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

F01 MACHINES OR ENGINES IN GENERAL; ENGINE PLANTS IN GENERAL; STEAM ENGINES

F01C ROTARY-PISTON OR OSCILLATING-PISTON MACHINES OR ENGINES (combustion engines F02; internal-combustion aspects F02B 53/00, F02B 55/00; machines for liquids F03, F04)

Note(s)

1. This subclass covers:
   - rotary-piston or oscillating-piston engines for elastic fluids, e.g. steam;
   - rotary-piston or oscillating-piston engines for liquids and elastic fluids;
   - rotary-piston or oscillating-piston machines for elastic fluids;
   - rotary-piston or oscillating-piston machines for liquids and elastic fluids.
2. In this subclass, the following expression is used with the meaning indicated:
   - "rotary-piston machine" includes the German expressions "Drehkolbenmaschinen", "Kreiskolbenmaschinen", and "Umlaufkolbenmaschinen".
3. Attention is drawn to the Notes preceding class F01, especially as regards the definitions of "rotary-piston machine", "oscillating-piston machine", "rotary piston", "co-operating members", "movement of co-operating members", "teeth or tooth-equivalents" and "internal-axis".

Subclass index

MACHINES OR ENGINES
With rotary pistons.....1/00-7/00
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DRIVE OF CO-OPERATING MEMBERS; SEALING ARRANGEMENTS.....17/00, 19/00
OTHER DETAILS OR ACCESSORIES.....21/00

1/00 **Rotary-piston machines or engines** (with axes of co-operating members non-parallel F01C 3/00; with the working-chamber walls at least partly resiliently deformable F01C 5/00; with fluid ring or the like F01C 7/00; rotary-piston machines or engines in which the working fluid is exclusively displaced by, or exclusively displaces, one or more reciprocating pistons F01B 13/00) **[1, 2006.01]**

Note(s)

Group F01C 1/30 takes precedence over groups F01C 1/02-F01C 1/24.

1/02 • 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 **[1, 2006.01]**

1/04 • • of internal-axis type **[1, 2006.01]**

1/06 • • of other than internal-axis type (F01C 1/063 takes precedence) **[1, 2006.01]**

1/063 • • with coaxially-mounted members having continuously-changing circumferential spacing between them **[3, 2006.01]**

1/067 • • • having cam-and-follower type drive **[3, 2006.01]**

1/07 • • • having crankshaft-and-connecting-rod type drive **[3, 2006.01]**

1/073 • • • having pawl-and-ratchet type drive **[3, 2006.01]**

1/077 • • • having toothed-gearing type drive **[3, 2006.01]**

1/08 • of intermeshing-engagement type, i.e. with engagement of co-operating members similar to that of toothed gearing **[1, 2006.01]**

1/10 • • of internal-axis type with the outer member having more teeth or tooth-equivalents, e.g. rollers, than the inner member **[1, 2006.01]**

1/107 • • • with helical teeth **[3, 2006.01]**

1/113 • • • the inner member carrying rollers intermeshing with the outer member **[3, 2006.01]**

1/12 • • of other than internal-axis type **[1, 2006.01]**

1/14 • • • with toothed rotary pistons **[1, 2006.01]**

1/16 • • • • with helical teeth, e.g. chevron-shaped, screw type **[1, 2006.01]**

1/18 • • • • with similar tooth forms (F01C 1/16 takes precedence) **[1, 2006.01]**

1/20 • • • • with dissimilar tooth forms (F01C 1/16 takes precedence) **[1, 2006.01]**

1/22 • 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 **[1, 2006.01]**

1/24 • of counter-engagement type, i.e. the movement of co-operating members at the points of engagement being in opposite directions **[1, 2006.01]**
1/26 • • of internal-axis type **[1, 2006.01]**
1/28 • • of other than internal-axis type **[1, 2006.01]**
1/30 • having the characteristics covered by two or more of groups F01C 1/02, F01C 1/08, F01C 1/22, F01C 1/24 or having the characteristics covered by one of these groups together with some other type of movement between co-operating members **[1, 2006.01]**
1/32 • • having both the movement defined in group F01C 1/02 and relative reciprocation between the co-operating members **[1, 2006.01]**
1/324 • • • with vanes hinged to the inner member and reciprocating with respect to the outer member **[3, 2006.01]**
1/328 • • • • and hinged to the outer member **[3, 2006.01]**
1/332 • • • with vanes hinged to the outer member and reciprocating with respect to the inner member **[3, 2006.01]**
1/336 • • • • and hinged to the inner member **[3, 2006.01]**
1/34 • • having the movement defined in group F01C 1/08 or F01C 1/22 and relative reciprocation between the co-operating members **[1, 2006.01]**
1/344 • • • with vanes reciprocating with respect to the inner member **[3, 2006.01]**
1/348 • • • • the vanes positively engaging, with circumferential play, an outer rotatable member **[3, 2006.01]**
1/352 • • • • the vanes being pivoted on the axis of the outer member **[3, 2006.01]**
1/356 • • • with vanes reciprocating with respect to the outer member **[3, 2006.01]**
1/36 • • having both the movements defined in groups F01C 1/22 and F01C 1/24 **[1, 2006.01]**
1/38 • • having the movement defined in group F01C 1/02 and having a hinged member (F01C 1/32 takes precedence) **[1, 3, 2006.01]**
1/39 • • • with vanes hinged to the inner as well as to the outer member **[3, 2006.01]**
1/40 • • having the movement defined in group F01C 1/08 or F01C 1/22 and having a hinged member **[1, 2006.01]**
1/44 • • • with vanes hinged to the inner member **[3, 2006.01]**
1/46 • • • with vanes hinged to the outer member **[3, 2006.01]**

