

EUROPEAN PATENT OFFICE  
U.S. PATENT AND TRADEMARK OFFICE

CPC NOTICE OF CHANGES 1234

DATE: JANUARY 1, 2022

PROJECT MP0522

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

<u>Action</u>	<u>Subclass</u>	<u>Group(s)</u>
<b>SCHEME:</b>		
Titles Changed:	B60K	31/00
	F02D	Subclass
	F02D	1/00, 1/16
	F02D	3/00
	F02D	9/08
	F02D	11/00, 11/04
	F02D	13/00
	F02D	15/00
	F02D	19/02, 19/12
	F02D	21/08, 21/10
	F02D	28/00
	F02D	37/02
	F02D	41/18, 41/20, 41/34, 41/36
	F02D	43/00
	F02D	45/00
Warnings Modified:	F02D	Subclass
Notes Modified:	F02D	Subclass
Guidance Headings Modified:	F02D	1/00
	F02D	31/00
<b>DEFINITIONS:</b>		
Definitions New:	F02D	1/16
	F02D	9/08
	F02D	19/02, 19/12
	F02D	21/08, 21/10
	F02D	41/36
Definitions Modified:	F02D	Subclass
	F02D	1/00
	F02D	3/00
	F02D	11/00
	F02D	13/00
	F02D	15/00
	F02D	17/00
	F02D	28/00
	F02D	37/02
	F02D	41/18, 41/20, 41/34
	F02D	45/00

CPC NOTICE OF CHANGES 1234

DATE: JANUARY 1, 2022

PROJECT MP0522

**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)

CPC NOTICE OF CHANGES 1234

DATE: JANUARY 1, 2022

PROJECT MP0522

1. CLASSIFICATION SCHEME CHANGES

A. New, Modified or Deleted Group(s)

**SUBCLASS B60K - ARRANGEMENT OR MOUNTING OF PROPULSION UNITS OR OF TRANSMISSIONS IN VEHICLES; ARRANGEMENT OR MOUNTING OF PLURAL DIVERSE PRIME-MOVERS IN VEHICLES; AUXILIARY DRIVES FOR VEHICLES; INSTRUMENTATION OR DASHBOARDS FOR VEHICLES; ARRANGEMENTS IN CONNECTION WITH COOLING, AIR INTAKE, GAS EXHAUST OR FUEL SUPPLY OF PROPULSION UNITS IN VEHICLES**

<u>Type*</u>	<u>Symbol</u>	<u>Indent Level</u> <u>Number of</u> <u>dots (e.g. 0, 1,</u> <u>2)</u>	<u>Title</u> <u>“CPC only” text should normally be</u> <u>enclosed in {curly brackets}**</u>	<u>Transferred to#</u>
M	B60K 31/00	0	Vehicle fittings, acting on a single sub-unit only, for automatically controlling vehicle speed, i.e. preventing speed from exceeding an arbitrarily established velocity or maintaining speed at a particular velocity, as selected by the vehicle operator (fittings acting on two or more sub-units B60W 30/14; speedometers G01P; systems or devices for controlling speed in general G05D 13/00 {; in traffic anti-collision system for road vehicles G08G 1/16})	

**SUBCLASS F02D - CONTROLLING COMBUSTION ENGINES**

<u>Type*</u>	<u>Symbol</u>	<u>Indent Level</u> <u>Number of</u> <u>dots (e.g. 0, 1,</u> <u>2)</u>	<u>Title</u> <u>“CPC only” text should normally be</u> <u>enclosed in {curly brackets}**</u>	<u>Transferred to#</u>
M	F02D	Subclass	CONTROLLING COMBUSTION ENGINES (vehicle fittings, acting on a single sub-unit only, for automatically controlling vehicle speed B60K 31/00; conjoint control of vehicle sub-units of different type or different function, road vehicle drive control systems for purposes other than the control of a single sub-unit B60W)	
M	F02D1/00	0	Controlling fuel-injection pumps, e.g. of high pressure injection type (F02D3/00 takes precedence)	
M	F02D1/16	1	Adjustment of injection timing (F02D1/02 takes precedence)	
M	F02D3/00	0	Controlling low-pressure fuel injection, i.e. where the fuel-air mixture containing fuel thus injected will be substantially compressed by the compression stroke of	

