Symbol	Typ	Titel
F	**Sektion**	**SECTION F — MECHANICAL ENGINEERING; LIGHTING; HEATING; WEAPONS; BLASTING**
F01	**Untersektion**	**ENGINES OR PUMPS**
F01	**Klasse**	**MACHINES OR ENGINES IN GENERAL (combustion engines F02; machines for liquids F03, F04); ENGINE PLANTS IN GENERAL; STEAM ENGINES**
F01B	**Unterklasse**	**MACHINES OR ENGINES, IN GENERAL OR OF POSITIVE-DISPLACEMENT TYPE, e.g. STEAM ENGINES (of rotary-piston or oscillating-piston type F01C; of non-positive-displacement type F01D; internal-combustion aspects of reciprocating-piston engines F02B 57/00, F02B 59/00; crankshafts, crossheads, connecting-rods F16C; flywheels F16F; gearings for interconverting rotary motion and reciprocating motion in general F16H; pistons, piston-rods, cylinders, for engines in general F16J)**
F01B 1/00	**Hauptgruppe**	**Reciprocating-piston machines or engines characterised by number or relative disposition of cylinders or by being built-up from separate cylinder-crankcase elements (F01B 3/00, F01B 5/00 take precedence) [2]**
F01B 1/01	1-Punkt Untergruppe	. with one single cylinder [2]
F01B 1/02	1-Punkt Untergruppe	. with cylinders all in one line
F01B 1/04	1-Punkt Untergruppe	. with cylinders in V-arrangement
F01B 1/06	1-Punkt Untergruppe	. with cylinders in star or fan arrangement
F01B 1/08	1-Punkt Untergruppe	. with cylinders arranged oppositely relative to main shaft and of "flat" type
F01B 1/10	1-Punkt Untergruppe	. with more than one main shaft, e.g. coupled to common output shaft (combinations of two or more machines or engines F01B 21/00)
F01B 1/12	1-Punkt Untergruppe	. Separate cylinder-crankcase elements coupled together to form a unit
F01B 3/00	**Hauptgruppe**	**Reciprocating-piston machines or engines with cylinder axes coaxial with, or parallel or inclined to, main shaft axis**
F01B 3/02	1-Punkt Untergruppe	. with wobble-plate
F01B 3/04	1-Punkt Untergruppe	. the piston motion being transmitted by curved surfaces
F01B 3/06	2-Punkt Untergruppe	. . by multi-turn helical surfaces and automatic reversal
F01B 3/08	3-Punkt Untergruppe	. . . the helices being arranged on the pistons
F01B 3/10	1-Punkt Untergruppe	. Control of working-fluid admission or discharge peculiar thereto (suitable for more general application F01L)
F01B 5/00	**Hauptgruppe**	**Reciprocating-piston machines or engines with cylinder axes arranged substantially tangentially to a circle centred on main shaft axis**
F01B 7/00	**Hauptgruppe**	**Machines or engines with two or more pistons reciprocating within same cylinder or within essentially coaxial cylinders (in opposite arrangement relative to main shaft F01B 1/08)**
F01B 7/02	1-Punkt Untergruppe	. with oppositely reciprocating pistons
F01B 7/04	2-Punkt Untergruppe	. . acting on same main shaft
F01B 7/06	3-Punkt Untergruppe	. . . using only connecting-rods for conversion of reciprocatory into rotary motion or vice versa
F01B 7/08	4-Punkt Untergruppe	. . . . with side rods
F01B 7/10	4-Punkt Untergruppe	. . . . having piston-rod of one piston passed through other piston
F01B 7/12	3-Punkt Untergruppe	. . . using rockers and connecting-rods

Symbol	Typ	Titel
F01B 7/14	2-Punkt Untergruppe	. . acting on different main shafts
F01B 7/16	1-Punkt Untergruppe	. with pistons synchronously moving in tandem arrangement
F01B 7/18	1-Punkt Untergruppe	. with differential piston (F01B 7/20 takes precedence)
F01B 7/20	1-Punkt Untergruppe	. with two or more pistons reciprocating one within another, e.g. one piston forming cylinder of the other
F01B 9/00	**Hauptgruppe**	**Reciprocating-piston machines or engines characterised by connections between pistons and main shafts and not specific to groups F01B 1/00-F01B 7/00 (connections disengageable during idling F01B 31/24)**
F01B 9/02	1-Punkt Untergruppe	. with crankshaft
F01B 9/04	1-Punkt Untergruppe	. with rotary main shaft other than crankshaft
F01B 9/06	2-Punkt Untergruppe	. . the piston motion being transmitted by curved surfaces
