

CPC COOPERATIVE PATENT CLASSIFICATION

F01M LUBRICATING OF MACHINES OR ENGINES IN GENERAL (lubricating in general F16N); LUBRICATING INTERNAL COMBUSTION ENGINES; CRANKCASE VENTILATING

NOTE

Attention is drawn to the notes preceding class [F01](#), specially as regards Note (3).

1/00	Pressure lubrication		
1/02	• using lubricating pumps (pumps in general F04 ; lubricating pumps per se F16N)	1/12	• Closed-circuit lubricating systems not provided for in groups F01M 1/02 - F01M 1/10
2001/0207	• . . {characterised by the type of pump}	2001/123	• . . {using two or more pumps}
2001/0215	• . . . {Electrical pumps}	2001/126	• . . {Dry-sumps}
2001/0223	• . . . {Electromagnetic pumps}	1/14	• Timed lubrication (F01M 1/08 takes precedence)
2001/023	• . . . {Piston pumps}	1/16	• Controlling lubricant pressure or quantity (rendering machines or engines inoperative or idling on lubricant pressure failure F01M 1/22)
2001/0238	• . . . {Rotary pumps}		
2001/0246	• . . . {Adjustable pumps}	2001/165	• . . {according to fuel dilution in oil}
2001/0253	• . {characterised by the pump driving means}	1/18	• Indicating or safety devices (concerning lubricant level F01M 11/06 , F01M 11/12)
2001/0261	• . . . {driven by the camshaft}	1/20	• . . concerning lubricant pressure
2001/0269	• . . . {driven by the crankshaft}	1/22	• . . . rendering machines or engines inoperative or idling on pressure failure
2001/0276	• . . . {driven by a balancer shaft}	1/24	• acting on engine fuel system
2001/0284	• . . {mounting of the pump}	1/26	• acting on engine ignition system
2001/0292	• . . {Sealings}	1/28	• acting on engine combustion-air supply
1/04	• using pressure in working cylinder or crankcase to operate lubricant feeding devices	3/00	Lubrication specially adapted for engines with crankcase compression of fuel-air mixture or for other engines in which lubricant is contained in fuel, combustion air, or fuel-air mixture (separating lubricant from air or fuel-air mixture before entry into cylinder F01M 11/08)
1/06	• Lubricating systems characterised by the provision therein of crankshafts or connecting rods with lubricant passageways, e.g. bores (crankshafts, connecting-rods, per se F16C)	3/02	• with variable proportion of lubricant to fuel, lubricant to air, or lubricant to fuel-air-mixture
2001/062	• . . {Crankshaft with passageways}	3/04	• for upper cylinder lubrication only
2001/064	• . . {Camshaft with passageways}	5/00	Heating, cooling, or controlling temperature of lubricant (arrangement of lubricant coolers in engine cooling system F01P 11/08); lubrication means facilitating engine starting
2001/066	• . . {Connecting rod with passageways}	5/001	• {Heating}
2001/068	• . . {Bakance shaft with passageways}	5/002	• {Cooling}
1/08	• Lubricating systems characterised by the provision therein of lubricant jetting means	2005/004	• . . {Oil-cooled engines}
2001/083	• . . {for lubricating cylinders}	5/005	• {Controlling temperature of lubricant}
2001/086	• . . {for lubricating gudgeon pins}	5/007	• . . {Thermostatic control}
1/10	• Lubricating systems characterised by the provision therein of lubricant venting or purifying means, e.g. of filters	2005/008	• {Lubrication means facilitating engine starting}
2001/1007	• . . {characterised by the purification means combined with other functions}	5/02	• Conditioning lubricant for aiding engine starting, e.g. heating
2001/1014	• . . . {comprising supply of additives}	5/021	• . . {by heating}
2001/1021	• . . . {comprising self cleaning systems}	2005/023	• . . . {Oil sump with partition for facilitating heating of oil during starting}
2001/1028	• . . {characterised by the type of purification}	5/025	• . . {by prelubricating, e.g. using an accumulator}
2001/1035	• . . . {comprising centrifugal filters}	2005/026	• . . . {with an auxiliary pump}
2001/1042	• . . . {comprising magnetic parts}	2005/028	• . . . {with a reservoir under pressure}
2001/105	• . . {characterised by the layout of the purification arrangements}	5/04	• . Diluting, e.g. with fuel
2001/1057	• . . . {comprising a plurality of filters, parallel or serial}	7/00	Lubrication means specially adapted for machine or engine running-in
2001/1064	• . . . {comprising drains for oil to the carter, e.g. to recover spilled oil during change of filters}	9/00	Lubrication means having pertinent characteristics not provided for in, or of interest apart from, groups F01M 1/00 - F01M 7/00
2001/1071	• . . . {comprising oil tanks}		
2001/1078	• . . . {comprising an oil pick-up tube to oil pump, e.g. strainer}		
2001/1085	• . . . {comprising non-return valves}		
2001/1092	• . . . {comprising valves bypassing the filter}		

