

Symbol	Typ	Titel
F	Sektion	MECHANICAL ENGINEERING; LIGHTING; HEATING; WEAPONS; BLASTING
F01	Untersektion	ENGINES OR PUMPS
F01	Klasse	MACHINES OR ENGINES IN GENERAL; ENGINE PLANTS IN GENERAL; STEAM ENGINES
F01P	Unterkategorie	COOLING OF MACHINES OR ENGINES IN GENERAL; COOLING OF INTERNAL-COMBUSTION ENGINES (arrangements in connection with cooling of propulsion units in vehicles B60K 11/00; heat-transfer, heat-exchange or heat-storage materials C09K 5/00; heat-exchange in general, radiators F28)
		<u>Air cooling; Liquid cooling</u>
F01P 1/00	Hauptgruppe	Air cooling (propelling cooling-air or liquid coolants F01P 5/00; controlling supply or circulation of coolants F01P 7/00) [1, 2006.01]
F01P 1/02	1-Punkt Untergruppe	. Arrangements for cooling cylinders or cylinder heads, e.g. ducting cooling-air from its pressure source to cylinders or along cylinders [1, 2006.01]
F01P 1/04	1-Punkt Untergruppe	. Arrangements for cooling pistons [1, 2006.01]
F01P 1/06	1-Punkt Untergruppe	. Arrangements for cooling other engine or machine parts [1, 2006.01]
F01P 1/08	2-Punkt Untergruppe	.. for cooling intake or exhaust valves [1, 2006.01]
F01P 1/10	2-Punkt Untergruppe	.. for cooling fuel injectors or sparking-plugs [1, 2006.01]
F01P 3/00	Hauptgruppe	Liquid cooling (propelling cooling-air or liquid coolants F01P 5/00; controlling supply or circulation of coolants F01P 7/00) [1, 2006.01]
F01P 3/02	1-Punkt Untergruppe	. Arrangements for cooling cylinders or cylinder heads [1, 2006.01]
F01P 3/04	2-Punkt Untergruppe	.. Liquid-to-air heat-exchangers combined with, or arranged on, cylinders or cylinder heads [1, 2006.01]
F01P 3/06	1-Punkt Untergruppe	. Arrangements for cooling pistons [1, 2006.01]
F01P 3/08	2-Punkt Untergruppe	.. Cooling of piston exterior only, e.g. by jets [1, 2006.01]
F01P 3/10	2-Punkt Untergruppe	.. Cooling by flow of coolant through pistons [1, 2006.01]
F01P 3/12	1-Punkt Untergruppe	. Arrangements for cooling other engine or machine parts [1, 2006.01]
F01P 3/14	2-Punkt Untergruppe	.. for cooling intake or exhaust valves [1, 2006.01]
F01P 3/16	2-Punkt Untergruppe	.. for cooling fuel injectors or sparking-plugs [1, 2006.01]
F01P 3/18	1-Punkt Untergruppe	. Arrangement or mounting of liquid-to-air heat-exchangers (such arrangements on cylinders or cylinder heads F01P 3/04; relative to vehicles B60K 11/04) [1, 2006.01]
F01P 3/20	1-Punkt Untergruppe	. Cooling circuits not specific to a single part of engine or machine (F01P 3/22 takes precedence) [1, 2006.01]
F01P 3/22	1-Punkt Untergruppe	. characterised by evaporation and condensation of coolant in closed cycles (other cooling by evaporation F01P 9/02); characterised by the coolant reaching higher temperatures than normal atmospheric boiling-point [1, 2006.01]
		<u>Pumping cooling-air or liquid coolants; Controlling circulation or supply of coolants</u>
F01P 5/00	Hauptgruppe	Pumping cooling-air or liquid coolants (controlling circulation or supply of coolants by influencing drive of pumps F01P 7/00) [1, 2006.01]
F01P 5/02	1-Punkt Untergruppe	. Pumping cooling-air; Arrangements of cooling-air pumps, e.g. fans or blowers [1, 2006.01]
F01P 5/04	2-Punkt Untergruppe	.. Pump-driving arrangements [1, 2006.01]
