EUROPEAN PATENT OFFICE
U.S. PATENT AND TRADEMARK OFFICE

CPC NOTICE OF CHANGES 961

DATE: JANUARY 1, 2021

PROJECT RP0703

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

Action	Subclass	Group(s)
SCHEME:		
Symbols Deleted:	F01L	9/02, 9/021, 9/023, 9/025, 9/026, 2009/028, 9/04, 2009/0401, 2009/0403, 2009/0405, 2009/0407, 2009/0409, 2009/0411, 2009/0413, 2009/0415, 2009/0417, 2009/0419, 2009/0421, 2009/0423, 2009/0425, 2009/0426, 2009/0428, 2009/043, 2009/0432, 2009/0434, 2009/0436, 2009/0438, 2009/044, 2009/0442, 2009/0444, 2009/0446, 2009/0448, 2009/0449, 2009/0451, 2009/0453, 2009/0455, 2009/0457, 2009/0459, 2009/0461, 2009/0463, 2009/0465, 2009/0467, 2009/0469, 2009/0471, 2009/0473, 2009/0474, 2009/0476, 2009/0478, 2009/048, 2009/0482, 2009/0484, 2009/0486, 2009/0488, 2009/049, 2009/0492, 2009/0494, 2009/0496, 2009/0498
Symbols New:	F01L	9/10, 9/11, 9/12, 9/14, 9/16, 9/18, 9/20, 9/21, 2009/2103, 2009/2105, 2009/2107, 2009/2109, 2009/2115, 2009/2117, 2009/2125, 2009/2126, 2009/2128, 2009/213, 2009/2132, 2009/2134, 2009/2136, 2009/2138, 2009/214, 2009/2142, 2009/2144, 2009/2146, 2009/2148, 2009/2149, 2009/2151, 2009/2153, 2009/2155, 2009/2157, 2009/2159, 2009/2161, 2009/2163, 2009/2165, 2009/2167, 2009/2169, 2009/2171, 2009/2173, 2009/2174, 2009/2176, 9/22, 9/24, 2009/25, 9/26, 9/30, 9/40, 2009/408, 2009/4082, 2009/4084, 2009/4086, 2009/4088, 2009/409, 2009/4092, 2009/4094, 2009/4096, 2009/4098
Titles Changed:	F01L	SUBCLASS
	F01L	2001/0475, 1/10, 1/40

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Action	Subclass	Group(s)
	F01L	3/16
	F01L	5/20, 5/22
	F01L	15/00
	F01L	23/00
	F01L	29/00
	F01L	31/00
Warnings New:	F01L	1/044, 1/10
Warnings Modified:	F01L	SUBCLASS
Notes Modified:	F01L	15/00
Guidance Headings Modified:	F01L	1/00
	F01L	15/00
DEFINITIONS:		
Definitions Deleted: (no frozen (F) symbol definitions should be deleted)	F01L	9/02, 9/04
Definitions New:	F01L	1/40
	F01L	3/16
	F01L	9/10, 9/20
Definitions Modified:	F01L	SUBCLASS
	F01L	1/00, 1/02, 1/10, 1/12, 1/14, 1/18, 1/34, 1/34416
	F01L	3/00
	F01L	5/00
	F01L	7/00
	F01L	9/00
	F01L	11/00
	F01L	13/00, 13/0005

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The following subclasses/groups are also impacted by this Notice of Changes (indicate subclasses/groups outside of the project scope, such as those listed in the CRL): H01F 7/00

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 F01L - CYCLICALLY OPERATING VALVES FOR MACHINES OR ENGINES (valves in general F16K)

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	F01L	Subclass	CYCLICALLY OPERATING VALVES FOR MACHINES OR ENGINES	
U	F01L 1/00	0	Valve-gear or valve arrangements, e.g. lift-valve gear (lift-valve and valve-seat assemblies per se F01L 3/00; slide-valve gear F01L 5/00; actuated non-mechanically F01L 9/00; valve arrangements in working piston or piston rod F01L 11/00; modifications of valve-gear to facilitate reversing, braking, starting, changing compression ratio, or other specific operations F01L 13/00)	
U	F01L 1/02	1	Valve drive (transmitting-gear between valve drive and valve F01L 1/12)	
U	F01L 1/04	2	by means of cams, camshafts, cam discs, eccentrics or the like (F01L 1/10 takes precedence)	
C	F01L 1/044	3	{Reciprocating cams}	F01L1/044, F01L1/10
M	F01L 2001/0475	4	{Hollow camshafts}	
T	F01L 1/10	2	by means of crank-or eccentric-driven rods	
M	F01L 1/40	2	for engines with scavenging charge near top dead centre position, e.g. by overlapping inlet and exhaust time	
M	F01L 3/16	2	by means of a fluid flowing through or along valve, e.g. air	
M	F01L 5/20	1	specially for two-stroke engines (F01L 5/06, F01L 5/14 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#
M	F01L 5/22	1	Multiple-valve arrangements (with valves surrounding working cylinder or piston F01L 5/08; with reciprocatory and other slide valves F01L 5/18; specially for two-stroke engines F01L 5/20)	
U	F01L 7/00	0	Rotary or oscillatory slide valve-gear or valve arrangements (slide valves with combined rotary and non-rotary movements, combinations of rotary and non-rotary slide valves F01L 5/00)	
U	F01L 9/00	0	Valve-gear or valve arrangements actuated non-mechanically	
D	F01L 9/02	1	by fluid means, e.g. hydraulic	<administrative transfer to F01L 9/10>
D	F01L 9/021	2	{the action of a cam being transmitted to a valve by a fluid column, e.g. a fluid conduit}	<administrative transfer to F01L9/11>
D	F01L 9/023	3	{Hydraulic lifters, i.e. fluid chamber comprised between a piston actuated by a cam and a piston acting on a valve stem}	<administrative transfer to F01L9/12>
D	F01L 9/025	4	{the volume of the chamber being variable, e.g. for varying the lift or the timing of a valve}	<administrative transfer to F01L9/14>
D	F01L 9/026	2	{Pneumatic}	<administrative transfer to F01L9/16>
D	F01L 2009/028	2	{Boost means, i.e. means for increasing initial opening force of the valve}	<administrative transfer to F01L9/18 INV>
D	F01L 9/04	1	by electric means	<Administrative transfer to F01L9/20>
D	F01L 2009/0401	2	{Driving circuits therefor}	<administrative transfer to F01L9/26 INV>

