps
 - 31.13. Panel joining machines
 - 31.2. Squaring-up Machines
 - 31.21. Frame clamps
 - 31.22. Carcase clamps
 - *31.221. stationary
 - *31.222. rotary
 - 31.29. Other squaring-up machines
 - 31.3. Surface Joining Machines
 - 31.31. Plywood presses
 - 31.311. for flat surfaces
 - 31.312. for formed surfaces

- 31.32 Laminated wood presses
 - 31.321 for flat surfaces
 - 31.322 for formed surfaces
- 31.33 Veneering presses
 - 31.331 for flat surfaces
 - 31.331.1 hand loading
 - 31.331.2 auto loading, alternated pressure
 - *31.331.3 continuous loading and pressure (roller presses)
 - 31.332 for formed surfaces
 - 31.332.1 with rigid form
 - 31.332.2 with flexible form
- 31.4 Edge Lipping and Bonding Machines
- 31.5 Core Stock Composing and Joinery Stock Offset Composing and Gluing Up Machines
- 31.6 Presses for Coated Particles
 - 31.61 Chip and particle board presses
 - 31.611 for intermittent processing
 - 31.612 for continuously processing
 - 31.612.1 belt presses
 - 31.612.2 extrusion presses
 - 31.612.9 other continuous processes
 - 31.62 Mould presses
 - 31.69 Other presses for blended particles
- 31.7 Fibre Presses
 - 31.71 Continuous metal link belt presses
 - 31.72 Flaten presses
 - 31.79 Other fibreboard presses
- 31.9 Other Joining and Assembling Machines Using Binding Agents (Adhesives)
- 32 MACHINES FOR JOINING BY MEANS OF FASTENERS AS NAILS, STAPLES, WIRE, ETC.)
 - 32.1 Machines for Driving Nails, Staples, Etc.
 - 32.11 Box-nailing machines
 - 32.12 Machines for nailing on strips
 - 32.13 Flat and/or corner staplers

- 32.14 Stapling and stitching machines for wire bound boxes
- 32.19 Other driving machines (e.g. corrugated fastener and crimp driving machines, hardware nailing machines, dowel pin driving machines, hand stapling machines, cable drum nail driving machines, etc.)
- 32.2 Machines for Assembling by Means of Wire (e.g. Firewood Bundling Machines, Weaving Machines, etc.)
- 32.9 Other Machines for Joining by Means of Fasteners such as Nails, Staples, Wire, etc.
- 33 MACHINES FOR JOINING WITHOUT BINDING AGENTS AND WITHOUT FASTENERS
- 33.1 Squeeze Presses for Framework (e.g. ladders, setting of edge protecting rails on shutter boards)
- 33.2 Bailing Presses
- 33.3 Briquetting Presses
- 33.4 Woodwool Rope Spinning Machines
- 33.5 Interweaving Machines
- 33.9 Other machines for Assembling without Binding Agents and without Fasteners
- 34 COATING MACHINES (ADDING COATS TO WOOD)
- 34.1 Glue Spreading Machines
- 34.11 Machines for glue spreading on boards and veneers
 - 34.111 glue spreaders for edges
 - 34.112 glue spreaders for surfaces
- 34.12 Chip and glue blending machines
- 34.19 Other glue spreading machines
- 34.2 Machines for Application of Lacquers
- 34.21 Roller coating
- 34.22 Curtain coating
- 34.23 Flow coating
- 34.24 Spray coating
- 34.25 Dipping
- 34.26 Electrostatic coating
- 34.29 Other machines for application of lacquers

