EUROPEAN PATENT OFFICE
U.S. PATENT AND TRADEMARK OFFICE

CPC NOTICE OF CHANGES 1591

DATE: JANUARY 1, 2024

PROJECT MP12208

The following classification changes will be effected by this Notice of Changes:

Action	Subclass	Group(s)
SCHEME:		
Titles Changed:	G05B	SUBCLASS
	G05B	1/00, 1/02, 6/00, 9/00
	G05B	11/16, 11/42, 11/54
	G05B	13/00, 15/00, 17/00
	G05B	19/00, 19/04, 19/0405, 19/06, 19/075, 19/39, 19/409, 19/4097
	G05B	21/00
Warnings Deleted:	G05B	SUBCLASS
Notes Modified:	G05B	SUBCLASS
DEFINITIONS:		
Definitions Deleted: (no frozen (F) symbol definitions should be deleted)		
Definitions New:	G05B	19/04, 19/0405, 19/042, 19/06, 19/4097
Definitions Modified:	G05B	SUBCLASS
	G05B	1/00, 6/00, 9/00
	G05B	13/00, 15/00, 17/00, 19/00, 21/00

No other subclasses/groups are impacted by this Notice of Changes.

This Notice of Changes includes the following *[Check the ones included]:*

1. CLASSIFICATION SCHEME CHANGES

     ☒ A. New, Modified or Deleted Group(s)

     ☒ B. New, Modified or Deleted Warning(s)

     ☒ C. New, Modified or Deleted Note(s)

     ☐ D. New, Modified or Deleted Guidance Heading(s)

2. DEFINITIONS

     ☒ A. New or Modified Definitions (Full definition template)

     ☐ B. Modified or Deleted Definitions (Definitions Quick Fix)

3. ☐ REVISION CONCORDANCE LIST (RCL)

4. ☐ CHANGES TO THE CPC-TO-IPC CONCORDANCE LIST (CICL)

5. ☐ CHANGES TO THE CROSS-REFERENCE LIST (CRL)

1. CLASSIFICATION SCHEME CHANGES

   A. New, Modified or Deleted Group(s)

SUBCLASS G05B - CONTROL OR REGULATING SYSTEMS IN GENERAL

Type*	Symbol	Indent Level Number of dots (e.g. 0, 1, 2)	Title "CPC only" text should normally be enclosed in {curly brackets}**	Transferred to#
M	G05B	SUBCLASS	CONTROL OR REGULATING SYSTEMS IN GENERAL; FUNCTIONAL ELEMENTS OF SUCH SYSTEMS; MONITORING OR TESTING ARRANGEMENTS FOR SUCH SYSTEMS OR ELEMENTS (systems for controlling or regulating non-electric variables G05D; systems for regulating electric or magnetic variables G05F; control devices or systems insofar as characterised by mechanical features only G05G)	
M	G05B 1/00	0	Comparing elements, i.e. elements for effecting comparison directly or indirectly between a desired value and existing or anticipated values	
M	G05B 1/02	2	for comparing analogue signals (circuits for comparing the phase or frequency of two mutually-independent oscillations H03D 13/00)	
M	G05B 6/00	0	Internal feedback arrangements for obtaining particular characteristics, e.g. proportional, integral or differential	
M	G05B 9/00	0	Safety arrangements (G05B 7/00 takes precedence; safety arrangements in programme-control systems G05B 19/048, G05B 19/406)	
M	G05B 11/16	3	Two-step controllers, e.g. with on/off action	
M	G05B 11/42	3	for obtaining a characteristic which is both proportional and time-dependent, e.g. P. I., P. I. D.	
M	G05B 11/54	4	Two-step controllers, e.g. with on/off action	
M	G05B 13/00	0	Adaptive control systems, i.e. systems automatically adjusting themselves to have a performance which is optimum according to some preassigned criterion (G05B 19/00 takes precedence)	
M	G05B 15/00	0	Systems controlled by a computer (G05B 13/00, G05B 19/00 take precedence;	