CPC NOTICE OF CHANGES 1234

DATE: JANUARY 1, 2022

PROJECT MP0522

			the engine, by means other than controlling only an injection pump	
M	F02D9/08	1	Throttle valves specially adapted therefor; Arrangements of such valves in conduits	
M	F02D11/00	0	Arrangements for, or adaptations to, non-automatic engine control initiation means, e.g. operator initiated (specially for reversing F02D27/00)	
M	F02D11/04	1	characterised by mechanical control linkages (F02D11/06 takes precedence)	
M	F02D13/00	0	Controlling the engine output power by varying inlet or exhaust valve operating characteristics, e.g. timing	
M	F02D15/00	0	Varying compression ratio	
M	F02D19/02	1	peculiar to engines working with gaseous fuels	
M	F02D19/12	1	peculiar to engines working with non-fuel substances or with anti-knock agents, e.g. with anti-knock fuel	
M	F02D21/08	2	the other gas being the exhaust gas of engine	
M	F02D21/10	2	having secondary air added to the fuel-air mixture	
M	F02D28/00	0	Programme-control of engines	
M	F02D37/02	1	one of the functions being ignition	
M	F02D41/18	2	by measuring intake air flow	
M	F02D41/20	1	Output circuits, e.g. for controlling currents in command coils	
M	F02D41/34	3	with means for controlling injection timing or duration	
M	F02D41/36	3	with means for controlling distribution	
M	F02D43/00	0	Conjoint electrical control of two or more functions, e.g. ignition, fuel-air mixture, recirculation, supercharging or exhaust-gas treatment	
M	F02D45/00	0	Electrical control not provided for in groups F02D41/00 - F02D43/00	

\*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.

NOTES:

- \*\*No {curly brackets} are used for titles in CPC only subclasses, 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} are used for 2000 series symbol titles found interspersed throughout the main trunk schemes (breakdown codes).

## CPC NOTICE OF CHANGES 1234

DATE: JANUARY 1, 2022

### PROJECT MP0522

- 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 must 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 finalization 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.

CPC NOTICE OF CHANGES 1234

DATE: JANUARY 1, 2022

PROJECT MP0522

B. New, Modified or Deleted Warning(s)

**SUBCLASS F02D - CONTROLLING COMBUSTION ENGINES**

<b><u>Type*</u></b>	<b><u>Location</u></b>	<b><u>Old Warning</u></b>	<b><u>New/Modified Warning</u></b>
M	F02D	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.	{ 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.

DATE: JANUARY 1, 2022

PROJECT MP0522

C. New, Modified or Deleted Note(s)

**SUBCLASS F02D - CONTROLLING COMBUSTION ENGINES**

<u>Type*</u>	<u>Location</u>	<u>Old Note</u>	<u>New/Modified Note</u>
M	F02D	<ol style="list-style-type: none"> <li>1. Attention is drawn to the notes preceding class F01.</li> <li>2. In this subclass, the following words are used with the meanings indicated: <ul style="list-style-type: none"> <li>• "Fuel injection" means the introduction of a combustible substance into a space, e.g. cylinder, by means of a pressure source, e.g. a pump, continuously or cyclically acting behind the substance;</li> <li>• "Supercharging" means supplying to the working space, e.g. cylinder, combustion-air pressurised by means of a pressure source, e.g. a pump.</li> </ul> </li> </ol>	<ol style="list-style-type: none"> <li>1. In this subclass, the following term or expression is used with the meanings indicated: <ul style="list-style-type: none"> <li>• "fuel injection" means the introduction of a combustible substance into a space, e.g. cylinder, by means of a pressure source, e.g. a pump, continuously or cyclically acting behind the substance;</li> <li>• "supercharging" means supplying to the working space, e.g. cylinder, combustion-air pressurised by means of a pressure source, e.g. a pump.</li> </ul> </li> <li>2. Attention is drawn to the Notes preceding class F01.</li> <li>3. In this subclass, electrical aspects of control arrangements are classified in groups F02D 41/00-F02D 45/00.</li> </ol>

\*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.