- 34.3 Machines for Printing
- 34.9 Machines for Application of Other Adhesive Materials
(e.g. synthetic resins)
- 39 OTHER JOINING AND ASSEMBLING MACHINES
- 4. Equipment for wood conditioning (seasoning, preserving, etc.)
 - 41 STEAMING EQUIPMENT
 - 42 DRIERS
 - 42.1 Solid Wood Driers
 - 42.2 Veneer Driers
 - 42.3 Chip Driers
 - 42.4 Lacquer Coat Driers
 - 42.9 Other Driers
 - 43 HUMIDIFYING EQUIPMENT
 - 44 IMPREGNATING AND PRESERVING EQUIPMENT
 - 45 BLEACHING, STAINING AND SMOKING EQUIPMENT
 - 49 OTHER MACHINES FOR WOOD CONDITIONING
- 5 Auxiliary machines and equipment for the woodworking industry
 - 51 EQUIPMENT FOR MOVING MATERIAL
 - 51.1 Lifting Equipment
 - 51.11 Mobile lifting tables
 - 51.12 Lifting tables and stages (non-transportable)
 - 51.13 Tilting hoists
 - 51.19 Other lifting equipment
 - 51.2 Infeed and Outfeed Devices
 - *51.21 Lathe chargers
 - 51.3 Turning Devices
 - 51.4 Feeding Devices (especially for feeding workpieces)
 - 51.5 Particle and Waste Conveying Equipment
 - 51.51 Mechanical equipment
 - 51.52 Pneumatic equipment
 - 51.59 Other particles and waste conveying equipment
 - 51.9 Other Equipment for Moving Material
 - 52 PARTICLE GRADERS
 - 53 PARTICLE SPREADERS
 - 54 GLUE ROOM EQUIPMENT
 - 55 EQUIPMENT FOR TOOL MAINTENANCE

- 55.1 Equipment for Saw Blade Maintenance
- 55.11 Grinding machines
- 55.12 Filing machines
- 55.13 Saw setting, saw swaging and dressing machines and equipment
- 55.14 Band saw brazers and butt-joint welding machines
- 55.15 Stretching and rolling machines
- 55.16 Band saw shearing and lap grinding machines
- 55.17 Grinding machines for carbide-tipped blades
- 55.19 Other equipment for saw blade maintenance
- 55.2 Cutter Sharpeners
- 55.21 for straight edges
- 55.22 for shaped edges
- 55.3 Sharpening Machines for Solid Cutters
- 55.4 Sharpening Machines for Boring Tools and Router Bits
- 55.5 Sharpening Machines for Mortising Chisels
- 55.6 Sharpening Machines for Chain Cutters
- 55.7 Universal Tool and Cutter Sharpeners
- 55.8 Sharpening Machines for Carbide-Tipped Tools
- 55.9 Other Equipment for Tool Maintenance
- 59 OTHER AUXILIARY MACHINES AND EQUIPMENT FOR THE WOODWORKING INDUSTRY (e.g. metal detectors, moisture meters, tool setting devices, gauges, safety devices)
- 6 Portable machines (hand operated machines) and machining heads
- 61 PORTABLE MACHINES (HAND OPERATED MACHINES)
- 61.1 Portable Machines for Chipless Cutting
- 61.11 Portable debarking machines (cleaving action)
- 61.19 Other portable machines for chipless cutting (e.g. portable shears)
- 61.2 Portable Machines for Cutting
- 61.21 Portable sawing machines
- 61.211 portable sawing machines with reciprocating tool
- 61.212 portable sawing machines with continuous tool
- 61.212.1 portable bandsaws
- 61.212.2 portable chainsaws
- 61.212.21 portable guide plate chain saws
- 61.212.22 portable bow chain saws

- 61.212.29 other portable chain saws
- 61.213 portable sawing machines with rotating tool
- 61.213.1 portable circular sawing machines
- 61.213.2 portable ring sawing machines
- 61.213.9 other portable sawing machines with rotating tool
- 61.22 Portable planing machines
- 61.23 Portable moulding and routing machines
- 61.24 Portable boring machines
- 61.25 Portable mortising machines
- 61.251 with oscillating tool
- 61.252 with continuous tool (chain mortiser)
- 61.259 other portable mortising machines
- 61.26 Portable sanding and buffing machines
- 61.261.1 with oscillating action
- 61.261.2 with continuous action (portable belt sanding machines)
- 61.261.3 with rotating action
- 61.261.31 portable disc sanding machines
- 61.261.32 portable drum sanding machines
- 61.261.9 other portable sanding machines
- 61.262 portable buffing machines
- 61.3 Portable Machines for Joining and Assembling
- 61.31 Portable nailing machines
- 61.32 Portable stapling machines
- 61.39 Other portable machines for joining and assembling
- 61.4 Portable Machines for Application of Adhering Coats
- 61.41 Glue guns
- 61.42 Spray guns
- 61.49 Other portable machines for application of adhering coats
- 61.9 Other Portable Machines (flexible drive machines included)
- 62 MACHINING HEADS (unit heads)
- 62.1 Dividing Units (chipless cutting)
- 62.2 Cutting Units (removal of chips)
- 62.21 Sawing units
- 62.22 Planing units
- 62.23 Shaping units
- 62.24 Boring units
- 62.25 Mortising units
- 62.26 Sanding and buffing units

