

F04 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)

F04F PUMPING OF FLUID BY DIRECT CONTACT OF ANOTHER FLUID OR BY USING INERTIA OF FLUID TO BE PUMPED (containers or packages with special means for dispensing liquid or semi-liquid contents by internal gaseous pressure B65D 83/14); **SIPHONS** [2]

- (1) Attention is drawn to the Notes preceding class F01.
 (2) Combinations of pumps covered by this subclass with other pumps are only classified in this subclass if such other pumps are intended for preliminary pumping for diffusion pumps.

PUMPS USING PRESSURE OR FLOW OF ANOTHER FLUID	1/00, 5/00	DIFFUSION PUMPS, e.g. WITH FORE PUMPS	9/00
PUMPS USING NEGATIVE PRESSURE; PUMPS USING INERTIA OF THE FLUID	1/00, 3/00; 7/00	SIPHONS; OTHER PUMPS	10/00; 11/00
		JET-PUMP INSTALLATIONS	5/54

1/00	Pumps using positively or negatively pressurised fluid medium acting directly on the liquid to be pumped (using only negative pressure F04F 3/00; jet pumps F04F 5/00; siphons F04F 10/00)	5/18	. . . for compressing
1/02	. using both positively and negatively pressurised fluid medium, e.g. alternating	5/20	. . . for evacuating
1/04	. . generated by vaporising and condensing	5/22	. . . of multi-stage type
1/06	. the fluid medium acting on the surface of the liquid to be pumped (F04F 1/02 takes precedence)	5/24	. . displacing liquids, e.g. containing solids, or liquids and elastic fluids
1/08	. . specially adapted for raising liquids from great depths, e.g. in wells	5/26	. . . of multi-stage type (F04F 5/28 takes precedence)
1/10	. . of multiple type, e.g. with two or more units in parallel (F04F 1/08 takes precedence)	5/28	. . . Restarting of inducing action
1/12	. . . in series	5/30	. . . with axially-slidable combining nozzle
1/14	. . adapted to pump specific liquids, e.g. corrosive or hot liquids	5/32	. . . with hinged flap in combining nozzle
1/16	. . characterised by the fluid medium being suddenly pressurised, e.g. by explosion	5/34	. . characterised by means for changing inducing-fluid source
1/18	. the fluid medium being mixed with, or generated from, the liquid to be pumped	5/36	. . characterised by using specific inducing fluid
1/20	. . specially adapted for raising liquids from great depths, e.g. in wells	5/38	. . . the inducing fluid being mercury vapour
3/00	Pumps using negative pressure acting directly on the liquid to be pumped (siphons F04F 10/00)	5/40	. . . the inducing fluid being oil vapour
5/00	Jet pumps, i.e. devices in which fluid flow is induced by pressure drop caused by velocity of another fluid flow (diffusion pumps F04F 9/00; combination of jet pumps with pumps of other than jet type F04B; use of jet pumps for priming or boosting non-positive-displacement pumps F04D)	5/42	. characterised by the input flow of inducing fluid medium being radial or tangential to output flow (cyclones B04C)
5/02	. the inducing fluid being liquid	5/44	. Component parts, details, or accessories not provided for in, or of interest apart from, groups F04F 5/02 F04F 5/42
5/04	. . displacing elastic fluids	5/46	. . Arrangements of nozzles
5/06	. . . of rotary type	5/48	. . Control
5/08	. . . the elastic fluid being entrained in a free-falling column of liquid	5/50	. . . of compressing pumps
5/10	. . displacing liquids, e.g. containing solids, or liquids and elastic fluids	5/52	. . . of evacuating pumps
5/12	. . . of multi-stage type	5/54	. Installations characterised by use of jet pumps, e.g. combinations of two or more jet pumps of different type
5/14	. the inducing fluid being elastic fluid	7/00	Pumps displacing fluids by using inertia thereof, e.g. by generating vibrations therein
5/16	. . displacing elastic fluids	7/02	. Hydraulic rams
		9/00	Diffusion pumps
		9/02	. of multi-stage type
		9/04	. in combination with fore pumps, e.g. use of isolating valves
		9/06	. Arrangement of vapour traps
		9/08	. Control

F04F

- 10/00 Siphons**
- 10/02 . Gravity-actuated siphons

- 11/00 Other pumps** (evacuating by sorption F04B)
- 11/02 . Pressure exchangers **[3]**