F01B 9/08	2-Punkt Untergruppe	. . with ratchet and pawl
F01B 11/00	**Hauptgruppe**	**Reciprocating-piston machines or engines without rotary main shaft, e.g. of free-piston type**
F01B 11/02	1-Punkt Untergruppe	. Equalising or cushioning devices
F01B 11/04	1-Punkt Untergruppe	. Engines combined with reciprocatory driven devices, e.g. hammers (with pumps F01B 23/08; predominating aspects of driven devices, see the relevant classes for the devices)
F01B 11/06	2-Punkt Untergruppe	. . for generating vibration only
F01B 11/08	1-Punkt Untergruppe	. with direct fluid transmission link (F01B 11/02 takes precedence)
F01B 13/00	**Hauptgruppe**	**Reciprocating-piston machines or engines with rotating cylinders in order to obtain the reciprocating-piston motion (machines or engines of flexible-wall type F01B 19/00) [2]**
F01B 13/02	1-Punkt Untergruppe	. with one cylinder only
F01B 13/04	1-Punkt Untergruppe	. with more than one cylinder
F01B 13/06	2-Punkt Untergruppe	. . in star arrangement
F01B 15/00	**Hauptgruppe**	**Reciprocating-piston machines or engines with movable cylinders other than provided for in group F01B 13/00 (with movable cylinder sleeves for working-fluid control F01L)**
F01B 15/02	1-Punkt Untergruppe	. with reciprocating cylinders (with one piston within another F01B 7/20)
F01B 15/04	1-Punkt Untergruppe	. with oscillating cylinder
F01B 15/06	2-Punkt Untergruppe	. . Control of working-fluid admission or discharge peculiar thereto
F01B 17/00	**Hauptgruppe**	**Reciprocating-piston machines or engines characterised by use of uniflow principle**
F01B 17/02	1-Punkt Untergruppe	. Engines
F01B 17/04	2-Punkt Untergruppe	. . Steam engines
F01B 19/00	**Hauptgruppe**	**Positive-displacement machines or engines of flexible-wall type**
F01B 19/02	1-Punkt Untergruppe	. with plate-like flexible members
F01B 19/04	1-Punkt Untergruppe	. with tubular flexible members
F01B 21/00	**Hauptgruppe**	**Combinations of two or more machines or engines (F01B 23/00 takes precedence; combinations of two or more pumps F04; fluid gearing F16H; regulating or controlling, see the relevant groups)**
F01B 21/02	1-Punkt Untergruppe	. the machines or engines being all of reciprocating-piston type

Symbol	Typ	Titel
F01B 21/04	1-Punkt Untergruppe	. the machines or engines being not all of reciprocating-piston type, e.g. of reciprocating steam engine with steam turbine
F01B 23/00	**Hauptgruppe**	**Adaptations of machines or engines for special use; Combinations of engines with devices driven thereby (F01B 11/00 takes precedence; fluid gearing F16H; aspects predominantly concerning driven devices, see the relevant classes for these devices; regulating or controlling, see the relevant groups)**
F01B 23/02	1-Punkt Untergruppe	. Adaptations for driving vehicles, e.g. locomotives (arrangements in vehicles, see the relevant classes for vehicles)
F01B 23/04	2-Punkt Untergruppe	. . the vehicles being waterborne vessels
F01B 23/06	1-Punkt Untergruppe	. Adaptations for driving, or combinations with, hand-held tools or the like
F01B 23/08	1-Punkt Untergruppe	. Adaptations for driving, or combinations with, pumps
F01B 23/10	1-Punkt Untergruppe	. Adaptations for driving, or combinations with, electric generators
F01B 23/12	1-Punkt Untergruppe	. Adaptations for driving rolling mills or other heavy reversing machinery
F01B 25/00	**Hauptgruppe**	**Regulating, controlling, or safety means (regulating or controlling in general G05)**
F01B 25/02	1-Punkt Untergruppe	. Regulating or controlling by varying working-fluid admission or exhaust, e.g. by varying pressure or quantity (distributing or expansion valve gear F01L)
F01B 25/04	2-Punkt Untergruppe	. . Sensing elements
F01B 25/06	3-Punkt Untergruppe	. . . responsive to speed
F01B 25/08	2-Punkt Untergruppe	. . Final actuators
F01B 25/10	3-Punkt Untergruppe	. . . Arrangements or adaptations of working-fluid admission or discharge valves (valves in general F16K)
