SECTION F — MECHANICAL ENGINEERING; LIGHTING; HEATING; WEAPONS; BLASTING

F02 COMBUSTION ENGINES; HOT-GAS OR COMBUSTION-PRODUCT ENGINE PLANTS

F02P IGNITION, OTHER THAN COMPRESSION IGNITION, FOR INTERNAL-COMBUSTION ENGINES; TESTING OF IGNITION TIMING IN COMPRESSION-IGNITION ENGINES (specially adapted for rotary-piston or oscillating-piston engines F02B 53/12; ignition of combustion apparatus in general, glowing plugs F23Q; measuring of physical variables in general G01; controlling in general G05; data processing in general G06; electrical components in general, see section H; sparking plugs H01T)

Subclass index

Electric spark ignition installations characterised by the type of ignition power generation or storage

1/00 Installations having electric ignition energy generated by magneto- or dynamo-electric generators without subsequent storage [1, 2006.01]

1/02 • the generator rotor being characterised by forming part of the engine flywheel **[1, 2006.01]**

1/04 • the generator being specially adapted for use with specific engine types, e.g. engines with V-arrangement of cylinders **[1, 2006.01]**

1/06 • Generator drives, e.g. having snap couplings **[1, 2006.01]**

1/08 • Layout of circuits **[1, 2006.01]**

3/00 Other electric spark ignition installations characterised by the type of ignition power generation storage [1, 2006.01]

3/01 • Electric spark ignition installations without subsequent energy storage, i.e. energy supplied by an electrical oscillator (with magneto- or dynamo-electric generators F02P 1/00; piezoelectric ignition F02P 3/12; with continuous electric spark F02P 15/10) **[4, 2006.01]**

3/02 • having inductive energy storage, e.g. arrangements of induction coils **[1, 2006.01]**

3/04 • • Layout of circuits **[1, 2006.01]**

3/045 • • • for control of the dwell or anti-dwell time **[4, 2006.01]**

3/05 • • • for control of the magnitude of the current in the ignition coil (during starting F02P 15/12) **[4, 2006.01]**

3/055 • • • with protective means to prevent damage to the circuit or the ignition coil **[4, 2006.01]**

3/06 • having capacitive energy storage (piezoelectric or electrostatic ignition F02P 3/12) **[1, 2006.01]**

3/08 • • Layout of circuits (for low tension F02P 3/10) **[1, 2006.01]**

3/09 • • • for control of the charging current in the capacitor (F02P 15/12 takes precedence) **[4, 2006.01]**

3/10 • • Low-tension installation, e.g. using surface-discharge sparking plugs **[1, 2006.01]**

3/12 • Piezoelectric ignition; Electrostatic ignition **[1, 2006.01]**

Advancing or retarding electric ignition spark; Arrangements of distributors or of circuit-makers or -breakers for electric spark ignition; Electric spark ignition control or safety means, not otherwise provided for

5/00 Advancing or retarding electric ignition spark; Control therefor [1, 6, 2006.01]

5/02 • non-automatically; dependent on position of personal controls of engine, e.g. throttle position **[1, 2006.01]**

5/04 • automatically, as a function of the working conditions of the engine or vehicle or of the atmospheric conditions (dependent on position of personal controls of engine F02P 5/02) **[1, 2006.01]**

5/05 • • using mechanical means **[4, 2006.01]**

5/06 • • • dependent on engine speed **[1, 4, 2006.01]**

5/07 • • • • Centrifugal timing mechanisms **[6, 2006.01]**

5/10 • • • dependent on fluid pressure in engine, e.g. combustion-air pressure **[1, 4, 2006.01]**

5/12 • • • • dependent on a specific pressure other than that of combustion-air, e.g. of exhaust, cooling fluid, lubricant **[1, 4, 2006.01]**

5/14 • • • dependent on specific conditions other than engine speed or engine fluid pressure, e.g. temperature **[1, 4, 2006.01]**

5/145 • • using electrical means **[4, 2006.01]**

5/15 • • • Digital data processing **[4, 2006.01]**

5/152 • • • • dependent on pinking (detecting or indicating knocks in internal-combustion engines G01L 23/22) **[6, 2006.01]**

5/153 • • • • dependent on combustion pressure **[6, 2006.01]**

5/155 • • • Analogue data processing **[4, 2006.01]**

5/16 • characterised by the mechanical transmission between sensing elements or personal controls and final actuating elements **[1, 2006.01]**