- 22 -
- 62.29 Other machining units
 - 62.3 Joining, Assembling and Coating Units
 - 62.9 Other Machining Heads
 - 7. Special woodworking machines for dividing and forming by means of forces other than tools
 - 7.1 ULTRA-SONIC DIVIDING OPERATION
 - 7.2 LASER DIVIDING OPERATION
 - 7.3 WATER JET DIVIDING OPERATION
 - 8. Multi-purpose machines using working methods covered by groups 1,2,3,4,5,6,7
 - 81 MACHINES FOR SEVERAL DIFFERENT OPERATIONS FOR MAKING JOINTS AND/OR JOINING
 - 81.1 Tenoning Machines
 - 81.11 Single-end tenoning machines with several spindles
 - 81.12 Double-end tenoning machines
 - 81.13 Double-end profiling machines with attached units
 - 81.2 Dowelling Machines
 - 81.21 Dowel making machines
 - 81.22 Dowel hole boring machines with various operations (sawing, boring)
 - 81.23 Dowel driving machines with various operations (gluing)
 - 81.24 Dowelling machines performing two or more of the basic operations covered by 81.21 to 81.23
 - 81.3 Dovetailing, Gluing and Long Edge Board Assembling Machines
 - 81.4 Veneer Edge Dressing and Gluing Machines
 - 81.5 Core Stock Composing Machines with Various Operations (gluing, sawing)
 - 81.6 Edge Gluing Banding and Trimming Machines (with sawing)
 - 81.7 Finger Joining and Double Scarfing Machines (with sawing)
 - 81.71 with finger shapers
 - 81.72 with finger dieing tools
 - 81.8 Board Scarfing Machines (with sawing)
 - 81.9 Other Multi-Purpose Machines for Several Different Operations for Making Joints and/or Joining (e.g. automatic frame press and nailing machines; corrugated core beam making machines)
 - 89 OTHER MULTI-PURPOSE MACHINES OF CATEGORY E (e.g. moulding and sanding machines)

9. Other machines

91 SPECIAL MACHINES OR SETS OF SPECIAL MACHINES DESIGNED FOR THE SOLE PURPOSE OF MANUFACTURING A PARTICULAR END PRODUCT

Machines and equipment to make:

- 91.1 Brooms and brushes
- 91.2 Pencils
- 91.3 Barrels
- 91.4 Penholders
- 91.5 Bottle cases
- 91.6 Fountain and ball point pens
- 91.7 Gun stocks
- 91.8 Pit props
- 91.9 Shoe heels
- 91.10 Clogs and sandals
- 91.11 Shoe arches
- 91.12 Laminated structural timbers
- 91.13 Combs
- 91.14 Clothes hangers
- 91.15 Buttons
- 91.16 Cork products
- 91.17 Ornamental mouldings
- 91.18 Rulers
- 91.19 Musical instruments
- 91.20 Parquetry
- 91.21 Paving blocks
- 91.22 Brushes (artists, decorators)
- 91.23 Propeller blades
- 91.24 Slide rules
- 91.25 Louvres and shutters
- 91.26 Coffins (caskets)
- 91.27 Locks and hardware mortises and recesses
- 91.28 Shoe lasts and shoe trees
- 91.29 Railway sleepers (ties)
- 91.30 Sports equipment (skis, racquets)
- 91.31 Chopping blocks (facing)
- 91.32 Basket work etc.
- 91.33 Chairs and settees

- 91.34 Accessories for textile machines (bobbins and shuttles, etc.)
- 91.35 Clothes pegs
- 91.36 Wheels
- 91.37 Toothpicks
- 91.38 Matches
- 91.39 Pallets
- 92 VARIOUS MACHINES
- 92.1 Non-Portable Barking Machines
- 92.11 Mechanical barking machines
- 92.111 drum barking machines
- 92.112 hammer barking machines
- 92.113 bark peeling machines
- 92.12 Hydraulic barking machines