F01P 5/06	2-Punkt Untergruppe	.. Guiding or ducting air to or from ducted fans [1, 2006.01]

Symbol	Typ	Titel
F01P 5/08	2-Punkt Untergruppe	... Use of engine exhaust gases for pumping cooling-air [1, 2006.01]
F01P 5/10	1-Punkt Untergruppe	. Pumping liquid coolant; Arrangements of coolant pumps [1, 2006.01]
F01P 5/12	2-Punkt Untergruppe	... Pump-driving arrangements [1, 2006.01]
F01P 5/14	1-Punkt Untergruppe	. Safety means against, or active at, failure of coolant-pump drives, e.g. shutting engine down; Means for indicating functioning of coolant pumps [1, 2006.01]
F01P 7/00	Hauptgruppe	Controlling of coolant flow [1, 2006.01]
F01P 7/02	1-Punkt Untergruppe	. the coolant being cooling-air [1, 2006.01]
F01P 7/04	2-Punkt Untergruppe	... by varying pump speed, e.g. by changing pump-drive gear ratio [1, 2006.01]
F01P 7/06	2-Punkt Untergruppe	... by varying blade pitch [1, 2006.01]
F01P 7/08	2-Punkt Untergruppe	... by cutting in or out of pumps [1, 2006.01]
F01P 7/10	2-Punkt Untergruppe	... by throttling amount of air flowing through liquid-to-air heat-exchangers [1, 2006.01]
F01P 7/12	3-Punkt Untergruppe	... by thermostatic control [1, 2006.01]
F01P 7/14	1-Punkt Untergruppe	. the coolant being liquid [1, 2006.01]
F01P 7/16	2-Punkt Untergruppe	... by thermostatic control [1, 2006.01]
F01P 9/00	Hauptgruppe	Cooling having pertinent characteristics not provided for in, or of interest apart from, groups F01P 1/00-F01P 7/00 (profiting from waste heat of combustion-engine cooling F02G 5/00) [1, 2006.01]
F01P 9/02	1-Punkt Untergruppe	. Cooling by evaporation, e.g. by spraying water on to cylinders (evaporation and condensation of liquid coolant in closed cycles F01P 3/22) [1, 2006.01]
F01P 9/04	1-Punkt Untergruppe	. by simultaneous or alternative use of direct air cooling and liquid cooling (F01P 9/02 takes precedence) [1, 2006.01]
F01P 9/06	1-Punkt Untergruppe	. by use of refrigerating apparatus, e.g. of compressor or absorber type [1, 2006.01]
F01P 11/00	Hauptgruppe	Component parts, details, or accessories, not provided for in, or of interest apart from, groups F01P 1/00-F01P 9/00 [1, 2006.01]
F01P 11/02	1-Punkt Untergruppe	. Liquid-coolant overflow, venting, or draining devices (automatic draining during freezing conditions F01P 11/20) [1, 2006.01]
F01P 11/04	1-Punkt Untergruppe	. Arrangements of liquid pipes or hoses [1, 2006.01]
F01P 11/06	1-Punkt Untergruppe	. Cleaning (in general B08B); Combating corrosion (in general C23F) [1, 2006.01]
F01P 11/08	1-Punkt Untergruppe	. Arrangements of lubricant coolers (in lubrication apparatus F01M) [1, 2006.01]
F01P 11/10	1-Punkt Untergruppe	. Guiding or ducting cooling-air to or from liquid-to-air heat-exchangers [1, 2006.01]
F01P 11/12	1-Punkt Untergruppe	. Filtering, cooling, or silencing cooling-air [1, 2006.01]
F01P 11/14	1-Punkt Untergruppe	. Indicating devices; Other safety devices [1, 2006.01]
F01P 11/16	2-Punkt Untergruppe	... concerning coolant temperature (F01P 11/20 takes precedence) [1, 2006.01]
F01P 11/18	2-Punkt Untergruppe	... concerning coolant pressure, coolant flow, or liquid-coolant level [1, 2006.01]
F01P 11/20	2-Punkt Untergruppe	... concerning atmospheric freezing conditions, e.g. automatically draining or heating during frosty weather [1, 2006.01]