Symbol	Typ	Titel
F	**Sektion**	**SECTION F — MECHANICAL ENGINEERING; LIGHTING; HEATING; WEAPONS; BLASTING**
F02	**Klasse**	**COMBUSTION ENGINES (cyclically operating valves therefor, lubricating, exhausting, or silencing engines F01); HOT-GAS OR COMBUSTION-PRODUCT ENGINE PLANTS**
F02D	***Unterklasse***	***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 ; 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 ; starting of combustion engines F02N ; controlling of ignition F02P ; controlling gas-turbine plants, jet-propulsion plants, or combustion-product engine plants, see the relevant subclasses for these plants) [4, 2006.01]***
		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)
F02D 1/00	**Hauptgruppe**	**Controlling fuel-injection pumps, e.g. of high-pressure injection type (F02D 3/00 takes precedence) [2]**
F02D 1/02	1-Punkt Untergruppe	. not restricted to adjustment of injection timing, e.g. varying amount of fuel delivered
F02D 1/04	2-Punkt Untergruppe	. . by mechanical means dependent on engine speed, e.g. using centrifugal governors (F02D 1/08 takes precedence)
F02D 1/06	2-Punkt Untergruppe	. . by means dependent on pressure of engine working fluid (F02D 1/08 takes precedence)
F02D 1/08	2-Punkt Untergruppe	. . Transmission of control impulse to pump control, e.g. with power drive or power assistance
F02D 1/10	3-Punkt Untergruppe	. . . mechanical
F02D 1/12	3-Punkt Untergruppe	. . . non-mechanical, e.g. hydraulic
F02D 1/14	4-Punkt Untergruppe	. . . . pneumatic
F02D 1/16	1-Punkt Untergruppe	. Adjustment of injection timing (F02D 1/02 takes precedence)
F02D 1/18	2-Punkt Untergruppe	. . with non-mechanical means for transmitting control impulse; with amplification of control impulse
F02D 3/00	**Hauptgruppe**	**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 (carburettors F02M) [2]**
F02D 3/02	1-Punkt Untergruppe	. with continuous injection or continuous flow upstream of the injection nozzle [2]
F02D 3/04	1-Punkt Untergruppe	. Controlling fuel injection and carburation, e.g. of alternative systems
F02D 7/00	**Hauptgruppe**	**Other non-electrical fuel injection control [4]**
F02D 7/02	1-Punkt Untergruppe	. Controlling fuel injection where fuel is injected by compressed air
F02D 9/00	**Hauptgruppe**	**Controlling engines by throttling air or fuel-and-air induction conduits or exhaust conduits**
F02D 9/02	1-Punkt Untergruppe	. concerning induction conduits (throttle valves, or arrangements thereof in conduits F02D 9/08)
F02D 9/04	1-Punkt Untergruppe	. concerning exhaust conduits (throttle valves, or arrangements thereof in conduits F02D 9/08)

Symbol	Typ	Titel
F02D 9/06	2-Punkt Untergruppe	. . Exhaust brakes
F02D 9/08	1-Punkt Untergruppe	. Throttle valves specially adapted therefor; Arrangements of such valves in conduits (throttle valves modified for use in, or arranged in, carburettors F02M; throttle valves in general F16K)
F02D 9/10	2-Punkt Untergruppe	. . having pivotally-mounted flaps
F02D 9/12	2-Punkt Untergruppe	. . having slidably-mounted valve-members; having valve-members movable longitudinally of conduit
F02D 9/14	3-Punkt Untergruppe	. . . the members being slidable transversely of conduit
F02D 9/16	3-Punkt Untergruppe	. . . the members being rotatable
F02D 9/18	2-Punkt Untergruppe	. . having elastic-wall valve-members
F02D 11/00	**Hauptgruppe**	**Arrangements for, or adaptations to, non-automatic engine control initiation means, e.g. operator initiated (specially for reversing F02D 27/00; arrangement or mounting of prime-mover control devices in vehicles B60K 26/00) [2, 5]**
F02D 11/02	1-Punkt Untergruppe	. characterised by hand, foot, or like operator controlled initiation means [5]
F02D 11/04	1-Punkt Untergruppe	. characterised by mechanical control linkages (with power drive or assistance F02D 11/06) [5]
F02D 11/06	1-Punkt Untergruppe	. characterised by non-mechanical control linkages, e.g. fluid control linkages or by control linkages with power drive or assistance [5]
F02D 11/08	2-Punkt Untergruppe	. . of the pneumatic type [5]
F02D 11/10	2-Punkt Untergruppe	. . of the electric type [5]
