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**
F02B	**Unterklasse**	**INTERNAL-COMBUSTION PISTON ENGINES; COMBUSTION ENGINES IN GENERAL (internal-combustion turbines F02C; plants in which engines use combustion products F02C, F02G)**
		Engines characterised by the working fluid to be compressed, or characterised by the type of ignition (with both fuel-air mixture compression and air compression, or with both positive ignition and compression ignition F02B 11/00; with precombustion chambers F02B 19/00; having air-storage chambers F02B 21/00; with special shape or construction of other combustion chambers F02B 23/00)
F02B 1/00	**Hauptgruppe**	**Engines with fuel-air mixture compression**
F02B 1/02	1-Punkt Untergruppe	. with positive ignition (with non-timed positive ignition F02B 9/06)
F02B 1/04	2-Punkt Untergruppe	. . with fuel-air mixture admission into cylinder
F02B 1/06	3-Punkt Untergruppe	. . . Methods of operating
F02B 1/08	2-Punkt Untergruppe	. . with separate admission of air and fuel into cylinder
F02B 1/10	3-Punkt Untergruppe	. . . Methods of operating
F02B 1/12	1-Punkt Untergruppe	. with compression ignition (with fuel-air charge ignited by compression ignition of an additional fuel F02B 7/00)
F02B 1/14	2-Punkt Untergruppe	. . Methods of operating
F02B 3/00	**Hauptgruppe**	**Engines with air compression and subsequent fuel addition**
F02B 3/02	1-Punkt Untergruppe	. with positive ignition (with non-timed positive ignition F02B 9/06)
F02B 3/04	2-Punkt Untergruppe	. . Methods of operating
F02B 3/06	1-Punkt Untergruppe	. with compression ignition (F02B 13/02 takes precedence; with fuel-air charge ignited by compression ignition of an additional fuel F02B 7/00)
F02B 3/08	2-Punkt Untergruppe	. . Methods of operating (F02B 3/12 takes precedence)
F02B 3/10	2-Punkt Untergruppe	. . with intermittent fuel introduction
F02B 3/12	3-Punkt Untergruppe	. . . Methods of operating
F02B 5/00	**Hauptgruppe**	**Engines with positive ignition (F02B 1/02, F02B 3/02 take precedence; with non-timed positive ignition F02B 9/06)**
F02B 5/02	1-Punkt Untergruppe	. Methods of operating
F02B 7/00	**Hauptgruppe**	**Engines with fuel-air charge ignited by compression ignition of an additional fuel (with pre-combustion chambers F02B 19/00)**
F02B 7/02	1-Punkt Untergruppe	. the fuel in the charge being liquid
F02B 7/04	2-Punkt Untergruppe	. . Methods of operating
F02B 7/06	1-Punkt Untergruppe	. the fuel in the charge being gaseous
F02B 7/08	2-Punkt Untergruppe	. . Methods of operating
F02B 9/00	**Hauptgruppe**	**Engines characterised by other types of ignition**

Symbol	Typ	Titel
F02B 9/02	1-Punkt Untergruppe	. with compression ignition (F02B 1/12, F02B 3/06 take precedence)
F02B 9/04	2-Punkt Untergruppe	. . Methods of operating
F02B 9/06	1-Punkt Untergruppe	. with non-timed positive ignition, e.g. with hot-spots
F02B 9/08	2-Punkt Untergruppe	. . with incandescent chambers
F02B 9/10	3-Punkt Untergruppe	. . . Chamber shapes or constructions
F02B 11/00	**Hauptgruppe**	**Engines with both fuel-air mixture compression and air compression, or with both positive ignition and compression ignition, e.g. in different cylinders**
F02B 11/02	1-Punkt Untergruppe	. convertible from fuel-air mixture compression to air compression or vice versa
		Engines characterised by the method of introducing fuel into cylinders (characterised by use of gaseous or solid fuels F02B 43/00, F02B 45/00; carburettors, fuel-injection apparatus F02M)
F02B 13/00	**Hauptgruppe**	**Engines with introduction of fuel into cylinders by use of auxiliary fluid**
F02B 13/02	1-Punkt Untergruppe	. Compression ignition engines using air or gas for blowing fuel into compressed air in cylinder
