Symbol	Typ	Titel
F	**Sektion**	**SECTION F — MECHANICAL ENGINEERING; LIGHTING; HEATING; WEAPONS; BLASTING**
F04	**Klasse**	**POSITIVE-DISPLACEMENT MACHINES FOR LIQUIDS; PUMPS FOR LIQUIDS OR ELASTIC FLUIDS (portable fire extinguishers with manually-operated pumps A62C 11/00, with power-driven pumps A62C 25/00; charging or scavenging combustion engines by pumps F02B; engine fuel-injection pumps F02M; ion pumps H01J 41/12; electrodynamic pumps H02K 44/02)**
F04C	**Unterklasse**	**ROTARY-PISTON, OR OSCILLATING-PISTON, POSITIVE-DISPLACEMENT MACHINES FOR LIQUIDS (engines F03C); ROTARY-PISTON, OR OSCILLATING-PISTON, POSITIVE-DISPLACEMENT PUMPS**
F04C 2/00	**Hauptgruppe**	**Rotary-piston machines or pumps (with non-parallel axes of co-operating members F04C 3/00; with the working-chamber walls at least partly resiliently deformable F04C 5/00; with fluid ring or the like F04C 7/00; rotary-piston pumps specially adapted for elastic fluids F04C 18/00, F04C 19/00; rotary-piston machines or pumps in which the working-fluid is exclusively displaced by, or exclusively displaces, one or more reciprocating pistons F04B) [3]**
F04C 2/02	1-Punkt Untergruppe	. 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 [3]
F04C 2/04	2-Punkt Untergruppe	. . of internal-axis type [3]
F04C 2/06	2-Punkt Untergruppe	. . of other than internal-axis type (F04C 2/063 takes precedence) [3]
F04C 2/063	2-Punkt Untergruppe	. . with coaxially-mounted members having continuously-changing circumferential spacing between them [3]
F04C 2/067	3-Punkt Untergruppe	. . . having cam-and-follower type drive [3]
F04C 2/07	3-Punkt Untergruppe	. . . having crankshaft-and-connecting-rod type drive [3]
F04C 2/073	3-Punkt Untergruppe	. . . having pawl-and-ratchet type drive [3]
F04C 2/077	3-Punkt Untergruppe	. . . having toothed-gearing type drive [3]
F04C 2/08	1-Punkt Untergruppe	. of intermeshing-engagement type, i.e. with engagement of co-operating members similar to that of toothed gearing [3]
F04C 2/10	2-Punkt Untergruppe	. . of internal-axis type with the outer member having more teeth or tooth-equivalents, e.g. rollers, than the inner member [3]
F04C 2/107	3-Punkt Untergruppe	. . . with helical teeth [3]
F04C 2/113	3-Punkt Untergruppe	. . . the inner member carrying rollers intermeshing with the outer member [3]
F04C 2/12	2-Punkt Untergruppe	. . of other than internal-axis type [3]
F04C 2/14	3-Punkt Untergruppe	. . . with toothed rotary pistons [3]
F04C 2/16	4-Punkt Untergruppe	. . . . with helical teeth, e.g. chevron-shaped, screw type [3]
F04C 2/18	4-Punkt Untergruppe	. . . . with similar tooth forms (F04C 2/16 takes precedence) [3]
F04C 2/20	4-Punkt Untergruppe	. . . . with dissimilar tooth forms (F04C 2/16 takes precedence) [3]
F04C 2/22	1-Punkt Untergruppe	. 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 [3]
F04C 2/24	1-Punkt Untergruppe	. of counter-engagement type, i.e. the movement of co-operating members at the points of engagement being in opposite directions [3]

Symbol	Typ	Titel
F04C 2/26	2-Punkt Untergruppe	. . of internal-axis type [3]
F04C 2/28	2-Punkt Untergruppe	. . of other than internal-axis type [3]
F04C 2/30	1-Punkt Untergruppe	. having the characteristics covered by two or more of groups F04C 2/02, F04C 2/08, F04C 2/22, F04C 2/24 or having the characteristics covered by one of these groups together with some other type of movement between co-operating members [3]
F04C 2/32	2-Punkt Untergruppe	. . having both the movement defined in group F04C 2/02 and relative reciprocation between the co-operating members [3]