F02D 13/00	**Hauptgruppe**	**Controlling the engine output power by varying inlet or exhaust valve operating characteristics, e.g. timing (modifying valve gear F01L)**
F02D 13/02	1-Punkt Untergruppe	. during engine operation
F02D 13/04	2-Punkt Untergruppe	. . using engine as brake
F02D 13/06	2-Punkt Untergruppe	. . Cutting-out cylinders
F02D 13/08	1-Punkt Untergruppe	. for rendering engine inoperative or idling
F02D 15/00	**Hauptgruppe**	**Varying compression ratio (modifying valve-gear F01L)**
F02D 15/02	1-Punkt Untergruppe	. by alteration or displacement of piston stroke
F02D 15/04	1-Punkt Untergruppe	. by alteration of volume of compression space without changing piston stroke
F02D 17/00	**Hauptgruppe**	**Controlling engines by cutting-out individual cylinders; Rendering engines inoperative or idling (controlling or rendering inoperative by varying inlet or exhaust valve operating characteristics F02D 13/00)**
F02D 17/02	1-Punkt Untergruppe	. Cutting-out (cutting-out engines in multiple-engine arrangements F02D 25/04)
F02D 17/04	1-Punkt Untergruppe	. rendering engines inoperative or idling, e.g. caused by abnormal conditions (dependent on lubricating conditions F01M 1/22; dependent on cooling F01P 5/14)
		Controlling peculiar to specified types or adaptations of engines
F02D 19/00	**Hauptgruppe**	**Controlling engines characterised by their use of non-liquid fuels, pluralities of fuels, or non-fuel substances added to the combustible mixtures (the non-fuel substances being gaseous F02D 21/00)**
F02D 19/02	1-Punkt Untergruppe	. peculiar to engines working with gaseous fuels (apparatus, or control parts thereof, for mixing gas and air F02M)
F02D 19/04	1-Punkt Untergruppe	. peculiar to engines working with solid fuels, e.g. pulverised coal

Symbol	Typ	Titel
F02D 19/06	1-Punkt Untergruppe	. peculiar to engines working with pluralities of fuels, e.g. alternatively with light and heavy fuel oil, other than engines indifferent to the fuel consumed
F02D 19/08	2-Punkt Untergruppe	. . simultaneously using pluralities of fuels (F02D 19/12 takes precedence)
F02D 19/10	3-Punkt Untergruppe	. . . peculiar to compression-ignition engines in which the main fuel is gaseous
F02D 19/12	1-Punkt Untergruppe	. peculiar to engines working with non-fuel substances or with anti-knock agents, e.g. with anti-knock fuel (apparatus, or control parts thereof, for delivering such substances or agents F02M)
F02D 21/00	**Hauptgruppe**	**Controlling engines characterised by their being supplied with non-airborne oxygen or other non-fuel gas**
F02D 21/02	1-Punkt Untergruppe	. peculiar to oxygen-fed engines
F02D 21/04	2-Punkt Untergruppe	. . with circulation of exhaust gases in closed or semi-closed circuits
F02D 21/06	1-Punkt Untergruppe	. peculiar to engines having other non-fuel gas added to combustion-air
F02D 21/08	2-Punkt Untergruppe	. . the other gas being the exhaust gas of engine (circulation of exhaust gas in oxygen-fed engines F02D 21/04)
F02D 21/10	2-Punkt Untergruppe	. . having secondary air added to fuel-air mixture (apparatus, or control parts thereof, for delivering secondary air F02M)
F02D 23/00	**Hauptgruppe**	**Controlling engines characterised by their being supercharged**
F02D 23/02	1-Punkt Untergruppe	. the engines being of fuel-injection type
F02D 25/00	**Hauptgruppe**	**Controlling two or more co-operating engines**
F02D 25/02	1-Punkt Untergruppe	. to synchronise speed
F02D 25/04	1-Punkt Untergruppe	. by cutting-out engines
F02D 27/00	**Hauptgruppe**	**Controlling engines characterised by their being reversible**
F02D 27/02	1-Punkt Untergruppe	. by performing a programme
F02D 28/00	**Hauptgruppe**	**Programme-control of engines (programme-control specific to a type or purpose covered by one of the groups of this subclass, except groups F02D 29/00, F02D 39/00, or by one group of another subclass, e.g. of F01L, see that group) [2]**
F02D 29/00	**Hauptgruppe**	**Controlling engines, such controlling being peculiar to the devices driven thereby, the devices being other than parts or accessories essential to engine operation, e.g. controlling of engines by signals external thereto [2]**