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#
D	F01L 2009/0403	2	{Electromagnetic actuators comprising one coil}	<administrative transfer to F01L2009/2103>
D	F01L 2009/0405	2	{Electromagnetic actuators comprising two or more coils}	<administrative transfer to F01L2009/2105>
D	F01L 2009/0407	3	{The two coils being disposed coaxially to the armature shaft}	<administrative transfer to F01L2009/2107>
D	F01L 2009/0409	3	{The armature being articulated perpendicularly to the coils axes}	<administrative transfer to F01L2009/2109>
D	F01L 2009/0411	2	{Electromagnetic actuators using a rotary motor}	<administrative transfer to F01L9/22 INV>
D	F01L 2009/0413	2	{Piezo electric actuators}	<administrative transfer to F01L9/24 INV>
D	F01L 2009/0415	2	{Moving coil actuators}	<administrative transfer to F01L2009/2115>
D	F01L 2009/0417	2	{Floating actuators for varying the valve stroke}	<administrative transfer to F01L2009/2117>
D	F01L 2009/0419	2	{Actuator position setting device, e.g. initial setting}	<administrative transfer to F01L9/30 INV>
D	F01L 2009/0421	2	{Mixed arrangement with both mechanically and electromagnetically actuated valves}	<administrative transfer to F01L2009/25>
D	F01L 2009/0423	2	{Electromagnetic actuators construction details}	<administrative transfer to F01L9/21 INV>
D	F01L 2009/0425	3	{Shaft and armature construction}	<administrative transfer to F01L2009/2125>

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#
D	F01L 2009/0426	4	{Arrangements for amplifying the armature stroke}	<administrative transfer to F01L2009/2126>
D	F01L 2009/0428	3	{Core and coil construction}	<administrative transfer to F01L2009/2128>
D	F01L 2009/043	3	{Casing construction}	<administrative transfer to F01L2009/213>
D	F01L 2009/0432	3	{Biasing means}	<administrative transfer to F01L2009/2132>
D	F01L 2009/0434	4	{Helical springs}	<administrative transfer to F01L2009/2134>
D	F01L 2009/0436	5	{Two opposed springs for intermediate resting position of the armature}	<administrative transfer to F01L2009/2136>
D	F01L 2009/0438	4	{Torsion springs}	<administrative transfer to F01L2009/2138>
D	F01L 2009/044	4	{Pneumatic springs}	<administrative transfer to F01L2009/214>
D	F01L 2009/0442	4	{Means for varying the spring bias}	<administrative transfer to F01L2009/2142>
D	F01L 2009/0444	4	{Means for connecting springs to valve or anchor}	<administrative transfer to F01L2009/2144>
D	F01L 2009/0446	3	{Latching means}	<administrative transfer to F01L2009/2146>
D	F01L 2009/0448	4	{using permanent magnet}	<administrative transfer to F01L2009/2148>

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#
D	F01L 2009/0449	3	{Means for varying the air gap}	<administrative transfer to F01L2009/2149>
D	F01L 2009/0451	3	{Damping means}	<administrative transfer to F01L2009/2151>
D	F01L 2009/0453	3	{Means for counteracting cylinder pressure}	<administrative transfer to F01L2009/2153>
D	F01L 2009/0455	3	{Lash adjusting means}	<administrative transfer to F01L2009/2155>
D	F01L 2009/0457	3	{Actor cooling means}	<administrative transfer to F01L2009/2157>
D	F01L 2009/0459	3	{Means for facilitating assembly}	<administrative transfer to F01L2009/2159>
D	F01L 2009/0461	3	{Wiring}	<administrative transfer to F01L2009/2161>
D	F01L 2009/0463	4	{Connectors}	<administrative transfer to F01L2009/2163>
D	F01L 2009/0465	4	{Harnesses}	<administrative transfer to F01L2009/2165>
D	F01L 2009/0467	3	{Sensing means}	<administrative transfer to F01L2009/2167>
D	F01L 2009/0469	4	{Position sensors}	<administrative transfer to F01L2009/2169>
D	F01L 2009/0471	4	{Vibration sensors}	<administrative transfer to F01L2009/2171>

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#
D	F01L 2009/0473	4	{Temperature sensors}	<administrative transfer to F01L2009/2173>
D	F01L 2009/0474	4	{Flux sensors}	<administrative transfer to F01L2009/2174>
D	F01L 2009/0476	4	{Spring force sensors}	<administrative transfer to F01L2009/2176>
D	F01L 2009/0478	2	{Electromagnetic actuators; Method of operation thereof}	<administrative transfer to F01L9/40 INV>
D	F01L 2009/048	3	{Engine starting}	<administrative transfer to F01L2009/408>
D	F01L 2009/0482	4	{in normal conditions}	<administrative transfer to F01L2009/4082>
D	F01L 2009/0484	4	{Cold start}	<administrative transfer to F01L2009/4084>
D	F01L 2009/0486	3	{Soft landing, e.g. applying braking current; Levitation of armature close to core surface}	<administrative transfer to F01L2009/4086>
D	F01L 2009/0488	3	{Fail safe, e.g. valve kept closed if not opening properly}	<administrative transfer to F01L2009/4088>
D	F01L 2009/049	3	{Determination of valve speed}	<administrative transfer to F01L2009/409>
D	F01L 2009/0492	3	{Determination of valve timing during particular working conditions, e.g. deceleration}	<administrative transfer to F01L2009/4092>
D	F01L 2009/0494	3	{Engine stopping; Engine stall}	<administrative transfer to F01L2009/4094>