F02B 13/04	2-Punkt Untergruppe	. . Arrangements or adaptations of pumps
F02B 13/06	1-Punkt Untergruppe	. Engines having secondary air mixed with fuel in pump, compressed therein without ignition, and fuel-air mixture being injected into air in cylinder
F02B 13/08	2-Punkt Untergruppe	. . Arrangements or adaptations of pumps
F02B 13/10	1-Punkt Untergruppe	. Use of specific auxiliary fluids, e.g. steam, combustion gas
F02B 15/00	**Hauptgruppe**	**Engines characterised by method of introducing fuel into cylinders and not otherwise provided for**
F02B 15/02	1-Punkt Untergruppe	. having means for sucking fuel directly into cylinder
F02B 17/00	**Hauptgruppe**	**Engines characterised by means for effecting stratification of charge in cylinders**
		Engines characterised by having precombustion chambers or air-storage chambers, or characterised by shape or construction of combustion chambers to improve operation (engines with incandescent chambers F02B 9/08)
F02B 19/00	**Hauptgruppe**	**Engines with precombustion chambers**
F02B 19/02	1-Punkt Untergruppe	. the chamber being periodically isolated from its cylinder
F02B 19/04	2-Punkt Untergruppe	. . the isolation being effected by a protuberance on piston or cylinder head
F02B 19/06	1-Punkt Untergruppe	. with auxiliary piston in chamber for transferring ignited charge to cylinder space
F02B 19/08	1-Punkt Untergruppe	. the chamber being of air-swirl type
F02B 19/10	1-Punkt Untergruppe	. with fuel introduced partly into pre-combustion chamber, and partly into cylinder (F02B 19/02-F02B 19/08 take precedence)
F02B 19/12	1-Punkt Untergruppe	. with positive ignition (F02B 19/02-F02B 19/10 take precedence)
F02B 19/14	1-Punkt Untergruppe	. with compression ignition (F02B 19/02-F02B 19/10 take precedence)
F02B 19/16	1-Punkt Untergruppe	. Chamber shapes or constructions not specific to groups F02B 19/02-F02B 19/10
F02B 19/18	2-Punkt Untergruppe	. . Transfer passages between chamber and cylinder
F02B 21/00	**Hauptgruppe**	**Engines having air-storage chambers**
F02B 21/02	1-Punkt Untergruppe	. Chamber shapes or constructions
F02B 23/00	**Hauptgruppe**	**Other engines having special shape or construction of combustion chambers to improve operation**

Symbol	Typ	Titel
F02B 23/02	1-Punkt Untergruppe	. with compression ignition
F02B 23/04	2-Punkt Untergruppe	. . the combustion space being subdivided into two or more chambers (with pre-combustion chambers F02B 19/00)
F02B 23/06	2-Punkt Untergruppe	. . the combustion space being arranged in working piston (F02B 23/04 takes precedence)
F02B 23/08	1-Punkt Untergruppe	. with positive ignition
F02B 23/10	2-Punkt Untergruppe	. . with separate admission of air and fuel into cylinder
		Engines characterised by provisions for charging or scavenging (aspects concerned with driven charging or scavenging pumps F02B 33/00-F02B 39/00)
F02B 25/00	**Hauptgruppe**	**Engines using fresh charge for scavenging cylinders**
F02B 25/02	1-Punkt Untergruppe	. using unidirectional scavenging
F02B 25/04	2-Punkt Untergruppe	. . Engines having ports both in cylinder head and in cylinder wall near bottom of piston stroke
F02B 25/06	3-Punkt Untergruppe	. . . the cylinder-head ports being controlled by working pistons, e.g. by sleeve-shaped extensions thereof
F02B 25/08	2-Punkt Untergruppe	. . Engines with oppositely-moving reciprocating working pistons
F02B 25/10	3-Punkt Untergruppe	. . . with one piston having a smaller diameter or shorter stroke than the other
F02B 25/12	2-Punkt Untergruppe	. . Engines with U-shaped cylinders, having ports in each arm
F02B 25/14	1-Punkt Untergruppe	. using reverse-flow scavenging, e.g. with both inlet and outlet ports arranged near bottom of piston stroke