F02D 29/02	1-Punkt Untergruppe	. peculiar to engines driving vehicles; peculiar to engines driving variable-pitch propellers [2]
F02D 29/04	1-Punkt Untergruppe	. peculiar to engines driving pumps
F02D 29/06	1-Punkt Untergruppe	. peculiar to engines driving electric generators
		Other non-electrical control of engines [4]
F02D 31/00	**Hauptgruppe**	**Use of speed-sensing governors to control combustion engines, not otherwise provided for**
F02D 33/00	**Hauptgruppe**	**Controlling delivery of fuel or combustion-air, not otherwise provided for**
F02D 33/02	1-Punkt Untergruppe	. of combustion-air
F02D 35/00	**Hauptgruppe**	**Controlling engines, dependent on conditions exterior or interior to engines, not otherwise provided for**
F02D 35/02	1-Punkt Untergruppe	. on interior conditions
F02D 37/00	**Hauptgruppe**	**Controlling conjointly two or more functions of engines, not otherwise provided for**
F02D 37/02	1-Punkt Untergruppe	. one of the functions being ignition (ignition control per seF02P)

Symbol	Typ	Titel
F02D 39/00	**Hauptgruppe**	**Other non-electrical control [4]**
F02D 39/02	1-Punkt Untergruppe	. for four-stroke engines
F02D 39/04	1-Punkt Untergruppe	. for engines with other cycles than four-stroke, e.g. two-stroke
F02D 39/06	1-Punkt Untergruppe	. for engines adding the fuel substantially at end of compression stroke
F02D 39/08	1-Punkt Untergruppe	. for engines adding the fuel substantially before compression stroke
F02D 39/10	1-Punkt Untergruppe	. for free-piston engines; for engines without rotary main shaft
		Electrical control of combustion engines [4]
F02D 41/00	**Hauptgruppe**	**Electrical control of supply of combustible mixture or its constituents (F02D 43/00 takes precedence) [4]**
F02D 41/02	1-Punkt Untergruppe	. Circuit arrangements for generating control signals [4]
F02D 41/04	2-Punkt Untergruppe	. . Introducing corrections for particular operating conditions (F02D 41/14 takes precedence) [4]
F02D 41/06	3-Punkt Untergruppe	. . . for engine starting or warming up [4]
F02D 41/08	3-Punkt Untergruppe	. . . for idling (F02D 41/06, F02D 41/16 take precedence) [4]
F02D 41/10	3-Punkt Untergruppe	. . . for acceleration [4]
F02D 41/12	3-Punkt Untergruppe	. . . for deceleration [4]
F02D 41/14	2-Punkt Untergruppe	. . Introducing closed-loop corrections [4]
F02D 41/16	3-Punkt Untergruppe	. . . for idling [4]
F02D 41/18	2-Punkt Untergruppe	. . by measuring intake air flow (measuring flow, in general G01F) [4]
F02D 41/20	1-Punkt Untergruppe	. Output circuits, e.g. for controlling currents in command coils (current control in inductive loads in general H03K 17/64) [4]
F02D 41/22	1-Punkt Untergruppe	. Safety or indicating devices for abnormal conditions [4]
F02D 41/24	1-Punkt Untergruppe	. characterised by the use of digital means [4]
F02D 41/26	2-Punkt Untergruppe	. . using computer, e.g. microprocessor [4]
F02D 41/28	3-Punkt Untergruppe	. . . Interface circuits [4]
F02D 41/30	1-Punkt Untergruppe	. Controlling fuel injection [4]
F02D 41/32	2-Punkt Untergruppe	. . of the low pressure type [4]
F02D 41/34	3-Punkt Untergruppe	. . . with means for controlling injection timing or duration (ignition timing F02P 5/00) [4]
F02D 41/36	3-Punkt Untergruppe	. . . with means for controlling distribution (arrangement of ignition distributors F02P 7/00) [4]
F02D 41/38	2-Punkt Untergruppe	. . of the high pressure type [4]
F02D 41/40	3-Punkt Untergruppe	. . . with means for controlling injection timing or duration [4]
F02D 43/00	**Hauptgruppe**	**Conjoint electrical control of two or more functions, e.g. ignition, fuel-air mixture, recirculation, supercharging, exhaust-gas treatment (electrical control of exhaust gas treating apparatus per se F01N 9/00) [4]**
F02D 43/02	1-Punkt Untergruppe	. using only analogue means [4]
F02D 43/04	1-Punkt Untergruppe	. using only digital means [4]

Symbol	Typ	Titel
F02D 45/00	**Hauptgruppe**	**Electrical control not provided for in groups F02D 41/00-F02D 43/00 (electrical control of exhaust gas treating apparatus F01N 9/00; electrical control of one of the functions: ignition, lubricating, cooling, starting, intake-heating, see the relevant subclasses for such functions) [4]**