Annex II

Proposed Changes to the Existing EUMARBOIS Classification System

1. Sanding and Buffing Machines (12.7)
- 12.71 Sanding machines with oscillating action.
- 12.72 Belt sanding machines
- 12.721 with fixed table
- 12.721.1 horizontal
- 12.721.2 vertical
- 12.722 with sliding table
- 12.722.1 single belt
- 12.722.2 double belt
- 12.723 with continuous feed
- 12.723.1 one-side sanding
- 12.723.2 two-side sanding
- 12.723.21 vertical
- 12.723.22 horizontal
- 12.73 Wide-belt sanding machines
- 12.731 One-side sanding
- 12.731.1 with top units
- 12.731.2 with bottom units
- 12.732 two-side sanding
- 12.74 Combined sanding units (wide and narrow belts)
- 12.75 Disc sanding machines
- 12.751 with spindle in fixed position
- 12.752 with spindle in articulated arm
- 12.76 Sanding machines with cylindrical sanding tool
- 12.761 bobbin sanding machines (extended spindle, no outboard bearing)
- 12.761.1 hand feed
- 12.761.2 automatic feed
- 12.762 drum sanding machines (drums mounted between bearings)
- 12.762.1 single-drum sanding machines
- 12.762.11 hand feed
- 12.762.12 automatic feed
- 12.762.2 multi-drum sanding machines (automatic feed)
- 12.77 Special purpose sanding machines
- 12.771 edge, rebate and profile sanding machines
- 12.772 curve and form sanding machines
- 12.773 round stock, centreless sanding machines
- 12.774 automatic variety sanding machines

- 12.775 two-side sanding machines (e.g. for drawers)
- 12.779 other special purpose sanding machines
- 12.78 buffing or polishing, machines
- 12.781 belt buffing or polishing machines
 - 12.781.1 hand feed
 - 12.781.2 automatic feed
- 12.782 bobbin buffing or polishing machines
- 12.783 drum polishing machines
 - 12.783.1 hand feed
 - 12.783.2 automatic feed
- 12.789 other buffing or polishing machines
- 2. Veneer Splicing Machines (31.11)
- 31.11 Veneer splicing machines
 - 31.111 glue joint splicing machines
 - 31.111.1 lengthwise splicing machines
 - 31.111.2 crosswise splicing machines
 - 31.112 tape joint splicing machines
 - 31.113 melt adhesive splicing machines
 - 31.113.1 string melt splicing machines
 - 31.113.11 lengthwise splicing machines
 - 31.113.12 edge reinforcing by melt strings
 - 31.113.2 spot melt splicing machines
- 3. Other Auxiliary Machines and Equipment (59)
- 56. TESTING MACHINES FOR WOODWORKING INDUSTRIES
- 56.1 Machines for Testing Logs
- 56.11 Metal detectors
- 56.2 Machines for Testing Sawwood
- 56.21 Moisture meters
- 56.22 Stress graders
- 56.3 Machines for Testing Veneer
- 56.31 Moisture
- 56.32 Thickness
- 56.33 Surface quality
- 56.4 Machines for Testing Plywood
- 56.41 Moisture
- 56.42 Strength properties
- 56.43 Surface quality
- 56.5 Machines for Testing Particleboard

- 56.51 Moisture of particles
- 56.52 Particle characteristics
- 56.53 Binder tests
- 56.54 Additive tests
- 56.55 Strength
- 56.56 Surface quality (planeness)
- 56.6 Machines for Testing Fibreboard
- 56.61 Fibre characteristics
- 56.62 Additive tests
- 56.63 Strength
- 56.64 Surface quality
- 56.7 Machines for Testing Joinery
- 56.8 Machines for Testing Furniture
- 56.9 Machines for Testing Other Products
- 57. GUIDING DEVICES
- 57.1 Pattern Line Devices for Log Breakdown
- 57.2 Light Pointers for Log Centering
- 57.3 Guide Light Line Devices (shadow line projectors for lumber breakdown)
- 58. SAFETY DEVICES
- 59. OTHER AUXILIARY EQUIPMENT
- 4. Multi-Purpose Machines(81)

- 81 MULTI-PURPOSE MACHINES
- 81.1 Machines for Making Joints
- 81.11 Tenoning machines
- 81.111 Single-end tenoning machines
- 81.111.1 Combined circular saw + spindle moulder-tenoner
- 81.111.2 Standard single end tenoner
- 81.111.21 with horizontal saw-spindle and vertical tenon-spindle
- 81.111.22 with horizontal saw-spindle and two horizontal tenon shaper heads
- 81.111.3 Combined single end tenoner and spindle shaper
- 81.112 Double-end tenoning machines
- 81.112.1 with sliding table (reciprocating operation)
- 81.112.2 with rotating feed clamp
- 81.112.3 with continuous feed
- 81.112.4 with interrupted continuous feed