F04C 2/324	3-Punkt Untergruppe	. . . with vanes hinged to the inner member and reciprocating with respect to the outer member [3]
F04C 2/328	4-Punkt Untergruppe	. . . . and hinged to the outer member [3]
F04C 2/332	3-Punkt Untergruppe	. . . with vanes hinged to the outer member and reciprocating with respect to the inner member [3]
F04C 2/336	4-Punkt Untergruppe	. . . . and hinged to the inner member [3]
F04C 2/34	2-Punkt Untergruppe	. . having the movement defined in group F04C 2/08 or F04C 2/22 and relative reciprocation between the co-operating members [3]
F04C 2/344	3-Punkt Untergruppe	. . . with vanes reciprocating with respect to the inner member [3]
F04C 2/348	4-Punkt Untergruppe	. . . . the vanes positively engaging, with circumferential play, an outer rotatable member [3]
F04C 2/352	4-Punkt Untergruppe	. . . . the vanes being pivoted on the axis of the outer member [3]
F04C 2/356	3-Punkt Untergruppe	. . . with vanes reciprocating with respect to the outer member [3]
F04C 2/36	2-Punkt Untergruppe	. . having both the movements defined in groups F04C 2/22 and F04C 2/24 [3]
F04C 2/38	2-Punkt Untergruppe	. . having the movement defined in group F04C 2/02 and having a hinged member (F04C 2/32 takes precedence) [3]
F04C 2/39	3-Punkt Untergruppe	. . . with vanes hinged to the inner as well as to the outer member [3]
F04C 2/40	2-Punkt Untergruppe	. . having the movement defined in group F04C 2/08 or F04C 2/22 and having a hinged member [3]
F04C 2/44	3-Punkt Untergruppe	. . . with vanes hinged to the inner member [3]
F04C 2/46	3-Punkt Untergruppe	. . . with vanes hinged to the outer member [3]
F04C 3/00	**Hauptgruppe**	**Rotary-piston machines or pumps, with non-parallel axes of movement of co-operating members, e.g. of screw type (with the working-chamber walls at least partly resiliently deformable F04C 5/00; rotary-piston pumps with non-parallel axes of movement of co-operating members specially adapted for elastic fluids F04C 18/48)**
F04C 3/02	1-Punkt Untergruppe	. the axes being arranged at an angle of 90 degrees [5]
F04C 3/04	2-Punkt Untergruppe	. . of intermeshing engagement type, i.e. with engagement of co-operating members similar to that of toothed gearing [5]
F04C 3/06	1-Punkt Untergruppe	. the axes being arranged otherwise than at an angle of 90 degrees [5]
F04C 3/08	2-Punkt Untergruppe	. . of intermeshing engagement type, i.e. with engagement of co-operating members similar to that of toothed gearing [5]
F04C 5/00	**Hauptgruppe**	**Rotary-piston machines or pumps with the working-chamber walls at least partly resiliently deformable (such pumps specially adapted for elastic fluids F04C 18/00)**
F04C 7/00	**Hauptgruppe**	**Rotary-piston machines or pumps with fluid ring or the like (such pumps specially adapted for elastic fluids F04C 19/00)**
F04C 9/00	**Hauptgruppe**	**Oscillating-piston machines or pumps (such pumps specially adapted for elastic fluids F04C 21/00)**
F04C 11/00	**Hauptgruppe**	**Combinations of two or more machines or pumps, each being of rotary-piston or oscillating-piston**

Symbol	Typ	Titel
		type (combinations of such pumps specially adapted for elastic fluids F04C 23/00); Pumping installations (F04C 13/00 takes precedence; specially adapted for elastic fluids F04C 23/00; fluid gearing F16H)
F04C 13/00	**Hauptgruppe**	**Adaptations of machines or pumps for special use, e.g. for extremely high pressures (of pumps specially adapted for elastic fluids F04C 25/00)**
F04C 14/00	***Hauptgruppe***	***Control of, monitoring of, or safety arrangements for, machines, pumps or pumping installations (of pumps or pumping installations specially adapted for elastic fluids F04C 28/00) [2006.01]***