F02B 25/16	2-Punkt Untergruppe	. . the charge flowing upward essentially along cylinder wall opposite the inlet ports
F02B 25/18	2-Punkt Untergruppe	. . the charge flowing upward essentially along cylinder wall adjacent the inlet ports, e.g. by means of deflection rib on piston
F02B 25/20	1-Punkt Untergruppe	. Means for reducing the mixing of charge and combustion residues or for preventing escape of fresh charge through outlet ports, not provided for in, or of interest apart from, groups F02B 25/02-F02B 25/18
F02B 25/22	2-Punkt Untergruppe	. . by forming air cushion between charge and combustion residues
F02B 25/24	2-Punkt Untergruppe	. . Inlet or outlet openings being timed asymmetrically relative to bottom dead-centre
F02B 25/26	1-Punkt Untergruppe	. Multi-cylinder engines other than those provided for in, or of interest apart from, groups F02B 25/02-F02B 25/24 (internal-combustion aspects of rotary engines with movable cylinders F02B 57/00)
F02B 25/28	2-Punkt Untergruppe	. . with V-, fan-, or star-arrangement of cylinders
F02B 27/00	**Hauptgruppe**	**Use of kinetic or wave energy of charge in induction systems, or of combustion residues in exhaust systems, for improving quantity of charge or for increasing removal of combustion residues (use of driven apparatus for immediate conversion of combustion gas pressure into pressure of fresh charge F02B 33/42)**
F02B 27/02	1-Punkt Untergruppe	. the systems having variable, i.e. adjustable, cross-sectional areas, chambers of variable volume, or like variable means (in exhaust systems only F02B 27/06)
F02B 27/04	1-Punkt Untergruppe	. in exhaust systems only, e.g. for sucking-off combustion gases
F02B 27/06	2-Punkt Untergruppe	. . the systems having variable, i.e. adjustable, cross-sectional areas, chambers of variable volume, or like variable means
F02B 29/00	**Hauptgruppe**	**Engines characterised by other provisions for charging or scavenging; Details not provided for in, or of interest apart from, groups F02B 25/00 and F02B 27/00**
F02B 29/02	1-Punkt Untergruppe	. Other fluid-dynamic features of induction systems for improving quantity of charge (for also imparting a rotation to the charge in the cylinder F02B 31/00; structural features of induction systems F02M)

Symbol	Typ	Titel
F02B 29/04	1-Punkt Untergruppe	. Cooling of air intake supply
F02B 29/06	1-Punkt Untergruppe	. After-charging, i.e. supplementary charging after scavenging
F02B 29/08	1-Punkt Untergruppe	. Modifying distribution valve timing for charging purposes (F02B 29/06 takes precedence; valve-gear therefor F01L)
F02B 31/00	**Hauptgruppe**	**Modifying induction systems for imparting a rotation to the charge in the cylinder (structural features of induction systems F02M)**
F02B 31/02	1-Punkt Untergruppe	. in engines having inlet valves arranged eccentrically to cylinder axis (F02B 31/08 takes precedence) [6]
F02B 31/04	1-Punkt Untergruppe	. by means within the induction channel, e.g. deflectors [6]
F02B 31/06	2-Punkt Untergruppe	. . Movable means, e.g. butterfly valves [6]
F02B 31/08	1-Punkt Untergruppe	. having multiple air inlets [6]
		Engines characterised by provision of driven charging or scavenging pumps (introducing fuel into cylinders by air pressure F02B 13/00; after-charging F02B 29/06; arrangements of such pumps or other auxiliary apparatus on engines F02B 67/00; combined engine and pump control, control dependent on variables other than those generic to pump F02D)
F02B 33/00	**Hauptgruppe**	**Engines with pumps for charging or scavenging (with pumps for sucking combustion residues from cylinders F02B 35/00; with exhaust-driven pumps F02B 37/00)**