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#
D	F01L 2009/0496	3	{relating to sticking duration}	\<administrative transfer to F01L2009/4096>
D	F01L 2009/0498	3	{relating to gap between armature shaft and valve stem end}	\<administrative transfer to F01L2009/4098>
N	F01L 9/10	1	by fluid means, e.g. hydraulic	
N	F01L 9/11	2	in which the action of a cam is being transmitted to a valve by a liquid column	
N	F01L 9/12	3	with a liquid chamber between a piston actuated by a cam and a piston acting on a valve stem	
N	F01L 9/14	4	the volume of the chamber being variable, e.g. for varying the lift or the timing of a valve	
N	F01L 9/16	2	Pneumatic means	
N	F01L 9/18	2	Means for increasing the initial opening force on the valve	
N	F01L 9/20	1	by electric means	
N	F01L 9/21	2	actuated by solenoids	
N	F01L 2009/2103	3	{comprising one coil}	
N	F01L 2009/2105	3	{comprising two or more coils}	
N	F01L 2009/2107	4	{being disposed coaxially to the armature shaft}	
N	F01L 2009/2109	4	{The armature being articulated perpendicularly to the coils axes}	
N	F01L 2009/2115	3	{Moving coil actuators}	
N	F01L 2009/2117	3	{Floating actuators for varying the valve stroke}	
N	F01L 2009/2125	3	{Shaft and armature construction}	

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#
N	F01L 2009/2126	4	{Arrangements for amplifying the armature stroke}	
N	F01L 2009/2128	3	{Core and coil construction}	
N	F01L 2009/213	3	{Casing construction}	
N	F01L 2009/2132	3	{Biasing means}	
N	F01L 2009/2134	4	{Helical springs}	
N	F01L 2009/2136	5	{Two opposed springs for intermediate resting position of the armature}	
N	F01L 2009/2138	4	{Torsion springs}	
N	F01L 2009/214	4	{Pneumatic springs}	
N	F01L 2009/2142	4	{Means for varying the spring bias}	
N	F01L 2009/2144	4	{Means for connecting springs to valve or anchor}	
N	F01L 2009/2146	3	{Latching means}	
N	F01L 2009/2148	4	{using permanent magnet}	
N	F01L 2009/2149	3	{Means for varying the air gap}	
N	F01L 2009/2151	3	{Damping means}	
N	F01L 2009/2153	3	{Means for counteracting cylinder pressure}	
N	F01L 2009/2155	3	{Lash adjusting means}	
N	F01L 2009/2157	3	{Actuator cooling means}	
N	F01L 2009/2159	3	{Means for facilitating assembly}	
N	F01L 2009/2161	3	{Wiring}	
N	F01L 2009/2163	4	{Connectors}	
N	F01L 2009/2165	4	{Harnesses}	
N	F01L 2009/2167	3	{Sensing means}	

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#
N	F01L 2009/2169	4	{Position sensors}	
N	F01L 2009/2171	4	{Vibration sensors}	
N	F01L 2009/2173	4	{Temperature sensors}	
N	F01L 2009/2174	4	{Flux sensors}	
N	F01L 2009/2176	4	{Spring force sensors}	
N	F01L 9/22	2	actuated by rotary motors	
N	F01L 9/24	2	Piezo-electric actuators	
N	F01L 2009/25	2	{Mixed arrangement with both mechanically and electromagnetically actuated valves}	
N	F01L 9/26	2	Driving circuits therefor	
N	F01L 9/30	1	Arrangements for setting the actuator position, e.g. the initial position	
N	F01L 9/40	1	Methods of operation thereof; Control of valve actuation, e.g. duration or lift	
N	F01L 2009/408	2	{Engine starting}	
N	F01L 2009/4082	3	{in normal conditions}	
N	F01L 2009/4084	3	{Cold start}	
N	F01L 2009/4086	2	{Soft landing, e.g. applying braking current; Levitation of armature close to core surface}	
N	F01L 2009/4088	2	{Fail safe, e.g. valve kept closed if not opening properly}	
N	F01L 2009/409	2	{Determination of valve speed}	
N	F01L 2009/4092	2	{Determination of valve timing during particular working conditions, e.g. deceleration}	
N	F01L 2009/4094	2	{Engine stopping; Engine stall}	
N	F01L 2009/4096	2	{relating to sticking duration}	

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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#
N	F01L 2009/4098	2	{relating to gap between armature shaft and valve stem end}	
M	F01L 15/00	0	Valve-gear or valve arrangements, e.g. with reciprocatory slide valves, other than provided for in groups F01L 17/00 - F01L 29/00 (valve drive or external valve-adjustment during operation, tripping-gear or tripping of valves F01L 31/00)	
M	F01L 23/00	0	Valves controlled by impact by piston, e.g. in free-piston machines	
M	F01L 29/00	0	Reversing-gear	
M	F01L 31/00	0	Valve drive, valve adjustment during operation, or other valve control, not provided for in groups F01L 15/00 - F01L 29/00 (sensing elements measuring the variable or condition to be controlled or regulated F01B 25/04)	

*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).
- 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 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(s)

SUBCLASS F01L - CYCLICALLY OPERATING VALVES FOR MACHINES OR ENGINES (valves in general F16K)

Type*	Location	Old Warning	New/Modified Warning
M	F01L	1. The following IPC groups are not in the CPC scheme. The subject matter for these IPC groups is classified in the following CPC groups: F01L31/20 covered by F01L31/08 - F01L31/18 F01L31/22 covered by F01L31/08 - F01L31/18 F01L31/24 covered by F01L31/08 - F01L31/18 2. 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.	Delete: The <u>second</u> existing Warning so that only the first Warning remains as follows. The following IPC groups are not in the CPC scheme. The subject matter for these IPC groups is classified in the following CPC groups: F01L31/20 covered by F01L31/08 - F01L31/18 F01L31/22 covered by F01L31/08 - F01L31/18 F01L31/24 covered by F01L31/08 - F01L31/18
N	F01L 1/044		<u>Insert</u>: The following new Warning. Group F01L 1/044 is impacted by reclassification into group F01L 1/10. Groups F01L 1/044 and F01L 1/10 should be considered in order to perform a complete search.
N	F01L1/10		<u>Insert</u>: The following new Warning. Group F01L 1/10 is incomplete pending reclassification of documents from group F01L 1/044. Groups F01L 1/044 and F01L 1/10 should be considered in order to perform a complete search.