DATE: JANUARY 1, 2022

PROJECT MP0522

D. New, Modified or Deleted Guidance Heading(s)**SUBCLASS F02D- CONTROLLING COMBUSTION ENGINES**

<u>Type*</u>	<u>Location</u>	<u>Old Guidance Heading</u>	<u>New/Modified Guidance Heading</u>
M	F02D 1/00	Controlling, e.g. regulating, fuel injection (peculiar to engines characterised by their use of non-liquid fuels, pluralities of fuels, or non-fuel substances added to the combustible mixtures F02D 19/00; peculiar to supercharged engines F02D 23/00; automatic controllers for prime movers, in general G05D)	Controlling, e.g. regulating, fuel injection
M	F02D 31/00	Other controlling of engines	Other non-electrical control of combustion engines

\*N = new guidance heading, M = modified guidance heading, D = deleted guidance heading

## NOTES:

- The "Location" column requires the symbol AFTER the guidance heading location. No further directions such as "before" or "after" are required.
- In cases where there may be confusion as to whether a new group falls within the scope of a guidance heading, indicate the guidance heading and whether the group does or does not go with the guidance heading. This can be included in the "Location" column. For example, the guidance heading "Compounds containing carbon together with sulfur, selenium or tellurium with or without hydrogen, halogens, oxygen or nitrogen" encompasses groups C07C 301/00-395/00 only. If a new group C07C 398/00 is proposed and is included in the guidance heading scope, indicate this in the "Location" column as follows: 398/00 to be included under the guidance heading: "Compounds containing carbon together with sulfur, s



DATE: JANUARY 1, 2022

PROJECT MP0522

## 2. A. DEFINITIONS (new)

Insert: The following new Definitions.

### F02D 1/16

#### References

#### Limiting References

*This place does not cover:*

Not restricted to adjustment of injection timing, e.g. varying amount of fuel delivered	<a href="#">F02D 1/02</a>
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#### Informative references

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

Rotary distributor pumps	<a href="#">F02M 41/00</a>
Adjustment of injection timing by adjustment of pumping elements	<a href="#">F02M 59/20</a>

### F02D 9/08

#### References

#### Informative references

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

Throttle valves modified for use in, or arranged in, carburetors	<a href="#">F02M</a>
Throttle valves in general	<a href="#">F16K</a>

DATE: JANUARY 1, 2022

PROJECT MP0522

**F02D 19/02****References****Informative references**

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

Apparatus, or control parts thereof, for mixing gas and air	<a href="#">F02M</a>
Control of dual fuel engines with at least one fuel being gaseous	<a href="#">F02D19/0642</a>
Electrical control of the supply of the combustible mixture for controlling engines with gaseous fuels	<a href="#">F02D41/0025</a>

**F02D 19/12****Definition statement**

*This place covers:*

The group covers the control of engines, which are supplied with non-fuel substances or anti-knock agents. This includes controlling engines wherein engines are supplied with water.