- 81.12 Finger jointing machines
 - 81.121 for mitre joining
 - 81.122 for end joining
 - 81.122.1 with cutting operations
 - 81.122.2 with embossing operation
 - 81.123 for side joining
- 81.13 Dowelling machines
 - 81.131 Dowel end shaping
 - 81.131.1 Single end dowel shaping and boring machines
 - 81.131.2 Double end sawing and dowel end shaping machines
 - 81.132 Dowel hole boring with various operations
 - 81.132.1 Single end sawing, shaping, boring machines
 - 81.132.2 Double end sawing, boring (chucking), gluing, dowel driving machines
- 81.2 Machines for Forming Edges
 - 81.21 Single edge operations
 - 81.211 Workpiece in horizontal position (edge gluing, bonding, flush sawing, end trimming, sanding)
 - 81.212 Workpiece in vertical position
 - 81.212.1 Machining tool feeding
 - 81.212.2 Workpiece feeding
 - 81.22 Double edge operation
 - 81.221 Double edge multi-operation
 - 81.221.1 with sliding table
 - 81.221.2 with continuous feed of workpiece
 - 81.221.21 edge machining only
 - 81.221.211 chip cutting operations
 - 81.221.212 sizing and edge banding operations
 - 81.221.22 edge and surface machining
 - 81.221.3 with moving machining units

- 81.3 Machines for Forming Sides
- 81.31 Single side operations
- 81.311 With travelling shaping, sanding, sawing unit
- 81.312 With rotating table and fixed sawing, shaping, boring and sanding heads
- 81.32 Double and/or up to five side operations
- 81.321 For longitudinal shaping sanding operations
- 81.322 For longitudinal and crossworking operations sawing, hogging, shaping, sanding, boring (chucking)
- 81.323 For crossworking operations
- 81.323.1 two or three station operation, fixed machining units
- 81.323.2 multi-station operation, moving machining units (machining center)
- 81.4 Machines for Forming Panels and Boards
- 81.41 Core stock composing machines (gluing, clamping, sawing)
- 81.42 Board gluing and sawing machines
- 81.43 Board dovetailing, gluing, driving machines
- 81.5 Machines for Forming Frames (sawing, scoring, shaping, gluing, clamping, nailing)
- 81.6 Machines for Hardware Mounting (recessing, boring, routising,¹ hardware mounting, screwing and/or nailing)
- 81.7 Machines for Inserting Glass into Sashes
- 82. MULTI-PURPOSE PROCESSING LINES
- 82.1 Linked Processing Lines with Continuous Flow
- 82.11 Straight flow line
- 82.12 Angle flow line
- 82.13 Reverse flow line
- 82.14 Staggered flow line
- 82.2 Transfer Processing Lines with Cycling Flow
- 82.21 For panel production
- 82.22 For solid wood production
- 82.221 Straight flow line
- 82.222 Angle flow line
- 82.223 Reverse flow line
- 82.224 Staggered flow line
- 83. MULTI-PURPOSE SURFACE COATING LINES

¹ Combines the operations of routing and mortising.



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RESUME

CLASSIFICATION ET TERMINOLOGIE NORMALISEES DANS L'INDUSTRIE DES MACHINES A BOIS^{1/}

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L'élaboration de codes et de classements détaillés tient à la nécessité de désigner par des indices les machines et le matériel mentionnés dans la documentation technique (guides de l'acheteur, listes statistiques, catalogues, etc.).

C'est le professeur Schmalts qui a essayé le premier, en 1920, d'appliquer la classification décimale de Dewey au classement des machines à bois. Groupant toutes les machines à bois fabriquées à l'époque en Allemagne, en 10 classes, il a élaboré un guide détaillé de l'acheteur pour l'Association des fabricants allemands de machines à bois.

Des classifications similaires ont été préparées dans d'autres pays européens et aux Etats-Unis.

^{1/} Les opinions exprimées dans le présent document sont celles de l'auteur et ne reflètent pas nécessairement les vues du Secrétariat de l'ONUDI.

