

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
F02K	Unterklasse	JET-PROPULSION PLANTS (arrangement or mounting of jet-propulsion plants in land vehicles or vehicles in general B60K; arrangement or mounting of jet-propulsion plants in waterborne vessels B63H; controlling aircraft attitude, flight direction, or altitude by jet reaction B64C; arrangement or mounting of jet-propulsion plants in aircraft B64D; plants characterised by the power of the working fluid being divided between jet propulsion and another form of propulsion, e.g. propeller, F02B, F02C; features of jet-propulsion plants common to gas-turbine plants, air intakes or fuel supply control of air-breathing jet-propulsion plants F02C)
F02K 1/00	Hauptgruppe	Plants characterised by the form or arrangement of the jet pipe or nozzle; Jet pipes or nozzles peculiar thereto (rocket nozzles F02K 9/97)
F02K 1/04	1-Punkt Untergruppe	. Mounting of an exhaust cone in the jet pipe
F02K 1/06	1-Punkt Untergruppe	. Varying effective area of jet pipe or nozzle (F02K 1/30 takes precedence) [3]
F02K 1/08	2-Punkt Untergruppe	. . by axially moving or transversely deforming an internal member, e.g. the exhaust cone
F02K 1/09	2-Punkt Untergruppe	. . by axially moving an external member, e.g. a shroud (F02K 1/12 takes precedence) [3]
F02K 1/10	2-Punkt Untergruppe	. . by distorting the jet pipe or nozzle
F02K 1/11	2-Punkt Untergruppe	. . by means of pivoted eyelids [3]
F02K 1/12	2-Punkt Untergruppe	. . by means of pivoted flaps
F02K 1/15	2-Punkt Untergruppe	. . Control or regulation [3]
F02K 1/16	3-Punkt Untergruppe	. . . conjointly with another control [3]
F02K 1/17	4-Punkt Untergruppe	 with control of fuel supply [3]
F02K 1/18	3-Punkt Untergruppe	. . . automatic [3]
F02K 1/28	1-Punkt Untergruppe	. using fluid jets to influence the jet flow [3]
F02K 1/30	2-Punkt Untergruppe	. . for varying effective area of jet pipe or nozzle [3]
F02K 1/32	2-Punkt Untergruppe	. . for reversing thrust [3]
F02K 1/34	2-Punkt Untergruppe	. . for attenuating noise [3]
F02K 1/36	1-Punkt Untergruppe	. having an ejector [3]
F02K 1/38	1-Punkt Untergruppe	. Introducing air inside the jet (F02K 1/28 takes precedence) [3]
F02K 1/40	1-Punkt Untergruppe	. Nozzles having means for dividing the jet into a plurality of partial jets or having an elongated cross-section outlet [3]
F02K 1/42	2-Punkt Untergruppe	. . the means being movable into an inoperative position [3]
F02K 1/44	1-Punkt Untergruppe	. Nozzles having means, e.g. a shield, reducing sound radiation in a specified direction (F02K 1/40 takes precedence) [3]

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F02K 1/46	1-Punkt Untergruppe	. Nozzles having means for adding air to the jet or for augmenting the mixing region between the jet and the ambient air, e.g. for silencing (F02K 1/28, F02K 1/36, F02K 1/38 take precedence) [3]
F02K 1/48	2-Punkt Untergruppe	. . Corrugated nozzles [3]
F02K 1/50	2-Punkt Untergruppe	. . Deflecting outwardly a portion of the jet by retractable scoop-like baffles [3]
F02K 1/52	1-Punkt Untergruppe	. Nozzles specially constructed for positioning adjacent to another nozzle or to a fixed member, e.g. fairing [3]
F02K 1/54	1-Punkt Untergruppe	. Nozzles having means for reversing jet thrust (F02K 1/32 takes precedence) [3]
F02K 1/56	2-Punkt Untergruppe	. . Reversing jet main flow [3]
F02K 1/58	3-Punkt Untergruppe	. . . Reversers mounted on the inner cone or the nozzle housing [3]
F02K 1/60	3-Punkt Untergruppe	. . . by blocking the rearward discharge by means of pivoted eyelids or clamshells, e.g. target-type reversers [3]
F02K 1/62	3-Punkt Untergruppe	. . . by blocking the rearward discharge by means of flaps [3]
F02K 1/64	2-Punkt Untergruppe	. . Reversing fan flow [3]
F02K 1/66	3-Punkt Untergruppe	. . . using reversing fan blades [3]
F02K 1/68	3-Punkt Untergruppe	. . . Reversers mounted on the engine housing downstream of the fan exhaust section [3]
F02K 1/70	3-Punkt Untergruppe	. . . using thrust reverser flaps or doors mounted on the fan housing [3]
F02K 1/72	4-Punkt Untergruppe	 the aft end of the fan housing being movable to uncover openings in the fan housing for the reversed flow [3]
F02K 1/74	2-Punkt Untergruppe	. . Reversing at least one flow in relation to at least one other flow in a plural-flow engine [3]
F02K 1/76	2-Punkt Untergruppe	. . Control or regulation of thrust reversers [3]
F02K 1/78	1-Punkt Untergruppe	. Other construction of jet pipes [3]
F02K 1/80	2-Punkt Untergruppe	. . Couplings or connections [3]
F02K 1/82	2-Punkt Untergruppe	. . Jet pipe walls, e.g. liners [3]
F02K 3/00	Hauptgruppe	Plants including a gas turbine driving a compressor or a ducted fan
F02K 3/02	1-Punkt Untergruppe	. in which part of the working fluid by-passes the turbine and combustion chamber
F02K 3/04	2-Punkt Untergruppe	. . the plant including ducted fans, i.e. fans with high volume, low-pressure outputs, for augmenting jet thrust, e.g. of double-flow type
F02K 3/06	3-Punkt Untergruppe	. . . with front fan
F02K 3/062	3-Punkt Untergruppe	. . . with aft fan [3]
F02K 3/065	3-Punkt Untergruppe	. . . with front and aft fans [3]
F02K 3/068	3-Punkt Untergruppe	. . . being characterised by a short axial length relative to diameter [3]
F02K 3/072	3-Punkt Untergruppe	. . . with counter-rotating rotors [3]
F02K 3/075	3-Punkt Untergruppe	. . . controlling flow ratio between flows [3]
F02K 3/077	3-Punkt Untergruppe	. . . the plant being of the multiple flow type, i.e. having three or more flows [3]
F02K 3/08	1-Punkt Untergruppe	. with supplementary heating of the working fluid (after-burners, combustion chambers F23R); Control thereof (control of fuel supply therefor F02C 9/26) [3]

