

**60**                    **Regulatorer för motorer; Servomotorer för allmänna ändamål**                    **[-69]**

**60**                    **(IPC: F15) Fluid-pressure actuators; Hydraulics or pneumatics in general**                    **[69-]**

**60**                    **Regulatorer för motorer; Servomotorer; Kopplingssystem för servomotorer**                    **[-69]**

**60a**                    **(IPC: F15B) Systems acting by means of fluids in general; Fluid-pressure actuators; Details of fluid-pressure systems not otherwise provided for**                    **[69-]**

**60b**                    **(IPC: F15C) Fluid-circuit elements predominantly used for computing or control purposes**                    **[69-]**

**60c**                    **(IPC: F15D) Fluid dynamics**                    **[69-]**

**60**                    **Regulatorer för motorer (automatiska reglerapparater 42q, 42r); Servomotorer [ställmotorer]; Kopplingssystem för servomotorer**                    **[-69]**

60-1                    Anordningar för överföring av reglerrörelsen; Spjällställare; Katarakter; Strypanordningar; Regleranordningar                    [-69]

60-2                    Fjäderbelastade regulatorer                    [-69]

60-3                    Viktbelastade regulatorer                    [-69]

60-4                    Regulatorer med vikter förskjutbara på pendelarmar                    [-69]

60-5                    Obelastade pendelregulatorer                    [-69]

60-6                    Speciella pendelregulatorer, t.ex. med kulor, med gyroskopverkan eller med hydrauliska svängmassor                    [-69]

60-7                    Effektregulatorer                    [-69]

60-8                    Motståndsregulatorer (46e-7; 51d-18; 83a-62)                    [-69]

60-9                    Bromsregulatorer                    [-69]

60-10                    Regulatorer med utlösninganordningar                    [-69]

60-11                    Regulatorer med av trögheten påverkade eftergivande drivna vikter                    [-69]

60-12                    Regulatorer för fartygsmaskiner (som påverkas av fartygets rörelse 65f2-4)                    [-69]

60-13                    Differentialregulatorer; Dynamometriska regulatorer                    [-69]

60-14                    Regulatorer med pumpverkan, t.ex. fungerande som mängdregulatorer eller tryckregulatorer                    [-69]

60-15                    Överföringsanordningar; Drivning med servomotorer                    [-69]

60-16                    Regulatorer för vattenmotorer                    [-69]

60-17                    Indirekta regulatorer med spärrverk                    [-69]

60-18                    Indirekta regulatorer med anordningar för omkastning eller inkoppling                    [-69]

60-19                    Speciella indirekta regulatorer                    [-69]

60-20                    Elektriska regulatorer; Elektriska anordningar för överföring av reglerrörelsen (21d1-43; 21d1-44)                    [-69]

60-21                    Axelregulatorer                    [-69]

60-22                    Andra specialutföranden av regulatorer                    [-69]

60-30                    Servomotorer [ställmotorer] för allmänna ändamål (med stångsystem jämförbara hydrauliska eller pneumatiska rörelseöverföringssystem 47h-22; som hjälpapparater i regulatorer 42r-4)                    [52-]

60-35                    Kopplingssystem för servomotorer (kopplingssystem för automatiska reglerapparater för allmänna ändamål 42q, 42r)                    [52-]

**60a (IPC: F15B) Systems acting by means of fluids in general; Fluid-pressure actuators, e.g. servomotors; Details of fluid-pressure systems not otherwise provided for** (motors, turbines, compressors, blowers, pumps 14, 27, 46, 59; fluid dynamics 60c; fluid clutches or brakes 47c; fluid springs 47a3; fluid gearing 47h; pistons, cylinders, packing 47f2; valves, taps, cocks, actuating-floats 47g1; safety valves with auxiliary fluid operation of the main valve 47g1-17/10; fluid-operating means for valves 47g1-31/12; pipes, pipe joints 47f1; lubricating 47e) **[69-]**

**Note:**

**In this subclass, the following terms are used with the meaning stated:**

**(a) "Telemotor" means a system or device in which a substantially constant amount of fluid is trapped between an input member and an output member to act as a fluid link.**

**(b) "Servomotor" means a fluid-pressure actuator, e.g. a piston and cylinder, directly controlled by a valve or other device which is responsive to operation of an initial controlling member; "Servomotor" does not cover a telemotor. The initial controlling member may be adjacent to the servomotor or at a distance, and may be, for example, a hand lever.** **[69-]**

**60a-1/00 Installations for supplying fluid under pressure; Sumps** **[69-]**  
60a-1/02 . Accumulator installations **[69-]**  
60a-1/04 . . Accumulators **[69-]**  
60a-1/06 . Supply reservoir or sump assemblies **[69-]**

**60a-3/00 Intensifiers or fluid-pressure converters, e.g. pressure exchangers; Conveying pressure from one fluid system to another, without contact between the fluids** **[69-]**