Type*	Symbol	Indent Level Number of dots (e.g. 0, 1, 2)	Title "CPC only" text should normally be enclosed in {curly brackets}**	Transferred to#
			automatic controllers with particular characteristics G05B 11/00)	
M	G05B 17/00	0	Systems involving the use of models or simulators of said systems (G05B 13/00, G05B 15/00, G05B 19/00 take precedence)	
M	G05B 19/00	0	Programme-control systems	
M	G05B 19/04	2	Programme control other than numerical control, i.e. in sequence controllers or logic controllers (G05B 19/418 takes precedence)	
M	G05B 19/0405	3	{Programme-control specially adapted for machine tool control and not otherwise provided for}	
M	G05B 19/06	3	using cams, discs, rods, drums or the like	
M	G05B 19/075	4	{for delivering a step function, a slope or a continuous function (G05B 19/06 takes precedence)}	
M	G05B 19/39	4	using a combination of the means covered by at least two of the preceding groups G05B 19/21, G05B 19/27 and G05B 19/33	
M	G05B 19/409	3	characterised by using manual data input [MDI] or by using control panel, e.g. controlling functions with the panel; characterised by control panel details or by setting parameters (G05B 19/408, G05B 19/4093 take precedence)	
U	G05B 19/4093	3	characterised by part programming, e.g. entry of geometrical information as taken from a technical drawing, combining this with machining and material information to obtain control information, named part programme, for the NC machine	
M	G05B 19/4097	3	characterised by using design data to control NC machines, e.g. CAD/CAM (G05B 19/4093 takes precedence)	
M	G05B 21/00	0	Systems involving sampling of the variable controlled (G05B 13/00 - G05B 19/00 take precedence)	

*N = new entries where reclassification into entries is involved; C = entries with modified file scope where reclassification of documents from the entries is involved; Q = new entries which are firstly populated with documents via administrative transfers from deleted (D) entries. Afterwards, the transferred documents into the Q entry will either stay or be moved to more appropriate entries, as determined by intellectual reclassification; T= existing entries with enlarged file scope, which receive documents from C or D entries, e.g. when a limiting reference is removed from the entry title; M = entries with no change to the file scope (no reclassification); D = deleted entries; F = frozen entries will be deleted once reclassification of documents from the entries is completed; U = entries that are unchanged.

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NOTES:
- **No {curly brackets} are used for titles in CPC only <u>subclasses</u>, e.g. C12Y, A23Y; 2000 series symbol titles of groups found at the end of schemes (orthogonal codes); or the Y section titles. The {curly brackets} <u>are</u> used for 2000 series symbol titles found interspersed throughout the main trunk schemes (breakdown codes).
- U groups: it is obligatory to display the required "anchor" symbol (U group), i.e. the entry immediately preceding a new group or an array of new groups to be created (in case new groups are not clearly subgroups of C-type groups). Always include the symbol, indent level and title of the U group in the table above.
- All entry types should be included in the scheme changes table above for better understanding of the overall scheme change picture. Symbol, indent level, and title are required for all types .
- "Transferred to" column <u>must</u> be completed for all C, D, F, and Q type entries. F groups will be deleted once reclassification is completed.
- When multiple symbols are included in the "Transferred to" column, avoid using ranges of symbols in order to be as precise as possible.
- For administrative transfer of documents, the following text should be used: "< administrative transfer to XX>", "<administrative transfer to XX and YY simultaneously>", or "<administrative transfer to XX, YY, ...and ZZ simultaneously>" when administrative transfer of the same documents is to more than one place.
- Administrative transfer to main trunk groups is assumed to be the source allocation type, unless otherwise indicated.
- Administrative transfer to 2000/Y series groups is assumed to be "additional information".
- If needed, instructions for allocation type should be indicated within the angle brackets using the abbreviations "ADD" or "INV": <administrative transfer to XX ADD> , <administrative transfer to XX INV>, or < administrative transfer to XX ADD, YY INV, ... and ZZ ADD simultaneously>.
- In certain situations, the "D" entries of 2000-series or Y-series groups may not require a destination ("Transferred to") symbol, however it is required to specify "<no transfer>" in the "Transferred to" column for such cases.
- For finalisation projects, the deleted "F" symbols should have <no transfer> in the "Transferred to" column.
- For more details about the types of scheme change, see CPC Guide.