F01B 25/12	2-Punkt Untergruppe	. . Devices dealing with sensing elements or final actuators or transmitting means between them, e.g. power-assisted (sensing elements alone F01B 25/04; final actuators alone F01B 25/08)
F01B 25/14	2-Punkt Untergruppe	. . peculiar to particular kinds of machines or engines
F01B 25/16	1-Punkt Untergruppe	. Safety means responsive to specific conditions (against water hammer or the like in steam engines F01B 31/34)
F01B 25/18	2-Punkt Untergruppe	. . preventing rotation in wrong direction
F01B 25/20	1-Punkt Untergruppe	. Checking operation of safety devices
F01B 25/22	1-Punkt Untergruppe	. Braking by redirecting working fluid
F01B 25/24	2-Punkt Untergruppe	. . thereby regenerating energy
F01B 25/26	1-Punkt Untergruppe	. Warning devices
F01B 27/00	**Hauptgruppe**	**Starting of machines or engines (starting combustion engines F02N)**
F01B 27/02	1-Punkt Untergruppe	. of reciprocating-piston engines
F01B 27/04	2-Punkt Untergruppe	. . by directing working-fluid supply, e.g. by aid of by-pass steam conduits
F01B 27/06	3-Punkt Untergruppe	. . . specially for compound engines
F01B 27/08	2-Punkt Untergruppe	. . Means for moving crank off dead-centre (turning-gear in general F16H)
F01B 29/00	**Hauptgruppe**	**Machines or engines with pertinent characteristics other than those provided for in main groups F01B 1/00-F01B 27/00**

Symbol	Typ	Titel
F01B 29/02	1-Punkt Untergruppe	. Atmospheric engines, i.e. atmosphere acting against vacuum
F01B 29/04	1-Punkt Untergruppe	. characterised by means for converting from one type to a different one
F01B 29/06	2-Punkt Untergruppe	. . from steam engine into combustion engine
F01B 29/08	1-Punkt Untergruppe	. Reciprocating-piston machines or engines not otherwise provided for
F01B 29/10	2-Punkt Untergruppe	. . Engines (refrigeration machines F25B)
F01B 29/12	3-Punkt Untergruppe	. . . Steam engines (toy steam engines A63H 25/00)
F01B 31/00	**Hauptgruppe**	**Component parts, details, or accessories not provided for in, or of interest apart from, other groups (machine or engine casings, other than those peculiar to steam engines, F16M)**
F01B 31/02	1-Punkt Untergruppe	. De-icing means for engines having icing phenomena
F01B 31/04	1-Punkt Untergruppe	. Means for equalising torque in reciprocating-piston machines or engines (compensation of inertial forces, suppression of vibration in systems F16F)
F01B 31/06	1-Punkt Untergruppe	. Means for compensating relative expansion of component parts
F01B 31/08	1-Punkt Untergruppe	. Cooling of steam engines (cooling of fluid machines or engines in general F01P); Heating; Heat insulation (heat insulation in general F16L 59/00)
F01B 31/10	1-Punkt Untergruppe	. Lubricating arrangements of steam engines (of fluid machines or engines in general F01M)
F01B 31/12	1-Punkt Untergruppe	. Arrangements of measuring or indicating devices (warning apparatus F01B 25/26; measuring instruments or the like per seG01)
F01B 31/14	1-Punkt Untergruppe	. Changing of compression ratio
F01B 31/16	1-Punkt Untergruppe	. Silencers specially adapted for steam engines (arrangements of exhaust pipes or tubes on steam engines F01B 31/30; gas-flow silencers or exhaust silencers for machines or engines in general F01N)
F01B 31/18	1-Punkt Untergruppe	. Draining
F01B 31/20	2-Punkt Untergruppe	. . of cylinders
F01B 31/22	1-Punkt Untergruppe	. Idling devices, e.g. having by-passing valves
F01B 31/24	2-Punkt Untergruppe	. . Disengagement of connections between pistons and main shafts
F01B 31/26	1-Punkt Untergruppe	. Other component parts, details, or accessories, peculiar to steam engines
F01B 31/28	2-Punkt Untergruppe	. . Cylinders or cylinder covers
F01B 31/30	2-Punkt Untergruppe	. . Arrangements of steam conduits
F01B 31/32	2-Punkt Untergruppe	. . Arrangements or adaptations of vacuum breakers
F01B 31/34	2-Punkt Untergruppe	. . Safety means against water hammer or against the penetration of water (steam traps F16T)
F01B 31/36	3-Punkt Untergruppe	. . . automatically cutting-off steam supply