7/00 Arrangement of distributors, circuit-makers, circuit-breakers or pick-up devices for electric spark ignition (advancing or retarding ignition or control therefor F02P 5/00; such devices per se, see the relevant classes of section H, e.g. rotary switches H01H 19/00, contact-breakers, distributors H01R 39/00, generators H02K) **[1, 2006.01]**

7/02 • of distributors **[1, 2006.01]**

7/03 • • with electrical means (ignition occurring simultaneously at different places in one engine cylinder or in two or more separate engine cylinders F02P 15/08) **[4, 2006.01]**

7/04 • • having distributors with air-tight casing **[1, 2006.01]**

7/06 • of circuit-makers or -breakers, or pick-up devices adapted to sense particular points of the timing cycle **[1, 4, 2006.01]**

7/063 • • Mechanical pick-up devices, circuit-makers or -breakers, e.g. contact-breakers **[4, 2006.01]**

7/067 • • Electromagnetic pick-up devices **[4, 2006.01]**

7/07 • • • Hall-effect pick-up devices **[4, 2006.01]**

7/073 • • Optical pick-up devices **[4, 2006.01]**

7/077 • • Circuits therefor, e.g. pulse generators **[4, 2006.01]**

7/08 • • having air-tight casings **[1, 2006.01]**

7/10 • Drives of distributors or of circuit-makers or -breakers **[1, 2006.01]**

9/00 Electric spark ignition control, not otherwise provided for [1, 2006.01]

11/00 Safety means for electric spark ignition, not otherwise provided for [1, 2006.01]

11/02 • Preventing damage to engines or engine-driven gearing **[1, 2006.01]**

11/04 • Preventing unauthorised use of engines (of vehicles B60R 25/04; ignition locks H01H 27/00) **[1, 2006.01]**

11/06 • Indicating unsafe conditions **[1, 2006.01]**

13/00 Sparking plugs structurally combined with other parts of internal-combustion engines (with fuel injectors F02M 57/06) **[1, 2006.01]**

15/00 Electric spark ignition having characteristics not provided for in, or of interest apart from, groups F02P 1/00-F02P 13/00 [1, 2006.01]

15/02 • Arrangements having two or more sparking plugs **[1, 2006.01]**

15/04 • one of the spark electrodes being mounted on the engine working piston **[1, 2006.01]**

15/06 • the electric spark triggered by engine working cylinder compression **[1, 2006.01]**

15/08 • having multiple-spark ignition, i.e. ignition occurring simultaneously at different places in one engine cylinder or in two or more separate engine cylinders **[1, 2006.01]**

15/10 • having continuous electric sparks **[1, 2006.01]**

15/12 • having means for strengthening spark during starting **[1, 2006.01]**

17/00 Testing of ignition installations, e.g. in combination with adjusting (testing fuel injection apparatus F02M 65/00; testing ignition installations in general F23Q 23/00)**; Testing of ignition timing in compression-ignition engines [1, 4, 2006.01]**

17/02 • Checking or adjusting ignition timing **[6, 2006.01]**

17/04 • • dynamically **[6, 2006.01]**

17/06 • • • using a stroboscopic lamp **[6, 2006.01]**

17/08 • • • using a cathode-ray oscilloscope (F02P 17/06 takes precedence) **[6, 2006.01]**

17/10 • Measuring dwell or antidwell time **[6, 2006.01]**

17/12 • Testing characteristics of the spark, ignition voltage or current **[6, 2006.01]**

Other ignition

19/00 Incandescent ignition, e.g. during starting of internal-combustion engines; Combination of incandescent and spark ignition [1, 4, 2006.01]

19/02 • electric, e.g. layout of circuits of apparatus having glowing plugs **[1, 2006.01]**

19/04 • non-electric, e.g. heating incandescent spots by burners (use of burners for direct ignition F02P 21/00) **[1, 2006.01]**

21/00 Direct use of flames or burners for ignition [1, 2006.01]

21/02 • the flames being kept burning essentially external to engine working chambers **[1, 2006.01]**

21/04 • Burning-cartridges or like inserts being arranged in engine working chambers (as starting aid F02N 19/02) **[1, 2006.01]**

23/00 Other ignition [1, 2006.01]

23/02 • Friction, pyrophoric, or catalytic ignition **[1, 2006.01]**

23/04 • Other physical ignition means, e.g. using laser rays **[1, 2006.01]**