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B. New, Modified or Deleted Warning notice(s)

SUBCLASS G05B - CONTROL OR REGULATING SYSTEMS IN GENERAL;FUNCTIONAL ELEMENTS OF SUCH SYSTEMS;MONITORING OR TESTING ARRANGEMENTS FOR SUCH SYSTEMS OR ELEMENTS

Type*	Location	Old Warning notice	New/Modified Warning
D	G05B	In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.	

*N = new warning, M = modified warning, D = deleted warning

NOTE: The "Location" column only requires the symbol PRIOR to the location of the warning. No further directions such as "before" or "after" are required.

C. New, Modified or Deleted Note(s)

SUBCLASS G05B - CONTROL OR REGULATING SYSTEMS IN GENERAL

Type*	Location	Old Note	New/Modified Note
M	G05B	1. This subclass covers features of control systems or elements for regulating specific variables, which are clearly more generally applicable. 2. This subclass does not cover: a. systems for controlling or regulating nonelectric variables in general, which are covered by subclass G05D; b. systems for regulating electric or magnetic variables in general, which are covered by subclass G05F; c. systems specially adapted for the control of particular machines or apparatus provided for in a single other subclass, which are classified in the relevant subclass for such machines or apparatus, provided that there is specific provision for control or regulation relevant to the special adaptation. Otherwise, classification is made in the most appropriate place in this subclass. 3. IIn this subclass, the following terms or expressions are used with the meanings indicated: – "automatic controller" means a system, circuit, or device in which a signal from the detecting element is compared with a signal representing the desired value and which operates in such a way as to reduce the deviation. The automatic controller generally does not include the sensitive element, i.e. that element which measures the value of the condition to be corrected, or the correcting element, i.e. that	1. This subclass covers features of control systems or elements for regulating specific variables, which are clearly more generally applicable. 2. This subclass does not cover: a. systems for controlling or regulating nonelectric variables in general, which are covered by subclass G05D; b. systems for regulating electric or magnetic variables in general, which are covered by subclass G05F; c. systems specially adapted for the control of particular machines or apparatus provided for in a single other subclass, which are classified in the relevant subclass for such machines or apparatus, provided that there is specific provision for control or regulation relevant to the special adaptation. Otherwise, classification is made in the most appropriate place in this subclass. 3. In this subclass, the following terms or expressions are used with the meanings indicated: – "automatic controller" means a system, circuit, or device in which a signal from the detecting element is compared with a signal representing the desired value and which operates in such a way as to reduce the deviation. The automatic controller generally does not include the sensitive element, i.e. that element which measures the value of the condition to be corrected, or the correcting element, i.e. that element which adjusts the condition to be corrected;

Type*	Location	Old Note	New/Modified Note
		element which adjusts the condition to be corrected; – "electric" includes "electromechanical", "electrohydraulic" or "electropneumatic". 4. In this subclass, details or specific control systems are classified in the group relevant to that system, if not otherwise provided for.	– "electric" includes "electromechanical", "electrohydraulic" or "electropneumatic". 4. In this subclass, details of specific control systems are classified in the group relevant to the system, if not otherwise provided for.

*N = new note, M = modified note, D = deleted note

NOTE: The "Location" column only requires the symbol PRIOR to the location of the note. No further directions such as "before" or "after" are required.

2. A. DEFINITIONS (new)

G05B 19/04

References

Limiting references

This place does not cover:

Total factory control, i.e. centrally controlling a plurality of machines, e.g. direct or distributed numerical control [DNC], flexible manufacturing systems [FMS], integrated manufacturing systems [IMS], computer integrated manufacturing [CIM]	G05B 19/418

Informative references

Attention is drawn to the following places, which may be of interest for search:

Numerical control	G05B 19/18

G05B 19/0405

References

References out of a residual place

Examples of places in relation to which this place is residual:

Arrangements for machine tools, e.g. for copying or controlling	B23Q

Programme control using cams, discs, rods, drums or the like	G05B 19/06
Programme control where the programme is defined in the fixed connection of electrical elements, e.g. potentiometers, counters, transistors	G05B 19/07
Programme control using plugboards, cross-bar distributors, matrix switches or the like	G05B 19/08
Programme control using selector switches	G05B 19/10
Programme control using record carriers	G05B 19/12
Programme control using punched cards or tapes	G05B 19/14
Programme control using magnetic record carriers	G05B 19/16

G05B 19/042

References

Limiting references

This place does not cover:

Programmable logic controllers, e.g. simulating logic interconnections of signals according to ladder diagrams or function charts	G05B 19/05

Application-oriented references

Examples of places where the subject matter of this place is covered when specially adapted, used for a particular purpose, or incorporated in a larger system:

Arrangements for program control	G06F 9/00

G05B 19/06

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Mechanical programme-control apparatus	G05G 21/00

G05B 19/4097

References

Limiting references

This place does not cover:

Numerical control characterised by part programming, e.g. entry of geometrical information as taken from a technical drawing, combining this with machining and material information to obtain control information, named part programme, for the NC machine	G05B 19/4093

Informative references

Attention is drawn to the following places, which may be of interest for search:

Computer-aided design [CAD] in general	G06F 30/00

2. A. DEFINITIONS (modified)

G05B

References

Limiting references

Replace: The reference text for G05G with the updated text below.

Control devices or systems insofar as characterised by mechanical features only	G05G

Application-oriented references

Replace: The existing Application-oriented references table with the updated table below.

Spreading or positioning of drawn nets for fishing	A01K 73/04
Adjustable operating tables, operating chairs or dental chairs	A61G 13/02, A61G 15/02
Distillation	B01D 3/42
Filtration	B01D 24/48, B01D 29/60, B01D 37/04, B01D 46/44
Separation of gases or vapours by gas-analysis apparatus	B01D 53/30
Separation using semi-permeable membranes	B01D 61/00
Feed or outlet in chemical or physical processes	B01J 4/00
Oxygen content in oxidation gas for regeneration or reactivation of catalysts	B01J 38/14

Ion-exchange processes	B01J 47/14
Delivery in spraying systems	B05B 12/02
Metal-rolling mills	B21B 37/00, B21B 39/00
Positioning tool carriers for forging, pressing or hammering	B21K 31/00
Continuous casting of metals	B22D 11/16
Centrifugal casting of metals	B22D 13/12
Pressure or injection die casting of metals	B22D 17/32
Pressure or vacuum casting of metals	B22D 18/08
Casting of metals in general	B22D 46/00
Tool or work positioning for boring or drilling	B23B 39/26
Machines for shearing or similar cutting stock travelling otherwise than in the direction of the cut	B23D 36/00
Driving or feeding mechanisms of machine tools	B23Q 5/00
Feed movement, cutting velocity or position of machine tools	B23Q 15/00
Copying from a pattern or master model for machine tools	B23Q 35/00
Position of grinding tool or work	B24B 47/22
Manipulators	B25J 13/00
Position of cutters in cutting machines	B26D 5/02
Shaping techniques for plastic substances	B29C 39/00- B29C 51/00
Presses	B30B 15/14, B30B 15/16
Composing machines	B41B 27/00
Printing machines or presses	B41F 33/00
Feeding sheets or webs in typewriters	B41J 11/42
Apparatus or devices for manifolding, duplicating or printing for commercial purposes	B41L 39/00
Addressing machines	B41L 47/56

Vehicle suspension	B60G 17/00-B60G 21/00
Vehicle brakes	B60T 7/00-B60T 15/00
Conjoint control of vehicle sub-units	B60W
Machines for packaging	B65B 57/00
Conveyors	B65G 43/00
Heat treatment of ferrous or non-ferrous metals or alloys	C21D 11/00
Sequence of drive operations for dredging or soil-shifting	E02F 3/43
Earth drilling operations	E21B 44/00
Steam accumulators	F01K 1/12, F01K 1/16
Steam engine plants	F01K 3/00, F01K 7/00, F01K 13/02
Air intakes for gas-turbine or jet-propulsion plants	F02C 7/05
Gas-turbine plants; Fuel supply in air-breathing jet-propulsion plants	F02C 9/00
Combustion engines	F02D
Jet pipes or nozzles in jet-propulsion plants	F02K 1/15, F02K 1/76
Jet-propulsion plants	F02K 7/00-F02K 9/00
Wind motors	F03D 7/00
Positive-displacement machines	F04B 1/00, F04B 27/00, F04B 49/00
Non-positive displacement pumps, pumping installations or systems	F04D 15/00, F04D 27/00
Clutches	F16D 43/00, F16D 48/00
Suppression of vibrations using fluid means	F16F 15/02