**60a-5/00 Transducers converting variations of physical quantities, e.g. expressed by variations in positions of members, into fluid-pressure variations or vice-versa; Varying fluid pressure as a function of variations of a plurality of fluid pressures or variations of other quantities** (60a-9/00 takes precedence; for measuring or controlling 42) **[69-]**

**Fluid-pressure actuator systems** (distribution devices 60a-13/02; systems peculiar to the control of a particular machine or apparatus covered in a single other class, see the class for such machine or apparatus) **[69-]**

**Note:**

**This heading relates to moving members into one or more definite positions by means of fluid pressure. Pump, motor, and control features so far as not peculiar to this purpose are classified in the relevant classes.** **[69-]**

**60a-7/00 Systems in which the movement produced is definitely related to the output of a volumetric pump; Telemotors** **[69-]**

60a-7/02 . Systems with continuously-operating input and output apparatus **[69-]**  
60a-7/04 . in which the ratio between pump stroke and motor stroke varies with the resistance against the motor (in brake-actuating systems for motor vehicles 63c) **[69-]**  
60a-7/06 . Details (60a-15/00 takes precedence) **[69-]**  
60a-7/08 . . Input units; Master units **[69-]**  
60a-7/10 . . Compensation of the liquid content in a system (60a-7/08 takes precedence) **[69-]**

**60a-9/00 Servomotors with follow-up action, i.e. in which the position of the actuated member conforms with that of the controlling member** **[69-]**

60a-9/02 . with servomotors of the reciprocable or oscillatable type **[69-]**

60a-9/03	. . with electrical control means	[69-]
60a-9/04	. . controlled by varying the output of a pump with variable capacity	[69-]
60a-9/06	. . controlled by means using a fluid jet	[69-]
60a-9/07	. . . with electrical control means	[69-]
60a-9/08	. . controlled by valves affecting the fluid feed or the fluid outlet of the servomotor (9/06 takes precedence)	[69-]
60a-9/09	. . . with electrical control means	[69-]
60a-9/10	. . . in which the controlling element and the servomotor each controls a separate member, these members influencing different fluid passages or the same passage	[69-]
60a-9/12	. . . in which both the controlling element and the servomotor control the same member influencing a fluid passage and are connected to that member by means of a differential gearing	[69-]
60a-9/14	. with rotary servomotors	[69-]
60a-9/16	. Systems essentially having two or more interacting servomotors	[69-]
60a-9/17	. . with electrical control means	[69-]
<b>60a-11/00</b>	<b>Servomotor systems without provision for follow-up action (60a-3/00 takes precedence)</b>	<b>[69-]</b>
60a-11/02	. Systems essentially incorporating special features for controlling the speed or actuating force of an output member	[69-]
60a-11/04	. . for controlling the speed	[69-]
60a-11/05	. . . specially adapted to maintain constant speed	[69-]
60a-11/06	. involving features specific to the use of a compressible medium, e.g. air, steam	[69-]
60a-11/08	. with only one servomotor	[69-]
60a-11/10	. . in which the servomotor position is a function of the pressure	[69-]
60a-11/12	. . providing distinct intermediate positions; with step-by-step action	[69-]
60a-11/14	. . without special provision for intermediate position	[69-]
60a-11/15	. . with special provision for automatic return	[69-]
60a-11/16	. with two or more servomotors	[69-]
60a-11/18	. . used in combination for obtaining stepwise operation of a single controlled member	[69-]
60a-11/20	. . controlling several interacting or sequentially-operating members	[69-]
60a-11/22	. . Synchronisation of the movement of two or more servomotors	[69-]
<b>60a-13/00</b>	<b>Details of servomotor systems (60a-15/00 takes precedence)</b>	<b>[69-]</b>
60a-13/01	. Locking-valves or other detent devices (associated with the actuator 60a-15/26)	[69-]
60a-13/02	. Fluid distribution or supply devices characterised by their adaptation to the control of servomotors (multiple-way valves 47g1-11/00)	[69-]
60a-13/04	. . for use with a single servomotor	[69-]
60a-13/042	. . . operated by fluid pressure	[69-]
60a-13/043	. . . . with electrically-controlled pilot valves	[69-]
60a-13/044	. . . operated by electrically-controlled means, e.g. solenoids, torque-motors	[69-]
60a-13/06	. . for use with two or more servomotors	[69-]
60a-13/07	. . . in distinct sequence	[69-]
60a-13/08	. . . Assemblies of units, each for the control of a single servomotor only	[69-]
60a-13/09	. . for use with two or more pumps	[69-]
60a-13/10	. Special arrangements for operating the actuated device without using fluid pressure, e.g. for emergency use	[69-]
60a-13/12	. Special measures for increasing the sensitivity of the system	[69-]
60a-13/14	. Special measures for giving the operating person a "feeling" of the response of the actuated device	[69-]
60a-13/16	. Special measures for feedback	[69-]
<b>60a-15/00</b>	<b>Fluid-actuated devices for displacing a member from one position to another (motors for continuous movement 14); Gearing associated therewith (gearings per se 47h)</b>	<b>[69-]</b>
60a-15/02	. Mechanical layout characterised by the means for converting the movement of the fluid-actuated element into movement of the finally-operated member	[69-]
60a-15/04	. . with oscillating cylinder	[69-]