F02B 33/02	1-Punkt Untergruppe	. Engines with reciprocating-piston pumps; Engines with crankcase pumps
F02B 33/04	2-Punkt Untergruppe	. . with simple crankcase pumps, i.e. with the rear face of a non-stepped working piston acting as sole pumping member in co-operation with the crankcase
F02B 33/06	2-Punkt Untergruppe	. . with reciprocating-piston pumps other than simple crankcase pumps
F02B 33/08	3-Punkt Untergruppe	. . . with the working-cylinder head arranged between working and pumping cylinders
F02B 33/10	3-Punkt Untergruppe	. . . with the pumping cylinder situated between working cylinder and crankcase, or with the pumping cylinder surrounding working cylinder
F02B 33/12	4-Punkt Untergruppe	. . . . the rear face of working piston acting as pumping member and co-operating with a pumping chamber isolated from crankcase, the connecting-rod passing through the chamber and co-operating with movable isolating member
F02B 33/14	4-Punkt Untergruppe	. . . . working and pumping pistons forming stepped piston
F02B 33/16	4-Punkt Untergruppe	. . . . working and pumping pistons having differing movements
F02B 33/18	3-Punkt Untergruppe	. . . with crankshaft being arranged between working and pumping cylinders
F02B 33/20	3-Punkt Untergruppe	. . . with pumping-cylinder axis arranged at an angle to working-cylinder axis, e.g. at an angle of 90°
F02B 33/22	3-Punkt Untergruppe	. . . with pumping cylinder situated at side of working cylinder, e.g. the cylinders being parallel
F02B 33/24	2-Punkt Untergruppe	. . with crankcase pumps other than with reciprocating pistons only
F02B 33/26	2-Punkt Untergruppe	. . Four-stroke engines characterised by having crankcase pumps
F02B 33/28	2-Punkt Untergruppe	. . Component parts, details, or accessories of crankcase pumps not provided for in, or of interest apart from, groups F02B 33/02-F02B 33/26
F02B 33/30	3-Punkt Untergruppe	. . . Control of inlet or outlet ports (controlling only working-cylinder inlets F01L)
F02B 33/32	1-Punkt Untergruppe	. Engines with pumps other than of reciprocating-piston type (with crankcase pumps F02B 33/02)
F02B 33/34	2-Punkt Untergruppe	. . with rotary pumps (with cell-type pressure exchangers or the like F02B 33/42)

Symbol	Typ	Titel
F02B 33/36	3-Punkt Untergruppe	. . . of positive-displacement type
F02B 33/38	4-Punkt Untergruppe	. . . . of Roots type
F02B 33/40	3-Punkt Untergruppe	. . . of non-positive-displacement type
F02B 33/42	2-Punkt Untergruppe	. . with driven apparatus for immediate conversion of combustion gas pressure into pressure of fresh charge, e.g. with cell-type pressure exchangers (pressure exchangers per seF04F 11/02)
F02B 33/44	1-Punkt Untergruppe	. Passages conducting the charge from the pump to the engine inlet, e.g. reservoirs (cooling of charge after leaving pump F02B 29/04)
F02B 35/00	**Hauptgruppe**	**Engines with pumps for sucking combustion residues from cylinders**
F02B 35/02	1-Punkt Untergruppe	. using rotary pumps
F02B 37/00	**Hauptgruppe**	**Engines with pumps driven at least for part of the time by exhaust (passages conducting the charge from the pump to the engine inlet F02B 33/44)**
F02B 37/007	1-Punkt Untergruppe	. with exhaust-driven pumps arranged in parallel [6]
F02B 37/013	1-Punkt Untergruppe	. with exhaust-driven pumps arranged in series [6]
F02B 37/02	1-Punkt Untergruppe	. Gas passages between engine outlet and pump drive, e.g. reservoirs
F02B 37/04	1-Punkt Untergruppe	. Engines with exhaust drive and other drive of pumps, e.g. with exhaust-driven pump and mechanically-driven second pump
F02B 37/10	2-Punkt Untergruppe	. . at least one pump being alternately driven by exhaust and other drive [3]