*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 F01L - CYCLICALLY OPERATING VALVES FOR MACHINES OR ENGINES (valves in general F16K)

Type*	Location	Old Note	New/Modified Note
M	F01L 15/00 - F01L 31/00	The groups under this guide heading do not fully embrace subject matter restricted to rotary, oscillatory, or lift-valve-gear or valve arrangements, classified in groups F01L 33/00 and F01L 35/00. However, the present groups do embrace the following subject-matter thereof; valves drives or means external to valves for adjustment during operation, tripping-gear, reversing-gear, use of pistons or piston-rods as valves or as valve-supporting elements, valve-gear or valve arrangements peculiar to free-piston machines or engines	Replace: The existing Note with the following <u>two</u> new Notes. 1. Groups F01L 15/00 - F01L 31/00 cover: • valve drive or means external to valves for adjustment during operation; • tripping-gear; • reversing-gear; • use of pistons or piston-rods as valves or as valve-supporting elements; • valve-gear or valve arrangements peculiar to free-piston machines or engines. 2. Groups F01L 15/00 - F01L 31/00 do not fully cover subject matter restricted to rotary, oscillatory, or lift-valve gear or valve arrangements, which is covered by group F01L 33/00 or F01L 35/00.

*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.

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

SUBCLASS F01L - CYCLICALLY OPERATING VALVES FOR MACHINES OR ENGINES (valves in general F16K)

Type*	Location	Old Guidance Heading	New/Modified Guidance Heading
M	F01L 1/00 - F01L 13/00	Valve-gear for internal combustion piston engines or for other machines or engines with positive working-fluid displacement (valve gear specially for steam engines or specially for other machines or engines with variable fluid distribution F01L 15/00 - F01L 35/00)	Valve-gear or valve arrangements for positive-displacement machines or engines other than steam engines, e.g. for internal-combustion piston engines, without provision for variable fluid distribution
M	F01L 15/00 - F01L 31/00	Valve-gear or valve arrangements, e.g. with reciprocatory slide valves, specially for steam engine, or specially for other machines or engines with variable working-fluid distribution	Valve-gear or valve arrangements specially adapted for steam engines, or specially adapted for other positive-displacement machines or engines with variable working-fluid distribution

*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, selenium or tellurium with or without hydrogen, halogens, oxygen or nitrogen."

2. A. DEFINITIONS (new)

<u>Insert</u>:   The following new Definitions.

F01L 1/40

References

Informative references

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

Scavenging aspects	F02B

F01L 3/16

References

Informative references

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

Sealing of valve stem by means of a fluid flowing through or along valve	F01L 3/08

F01L 9/10

References

Informative references

Attention is drawn to the following places, which may be of interest for search:
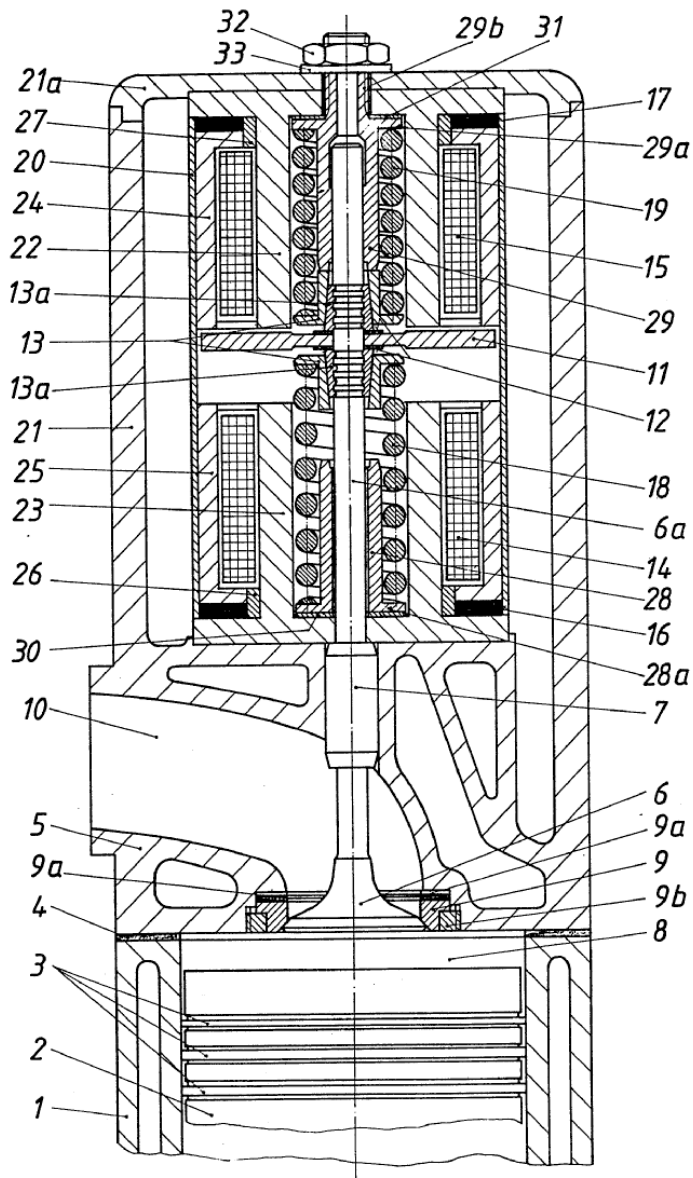
Means for increasing the initial opening force on the valve, boost means	F01L 9/18
Fluid pressure actuators	F15B 13/00

F01L 9/20

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.

References

Informative references

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

Electric actuating device, using motor	F16K 31/02, F16K 31/04,

	F16K 31/06, F16K 31/08
Pivoting, rectilinear armature, using motor	H01F 7/14, H01F 7/16, H01F 7/17
Linear motor	H02K 41/00

2. A. DEFINITIONS (modified)

F01L

Definition statement

Delete: The entire last paragraph of the Definition statement that begins "In this subclass F01L …"

Insert: Bullet points in front of the remaining paragraphs so that the text appears as follows.