Après la Seconde Guerre mondiale, on a essayé de séparer les machines à bois des machines-outils dans la classification décimale internationale. Le premier progrès décisif par rapport aux systèmes traditionnels de classement a été réalisé par le Comité européen des constructeurs de machines à bois, qui a adopté pour sa classification décimale les nouvelles normes DIN allemandes appliquées pour le classement des méthodes de fabrication. Ce classement a été l'oeuvre des techniciens de l'industrie de transformation des métaux et les spécialistes des machines à bois ont dû adhérer étroitement aux normes DIN pour classer ces machines de la façon la plus rationnelle. Il y a maintenant huit ans que ce système est en vigueur, et plusieurs pays industrialisés d'Europe ont mis au point des normes nationales fondées sur la classification EUMABOIS.

Ce système est suivi avec de bons résultats dans de nombreux catalogues. Le US Forest Products Laboratory, de Madison (Wisconsin) (Etats-Unis d'Amérique), membre de la Division 5 de l'Union internationale des instituts de recherches forestières, a élaboré de son côté un projet de section 8 - Produits forestiers et leurs utilisations - de l'Oxford System of Decimal Classification for Forestry (Système d'Oxford de classification décimale pour la foresterie). Le chapitre 82 traite du matériel pour le travail du bois et notamment des instruments pour le travail manuel du bois, mais de manière moins détaillée que dans la classification européenne.

La normalisation internationale des machines à bois a d'ores et déjà suscité un certain intérêt. Ce travail pourrait s'appuyer sur la documentation existante, et notamment sur les normes polonaises. C'est là une activité fondamentale, indispensable à la mise au point de la terminologie de l'industrie du bois, qui se poursuit depuis une dizaine d'années. Des groupes nationaux de coordination ont entrepris, dans différents pays, de normaliser la terminologie du bois et des articles en bois.

Les fabricants de machines contribuent à ce travail en établissant la terminologie de leurs machines.

Une section de l'Union internationale des instituts de recherches forestières a entrepris d'unifier, sous la direction du Commonwealth Scientific and Industrial Research Organisation, Division of Forest Products, la terminologie des principales opérations de coupe du bois. Le but essentiel est de faciliter les contacts entre les chercheurs spécialisés dans ce domaine.

Tous ces groupes s'efforcent de mettre au point une terminologie multilingue. Ils devraient donc coordonner leurs activités dès le départ, en vue d'établir une terminologie nationale du travail du bois.

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STANDARDISED CLASSIFICATION
AND
TERMINOLOGY
IN THE
WOODWORKING MACHINERY INDUSTRY ^{1/}

by

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SUMMARY

The necessity for machinery and equipment indexes in technical literature, vis. buyer's guides, statistical listings, catalogues and similar purposes leads to detailed coding and grouping in a classifying manner.

In view of the Dewey decimal classification professor Schmalz Fried first in 1920 to apply this system for coding woodworking machines. Within 10 classes of all available Woodworking machines manufactured at that time in Germany, he prepared a detailed Buyers Guide for the VDH (Association of German Woodworking Machinery Manufacturers).

Similar classifications have been prepared in other European countries and in the United States.

^{1/} The views and opinions expressed in this paper are those of the author and do not necessarily reflect the views of the Secretariat of UNIDO. This document has been reproduced without formal editing.

After World War II one tried to split off the woodworking machines from machine tools of the International Decimal Classification. The first break-through in traditional coding systems has been generated by the European Woodworking Machinery Association when they based their decimal classification on the new German DIN-Standard dealing with the classification of manufacturing methods. The processes have been set by technicians of the metalworking field so that woodworking machinery specialists had to find the best way to classify their machines in tight connection to the DIN-Standard. It is approved now for 8 years and several industrialised European countries prepared national standards based on the Eumabois classification.