F02B 37/11	3-Punkt Untergruppe	. . . driven by other drive at starting only [6]
F02B 37/12	1-Punkt Untergruppe	. Control of the pumps [3]
F02B 37/14	2-Punkt Untergruppe	. . of the alternation between exhaust drive and other drive of a pump, e.g. dependent on speed [3]
F02B 37/16	2-Punkt Untergruppe	. . by bypassing charging air [6]
F02B 37/18	2-Punkt Untergruppe	. . by bypassing exhaust [6]
F02B 37/20	2-Punkt Untergruppe	. . by increasing exhaust energy, e.g. using combustion chambers [6]
F02B 37/22	2-Punkt Untergruppe	. . by varying the cross-section of exhaust passages or air passages [6]
F02B 37/24	2-Punkt Untergruppe	. . by using pumps or turbines with adjustable guide vanes [6]
F02B 39/00	**Hauptgruppe**	**Component parts, details, or accessories relating to, but not provided for in, or of interest apart from, groups F02B 33/00-F02B 37/00 (pumps in general F04; machine elements in general F16)**
F02B 39/02	1-Punkt Untergruppe	. Drives of pumps (exhaust drives or combined exhaust and other drives F02B 37/00); Varying pump drive gear ratio (control acting both on engine and on pump drive gear ratio F02D)
F02B 39/04	2-Punkt Untergruppe	. . Mechanical drives; Variable-gear-ratio drives (non-mechanical pump drives having variable gear ratio F02B 39/08)
F02B 39/06	3-Punkt Untergruppe	. . . the engine torque being divided by a differential gear for driving a pump and the engine output shaft
F02B 39/08	2-Punkt Untergruppe	. . Non-mechanical drives, e.g. fluid drives having variable gear ratio
F02B 39/10	3-Punkt Untergruppe	. . . electric
F02B 39/12	2-Punkt Untergruppe	. . Drives characterised by use of couplings or clutches therein (using fluid slip couplings for varying gear ratio F02B 39/08)
F02B 39/14	1-Punkt Untergruppe	. Lubrication of pumps; Safety measures therefor

Symbol	Typ	Titel
F02B 39/16	1-Punkt Untergruppe	. Other safety measures for, or other control of, pumps
F02B 41/00	**Hauptgruppe**	**Engines with special means for improving conversion of heat or pressure energy into mechanical power**
F02B 41/02	1-Punkt Untergruppe	. Engines with prolonged expansion
F02B 41/04	2-Punkt Untergruppe	. . in main cylinders
F02B 41/06	2-Punkt Untergruppe	. . in compound cylinders
F02B 41/08	3-Punkt Untergruppe	. . . Two-stroke compound engines
F02B 41/10	2-Punkt Untergruppe	. . using exhaust turbines (use of exhaust turbines for charging F02B 37/00; turbine constructions F01D; gas-turbine plants F02C)
		Engines operating on non-liquid fuels; Plants including such engines, i.e. combinations of the engine with fuel-generating apparatus (engines having gas-air charge ignited by compression ignition of an additional fuel F02B 7/06; engines convertible from gas to other fuel consumption F02B 69/04; apparatus for generating fuel, e.g. gas, see the relevant classes, e.g. C10)
F02B 43/00	**Hauptgruppe**	**Engines operating on gaseous fuels; Plants including such engines**
F02B 43/02	1-Punkt Untergruppe	. Engines characterised by means for increasing operating efficiency
F02B 43/04	2-Punkt Untergruppe	. . for improving efficiency of combustion
F02B 43/06	2-Punkt Untergruppe	. . for enlarging charge
F02B 43/08	1-Punkt Untergruppe	. Plants characterised by the engines using gaseous fuel generated in the plant from solid fuel, e.g. wood
F02B 43/10	1-Punkt Untergruppe	. Engines or plants characterised by use of other specific gases, e.g. acetylene, oxyhydrogen
F02B 43/12	2-Punkt Untergruppe	. . Methods of operating
F02B 45/00	**Hauptgruppe**	**Engines operating on other non-liquid fuels; Plants including such engines (plants involving generation of gaseous fuel from solid fuel F02B 43/08)**
