

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

F01 MACHINES OR ENGINES IN GENERAL (combustion engines F02; machines for liquids F03, F04); ENGINE PLANTS IN GENERAL; STEAM ENGINES

F01C ROTARY-PISTON OR OSCILLATING-PISTON MACHINES OR ENGINES (internal-combustion aspects F02B 53/00, F02B 55/00)

- (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”.

MACHINES OR ENGINES

With rotary pistons..... 1/00 7/00
 With oscillating pistons 9/00
 Control; monitoring; safety
 arrangements 20/00

COMBINATIONS OR ADAPTATIONS OF

MACHINES OR ENGINES.....11/00, 13/00
 DRIVE OF CO-OPERATING MEMBERS;
 SEALING ARRANGEMENTS17/00; 19/00
 OTHER DETAILS OR ACCESSORIES21/00

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)

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
- 1/04 . . of internal-axis type
- 1/06 . . of other than internal-axis type (F01C 1/063 takes precedence)
- 1/063 . . with coaxially-mounted members having continuously-changing circumferential spacing between them [3]
- 1/067 . . . having cam-and-follower type drive [3]
- 1/07 . . . having crankshaft-and-connecting-rod type drive [3]
- 1/073 . . . having pawl-and-ratchet type drive [3]
- 1/077 . . . having toothed-gearing type drive [3]

- 1/08 . of intermeshing-engagement type, i.e. with engagement of co-operating members similar to that of toothed gearing
- 1/10 . . of internal-axis type with the outer member having more teeth or tooth-equivalents, e.g. rollers, than the inner member
- 1/107 . . . with helical teeth [3]
- 1/113 . . . the inner member carrying rollers intermeshing with the outer member [3]
- 1/12 . . of other than internal-axis type
- 1/14 . . . with toothed rotary pistons
- 1/16 . . . with helical teeth, e.g. chevron-shaped, screw type
- 1/18 with similar tooth forms (F01C 1/16 takes precedence)
- 1/20 with dissimilar tooth forms (F01C 1/16 takes precedence)
- 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
- 1/24 . of counter-engagement type, i.e. the movement of co-operating members at the points of engagement being in opposite directions
- 1/26 . . of internal-axis type
- 1/28 . . of other than internal-axis type

F01C

- 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
- 1/32 . . having both the movement defined in group F01C 1/02 and relative reciprocation between the co-operating members
- 1/324 . . . with vanes hinged to the inner member and reciprocating with respect to the outer member [3]
- 1/328 and hinged to the outer member [3]
- 1/332 . . . with vanes hinged to the outer member and reciprocating with respect to the inner member [3]
- 1/336 and hinged to the inner member [3]
- 1/34 . . having the movement defined in group F01C 1/08 or F01C 1/22 and relative reciprocation between the co-operating members
- 1/344 . . . with vanes reciprocating with respect to the inner member [3]
- 1/348 the vanes positively engaging, with circumferential play, an outer rotatable member [3]
- 1/352 the vanes being pivoted on the axis of the outer member [3]
- 1/356 . . . with vanes reciprocating with respect to the outer member [3]
- 1/36 . . having both the movements defined in groups F01C 1/22 and F01C 1/24
- 1/38 . . having the movement defined in group F01C 1/02 and having a hinged member (F01C 1/32 takes precedence) [3]
- 1/39 . . . with vanes hinged to the inner as well as to the outer member [3]
- 1/40 . . having the movement defined in group F01C 1/08 or F01C 1/22 and having a hinged member
- 1/44 . . . with vanes hinged to the inner member [3]
- 1/46 . . . with vanes hinged to the outer member [3]
- 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)
 - 3/02 . the axes being arranged at an angle of 90°
 - 3/04 . . with axially-sliding vanes
 - 3/06 . the axes being arranged otherwise than at an angle of 90°
 - 3/08 . . of intermeshing-engagement type, i.e. with engagement of co-operating members similar to that of toothed gearing
- 5/00 Rotary-piston machines or engines with the working-chamber walls at least partly resiliently deformable**
 - 5/02 . the resiliently-deformable wall being part of the inner member, e.g. of a rotary piston
 - 5/04 . the resiliently-deformable wall being part of the outer member, e.g. of a housing
 - 5/06 . the resiliently-deformable wall being a separate member
 - 5/08 . . of tubular form, e.g. hose
- 7/00 Rotary-piston machines or engines with fluid ring or the like**
- 9/00 Oscillating-piston machines or engines**

- 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)
- 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)
 - 13/02 . for driving hand-held tools or the like
 - 13/04 . for driving pumps or compressors
- 17/00 Arrangements for drive of co-operating members, e.g. for rotary piston and casing**
 - 17/02 . of toothed-gearing type (F01C 1/077 takes precedence) [3]
 - 17/04 . of cam-and-follower type (F01C 1/067 takes precedence) [3]
 - 17/06 . using cranks, universal joints, or similar elements (F01C 1/07 takes precedence) [3]
- 19/00 Sealing arrangements in rotary-piston machines or engines** (sealings in general F16J)
 - 19/02 . Radially-movable sealings for working fluids
 - 19/04 . . of rigid material
 - 19/06 . . of resilient material
 - 19/08 . Axially-movable sealings for working fluids
 - 19/10 . Sealings for working fluids between radially and axially movable parts
 - 19/12 . for other than working fluid
- 20/00 Control of, monitoring of, or safety arrangements for, machines or engines [8]**
 - 20/02 . specially adapted for several machines or engines connected in series or in parallel [8]
 - 20/04 . specially adapted for reversible machines or engines [8]
 - 20/06 . specially adapted for stopping, starting, idling or no-load operation [8]
 - 20/08 . characterised by varying the rotational speed [8]
 - 20/10 . characterised by changing the positions of the inlet or outlet openings with respect to the working chamber [8]
 - 20/12 . . using sliding valves [8]
 - 20/14 . . using rotating valves [8]
 - 20/16 . . using lift valves [8]
 - 20/18 . characterised by varying the volume of the working chamber (by changing the positions of inlet or outlet openings F01C 20/10) [8]
 - 20/20 . . by changing the form of the inner or outer contour of the working chamber [8]
 - 20/22 . . by changing the eccentricity between cooperating members [8]
 - 20/24 . characterised by using valves regulating pressure or flow rate, e.g. discharge valves (F01C 20/10 takes precedence) [8]
 - 20/26 . . using bypass channels [8]
 - 20/28 . Safety arrangements; Monitoring [8]
- 21/00 Component parts, details, or accessories, not provided for in groups F01C 1/00 F01C 20/00**
 - 21/02 . Arrangements of bearings (bearing constructions F16C)
 - 21/04 . Lubrication (of machines or engines in general F01M)
 - 21/06 . Heating; Cooling (of machines or engines in general F01P); Heat insulation (heat insulation in general F16L)

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| 21/08 | · Rotary pistons (reciprocating pistons in general F16J) | 21/18 | · Arrangements for admission or discharge of the |
| 21/10 | · Outer members for co-operation with rotary pistons;
Casings (casings for rotary engines or machines in
general F16M) | | working fluid, e.g. constructional features of the inlet
or outlet [8] |