Gearings	F16H 59/00-F16H 63/00
Control of gearings	F16H 61/00
Steam boilers	F22B 35/00
Incineration of waste	F23G 5/50
Combustion in combustion apparatus	F23N
Combustion in open fires using solid fuel	F24B 1/18
Solar heating	F24S
Drying processes of solid materials or objects	F26B 25/22
Steam or vapour condensers	F28B 11/00
Heat-exchange apparatus with intermediate heat-transfer medium in closed tubes passing into or through conduit walls, in which the medium condenses and evaporates	F28D 15/06
Heat-exchanges or heat-transfer apparatus in general	F28F 27/00
Measurement in general	G01
Computers	G06F 11/00
Traffic	G08G
Indicating devices using static means to present variable information	G09G
Driving, starting or stopping of record carriers	G11B 15/00, G11B 19/00
Nuclear reaction	G21C 7/00
Nuclear-power plant	G21D 3/00
Electron-beam or ion-beam tubes used for localised treatment of objects	H01J 37/30
Processes or apparatus adapted for the manufacture or treatment of semiconductor or solid state devices	H01L 21/00
Circuit arrangements for ac mains or ac distribution networks	H02J 3/00
Electric motors, generators or dynamo-electric converters	H02P

Informative references

Replace: The existing Informative references table with the updated table below.

Fluid-pressure actuators or systems acting by means of fluids in general	F15B
Valves per se	F16K
Measuring not specially adapted for a specific variable; Arrangements for measuring two or more variables not covered in a single other subclass; Tariff metering apparatus	G01D
Testing static or dynamic balance of machines or structures; Testing of structures or apparatus	G01M
Investigating or analysing materials by determining their chemical or physical properties	G01N
Measuring electric variables; Measuring magnetic variables	G01R
Compound strips or plates, e.g. bimetallic	G12B 1/02
Capacitors, rectifiers, detectors or switches devices	H01G
Electric switches, relays, selectors or emergency protective devices	H01H
Dynamo-electric machines	H02K

G05B 1/00

References

Delete: The Limiting references section and table.

G05B 6/00

References

Delete: The Limiting references section and table.

Insert: The following new Informative references section and table.

Informative references

Attention is drawn to the following places, which may be of interest for search:

Automatic controllers	G05B 11/00

G05B 9/00

References

Limiting references

Replace: The Limiting references table with the updated table below.

Arrangements for obtaining smooth engagement or disengagement of automatic control	G05B 7/00
Safety arrangements in programme-control systems	G05B 19/048, G05B 19/406

Informative references

Replace: The Informative references table with the updated table below.

Anti-hunting arrangements	G05B 5/00
Safety arrangements in programme-control systems other than numerical control	G05B 19/0428
Safety arrangements in programme-control systems using programmable logic controllers (PLC)	G05B 19/058

Monitoring of control system, i.e. detection of failures in the control action and response to those failures	G05B 23/00
Safety for robotic manipulators	B25J 9/1674
Safety valves	F16K 17/00
Safety devices acting in conjunction with the control or operation of a machine	F16P 3/00
Light barriers for detection of intrusion of a machine in a safety zone	G01V 8/10
Emergency protective circuit arrangements in general	H02H

G05B 13/00

References

Limiting references

Delete: The following row from the Limiting references table.

Machine learning	G06N 20/00

Informative references

Insert: The following new row to the Informative references table.

Machine learning	G06N 20/00

G05B 15/00

References

Limiting references

Replace: The existing Limiting references table with the updated one below.