- Valve-gear or valve arrangements, e.g. lift-valve gear;
- Lift-valve, i.e. cut-off apparatus with closure members having at least a component of their opening and closing motion perpendicular to the closing faces;
- Slide valve-gear or valve-arrangements;
- Valve-gear or valve arrangements actuated non-mechanically;
- Valve arrangements in working piston or piston-rod;
- Modifications of valve-gear to facilitate reversing, braking, starting, changing compression ratio, or other specific operations;
- Valve-gear or valve arrangements, e.g. with reciprocatory slide valves, other than provided for in groups;
- Slide valve-gear or valve arrangements with cylindrical, sleeve, or part annularly-shaped valves surrounding working cylinder or piston;
- Slide valve-gear or valve arrangements with reciprocatory and other movement of same valve, e.g. longitudinally of working cylinder and in cross direction
- Use of working pistons or pistons-rods as fluid-distributing valves or a valve-supporting elements, e.g. in free-piston machines
- Valves controlled by impact by piston, e.g. in free-piston machines; Drive, or adjustment during the operation, or distribution or expansion valves by non-mechanical means;
- Distribution or expansion valve-gear peculiar to free-piston machines or engines;
- Reversing gear Valve drive, valve adjustment during operation;
- Rotary or oscillatory slide valve-gear or valve arrangements, specially adapted for machines or engines with variable fluid distribution;
- Lift valve-gear or valve arrangements specially adapted for machines or engines with variable fluid distribution

References

Informative references

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

Valves in general	F16K

Insert: The following new Special rules of classification section.

Special rules of classification

The use of the Indexing Codes F01L 2201/00 – F01L 2820/00 is mandatory.

Insert: The following new Glossary of terms section.

Glossary of terms

In this place, the following terms or expressions are used with the meaning indicated:

Engine	A device for continuously converting fluid energy into mechanical power; thus this term includes, for example, steam piston engines or steam turbine or internal combustion engines.
Machine	A device that could equally be an engine and a pump, and not a device that is restricted to an engine or one that is restricted to a pump.

F01L 1/00

References

Limiting references

Replace: The existing Limiting references table with the following new table.

Lift-valve and valve-seat assemblies per se	F01L 3/00
Slide-valve gear	F01L 5/00
Actuated non-mechanically	F01L 9/00
Valve arrangements in working piston or piston rod	F01L 11/00
Modifications of valve-gear to facilitate reversing, braking, starting, changing compression ratio, or other specific operations	F01L 13/00

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:

Valve-gear specially for steam engines or specially for other machines or engines with variable fluid distribution	F01L 15/00 - F01L 35/00

Informative references

Replace: The existing Informative references table with the following new table.

Valve arrangements in general	F16K

F01L 1/02

References

Insert: The following new Limiting references section.

Limiting references

This place does not cover:

Transmitting-gear between valve drive and valve	F01L 1/12

Informative references

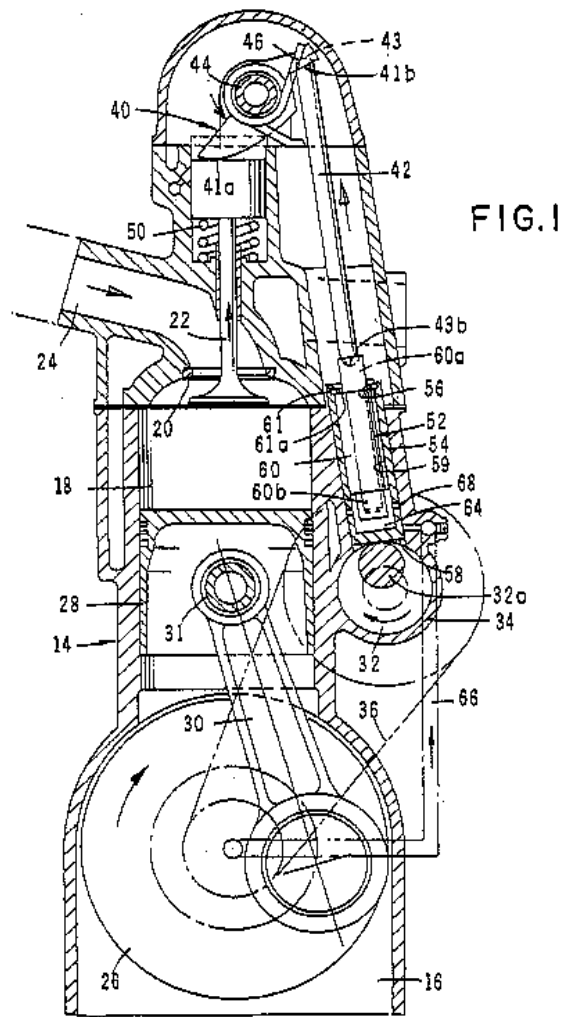Delete: The following row from the Informative references table.

Transmitting-gear between valve drive and valve	F01L 1/12

F01L 1/10

Definition statement

Replace: The existing Definition statement text and image with the following new
             text and image.

Illustrative example of subject matter classified in this group.

FIG. I

Insert: The following new References/Informative references section.

References

Informative references

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

Reciprocating cams	F01L 1/044

F01L 1/12

References

Insert: The following new Limiting references section.

Limiting references

This place does not cover:

Simultaneously operating two or more valves	F01L 1/26

F01L 1/14

References

Insert: The following new Limiting references section.