**References****Informative references**

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

Apparatus, or control parts thereof, for delivering such substances or agents	<a href="#">F02M</a>
Engine-pertinent apparatus for adding non-fuel substances or small quantities of secondary fuel to combustion-air, main fuel or fuel-air mixture	<a href="#">F02M 25/00</a>
Apparatus for adding water to combustion-air, main fuel or fuel-air mixture	<a href="#">F02M 25/025</a>

DATE: JANUARY 1, 2022

PROJECT MP0522

**F02D 21/08**

**References**

**Informative references**

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

Circulation of exhaust gas in oxygen-fed engines	<a href="#">F02D 21/04</a>
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**F02D 21/10**

**References**

**Informative references**

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

Apparatus, or control parts thereof, for delivering secondary air	<a href="#">F02M</a>
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**F02D 41/36**

**References**

**Informative references**

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

Arrangement of ignition distributors	<a href="#">F02P 7/00</a>
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## 2. A. DEFINITIONS (modified)

### F02D

#### References

Insert: The following new Limiting references section.

#### Limiting references

*This place does not cover:*

Vehicle fittings, acting on a single sub-unit only, for automatically controlling vehicle speed	B60K 31/00
Conjoint control of vehicle sub-units of different type or different function, road vehicle drive control systems for purposes other than the control of a single sub-unit	B60W

Replace: The text in the existing Informative references table with the following updated text.

#### Informative references

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

Cyclically operating valves for combustion engines	F01L
Controlling combustion engine lubrication	F01M
Cooling internal combustion engines	F01P
Controlling gas-turbine plants, jet-propulsion plants or combustion-product engine plants, see the relevant subclasses for these plants, e.g.	F02B, F02C, F02K
Supplying combustion engines with combustible mixtures or constituents thereof, e.g. carburettors or injection pumps	F02M
Starting of combustion engines	F02N
Controlling of ignition	F02P
Automatic controllers for prime movers, in general	G05D

DATE: JANUARY 1, 2022

PROJECT MP0522

**F02D 1/00****References**

Replace: The text in the existing Limiting references table with the following updated text.

**Limiting references**

*This place does not cover:*

Controlling low-pressure fuel injection, i.e. where the air-fuel mixture containing fuel thus injected will be substantially compressed by the compression stroke of the engine, by means other than controlling only an injection pump	F02D 3/00
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Replace: The text in the existing Informative references table with the following updated text.

**Informative references**

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

Controlling fuel-injection electrically	F02D 41/30
Cyclically operating valves for combustion engines	F01L
Controlling combustion engine lubrication	F01M
Cooling internal combustion engines	F01P
Supplying combustion engines with combustible mixtures or constituents thereof, e.g. carburettors, injection pumps	F02M
Control of modern common rail fuel pumps	F02M 59/20
Starting of combustion engines	F02N
Controlling of ignition	F02P
Automatic controllers for prime movers, in general	G05D
Controlling gas-turbine plants, jet-propulsion plants, or combustion-product engine plants see the relevant subclasses for these plants	F02G, F02C, F02K

**F02D 3/00**

**References**

Delete: The entire Limiting references section.

**Informative references**

Delete: The following reference from the Informative references table.

Controlling supercharged engines	F02D 23/00
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Insert: The following new Special rules of classification section.

**Special rules of classification**

Documents disclosing controlling the feeding of liquid fuel from storage containers to carburetors or fuel-injection apparatus are normally classified in [F02D 33/003](#).

**F02D 11/00**

Delete: The entire Relationships with other classification places section.

**References**

**Limiting references**

Delete: The following two references from the Limiting references table.

Electronic engine control initiation means	F02D 11/10
Arrangement or mounting of prime mover control devices in vehicles	B60K 26/00

DATE: JANUARY 1, 2022

PROJECT MP0522

Insert: The following new Application-oriented references section.

**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:

Arrangement or mounting of prime-mover control devices in vehicles	<a href="#">B60K 26/00</a>
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**Informative references**

Delete: The following reference from the Informative references table.

Arrangements or mounting of propulsion unit control devices in vehicles	<a href="#">B60K 26/00</a>
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Insert: The following new Special rules of classification section.

**Special rules of classification**

Documents disclosing electronic engine control initiation means are normally classified in [F02D 11/10](#).

**[F02D 13/00](#)**

Delete: The entire Relationships with other classification places section.

**References**

Delete: The entire Limiting references section.