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F02K 3/10	2-Punkt Untergruppe	. . by after-burners (F02K 3/105 takes precedence) [3]
F02K 3/105	2-Punkt Untergruppe	. . Heating the by-pass flow [3]
F02K 3/11	3-Punkt Untergruppe	. . . by means of burners or combustion chambers [3]
F02K 3/115	3-Punkt Untergruppe	. . . by means of indirect heat exchange [3]
F02K 3/12	1-Punkt Untergruppe	. characterised by having more than one gas turbine
F02K 5/00	Hauptgruppe	Plants including an engine, other than a gas turbine, driving a compressor or a ducted fan
F02K 5/02	1-Punkt Untergruppe	. the engine being of the reciprocating-piston type
F02K 7/00	Hauptgruppe	Plants in which the working-fluid is used in a jet only, i.e. the plants not having a turbine or other engine driving a compressor or a ducted fan; Control thereof (rocket-engine plants F02K 9/00)
F02K 7/02	1-Punkt Untergruppe	. the jet being intermittent, i.e. pulse jet
F02K 7/04	2-Punkt Untergruppe	. . with resonant combustion chambers
F02K 7/06	2-Punkt Untergruppe	. . with combustion chambers having valves
F02K 7/067	3-Punkt Untergruppe	. . . having aerodynamic valves [3]
F02K 7/075	2-Punkt Untergruppe	. . with multiple pulse-jet engines [3]
F02K 7/08	1-Punkt Untergruppe	. the jet being continuous
F02K 7/10	1-Punkt Untergruppe	. characterised by having ram-action compression, i.e. aero-thermo-dynamic-ducts or ram-jet engines
F02K 7/12	2-Punkt Untergruppe	. . Injection-induction jet engines [3]
F02K 7/14	2-Punkt Untergruppe	. . with external combustion, e.g. scram-jet engines [3]
F02K 7/16	2-Punkt Untergruppe	. . Composite ram-jet/turbo-jet engines [3]
F02K 7/18	2-Punkt Untergruppe	. . Composite ram-jet/rocket engines [3]
F02K 7/20	2-Punkt Untergruppe	. . Composite ram-jet/pulse-jet engines [3]
F02K 9/00	Hauptgruppe	Rocket-engine plants, i.e. plants carrying both fuel and oxidant therefor; Control thereof (chemical composition of propellants C06B, C06D) [3]
F02K 9/08	1-Punkt Untergruppe	. using solid propellants (F02K 9/72 takes precedence; using semi-solid or pulverulent propellants F02K 9/70) [3]
F02K 9/10	2-Punkt Untergruppe	. . Shape or structure of solid propellant charges [3]
F02K 9/12	3-Punkt Untergruppe	. . . made of two or more portions burning at different rates [3]
F02K 9/14	3-Punkt Untergruppe	. . . made from sheet-like materials, e.g. of carpet-roll type, of layered structure [3]
F02K 9/16	3-Punkt Untergruppe	. . . of honeycomb structure [3]
F02K 9/18	3-Punkt Untergruppe	. . . of the internal-burning type having a star or like shaped internal cavity [3]
F02K 9/20	3-Punkt Untergruppe	. . . of the external-burning type [3]
F02K 9/22	3-Punkt Untergruppe	. . . of the front-burning type [3]
F02K 9/24	2-Punkt Untergruppe	. . Charging rocket engines with solid propellants; Methods or apparatus specially adapted for working solid propellant charges [3]
F02K 9/26	2-Punkt Untergruppe	. . Burning control [3]