Limiting references

This place does not cover:

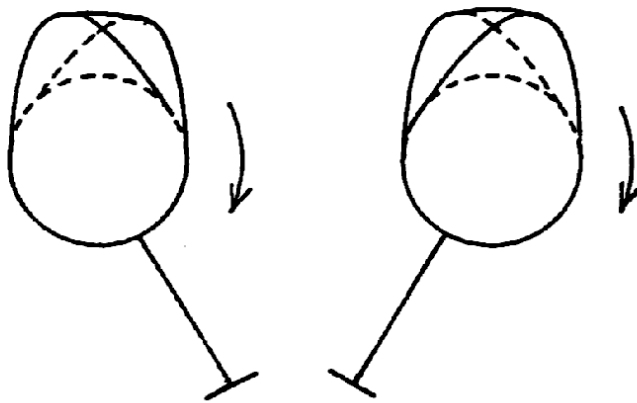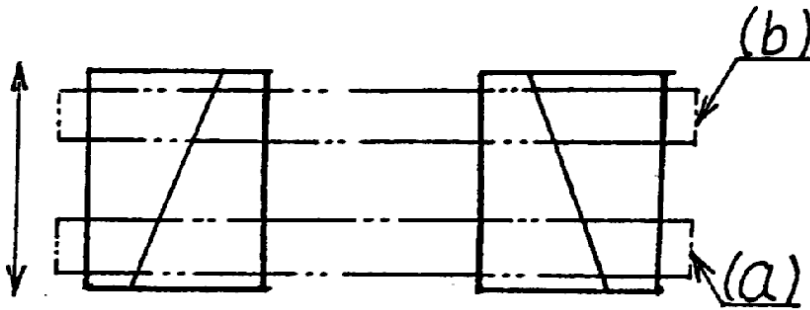| Simultaneously operating two or more valves	F01L 1/24

F01L 1/34

References

Delete: The entire Limiting references section.

F01L 1/34416

Definition statement

Replace: The existing Definition statement text and image with the following new text and image.

Illustrative example of subject matter classified in this group.

References

Delete: The existing Limiting references section.

Insert: The following new Informative references section.

Informative references

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

If axial displacement of a three-dimensional cam modifies beyond the opening/closing timing also the valve lift	F01L 2013/0078

F01L 3/00

References

Delete: The existing Limiting references section.

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:

Valve-gear specially for steam engines or specially for other machines or engines with variable fluid distribution	F01L 15/00 - F01L 35/00
Valves for specific use as Exhaust Gas Recirculation valves (EGR valves)	F02M26/52

Informative references

Replace: The existing Informative references table with the following modified table.

Finishing, reconditioning valves	B23C3/05
Making poppet valves	B23P15/002, B21K1/22

F01L 5/00

References

Limiting references

Delete: The following row from the Limiting references table.

Valve-gear specially for steam engines or specially for other machines or engines with variable fluid distribution	F01L 15/00 - F01L 35/00

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:

Valve-gear specially for steam engines or specially for other machines or engines with variable fluid distribution	F01L 15/00 - F01L 35/00

F01L 7/00

Insert: The following new Definition statement.

Definition statement

This place covers:

- Slide valve-gear or valve arrangements with a pure rotary movement

- Slide valve-gear or valve arrangements with a pure oscillatory movement

References

Delete: The existing Limiting references section.

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:

Valve-gear specially for steam engines or specially for other machines or engines with variable fluid distribution	F01L 15/00 - F01L 35/00

Informative references

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

Slide valves with combined rotary and non-rotary movements, combinations of rotary and non-rotary slide valves	F01L 5/00

Insert: The following new Special rules of classification section.

Special rules of classification

Reference F01L 5/00 is non-limiting in the main group F01L 7/00. CPC will be updated/corrected once this inconsistency is resolved.

Looping references between F01L 5/00 and F01L 7/00 have been identified. Until this inconsistency is resolved, the current classification practice in CPC is as follows: F01L 7/00 covers only slide valve-gear or valve arrangements with a pure rotary movement or a pure oscillatory movement, while slide valves with combined rotary and non-rotary movements or combinations of rotary and non-rotary slide valves belong to F01L 5/00.

F01L 9/00

References

Delete: The existing Limiting references section.

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:

Valve-gear specially for steam engines or specially for other machines or engines with variable fluid distribution	F01L 15/00 - F01L 35/00

F01L 11/00

References

Delete: The existing Limiting references section.

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:

Valve-gear specially for steam engines or specially for other machines or engines with variable fluid distribution	F01L 15/00 - F01L 35/00

F01L 13/00

References

Delete: The existing Limiting references section.

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:

Valve-gear specially for steam engines or specially for other machines or engines with variable fluid distribution	F01L 15/00 - F01L 35/00

Informative references

Delete: The colon that comes after "valve(s)" in the first table row and the semicolon from behind the symbol F02D 13/00. The row should look as follows.

Controlling engine output power by varying valve lift and timing of inlet resp. exhaust valve(s)	F02D 13/00

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

Methods of controlling engine output power by varying valve lift and timing of inlet resp. exhaust valve(s), for which the emphasis is not on the structure of the valve gear used	F02D13/02, F02D13/04, F02D13/06, F02D13/08, F02D15/00

Insert: The following new Relationships with other classification places.

Relationships with other classification places

This group covers the structure of valve drive, while the methods or processes of controlling the valve belong to F02D.

F01L 13/0005

References

Delete: The existing Limiting references section.

Insert: The following new Informative references section.

Informative references

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

Methods of controlling engines by rendering engine inoperative or idling or by cutting out individual cylinders, for which the emphasis is not on the structure of the valve gear used	F02D 17/00
Cutting-out	F02D 17/02
Inoperative or idling	F02D 17/04

Insert: The following new Relationships with other classification places section.

Relationships with other classification places

This group covers the structure of valve drive, while the methods or processes of controlling the valve belong to F02D.

2. B. DEFINITIONS QUICK FIX

Symbol	Location of change (e.g., section title)	Existing reference symbol or text	Action; New symbol; New text
F01L 1/18	Informative references	F01L1/18G	Replace: The existing symbol with the new symbol F01L 2001/188 so that the table row reads as follows. Fulcrums at upper surface F01L2001/188
F01L 9/02			Delete: The entire Definition.
F01L 9/04			Delete: The entire Definition.

NOTES:
- The table above is used for corrections or modifications to existing definitions, e.g. delete an entire definition or part thereof; propose new wording or modify wording of a section, change the symbol the definition is associated with, change or delete a reference symbol, etc.
- Do not delete (F) symbol definitions.