3/00 Rotary-piston machines or engines with non-parallel axes of movement of co-operating members (with the working-chamber walls being at least partly resiliently deformable F01C 5/00) **[1, 2006.01]**
3/02 • the axes being arranged at an angle of 90° **[1, 2006.01]**
3/04 • • with axially-sliding vanes **[1, 2006.01]**
3/06 • the axes being arranged otherwise than at an angle of 90° **[1, 2006.01]**
3/08 • • of intermeshing-engagement type, i.e. with engagement of co-operating members similar to that of toothed gearing **[1, 2006.01]**

5/00 Rotary-piston machines or engines with the working-chamber walls at least partly resiliently deformable [1, 2006.01]
5/02 • the resiliently-deformable wall being part of the inner member, e.g. of a rotary piston **[1, 2006.01]**
5/04 • the resiliently-deformable wall being part of the outer member, e.g. of a housing **[1, 2006.01]**
5/06 • the resiliently-deformable wall being a separate member **[1, 2006.01]**
5/08 • • of tubular form, e.g. hose **[1, 2006.01]**

7/00 Rotary-piston machines or engines with fluid ring or the like [1, 2006.01]

9/00 Oscillating-piston machines or engines [1, 2006.01]

11/00 Combinations of two or more machines or engines, each being of rotary-piston or oscillating-piston type (F01C 13/00 takes precedence; combinations of two or more pumps F04; fluid gearing F16H) **[1, 2006.01]**

13/00 Adaptations of machines or engines for special use; Combinations of engines with devices driven thereby (aspects predominantly concerning driven devices, see the relevant classes for these devices) **[1, 2006.01]**
13/02 • for driving hand-held tools or the like **[1, 2006.01]**
13/04 • for driving pumps or compressors **[1, 2006.01]**

17/00 Arrangements for drive of co-operating members, e.g. for rotary piston and casing [1, 2006.01]
17/02 • of toothed-gearing type (F01C 1/077 takes precedence) **[1, 3, 2006.01]**
17/04 • of cam-and-follower type (F01C 1/067 takes precedence) **[1, 3, 2006.01]**
17/06 • using cranks, universal joints, or similar elements (F01C 1/07 takes precedence) **[1, 3, 2006.01]**

19/00 Sealing arrangements in rotary-piston machines or engines (sealings in general F16J) **[1, 2006.01]**
19/02 • Radially-movable sealings for working fluids **[1, 2006.01]**
19/04 • • of rigid material **[1, 2006.01]**
19/06 • • of resilient material **[1, 2006.01]**
19/08 • Axially-movable sealings for working fluids **[1, 2006.01]**
19/10 • Sealings for working fluids between radially and axially movable parts **[1, 2006.01]**
19/12 • for other than working fluid **[1, 2006.01]**

20/00 Control of, monitoring of, or safety arrangements for, machines or engines [2006.01]
20/02 • specially adapted for several machines or engines connected in series or in parallel **[2006.01]**
20/04 • specially adapted for reversible machines or engines **[2006.01]**
20/06 • specially adapted for stopping, starting, idling or no-load operation **[2006.01]**
20/08 • characterised by varying the rotational speed **[2006.01]**
20/10 • characterised by changing the positions of the inlet or outlet openings with respect to the working chamber **[2006.01]**
20/12 • • using sliding valves **[2006.01]**
20/14 • • using rotating valves **[2006.01]**
20/16 • • using lift valves **[2006.01]**
20/18 • characterised by varying the volume of the working chamber (by changing the positions of inlet or outlet openings F01C 20/10) **[2006.01]**
20/20 • • by changing the form of the inner or outer contour of the working chamber **[2006.01]**
20/22 • • by changing the eccentricity between cooperating members **[2006.01]**
20/24 • characterised by using valves regulating pressure or flow rate, e.g. discharge valves (F01C 20/10 takes precedence) **[2006.01]**

20/26 • • using bypass channels **[2006.01]**

20/28 • Safety arrangements; Monitoring **[2006.01]**

21/00 Component parts, details, or accessories, not provided for in groups F01C 1/00-F01C 20/00 [1, 2006.01]

21/02 • Arrangements of bearings (bearing constructions F16C) **[1, 2006.01]**

21/04 • Lubrication (of machines or engines in general F01M) **[1, 2006.01]**

21/06 • Heating; Cooling (of machines or engines in general F01P); Heat insulation (heat insulation in general F16L) **[1, 2006.01]**

21/08 • Rotary pistons (reciprocating pistons in general F16J) **[1, 2006.01]**

21/10 • Outer members for co-operation with rotary pistons; Casings (casings for rotary engines or machines in general F16M) **[1, 2006.01]**

21/18 • Arrangements for admission or discharge of the working fluid, e.g. constructional features of the inlet or outlet **[2006.01]**