F04C 14/02	*1-Punkt Untergruppe*	*. specially adapted for several machines or pumps connected in series or in parallel [2006.01]*
F04C 14/04	*1-Punkt Untergruppe*	*. specially adapted for reversible machines or pumps [2006.01]*
F04C 14/06	*1-Punkt Untergruppe*	*. specially adapted for stopping, starting, idling or no-load operation [2006.01]*
F04C 14/08	*1-Punkt Untergruppe*	*. characterised by varying the rotational speed [2006.01]*
F04C 14/10	*1-Punkt Untergruppe*	*. characterised by changing the positions of the inlet or outlet openings with respect to the working chamber [2006.01]*
F04C 14/12	*2-Punkt Untergruppe*	*. . using sliding valves [2006.01]*
F04C 14/14	*2-Punkt Untergruppe*	*. . using rotating valves [2006.01]*
F04C 14/16	*2-Punkt Untergruppe*	*. . using lift valves [2006.01]*
F04C 14/18	*1-Punkt Untergruppe*	*. characterised by varying the volume of the working chamber (by changing the positions of inlet or outlet openings F04C 14/10) [2006.01]*
F04C 14/20	*2-Punkt Untergruppe*	*. . by changing the form of the inner or outer contour of the working chamber [2006.01]*
F04C 14/22	*2-Punkt Untergruppe*	*. . by changing the eccentricity between cooperating members [2006.01]*
F04C 14/24	*1-Punkt Untergruppe*	*. characterised by using valves regulating pressure or flow rate, e.g. discharge valves (F04C 14/10 takes precedence) [2006.01]*
F04C 14/26	*2-Punkt Untergruppe*	*. . using bypass channels [2006.01]*
F04C 14/28	*1-Punkt Untergruppe*	*. Safety arrangements ; Monitoring [2006.01]*
F04C 15/00	***Hauptgruppe***	***Component parts, details or accessories of machines, pumps or pumping installations, not provided for in groups F04C 2/00-F04C 14/00 (of pumps specially adapted for elastic fluids F04C 18/00-F04C 29/00) [1, 2006.01]***
F04C 15/02	Gelöscht	(transferred to F04C 14/00; F04C 15/06)
F04C 15/04	Gelöscht	(transferred to F04C 14/00)
F04C 15/06	*1-Punkt Untergruppe*	*. Arrangements for admission or discharge of the working fluid, e.g. constructional features of the inlet or outlet [2006.01]*
		Pumps specially adapted for elastic fluids
F04C 18/00	**Hauptgruppe**	**Rotary-piston pumps specially adapted for elastic fluids (with fluid ring or the like F04C 19/00; rotary-piston pumps in which the working-fluid is exclusively displaced by one or more reciprocating pistons F04B) [3]**
F04C 18/02	1-Punkt Untergruppe	. 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 [3]
F04C 18/04	2-Punkt Untergruppe	. . of internal-axis type [3]
F04C 18/06	2-Punkt Untergruppe	. . of other than internal-axis type (F04C 18/063 takes precedence) [3]
F04C 18/063	2-Punkt Untergruppe	. . with coaxially-mounted members having continuously-changing circumferential spacing between them [3]
F04C 18/067	3-Punkt Untergruppe	. . . having cam-and-follower type drive [3]

Symbol	Typ	Titel
F04C 18/07	3-Punkt Untergruppe	. . . having crankshaft-and-connecting-rod type drive [3]
F04C 18/073	3-Punkt Untergruppe	. . . having pawl-and-ratchet type drive [3]
F04C 18/077	3-Punkt Untergruppe	. . . having toothed-gearing type drive [3]
F04C 18/08	1-Punkt Untergruppe	. of intermeshing-engagement type, i.e. with engagement of co-operating members similar to that of toothed gearing [3]
F04C 18/10	2-Punkt Untergruppe	. . of internal-axis type with the outer member having more teeth or tooth-equivalents, e.g. rollers, than the inner member [3]
F04C 18/107	3-Punkt Untergruppe	. . . with helical teeth [3]
F04C 18/113	3-Punkt Untergruppe	. . . the inner member carrying rollers intermeshing with the outer member [3]