3.   REVISION CONCORDANCE LIST (RCL)

Type*	From CPC Symbol (existing)	To CPC Symbol(s)
C	F01L 1/044	F01L 1/044, F01L 1/10
D	F01L 9/02	<administrative transfer to F01L 9/10>
D	F01L 9/021	<administrative transfer to F01L 9/11>
D	F01L 9/023	<administrative transfer to F01L 9/12>
D	F01L 9/025	<administrative transfer to F01L 9/14>
D	F01L 9/026	<administrative transfer to F01L 9/16>
D	F01L 2009/028	<administrative transfer to F01L 9/18 INV>
D	F01L 9/04	<Administrative transfer to F01L 9/20>
D	F01L 2009/0401	<administrative transfer to F01L 9/26 INV>
D	F01L 2009/0403	<administrative transfer to F01L 2009/2103>
D	F01L 2009/0405	<administrative transfer to F01L 2009/2105>
D	F01L 2009/0407	<administrative transfer to F01L 2009/2107>
D	F01L 2009/0409	<administrative transfer to F01L 2009/2109>
D	F01L 2009/0411	<administrative transfer to F01L 9/22 INV>
D	F01L 2009/0413	<administrative transfer to F01L 9/24 INV>
D	F01L 2009/0415	<administrative transfer to F01L 2009/2115>
D	F01L 2009/0417	<administrative transfer to F01L 2009/2117>
D	F01L 2009/0419	<administrative transfer to F01L 9/30 INV>
D	F01L 2009/0421	<administrative transfer to F01L 2009/25>
D	F01L 2009/0423	<administrative transfer to F01L 9/21 INV>
D	F01L 2009/0425	<administrative transfer to F01L 2009/2125>
D	F01L 2009/0426	<administrative transfer to F01L 2009/2126>
D	F01L 2009/0428	<administrative transfer to F01L 2009/2128>
D	F01L 2009/043	<administrative transfer to F01L 2009/213>
D	F01L 2009/0432	<administrative transfer to F01L 2009/2132>
D	F01L 2009/0434	<administrative transfer to F01L 2009/2134>
D	F01L 2009/0436	<administrative transfer to F01L 2009/2136>
D	F01L 2009/0438	<administrative transfer to F01L 2009/2138>
D	F01L 2009/044	<administrative transfer to F01L 2009/214>
D	F01L 2009/0442	<administrative transfer to F01L 2009/2142>
D	F01L 2009/0444	<administrative transfer to F01L 2009/2144>
D	F01L 2009/0446	<administrative transfer to F01L 2009/2146>
D	F01L 2009/0448	<administrative transfer to F01L 2009/2148>
D	F01L 2009/0449	<administrative transfer to F01L 2009/2149>
D	F01L 2009/0451	<administrative transfer to F01L 2009/2151>
D	F01L 2009/0453	<administrative transfer to F01L 2009/2153>
D	F01L 2009/0455	<administrative transfer to F01L 2009/2155>
D	F01L 2009/0457	<administrative transfer to F01L 2009/2157>
D	F01L 2009/0459	<administrative transfer to F01L 2009/2159>
D	F01L 2009/0461	<administrative transfer to F01L 2009/2161>
D	F01L 2009/0463	<administrative transfer to F01L 2009/2163>
D	F01L 2009/0465	<administrative transfer to F01L 2009/2165>
D	F01L 2009/0467	<administrative transfer to F01L 2009/2167>
D	F01L 2009/0469	<administrative transfer to F01L 2009/2169>
D	F01L 2009/0471	<administrative transfer to F01L 2009/2171>
D	F01L 2009/0473	<administrative transfer to F01L 2009/2173>

Type*	From CPC Symbol (existing)	To CPC Symbol(s)
D	F01L 2009/0474	<administrative transfer to F01L 2009/2174>
D	F01L 2009/0476	<administrative transfer to F01L 2009/2176>
D	F01L 2009/0478	<administrative transfer to F01L 9/40 INV>
D	F01L 2009/048	<administrative transfer to F01L 2009/408>
D	F01L 2009/0482	<administrative transfer to F01L 2009/4082>
D	F01L 2009/0484	<administrative transfer to F01L 2009/4084>
D	F01L 2009/0486	<administrative transfer to F01L 2009/4086>
D	F01L 2009/0488	<administrative transfer to F01L 2009/4088>
D	F01L 2009/049	<administrative transfer to F01L 2009/409>
D	F01L 2009/0492	<administrative transfer to F01L 2009/4092>
D	F01L 2009/0494	<administrative transfer to F01L 2009/4094>
D	F01L 2009/0496	<administrative transfer to F01L 2009/4096>
D	F01L 2009/0498	<administrative transfer to F01L 2009/4098>

* 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; D = deleted entries; F = frozen entries will be deleted once reclassification of documents from the entries is completed.

NOTES:
- <u>Only</u> C, D, F, and Q type entries are included in the table above.
- When multiple symbols are included in the "To" column, do not use ranges of symbols.
- 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 ("To") symbol, however it is required to specify "<no transfer>" in the "To" column for such cases.
- RCL is not needed for finalisation projects.

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

CPC	IPC	Action*
F01L 9/02		DELETE
F01L 9/021		DELETE
F01L 9/023		DELETE
F01L 9/025		DELETE
F01L 9/026		DELETE
F01L 2009/028		DELETE
F01L 9/04		DELETE
F01L 2009/0401		DELETE
F01L 2009/0403		DELETE
F01L 2009/0405		DELETE
F01L 2009/0407		DELETE
F01L 2009/0409		DELETE
F01L 2009/0411		DELETE
F01L 2009/0413		DELETE
F01L 2009/0415		DELETE
F01L 2009/0417		DELETE
F01L 2009/0419		DELETE
F01L 2009/0421		DELETE
F01L 2009/0423		DELETE
F01L 2009/0425		DELETE
F01L 2009/0426		DELETE
F01L 2009/0428		DELETE
F01L 2009/043		DELETE
F01L 2009/0432		DELETE
F01L 2009/0434		DELETE
F01L 2009/0436		DELETE
F01L 2009/0438		DELETE
F01L 2009/044		DELETE
F01L 2009/0442		DELETE
F01L 2009/0444		DELETE
F01L 2009/0446		DELETE
F01L 2009/0448		DELETE
F01L 2009/0449		DELETE
F01L 2009/0451		DELETE
F01L 2009/0453		DELETE
F01L 2009/0455		DELETE
F01L 2009/0457		DELETE
F01L 2009/0459		DELETE
F01L 2009/0461		DELETE
F01L 2009/0463		DELETE

