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

F04 POSITIVE-DISPLACEMENT MACHINES FOR LIQUIDS; PUMPS FOR LIQUIDS OR ELASTIC FLUIDS

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]

Note(s)

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.

Subclass index

PUMPS USING PRESSURE OR FLOW OF ANOTHER FLUID.....1/00, 5/00
PUMPS USING NEGATIVE PRESSURE; PUMPS USING INERTIA OF THE FLUID.....1/00, 3/00, 7/00
DIFFUSION PUMPS, e.g. WITH FORE PUMPS.....9/00
SIPHONS; OTHER PUMPS.....10/00, 99/00
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) **[1, 2006.01]**

1/02 • using both positively and negatively pressurised fluid medium, e.g. alternating **[1, 2006.01]**

1/04 • • generated by vaporising and condensing **[1, 2006.01]**

1/06 • the fluid medium acting on the surface of the liquid to be pumped (F04F 1/02 takes precedence) **[1, 2006.01]**

1/08 • • specially adapted for raising liquids from great depths, e.g. in wells **[1, 2006.01]**

1/10 • • of multiple type, e.g. with two or more units in parallel (F04F 1/08 takes precedence) **[1, 2006.01]**

1/12 • • • in series **[1, 2006.01]**

1/14 • • adapted to pump specific liquids, e.g. corrosive or hot liquids **[1, 2006.01]**

1/16 • • characterised by the fluid medium being suddenly pressurised, e.g. by explosion **[1, 2006.01]**

1/18 • the fluid medium being mixed with, or generated from, the liquid to be pumped **[1, 2006.01]**

1/20 • • specially adapted for raising liquids from great depths, e.g. in wells **[1, 2006.01]**

3/00 Pumps using negative pressure acting directly on the liquid to be pumped (siphons F04F 10/00) **[1, 2006.01]**

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) **[1, 2006.01]**

5/02 • the inducing fluid being liquid **[1, 2006.01]**

5/04 • • displacing elastic fluids **[1, 2006.01]**

5/06 • • • of rotary type **[1, 2006.01]**

5/08 • • • the elastic fluid being entrained in a free-falling column of liquid **[1, 2006.01]**

5/10 • • displacing liquids, e.g. containing solids, or liquids and elastic fluids **[1, 2006.01]**

5/12 • • • of multi-stage type **[1, 2006.01]**

5/14 • the inducing fluid being elastic fluid **[1, 2006.01]**

5/16 • • displacing elastic fluids **[1, 2006.01]**

5/18 • • • for compressing **[1, 2006.01]**

5/20 • • • for evacuating **[1, 2006.01]**

5/22 • • • • of multi-stage type **[1, 2006.01]**

5/24 • • displacing liquids, e.g. containing solids, or liquids and elastic fluids **[1, 2006.01]**

5/26 • • • of multi-stage type (F04F 5/28 takes precedence) **[1, 2006.01]**

5/28 • • • Restarting of inducing action **[1, 2006.01]**

5/30 • • • • with axially-slidable combining nozzle **[1, 2006.01]**

5/32 • • • • with hinged flap in combining nozzle **[1, 2006.01]**

5/34 • • characterised by means for changing inducing-fluid source **[1, 2006.01]**

5/36 • • characterised by using specific inducing fluid **[1, 2006.01]**

5/38 • • • the inducing fluid being mercury vapour **[1, 2006.01]**

5/40 • • • the inducing fluid being oil vapour **[1, 2006.01]**

5/42 • characterised by the input flow of inducing fluid medium being radial or tangential to output flow (cyclones B04C) **[1, 2006.01]**

5/44 • Component parts, details, or accessories not provided for in, or of interest apart from, groups F04F 5/02-F04F 5/42 **[1, 2006.01]**
5/46 • • Arrangements of nozzles **[1, 2006.01]**
5/48 • • Control **[1, 2006.01]**
5/50 • • • of compressing pumps **[1, 2006.01]**
5/52 • • • of evacuating pumps **[1, 2006.01]**
5/54 • Installations characterised by use of jet pumps, e.g. combinations of two or more jet pumps of different type **[1, 2006.01]**

7/00 Pumps displacing fluids by using inertia thereof, e.g. by generating vibrations therein [1, 2006.01]
7/02 • Hydraulic rams **[1, 2006.01]**

9/00 Diffusion pumps [1, 2006.01]
9/02 • of multi-stage type **[1, 2006.01]**
9/04 • in combination with fore pumps, e.g. use of isolating valves **[1, 2006.01]**
9/06 • Arrangement of vapour traps **[1, 2006.01]**
9/08 • Control **[1, 2006.01]**

10/00 Siphons [1, 2006.01]
10/02 • Gravity-actuated siphons **[1, 2006.01]**

13/00 Pressure exchangers [2009.01]

99/00 Subject matter not provided for in other groups of this subclass [2009.01]