F04C 18/12	2-Punkt Untergruppe	. . of other than internal-axis type [3]
F04C 18/14	3-Punkt Untergruppe	. . . with toothed rotary pistons [3]
F04C 18/16	4-Punkt Untergruppe	. . . . with helical teeth, e.g. chevron-shaped, screw type [3]
F04C 18/18	4-Punkt Untergruppe	. . . . with similar tooth forms (F04C 18/16 takes precedence) [3]
F04C 18/20	4-Punkt Untergruppe	. . . . with dissimilar tooth forms (F04C 18/16 takes precedence) [3]
F04C 18/22	1-Punkt Untergruppe	. 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 [3]
F04C 18/24	1-Punkt Untergruppe	. of counter-engagement type, i.e. the movement of co-operating members at the points of engagement being in opposite directions [3]
F04C 18/26	2-Punkt Untergruppe	. . of internal-axis type [3]
F04C 18/28	2-Punkt Untergruppe	. . of other than internal-axis type [3]
F04C 18/30	1-Punkt Untergruppe	. having the characteristics covered by two or more of groups F04C 18/02, F04C 18/08, F04C 18/22, F04C 18/24, F04C 18/48, or having the characteristics covered by one of these groups together with some other type of movement between co-operating members [3]
F04C 18/32	2-Punkt Untergruppe	. . having both the movement defined in group F04C 18/02 and relative reciprocation between the co-operating members [3]
F04C 18/324	3-Punkt Untergruppe	. . . with vanes hinged to the inner member and reciprocating with respect to the outer member [3]
F04C 18/328	4-Punkt Untergruppe	. . . . and hinged to the outer member [3]
F04C 18/332	3-Punkt Untergruppe	. . . with vanes hinged to the outer member and reciprocating with respect to the inner member [3]
F04C 18/336	4-Punkt Untergruppe	. . . . and hinged to the inner member [3]
F04C 18/34	2-Punkt Untergruppe	. . having the movement defined in group F04C 18/08 or F04C 18/22 and relative reciprocation between the co-operating members [3]
F04C 18/344	3-Punkt Untergruppe	. . . with vanes reciprocating with respect to the inner member [3]
F04C 18/348	4-Punkt Untergruppe	. . . . the vanes positively engaging, with circumferential play, an outer rotatable member [3]
F04C 18/352	4-Punkt Untergruppe	. . . . the vanes being pivoted on the axis of the outer member [3]
F04C 18/356	3-Punkt Untergruppe	. . . with vanes reciprocating with respect to the outer member [3]
F04C 18/36	2-Punkt Untergruppe	. . having both the movements defined in groups F04C 18/22 and F04C 18/24 [3]

Symbol	Typ	Titel
F04C 18/38	2-Punkt Untergruppe	. . having the movement defined in group F04C 18/02 and having a hinged member (F04C 18/32 takes precedence) [3]
F04C 18/39	3-Punkt Untergruppe	. . . with vanes hinged to the inner as well as to the outer member [3]
F04C 18/40	2-Punkt Untergruppe	. . having the movement defined in group F04C 18/08 or F04C 18/22 and having a hinged member [3]
F04C 18/44	3-Punkt Untergruppe	. . . with vanes hinged to the inner member [3]
F04C 18/46	3-Punkt Untergruppe	. . . with vanes hinged to the outer member [3]
F04C 18/48	1-Punkt Untergruppe	. Rotary-piston pumps with non-parallel axes of movement of co-operating members [5]
F04C 18/50	2-Punkt Untergruppe	. . the axes being arranged at an angle of 90 degrees [5]
F04C 18/52	3-Punkt Untergruppe	. . . of intermeshing engagement type, i.e. with engagement of co-operating members similar to that of toothed gearing [5]
F04C 18/54	2-Punkt Untergruppe	. . the axes being arranged otherwise than at an angle of 90 degrees [5]
F04C 18/56	3-Punkt Untergruppe	. . . of intermeshing engagement type, i.e. with engagement of co-operating members similar to that of toothed gearing [5]