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CPC	IPC	Action*
F01L 2009/0465		DELETE
F01L 2009/0467		DELETE
F01L 2009/0469		DELETE
F01L 2009/0471		DELETE
F01L 2009/0473		DELETE
F01L 2009/0474		DELETE
F01L 2009/0476		DELETE
F01L 2009/0478		DELETE
F01L 2009/048		DELETE
F01L 2009/0482		DELETE
F01L 2009/0484		DELETE
F01L 2009/0486		DELETE
F01L 2009/0488		DELETE
F01L 2009/049		DELETE
F01L 2009/0492		DELETE
F01L 2009/0494		DELETE
F01L 2009/0496		DELETE
F01L 2009/0498		DELETE
F01L 9/10	F01L 9/10	NEW
F01L 9/11	F01L 9/11	NEW
F01L 9/12	F01L 9/12	NEW
F01L 9/14	F01L 9/14	NEW
F01L 9/16	F01L 9/16	NEW
F01L 9/18	F01L 9/18	NEW
F01L 9/20	F01L 9/20	NEW
F01L 9/21	F01L 9/21	NEW
F01L 2009/2103	F01L 9/21	NEW
F01L 2009/2105	F01L 9/21	NEW
F01L 2009/2107	F01L 9/21	NEW
F01L 2009/2109	F01L 9/21	NEW
F01L 2009/2115	F01L 9/21	NEW
F01L 2009/2117	F01L 9/21	NEW
F01L 2009/2125	F01L 9/21	NEW
F01L 2009/2126	F01L 9/21	NEW
F01L 2009/2128	F01L 9/21	NEW
F01L 2009/213	F01L 9/21	NEW
F01L 2009/2132	F01L 9/21	NEW
F01L 2009/2134	F01L 9/21	NEW
F01L 2009/2136	F01L 9/21	NEW
F01L 2009/2138	F01L 9/21	NEW
F01L 2009/214	F01L 9/21	NEW
F01L 2009/2142	F01L 9/21	NEW
F01L 2009/2144	F01L 9/21	NEW
F01L 2009/2146	F01L 9/21	NEW
F01L 2009/2148	F01L 9/21	NEW

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CPC	IPC	Action*
F01L 2009/2149	F01L 9/21	NEW
F01L 2009/2151	F01L 9/21	NEW
F01L 2009/2153	F01L 9/21	NEW
F01L 2009/2155	F01L 9/21	NEW
F01L 2009/2157	F01L 9/21	NEW
F01L 2009/2159	F01L 9/21	NEW
F01L 2009/2161	F01L 9/21	NEW
F01L 2009/2163	F01L 9/21	NEW
F01L 2009/2165	F01L 9/21	NEW
F01L 2009/2167	F01L 9/21	NEW
F01L 2009/2169	F01L 9/21	NEW
F01L 2009/2171	F01L 9/21	NEW
F01L 2009/2173	F01L 9/21	NEW
F01L 2009/2174	F01L 9/21	NEW
F01L 2009/2176	F01L 9/21	NEW
F01L 9/22	F01L 9/22	NEW
F01L 9/24	F01L 9/24	NEW
F01L 2009/25	F01L 9/20	NEW
F01L 9/26	F01L 9/26	NEW
F01L 9/30	F01L 9/30	NEW
F01L 9/40	F01L 9/40	NEW
F01L 2009/408	F01L 9/40	NEW
F01L 2009/4082	F01L 9/40	NEW
F01L 2009/4084	F01L 9/40	NEW
F01L 2009/4086	F01L 9/40	NEW
F01L 2009/4088	F01L 9/40	NEW
F01L 2009/409	F01L 9/40	NEW
F01L 2009/4092	F01L 9/40	NEW
F01L 2009/4094	F01L 9/40	NEW
F01L 2009/4096	F01L 9/40	NEW
F01L 2009/4098	F01L 9/40	NEW

*Action column:
- For an (N) or (Q) entry, provide an IPC symbol and complete the Action column with "NEW."
- For an existing CPC main trunk entry or indexing entry where the existing IPC symbol needs to be changed, provide an updated IPC symbol and complete the Action column with "UPDATED."
- For a (D) CPC entry or indexing entry complete the Action column with "DELETE." IPC symbol does not need to be included in the IPC column.
- For an (N) 2000 series CPC entry which is positioned within the main trunk scheme (breakdown code) provide an IPC symbol and complete the action column with "NEW".
- For an (N) 2000 series CPC entry positioned at the end of the CPC scheme (orthogonal code), with no IPC equivalent, complete the IPC column with "CPCONLY" and complete the action column with "NEW".

NOTES:
- F symbols are not included in the CICL table above.
- T and M symbols are not included in the CICL table above unless a change to the existing IPC is desired.

5. CROSS-REFERENCE LIST (CRL)

Definitions references impacted by this revision project

Location of reference to be changed	Referenced subclass or group to be changed	Section of definition	Action; New reference symbol; New text
H01F 7/00	F01L 9/04	Informative references	Replace: The existing symbol with the new symbol F01L 9/20so that the row reads as follows. Valve-gear or valve arrangements actuated by electric means F01L 9/20

NOTES:
- The CRL tables above are used for changes to locations **outside** of the project scope. Changes to references in scheme titles or definitions <u>inside</u> the project scope will be reflected in the "scheme change" template or one of the "definition" templates.
- In addition to other changes proposed in the tables above, in the column titled "Referenced subclass or group to be changed," **referenced** D symbols should indicate an action of "delete" or should indicate a replacement symbol and **referenced** F symbols should indicate a replacement symbol.
- When a reference is deleted, text related to that reference will also be deleted unless other references or a range of references associated with the same text remain.