Symbol	Typ	Titel
F02K 9/28	2-Punkt Untergruppe	. . having two or more propellant charges with the propulsion gases exhausting through a common nozzle [3]
F02K 9/30	2-Punkt Untergruppe	. . with the propulsion gases exhausting through a plurality of nozzles [3]
F02K 9/32	2-Punkt Untergruppe	. . Constructional parts; Details (shape or structure of solid propellant charges F02K 9/10; starting or ignition means or arrangements F02K 9/95; rocket nozzles F02K 9/97) [3]
F02K 9/34	3-Punkt Untergruppe	. . . Casings; Combustion chambers; Liners thereof [3]
F02K 9/36	3-Punkt Untergruppe	. . . Propellant charge supports [3]
F02K 9/38	3-Punkt Untergruppe	. . . Safety devices, e.g. to prevent accidental ignition [3]
F02K 9/40	3-Punkt Untergruppe	. . . Cooling arrangements [3]
F02K 9/42	1-Punkt Untergruppe	. using liquid or gaseous propellants (F02K 9/72 takes precedence) [3]
F02K 9/44	2-Punkt Untergruppe	. . Feeding propellants [3]
F02K 9/46	3-Punkt Untergruppe	. . . using pumps (pumps <u>per se</u> F04) [3]
F02K 9/48	4-Punkt Untergruppe	 driven by a gas turbine fed by propellant combustion gases [3]
F02K 9/50	3-Punkt Untergruppe	. . . using pressurised fluid to pressurize the propellants [3]
F02K 9/52	3-Punkt Untergruppe	. . . Injectors (in general B05B) [3]
F02K 9/54	3-Punkt Untergruppe	. . . Leakage detectors; Purging systems; Filtration systems (filters <u>per se</u> B01D) [3]
F02K 9/56	3-Punkt Untergruppe	. . . Control [3]
F02K 9/58	4-Punkt Untergruppe	 Propellant feed valves (valves in general F16K) [3]
F02K 9/60	2-Punkt Untergruppe	. . Constructional parts; Details (starting or ignition means or arrangements F02K 9/95; rocket nozzles F02K 9/97) [3]
F02K 9/62	3-Punkt Untergruppe	. . . Combustion or thrust chambers [3]
F02K 9/64	4-Punkt Untergruppe	 having cooling arrangements [3]
F02K 9/66	4-Punkt Untergruppe	 of the rotary type [3]
F02K 9/68	3-Punkt Untergruppe	. . . Decomposition chambers [3]
F02K 9/70	1-Punkt Untergruppe	. using semi-solid or pulverulent propellants [3]
F02K 9/72	1-Punkt Untergruppe	. using liquid and solid propellants, i.e. hybrid rocket-engine plants [3]
F02K 9/74	1-Punkt Untergruppe	. combined with another jet-propulsion plant [3]
F02K 9/76	2-Punkt Untergruppe	. . with another rocket-engine plant; Multistage rocket-engine plants [3]
F02K 9/78	2-Punkt Untergruppe	. . with an air-breathing jet-propulsion plant (with a ram-jet engine F02K 7/18) [3]
F02K 9/80	1-Punkt Untergruppe	. characterised by thrust or thrust vector control (F02K 9/26, F02K 9/56, F02K 9/94 take precedence) [3]
F02K 9/82	2-Punkt Untergruppe	. . by injection of a secondary fluid into the rocket exhaust gases [3]
F02K 9/84	2-Punkt Untergruppe	. . using movable nozzles [3]
F02K 9/86	2-Punkt Untergruppe	. . using nozzle throats of adjustable cross-section [3]

Symbol	Typ	Titel
F02K 9/88	2-Punkt Untergruppe	. . using auxiliary rocket nozzles [3]
F02K 9/90	2-Punkt Untergruppe	. . using deflectors (F02K 9/82 takes precedence) [3]
F02K 9/92	2-Punkt Untergruppe	. . incorporating means for reversing or terminating thrust [3]
F02K 9/94	1-Punkt Untergruppe	. Re-ignitable or restartable rocket-engine plants; Intermittently operated rocket-engine plants [3]
F02K 9/95	1-Punkt Untergruppe	. characterised by starting or ignition means or arrangements (safety devices F02K 9/38) [3]
F02K 9/96	1-Punkt Untergruppe	. characterised by specially adapted arrangements for testing or measuring [3]
F02K 9/97	1-Punkt Untergruppe	. Rocket nozzles (thrust or thrust vector control F02K 9/80) [3]
F02K 11/00	Hauptgruppe	Plants not provided for in the other groups of this subclass [3]