F02B 45/02	1-Punkt Untergruppe	. operating on powdered fuel, e.g. powdered coal (operating on fuel containing oxidant F02B 45/06)
F02B 45/04	2-Punkt Untergruppe	. . Plants, e.g. having coal-grinding apparatus
F02B 45/06	1-Punkt Untergruppe	. operating on fuel containing oxidant
F02B 45/08	1-Punkt Untergruppe	. operating on other solid fuels
F02B 45/10	1-Punkt Untergruppe	. operating on mixtures of liquid and non-liquid fuels, e.g. in pasty or foamed state
		Methods of operating engines involving specific pre-treating of, or adding specific substances to, combustion air, fuel, or fuel-air mixture of the engines, and not otherwise provided for (apparatus for performing such pretreatments or additions F02M)
F02B 47/00	**Hauptgruppe**	**Methods of operating engines involving adding non-fuel substances or anti-knock agents to combustion air, fuel, or fuel-air mixtures of engines**
F02B 47/02	1-Punkt Untergruppe	. the substances being water or steam
F02B 47/04	1-Punkt Untergruppe	. the substances being other than water or steam only
F02B 47/06	2-Punkt Untergruppe	. . the substances including non-airborne oxygen (F02B 47/10 takes precedence)
F02B 47/08	2-Punkt Untergruppe	. . the substances including exhaust gas
F02B 47/10	3-Punkt Untergruppe	. . . Circulation of exhaust gas in closed or semi-closed circuits, e.g. with simultaneous addition of oxygen
F02B 49/00	**Hauptgruppe**	**Methods of operating air-compressing compression-ignition engines involving introduction of small quantities of fuel in the form of a fine mist into the air in the engine's intake**

Symbol	Typ	Titel
F02B 51/00	**Hauptgruppe**	**Other methods of operating engines involving pre-treating of, or adding substances to, combustion air, fuel, or fuel-air mixture of the engines**
F02B 51/02	1-Punkt Untergruppe	. involving catalysts
F02B 51/04	1-Punkt Untergruppe	. involving electricity or magnetism
F02B 51/06	1-Punkt Untergruppe	. involving rays or sound waves
		Internal-combustion aspects of rotary-piston or oscillating-piston engines
F02B 53/00	**Hauptgruppe**	**Internal-combustion aspects of rotary-piston or oscillating-piston engines (internal-combustion aspects of rotary pistons or outer members for co-operation therewith F02B 55/00)**
F02B 53/02	1-Punkt Untergruppe	. Methods of operating
F02B 53/04	1-Punkt Untergruppe	. Charge admission or combustion-gas discharge
F02B 53/06	2-Punkt Untergruppe	. . Valve control therefor
F02B 53/08	2-Punkt Untergruppe	. . Charging, e.g. by means of rotary-piston pump
F02B 53/10	1-Punkt Untergruppe	. Fuel supply; Introducing fuel to combustion space
F02B 53/12	1-Punkt Untergruppe	. Ignition
F02B 53/14	1-Punkt Untergruppe	. Adaptations of engines for driving, or engine combinations with, other devices (aspects predominantly concerning such devices, see the relevant classes for the devices)
F02B 55/00	**Hauptgruppe**	**Internal-combustion aspects of rotary pistons; Outer members for co-operation with rotary pistons**
F02B 55/02	1-Punkt Untergruppe	. Pistons
F02B 55/04	2-Punkt Untergruppe	. . Cooling thereof
F02B 55/06	3-Punkt Untergruppe	. . . by air or other gas
F02B 55/08	1-Punkt Untergruppe	. Outer members for co-operation with rotary pistons; Casings
F02B 55/10	2-Punkt Untergruppe	. . Cooling thereof
F02B 55/12	3-Punkt Untergruppe	. . . by air or other gas
F02B 55/14	1-Punkt Untergruppe	. Shapes or constructions of combustion chambers
F02B 55/16	1-Punkt Untergruppe	. Admission or exhaust passages in pistons or outer members
		Internal-combustion aspects of reciprocating-piston engines with movable cylinders
F02B 57/00	**Hauptgruppe**	**Internal-combustion aspects of rotary engines in which the combusted gases displace one or more reciprocating pistons**