**F02D 15/00**

**References**

Delete: The entire Limiting references section.

**Informative references**

Insert: The following new reference in the existing Informative references table.

Modifying valve-gear	F01L 13/00
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**F02D 17/00**

**References**

**Limiting references**

Insert: The following new reference in the existing Limiting references table.

Varying inlet or exhaust valve operating characteristics	F02D 13/00
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**Informative references**

Delete: The following reference from the Informative references table.

Varying inlet or exhaust valve operating characteristics	F02D 13/00
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DATE: JANUARY 1, 2022

PROJECT MP0522

## F02D 28/00

Replace: The text in the existing Definition statement with the following updated text.

### Definition statement

Programme-control of engines. Although operator control is suitable for automobile engines, there are many systems, such as standby emergency electric power systems, where this type of control is impractical and expensive. For these applications, automatic program control systems have been devised which perform necessary engine control functions without operator attendance. Programme-control is also used in remote starting systems for automobile engines for example heating up the passenger cabin.

Delete: The entire Relationships with other classification places section.

### References

Delete: The entire Limiting references section.

### Informative references

Replace: The text in the existing Informative references table with the following updated text.

Automatic vehicle control systems	<a href="#">B62D</a>
Starting of engines by means of electric motors	<a href="#">F02N 11/00</a>
Programme-control in general	<a href="#">G05B 19/00</a>
Traffic control systems for road vehicles	<a href="#">G08G 1/00</a>

Insert: The following new Special rules of classification section.

**Special rules of classification**

The following types of Engine Control are classified in:

**F02D 13/00** – Controlling the engine output power by varying inlet or exhaust valve operating characteristics, e.g. timing

**F02D 35/00** – Controlling engines, dependent on conditions exterior or interior to engines

**F02D 41/00** – Electrical control of supply of combustible mixture or its constituents

**F02D 43/00** – Conjoint electrical control of two or more functions

**F02D 37/02**

**References**

Insert: The following new Informative references section.

**Informative references**

Ignition control per se	<b>F02P</b>
Automatically advancing or retarding ignition combined with electronic control of other engine functions, e.g. fuel injection	<b>F02P 5/045</b>

**F02D 41/18**

Replace: The text in the existing Definition statement with the following updated text.

**Definition statement**

Direct air mass measurement

Three types of sensors:

- air flaps normally classified here, with a plate pushed away by air dynamic pressure, which moves a potentiometer giving a resistance or a voltage proportional to air flow,
- vortex (Karmann) flowmeters which give a frequency directly proportional to the mass of air flowing in the pipe, see [F02D 41/185](#),
- hot wires using a wire which resistance varies with temperature, and which is heated by electric current and cooled by the air passing on it: they also give a voltage, see [F02D 41/187](#).

Computed air flow after manifold depression or throttle opening may also be here with the keyword "parameter measurement - air model".

Replace: The text in the existing Relationships with other classification places section with the following updated text.

**Relationships with other classification places**

There are two schools of injection control: the density based injection where an intake vacuum was combined with rpm after eventual temperature correction and the air-mass based injection where a direct air mass flow measure is used.

**References**

Replace: The text in the existing Informative references table with the following updated text.

**Informative references**

Measuring flow, in general	<a href="#">G01F</a>
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**F02D 41/20**

**References**

Insert: The following new Informative references section.

**Informative references**

Current control in inductive loads in general	H03K 17/64
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**F02D 41/34**

**References**

Insert: The following new reference in the Informative references section.

**Informative references**

Ignition timing	F02P 5/00
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**F02D 45/00**

**References**

Insert: The following new Informative references section.

**Informative references**

Electrical control of exhaust gas treating apparatus	F01N 9/00
Electrical control of one of the functions; ignition, lubricating, cooling, starting, intake-heating, see relevant subclasses for such functions, see the relevant subclasses for such functions, e.g.	F02P, F01N, F01P, F02N, F02M