Automatic controllers with particular characteristics	G05B 11/00
Adaptive control systems, i.e. systems automatically adjusting themselves to have a performance which is optimum according to some preassigned criterion	G05B 13/00
Programme-control systems	G05B 19/00

Informative references

Replace: The existing Informative references table with the updated one below.

Control of air-conditioning and HVACs	F24F 11/00
Electric digital data processing	G06F
Computing arrangements based on specific computational models	G06N
Home automation networks	H04L 12/2803
Control of lighting	H05B 47/10

G05B 17/00

References

Limiting references

Replace: The existing Limiting references table with the updated one below.

Adaptive control systems, i.e. systems automatically adjusting themselves to have a performance which is optimum according to some preassigned criterion	G05B 13/00
Systems controlled by a computer	G05B 15/00
Programme-control systems	G05B 19/00

Informative references

Insert: The following new Informative references section and table.

Analogue computers for specific processes, systems or devices, e.g. simulators	G06G 7/48

G05B 19/00

References

Delete: The Limiting references section and table.

Application-oriented references

Insert: The new Application-oriented references section and table below.

Automatic control of the different phases of cleaning in washing or rinsing machines for crockery or table-ware	A47L 15/46
Programmed medicine dispensers	A61J 7/04
Disinfection or sterilising	A61L 2/24
Heart pace-makers	A61N 1/36
Steering-mechanisms for toy vehicles	A63H 17/36
Centrifuges	B04B 13/00
Thickness of work produced by metal-rolling mills	B21B 37/24
Bending metal rods, profiles or tubes	B21D 7/12
Boring or drilling machines	B23B 39/08, B23B 39/24
Electrical discharge or electrochemical machining	B23H 7/20
Assembling of parts to compose units	B23P 21/00
Series of individual steps in grinding a workpiece	B24B 51/00
Manipulators	B25J 9/00
Presses	B30B 15/26
Sequence of operations in printing machines or presses	B41F 33/16
Feeding sheets or webs in typewriters	B41J 11/44
Sequence of operations in apparatus or devices for manifolding, duplicating or printing for commercial purposes	B41L 39/16
Selecting text or image to be printed in addressing machines	B41L 47/64
Traction-motor speed of electrically-propelled vehicles	B60L 15/20

Piling articles	B65H 31/24
Crane drives	B66C 13/48, B66C 23/58
Dispensing, delivering or transferring liquids	B67D 7/14
Sewing machines	D05B 19/00, D05B 21/00
Embroidering machines	D05C 5/04
Operations in washing machines	D06F 33/00
Combustion engines	F02D 27/02, F02D 28/00
Supply of combustible mixture or its constituents to combustion engines	F02D 41/26
Fluid-pressure actuator systems	F15B 21/02
Combustion in combustion apparatus	F23N 5/20, F23N 5/22
Weighing apparatus	G01G 19/38
Electromechanical clocks or watches	G04C 23/08, G04C 23/34
Mechanically operating digital computers	G06C 21/00
Control units for electric digital data processing	G06F 9/00
Peripheral devices for electric digital data processing	G06F 13/10
Electrically operating digital computers	G06F 15/00
Electrically or magnetically operating analogue computers	G06G 7/06
Marking or sensing record carriers with digital information	G06K
Electrically-operated teaching apparatus or devices	G09B 7/04, G09B 7/08, G09B 7/12
Electric switches	H01H 43/00
Electron-beam or ion-beam tubes used for localised treatment of objects	H01J 37/30
Electronic switching or gating	H03K 17/296
Selecting arrangements in electric communication technique	H04Q 3/54

Informative references

<u>Replace:</u>   The existing Informative references table with the updated one below.

Information storage based on relative movement between record carrier and transducer	G11B
Static stores	G11C

G05B 21/00

References

Limiting references

Replace: The existing Limiting references table with the updated one below.

Adaptive control systems, i.e. systems automatically adjusting themselves to have a performance which is optimum according to some preassigned criterion	G05B 13/00
Systems controlled by a computer	G05B 15/00
Systems involving the use of models or simulators of said systems	G05B 17/00
Programme-control systems	G05B 19/00

Informative references

Insert: The following new Informative references section and table.

Transmission systems for measured values	G08C
Electronic switching or gating	H03K 17/00