F02B 57/02	1-Punkt Untergruppe	. Fuel or combustion-air supply (cylinder-charge admission or exhaust control F02B 57/04)
F02B 57/04	1-Punkt Untergruppe	. Control of cylinder-charge admission or exhaust (peculiar to two-stroke engines or to other engines with working-piston-controlled charge admission or exhaust F02B 57/06)
F02B 57/06	1-Punkt Untergruppe	. Two-stroke engines or other engines with working-piston-controlled cylinder-charge admission or exhaust (with combustion space in centre of star F02B 57/10)
F02B 57/08	1-Punkt Untergruppe	. Engines with star-shaped cylinder arrangements
F02B 57/10	2-Punkt Untergruppe	. . with combustion space in centre of star
F02B 59/00	**Hauptgruppe**	**Internal-combustion aspects of other reciprocating-piston engines with movable, e.g. oscillating, cylinders (with yieldable walls F02B 75/38)**

Symbol	Typ	Titel
		Adaptations of engines for special use; Combinations of engines with devices other than engine parts or auxiliaries (of rotary-piston or oscillating-piston engines F02B 53/14; aspects predominantly concerning such devices, see the relevant classes for the devices)
F02B 61/00	**Hauptgruppe**	**Adaptations of engines for driving vehicles or for driving propellers; Combinations of engines with gearing (the engine torque being divided by a differential gear for driving a scavenging or charging pump and the engine output shaft F02B 39/06; arrangements in vehicles, see the relevant classes for vehicles)**
F02B 61/02	1-Punkt Untergruppe	. for driving cycles
F02B 61/04	1-Punkt Untergruppe	. for driving propellers
F02B 61/06	1-Punkt Untergruppe	. Combinations of engines with mechanical gearing (F02B 61/02, F02B 61/04 take precedence)
F02B 63/00	**Hauptgruppe**	**Adaptations of engines for driving hand-held tools, electric generators, or pumps; Portable combinations with engine-driven devices**
F02B 63/02	1-Punkt Untergruppe	. for hand-held tools
F02B 63/04	1-Punkt Untergruppe	. for electric generators
F02B 63/06	1-Punkt Untergruppe	. for pumps
F02B 65/00	**Hauptgruppe**	**Adaptations of engines for other special use; Combinations of engines with other devices, e.g. with non-driven apparatus**
		Engines with pertinent characteristics other than those provided for in, or of interest apart from, preceding main groups
F02B 67/00	**Hauptgruppe**	**Engines characterised by the arrangement of auxiliary apparatus not being otherwise provided for, e.g. the apparatus having different functions; Driving auxiliary apparatus from engines, not otherwise provided for**
F02B 67/04	1-Punkt Untergruppe	. of mechanically-driven auxiliary apparatus
F02B 67/06	2-Punkt Untergruppe	. . driven by means of chains, belts, or like endless members
F02B 67/08	1-Punkt Untergruppe	. of non-mechanically driven auxiliary apparatus
F02B 67/10	1-Punkt Untergruppe	. of charging or scavenging apparatus [5]
F02B 69/00	**Hauptgruppe**	**Internal-combustion engines convertible into other combustion-engine type, not provided for in group F02B 11/00; Internal-combustion engines of different types characterised by constructions facilitating use of same main engine-parts in different types**
F02B 69/02	1-Punkt Untergruppe	. for different fuel types, other than engines indifferent to fuel consumed, e.g. convertible from light to heavy fuel
F02B 69/04	2-Punkt Untergruppe	. . for gaseous and non-gaseous fuels
F02B 69/06	1-Punkt Untergruppe	. for different cycles, e.g. convertible from two-stroke to four-stroke
F02B 71/00	**Hauptgruppe**	**Free-piston engines; Engines without rotary main shaft**
F02B 71/02	1-Punkt Untergruppe	. Starting