9/02	. having means for introducing additives to lubricant	2011/038	. . . {comprising lubricant-air separators}
9/04	. Use of fuel as lubricant	11/04	. Filling or draining lubricant of or from machines or engines
9/06	. Dip or splash lubrication	11/0408	. . {Sump drainage devices, e.g. valves, plugs}
9/08	. Drip lubrication	2011/0416	. . . {Plugs}
9/10	. Lubrication of valve gear or auxiliaries	2011/0425 {with a device facilitating the change of oil}
9/101	. . {of cam surfaces}	2011/0433 {with a device defining the lubricant level during filling}
9/102	. . {of camshaft bearings}	2011/0441 {for measuring the lubricant level}
9/103	. . {of valve stem and guide}	11/045	. . {Removing lubricant by suction}
9/104	. . {of tappets}	11/0458	. . {Lubricant filling and draining}
9/105	. . {using distribution conduits}	2011/0466	. . . {Filling or draining during running}
9/106	. . {Oil reservoirs}	2011/0475 {with combustion of used lubricant in the engine}
9/107	. . {of rocker shaft bearings}	2011/0483	. . {with a lubricant cartridge for facilitating the change}
9/108	. . {of auxiliaries}	2011/0491	. . {Filing cap with special features}
9/109	. . {of rotary slide or sleeve valves}	11/06	. Means for keeping lubricant level constant or for accommodating movement or position of machines or engines
9/12	. Non-pressurised lubrication, or non-closed-circuit lubrication, not otherwise provided for	11/061	. . {Means for keeping lubricant level constant}
11/00	Component parts, details or accessories, not provided for in, or of interest apart from, groups F01M 1/00 - F01M 9/00	11/062	. . {Accommodating movement or position of machines or engines, e.g. dry sumps}
11/0004	. {Oilsumps}	11/064	. . . {Movement}
2011/0008	. . {with means for reducing vibrations}	11/065	. . . {Position}
2011/0012	. . . {with acoustic insulation}	11/067 {inverted, e.g. for inverted flight}
2011/0016	. . {with thermic insulation}	2011/068 {with internal reservoir}
2011/002	. . {with means for improving the stiffness}	11/08	. Separating lubricant from air or fuel-air mixture before entry into cylinder (separating in general B01D)
2011/0025	. . {with heat exchangers}	11/10	. Indicating devices; Other safety devices
2011/0029	. . {with oil filters}	11/12	. . concerning lubricant level
2011/0033	. . {with special means for guiding the return of oil into the sump}	2011/14	. . {for indicating the necessity to change the oil}
2011/0037	. . {with different oil compartments}	2011/1406	. . . {by considering acidity}
2011/0041	. . . {for accommodating movement or position of engines}	2011/1413	. . . {by considering dielectric properties}
2011/0045	. . . {for controlling the oil temperature}	2011/142	. . . {by considering speed, e.g. revolutions per minute [RPM]}
2011/005	. . {with special anti-turbulence means, e.g. anti-foaming means or intermediate plates}	2011/1426	. . . {by considering distance}
2011/0054	. . {Fastening to the cylinder block}	2011/1433	. . . {by considering load}
2011/0058	. . {Fastening to the transmission}	2011/144	. . . {by considering magnetic properties of the oil}
2011/0062	. . {Gaskets}	2011/1446	. . . {by considering pressure}
2011/0066	. . {with passages in the wall, e.g. for axles or fluid passages}	2011/1453	. . . {by considering oil quantity}
2011/007	. . {Oil pickup tube to oil pump, e.g. strainer}	2011/146	. . . {by considering moisture level}
2011/0075	. . . {with a plurality of tubes}	2011/1466	. . . {by considering quantity of soot}
2011/0079	. . {with the oil pump integrated or fixed to sump}	2011/1473	. . . {by considering temperature}
2011/0083	. . {Dry sumps}	2011/148	. . . {by considering viscosity}
2011/0087	. . {Sump being made of different parts}	2011/1486	. . . {by considering duration of operation}
2011/0091	. . {characterised by used materials}	2011/1493	. . . {by considering total base number [TBN]}
2011/0095	. {Supplementary oil tank}	13/00	Crankcase ventilating or breathing
11/02	. Arrangements of lubricant conduits	2013/0005	. {with systems regulating the pressure in the carter}
2011/021	. . {for lubricating auxiliaries, e.g. pumps or turbochargers}	13/0011	. {Breather valves}
2011/022	. . {for lubricating cylinders}	2013/0016	. . {with a membrane}
2011/023	. . {between oil sump and cylinder head}	2013/0022	. . {electromagnetic}
2011/025	. . {for lubricating gudgeon pins}	2013/0027	. . {with a de-icing or defrosting system}
2011/026	. . {for lubricating crankshaft bearings}	13/0033	. {Breather inlet-air filters}
2011/027	. . {for lubricating connecting rod bearings}	2013/0038	. {Layout of crankcase breathing systems}
2011/028	. . {for lubricating balance shafts}	2013/0044	. . {with one or more valves}
11/03	. Mounting or connecting of lubricant purifying means relative to the machine or engine; Details of lubricant purifying means (filters B01D)	2013/005	. . {having one or more deoilers}
2011/031	. . {characterised by mounting means}	2013/0055	. . . {with a by-pass}
2011/033	. . . {comprising coolers or heat exchangers}	2013/0061	. . . {having a plurality of deoilers}
2011/035	. . . {comprising oil pumps}	2013/0066 {in parallel}
2011/036	. . . {comprising pumps for the cooling circuit}	2013/0072 {in series}

