

CPC COOPERATIVE PATENT CLASSIFICATION

F03C POSITIVE-DISPLACEMENT ENGINES DRIVEN BY LIQUIDS (positive- displacement engines for liquids and elastic fluids [F01](#); positive- displacement machines for liquids [F04](#); fluid-pressure actuators [F15B](#); fluid gearing [F16H](#))

NOTE

Attention is drawn to the notes preceding class [F01](#), especially as regards the meanings of "positive displacement", "rotary-piston machines", "oscillating-piston machines", "rotary-piston", "co-operating members", "movement of co-operating members", "teeth or tooth-equivalents", and "internal axis".

WARNING

The following IPC groups are not used in the CPC scheme. Subject matter covered by these groups is classified in the following CPC groups:

F03C 1/253	covered by	F03C
F03C 1/28	covered by	F03C 1/0406 , F03C 1/0605
F03C 1/30	covered by	F03C 1/0409 , F03C 1/0631 , F03C 1/0668
F03C 1/32	covered by	F03C 1/0415 , F03C 1/0626 , F03C 1/0652
F03C 1/34	covered by	F03C 1/0435 , F03C 1/0615 , F03C 1/0655
F03C 1/36	covered by	F03C 1/0435 , F03C 1/0615 , F03C 1/0655
F03C 1/38	covered by	F03C 1/0435 , F03C 1/0615 , F03C 1/0655
F03C 1/40	covered by	F03C 1/0447 , F03C 1/0678