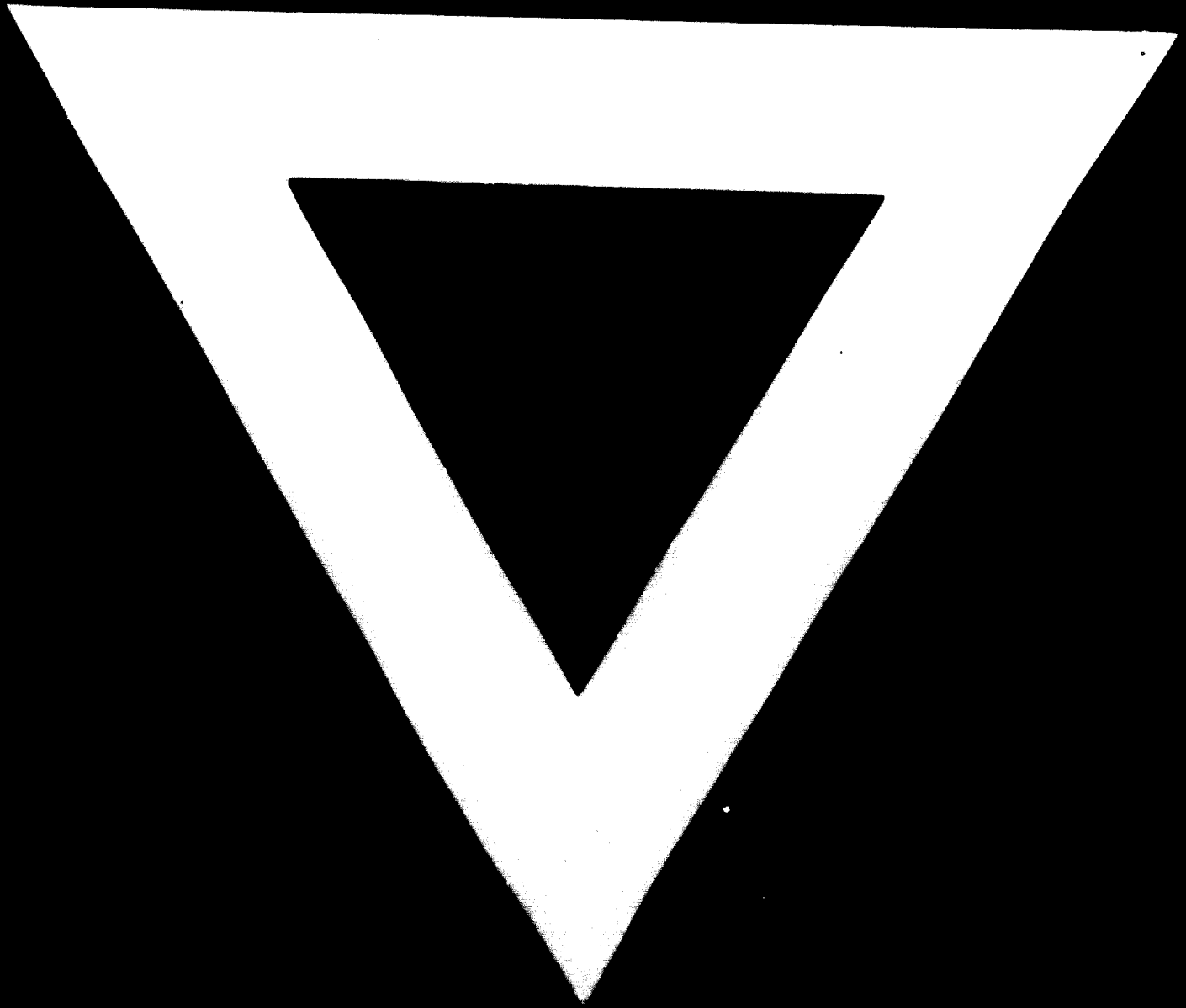
Besides this work which is well applied in many catalogues, the U.S. Forest Products Laboratory, Madison/Wisconsin, USA, members of Division 5 IUFRO, developed a tentative draft of Section 8 - Forest Products and their utilisation of the Oxford System of Decimal Classification for Forestry. Chapter 82 covers Woodworking Equipment including tools for manual operation on wood, but not so detailed as the European classification.

There is already some interest for international standardisation of Woodworking machines. The work could be based on the existing documents including the Polish standard. This is a basic work necessary for the woodworking terminology which began already 10 years ago. Coordinating national groups in various countries started to standardise terms of wood and wood products.

Machinery manufacturers contribute by establishing their machinery terminology.

A IUFRO section under direction of the Commonwealth Scientific and Industrial Research Organisation, Division of Forest products, began to unify the terminology of important wood cutting operations. The primary aim is to facilitate communication between research workers concerned with wood cutting.

All of these groups deal with the multi-lingual terminology. It is suggested that these groups slowly coordinate their work from the beginning to establish a nationwide terminology for Woodworking.



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