F02B 71/04	1-Punkt Untergruppe	. Adaptations of such engines for special use; Combinations of such engines with apparatus driven thereby (aspects predominantly concerning driven apparatus, see the relevant classes for such apparatus)
F02B 71/06	2-Punkt Untergruppe	. . Free-piston combustion gas generators
F02B 73/00	**Hauptgruppe**	**Combinations of two or more engines, not otherwise provided for**
F02B 75/00	**Hauptgruppe**	**Other engines, e.g. single-cylinder engines**
F02B 75/02	1-Punkt Untergruppe	. Engines characterised by their cycles, e.g. six-stroke

Symbol	Typ	Titel
F02B 75/04	1-Punkt Untergruppe	. Engines with variable distances between pistons at top dead-centre positions and cylinder heads
F02B 75/06	1-Punkt Untergruppe	. Engines with means for equalising torque (compensations of inertial forces, suppression of vibration in systems F16F)
F02B 75/08	1-Punkt Untergruppe	. Engines with means for preventing corrosion in gas-swept spaces
F02B 75/10	1-Punkt Untergruppe	. Engines with means for rendering exhaust gases innocuous (apparatus for rendering exhaust gases innocuous per seF01N 3/08)
F02B 75/12	1-Punkt Untergruppe	. Other methods of operation
F02B 75/16	1-Punkt Untergruppe	. Engines characterised by number of cylinders, e.g. single-cylinder engines (F02B 75/26 takes precedence)
F02B 75/18	2-Punkt Untergruppe	. . Multi-cylinder engines (scavenging aspects F02B 25/00)
F02B 75/20	3-Punkt Untergruppe	. . . with cylinders all in one line
F02B 75/22	3-Punkt Untergruppe	. . . with cylinders in V-, fan-, or star-arrangement
F02B 75/24	3-Punkt Untergruppe	. . . with cylinders arranged oppositely relative to main shaft and of "flat" type
F02B 75/26	1-Punkt Untergruppe	. Engines with cylinder axes coaxial with, or parallel or inclined to, main-shaft axis; Engines with cylinder axes arranged substantially tangentially to a circle centred on main-shaft axis
F02B 75/28	1-Punkt Untergruppe	. Engines with two or more pistons reciprocating within same cylinder or within essentially coaxial cylinders (arranged oppositely relative to main shaft F02B 75/24)
F02B 75/30	2-Punkt Untergruppe	. . with one working piston sliding inside another
F02B 75/32	1-Punkt Untergruppe	. Engines characterised by connections between pistons and main shafts and not specific to preceding main groups
F02B 75/34	1-Punkt Untergruppe	. Ultra-small engines, e.g. for driving models
F02B 75/36	1-Punkt Untergruppe	. Engines with parts of combustion- or working-chamber walls resiliently yielding under pressure
F02B 75/38	2-Punkt Untergruppe	. . Reciprocating-piston engines (F02B 75/04 takes precedence; with resiliently-urged auxiliary piston in pre-combustion chamber F02B 19/06)
F02B 75/40	1-Punkt Untergruppe	. Other reciprocating-piston engines
F02B 77/00	**Hauptgruppe**	**Component parts, details, or accessories, not otherwise provided for**
F02B 77/02	1-Punkt Untergruppe	. Surface coverings of combustion-gas-swept parts (of pistons or cylinders only F02F)
F02B 77/04	1-Punkt Untergruppe	. Cleaning of, preventing corrosion or erosion in, or preventing unwanted deposits in, combustion engines
F02B 77/08	1-Punkt Untergruppe	. Safety, indicating, or supervising devices (thermal insulation F02B 77/11; monitoring or diagnostic devices for exhaust-gas treatment apparatus F01N 11/00)
F02B 77/10	2-Punkt Untergruppe	. . Safety means relating to crankcase explosions
F02B 77/11	1-Punkt Untergruppe	. Thermal or acoustic insulation [3]
F02B 77/13	2-Punkt Untergruppe	. . Acoustic insulation [3]
F02B 77/14	1-Punkt Untergruppe	. Engine-driven auxiliary devices combined into units
F02B 79/00	**Hauptgruppe**	**Running-in of internal-combustion engines (lubrication thereof F01M)**