F01M

- 2013/0077 . {Engine parameters used for crankcase breather systems}
- 2013/0083 . . {Crankcase pressure}
- 2013/0088 . . {Rotation speed}
- 2013/0094 . . {Engine load}
- 13/02 . by means of additional source of positive or negative pressure
 - 13/021 . . {of negative pressure}
 - 13/022 . . . {using engine inlet suction}
 - 13/023 {Control valves in suction conduit}
 - 13/025 {with an inlet-conduit via an air-filter}
- 2013/026 . . . {with pumps sucking air or blow-by gases from the crankcase}
- 2013/027 . . . {with a turbo charger or compressor}
- 13/028 . . {of positive pressure}
- 13/04 . having means for purifying air before leaving crankcase, e.g. removing oil
 - 13/0405 . . {arranged in covering members apertures, e.g. caps}
- 2013/0411 . . {using cooling means}
- 13/0416 . . {arranged in valve-covers}
- 2013/0422 . . {Separating oil and gas with a centrifuge device}
- 2013/0427 . . . {the centrifuge device having no rotating part, e.g cyclone}
- 2013/0433 . . {with a deflection device, e.g. screen}
- 2013/0438 . . {with a filter}
- 2013/0444 . . {with means for accomodating movement or position of engines}
- 2013/045 . . {using compression or decompression of the gas}
- 2013/0455 . . {with a de-icing or defrosting system (for breathing valves [F01M 2013/0027](#))}
- 2013/0461 . . {with a labyrinth}
- 2013/0466 . . {with electrostatic means}
- 2013/0472 . . {using heating means}
- 2013/0477 . . {by separating water or moisture}
- 2013/0483 . . {using catalysis}
- 2013/0488 . . {with oil trap in the return conduit to the crankcase}
- 2013/0494 . . . {using check valves}
- 13/06 . specially adapted for submersible engines, e.g. of armoured vehicles
- 2250/00 Measuring**
- 2250/60 . Operating parameters
- 2250/62 . Load
- 2250/64 . Number of revolutions
- 2250/66 . Vehicle speed