1/00 Reciprocating-piston liquid engines

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| <p>1/001 . {the movement in two directions being obtained by two or more double-acting piston liquid motors}</p> <p>1/002 . {details; components parts}</p> <p>1/003 . {controlling}</p> <p>1/004 . . {speed-control}</p> <p>1/005 . . {motor piston stroke control}</p> <p>1/007 . with single cylinder, double-acting piston</p> <p>1/0073 . . {one side of the double-acting piston being always under the influence of the liquid under pressure}</p> <p>1/0076 . . . {the liquid under pressure being continuously delivered to one cylinder chamber through a valve in the piston for actuating the return stroke}</p> <p>1/013 . with single cylinder, single-acting piston</p> <p>1/0135 . . {with actuation of the return stroke by gravity}</p> <p>1/02 . with multiple-cylinders, characterised by the number or arrangement of cylinders (with movable cylinders F03C 1/22; of flexible-wall type F03C 7/00)</p> <p>1/03 . . with movement in two directions being obtained by two single-acting piston liquid engines, each acting in one direction</p> <p>1/035 . . . {one single-acting piston being always under the influence of the liquid under pressure}</p> <p>1/04 . . with cylinders in star or fan arrangement (F03C 1/22 takes precedence)</p> <p>1/0403 . . . {Details, component parts specially adapted of such engines}</p> <p>1/0406 {Pistons}</p> <p>1/0409 {Cams}</p> <p>1/0412 {consisting of several cylindrical elements, e.g. rollers}</p> <p>1/0415 {Cylinders}</p> <p>1/0419 {Arrangements for pressing or connecting the pistons against the actuated cam}</p> <p>1/0422 {hydraulically}</p> | <p>1/0425 {Disconnecting the pistons from the actuated cam (in general F01B 31/24)}</p> <p>1/0428 {Supporting and guiding means for the pistons}</p> <p>1/0431 {Draining of the engine housing; arrangements dealing with leakage fluid}</p> <p>1/0435 {Particularities relating to the distribution members (F03C 1/0472, F03C 1/0531, and F03C 1/0538 take precedence)}</p> <p>1/0438 {to cylindrical distribution members}</p> <p>1/0441 {to conical distribution members}</p> <p>1/0444 {to plate-like distribution members}</p> <p>1/0447 . . . {Controlling}</p> <p>1/045 {by using a valve in a system with several pump or motor chambers, wherein the flow path through the chambers can be changed, e.g. series-parallel}</p> <p>1/0454 {by changing the effective cross sectional piston working surface}</p> <p>1/0457 {by changing the effective piston stroke}</p> <p>1/046 {by changing the excentricity of one element relative to another element}</p> <p>1/0463 {by changing the phase relationship between two actuated cams}</p> <p>1/0466 {by changing the phase relationship between the actuated cam and the distributing means}</p> <p>1/047 . . . the pistons co-operating with an actuated element at the outer ends of the cylinders</p> <p>1/0472 {with cam-actuated distribution members}</p> <p>1/0474 {with two or more radial piston/cylinder units in series}</p> <p>1/0476 {directly located side by side}</p> <p>1/0478 {having several cylinder barrels coupled together}</p> <p>1/053 . . . the pistons co-operating with an actuated element at the inner ends of the cylinders</p> <p>1/0531 {with cam-actuated distribution members}</p> |
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- 1/0533 {each piston being provided with channels coating with the cylinder and being used as a distribution member for another cylinder}
- 1/0535 {with two or more radial piston/cylinder units in series}
- 1/0536 {directly located side by side}
- 1/0538 {the piston-driven cams being provided with inlets or outlets}
- 1/06 . . with cylinder axes generally coaxial with, or parallel or inclined to, main shaft axis
- 1/0602 . . . {Component parts, details}
- 1/0605 {Adaptations of pistons (pump pistons [F04B 1/124](#), [F04B 53/14](#))}
- 1/0607 {Driven means}
- 1/061 . . . {having stationary cylinders}
- 1/0613 {having two or more sets of cylinders or pistons}
- 1/0615 {distributing members}
- 1/0618 {cylindrical distribution members}
- 1/0621 {conical distribution members}
- 1/0623 {Details, component parts}
- 1/0626 {Cylinders}
- 1/0628 {Casings, housings}
- 1/0631 {Wobbler or actuated element}
- 1/0634 {Actuated element bearing means or driven axis bearing means}
- 1/0636 . . . {having rotary cylinder block}
- 1/0639 {having two or more sets of cylinders or pistons}
- 1/0642 {inclined on main shaft axis}
- 1/0644 {Component parts}
- 1/0647 {Particularities in the contacting area between cylinder barrel and valve plate}
- 1/0649 {Bearing means}
- 1/0652 {Cylinders}
- 1/0655 {Valve means}
- 1/0657 {Cylindrical valve means}
- 1/066 {Conical valve means}
- 1/0663 {Casings, housings}
- 1/0665 {Cylinder barrel bearing means}
- 1/0668 {Swash or actuated plate}
- 1/0671 {Swash or actuated plate bearing means or driven axis bearing means}
- 1/0673 {Connection between rotating cylinder and rotating inclined swash plate}
- 1/0676 {Arrangement for pressing the cylinder barrel against the valve plate}
- 1/0678 . . . {Control}
- 1/0681 {using a valve in a system with several motor chambers, wherein the flow path through the chambers can be changed}
- 1/0684 {using a by-pass valve}
- 1/0686 {by changing the inclination of the swash plate}
- 1/0689 {using wedges}
- 1/0692 {by changing the phase relationship between the actuated element and the distribution means, e.g. turning the valve plate; turning the swash plate}
- 1/0694 {by changing the inclination of the axis of the cylinder barrel in relation to the axis of the actuated element}
- 1/0697 {responsive to the speed}
- 1/08 . Distributing valve-gear peculiar thereto (for engines with positive-displacement in general [F01L](#); {[F03C 1/06](#) takes precedence})
- 1/10 . . actuated by piston or piston-rod
- 1/12 . . . mechanically
- 1/14 . . by driving liquid of engine
- 1/16 . . Speed controlling, equalising or cushioning
- 1/20 . . specially adapted for engines generating vibration only
- 1/22 . with movable cylinders {or cylinder}
- 1/223 . . {having cylinders in star or fan arrangement, the connection of the pistons with an actuated element being at the inner ends of the cylinders}
- 1/226 . . . {with cam actuated distribution members}
- 1/24 . . in which the liquid exclusively displaces one or more pistons reciprocating in rotary cylinders ({[F03C 1/0636](#) takes precedence})
- 1/2407 . . . {having cylinders in star or fan arrangement, the connection of the pistons with an actuated element being at the outer ends of the cylinders}
- 1/2415 {cylinder block and actuated cam both rotating ([F03C 1/2431](#) and [F03C 1/2446](#) take precedence)}
- 1/2423 {with two or more series radial piston-cylinder units}
- 1/2431 {cylinder block and actuated cam both rotating ([F03C 1/2446](#) takes precedence)}
- 1/2438 {directly located side by side}
- 1/2446 {cylinder block and actuated cam both rotating}
- 1/2454 . . . {having cylinders in star or fan arrangement, the connection of the pistons with an actuated element being at the inner ends of the cylinders}
- 1/2462 . . . {the rotary cylinder being provided with only one piston reciprocating within this cylinder}
- 1/247 . . . with cylinders in star- or fan-arrangement, {the connection of the pistons with an actuated element being at the outer ends of the cylinders}
- 1/26 . adapted for special use or combined with apparatus driven thereby (aspects predominantly concerning the driven apparatus [see the relevant classes for such apparatus](#))
- 2/00 Rotary-piston engines (in which the liquid exclusively displaces one or more piston reciprocating in rotary cylinders [F03C 1/24](#))**
NOTE
Group [F03C 2/30](#) takes precedence over groups [F03C 2/02](#) - [F03C 2/24](#).
- 2/02 . of arcuate-engagement type, i.e. with circular translatory movement of co-operating members, each member having the same number of teeth or tooth-equivalents
- 2/08 . of intermeshing-engagement type, i.e. with engagement of co- operating members similar to that of toothed gearing

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- 2/22 . of internal-axis type with equidirectional movement of co-operating members at the points of engagement, or with one of the co-operating members being stationary, the inner member having more teeth or tooth- equivalents than the outer member
- 2/24 . of counter-engagement type, i.e. the movement of co-operating members at the points of engagement being in opposite directions
- 2/30 . having the characteristics covered by two or more of groups [F03C 2/02](#), [F03C 2/08](#), [F03C 2/22](#), [F03C 2/24](#) or having the characteristics covered by one of these groups together with some other type of movement between co-operating members
- 2/302 . . {having both the movements defined in sub-groups [F03C 2/02](#) and relative reciprocation between members}
- 2/304 . . {having both the movements defined in sub-group [F03C 2/08](#) or [F03C 2/22](#) and relative reciprocation between members}
- 2/306 . . {having both the movements defined in sub-groups [F03C 2/22](#) and [F03C 2/24](#)}
- 2/308 . . {having the movement defined in [F03C 2/08](#) and having a hinged member}
- 4/00 Oscillating-piston engines**
- 7/00 Engines of flexible-wall type**
- 99/00 Subject matter not provided for in other groups of this subclass**
- 99/005 . {Free-piston type engines}