F04C 19/00	**Hauptgruppe**	**Rotary-piston pumps with fluid ring or the like, specially adapted for elastic fluids**
F04C 21/00	**Hauptgruppe**	**Oscillating-piston pumps specially adapted for elastic fluids**
F04C 23/00	**Hauptgruppe**	**Combinations of two or more pumps, each being of rotary-piston or oscillating-piston type, specially adapted for elastic fluids; Pumping installations specially adapted for elastic fluids; Multi-stage pumps specially adapted for elastic fluids (F04C 25/00 takes precedence)**
F04C 23/02	1-Punkt Untergruppe	. Pumps characterised by combination with, or adaptation to, specific driving engines or motors (predominant aspects of the engines or motors, see the relevant classes)
F04C 25/00	**Hauptgruppe**	**Adaptations for special use of pumps for elastic fluids**
F04C 25/02	1-Punkt Untergruppe	. for producing high vacuum (sealing arrangements F04C 27/00; silencing F04C 29/06)
F04C 27/00	**Hauptgruppe**	**Sealing arrangements in rotary-piston pumps specially adapted for elastic fluids**
F04C 27/02	1-Punkt Untergruppe	. Liquid sealing for high-vacuum pumps
F04C 28/00	***Hauptgruppe***	***Control of, monitoring of, or safety arrangements for, pumps or pumping installations specially adapted for elastic fluids [2006.01]***
F04C 28/02	*1-Punkt Untergruppe*	*. specially adapted for several pumps connected in series or in parallel [2006.01]*
F04C 28/04	*1-Punkt Untergruppe*	*. specially adapted for reversible pumps [2006.01]*
F04C 28/06	*1-Punkt Untergruppe*	*. specially adapted for stopping, starting, idling or no-load operation [2006.01]*
F04C 28/08	*1-Punkt Untergruppe*	*. characterised by varying the rotational speed [2006.01]*
F04C 28/10	*1-Punkt Untergruppe*	*. characterised by changing the positions of the inlet or outlet openings with respect to the working chamber [2006.01]*
F04C 28/12	*2-Punkt Untergruppe*	*. . using sliding valves [2006.01]*
F04C 28/14	*2-Punkt Untergruppe*	*. . using rotating valves [2006.01]*
F04C 28/16	*2-Punkt Untergruppe*	*. . using lift valves [2006.01]*
F04C 28/18	*1-Punkt Untergruppe*	*. characterised by varying the volume of the working chamber (by changing the positions of inlet or outlet openings F04C 28/10) [2006.01]*
F04C 28/20	*2-Punkt Untergruppe*	*. . by changing the form of the inner or outer contour of the working chamber [2006.01]*

Symbol	Typ	Titel
F04C 28/22	*2-Punkt Untergruppe*	*. . by changing the eccentricity between cooperating members [2006.01]*
F04C 28/24	*1-Punkt Untergruppe*	*. characterised by using valves regulating pressure or flow rate, e.g. discharge valves (F04C 28/10 takes precedence) [2006.01]*
F04C 28/26	*2-Punkt Untergruppe*	*. . using bypass channels [2006.01]*
F04C 28/28	*1-Punkt Untergruppe*	*. Safety arrangements ; Monitoring [2006.01]*
F04C 29/00	**Hauptgruppe**	**Component parts, details, or accessories, of pumps or pumping installations specially adapted for elastic fluids, not provided for in groups F04C 18/00-F04C 28/00**
F04C 29/02	1-Punkt Untergruppe	. Lubrication (of machines or engines in general F01M); Lubricant separation (separation in general B01D)
F04C 29/04	1-Punkt Untergruppe	. Heating; Cooling (of machines or engines in general F01P); Heat insulation (heat insulation in general F16L 59/00)
F04C 29/06	1-Punkt Untergruppe	. Silencing (gas-flow silencers or exhaust apparatus for machines or engines in general F01N)
F04C 29/08	Gelöscht	(transferred to F04C 28/00; F04C 29/12)
F04C 29/10	Gelöscht	(transferred to F04C 28/00)
F04C 29/12	*1-Punkt Untergruppe*	*. Arrangements for admission or discharge of the working fluid, e.g. constructional features of the inlet or outlet [2006.01]*