60a-15/06	. . for mechanically converting rectilinear movement into non-rectilinear movement	[69-]
60a-15/08	. characterised by the construction of the motor unit (pistons, cylinders, packing 47f2)	[69-]
60a-15/10	. . the motor being of diaphragm type (diaphragms, bellows 47f2-3/00)	[69-]
60a-15/12	. . of the oscillating-vane or curved-cylinder type	[69-]
60a-15/14	. . of the straight-cylinder type	[69-]
60a-15/16	. . . of the telescopic type	[69-]
60a-15/17	. . . of differential-piston type	[69-]
60a-15/18	. Combined units comprising both motor and pump	[69-]
60a-15/20	. Other details	[69-]
60a-15/22	. . for accelerating or decelerating the stroke	[69-]
60a-15/24	. . for restricting the stroke	[69-]
60a-15/26	. . Locking mechanisms	[69-]
<b>60a-17/00</b>	<b>Combinations of telemotor and servomotor systems</b>	<b>[69-]</b>
60a-17/02	. in which a telemotor operates the control member of a servomotor	[69-]
<b>60a-18/00</b>	<b>Parallel arrangements of independent servomotor systems</b>	<b>[69-]</b>
<b>60a-19/00</b>	<b>Testing fluid-pressure systems or apparatus, so far as not provided for elsewhere</b>	<b>[69-]</b>
<b>60a-20/00</b>	<b>Safety arrangements; Applications of safety devices</b> (safety devices in general 47a4); <b>Emergency measures</b>	<b>[69-]</b>
<b>60a-21/00</b>	<b>Common features; Fluid-pressure systems, or details thereof, not covered by any preceding group</b>	<b>[69-]</b>
60a-21/02	. Servomotor systems with programme control derived from a store or timing device; Control devices therefor (programme control in general 42r1-19/00)	[69-]
60a-21/04	. Special measures taken in connection with the properties of the fluid, e.g. for venting, compensating for changes of viscosity, cooling, filtering, preventing churning	[69-]
60a-21/06	. Use of special fluids, e.g. liquid metal; Special adaptations of fluid-pressure systems, or control of elements therefor, to the use of such fluids	[69-]
60a-21/08	. Servomotor systems incorporating electrically-operated control means (60a-21/02 takes precedence)	[69-]
60a-21/10	. Delay devices or arrangements (associated with fluid motors or actuators 60a-15/22)	[69-]
60a-21/12	. Fluid oscillators or pulse generators	[69-]
<b>60b</b>	<b>(IPC: F15C) Fluid-circuit elements predominantly used for computing or control purposes</b> (transducers 60a-5/00; fluid dynamics in general 60c; computers comprising fluid elements 42m2, 42m4)	<b>[69-]</b>
<b>60b-1/00</b>	<b>Circuit elements having no moving parts</b>	<b>[69-]</b>
60b-1/02	. Details	[69-]
60b-1/04	. . Means for controlling fluid streams to fluid devices, e.g. by electric signals	[69-]
60b-1/06	. . Constructional details; Selection of specified materials	[69-]
60b-1/08	. Boundary-layer devices, e.g. wall-attachment amplifiers, oscillators	[69-]
60b-1/10	. . for digital operation, e.g. to form a logical flip-flop, OR-gate, NOR-gate	[69-]
60b-1/12	. . . Multiple arrangements thereof	[69-]
60b-1/14	. Stream-interaction devices; Momentum-exchange devices, e.g. operating by exchange between two orthogonal fluid jets	[69-]
60b-1/16	. Vortex devices, i.e. devices in which use is made of the pressure drop associated with vortex motion in a fluid	[69-]
60b-1/18	. Turbulence devices, i.e. devices in which a controlling stream will cause a laminar flow to become turbulent	[69-]
60b-1/20	. Direct-impact devices, i.e. devices in which two collinear opposing power streams are impacted	[69-]

<b>60b-3/00</b>	<b>Circuit elements having moving parts</b> (valves, construction of valves 47g1)	<b>[69-]</b>
60b-3/02	. using spool valves	[69-]
60b-3/04	. using diaphragms	[69-]
60b-3/06	. using balls	[69-]
60b-3/08	. using reeds	[69-]
60b-3/10	. using nozzles or jet pipes	[69-]
60b-3/12	. . the nozzle or jet pipe being movable	[69-]
60b-3/14	. . the jet from the nozzle being intercepted by a flap	[69-]
<b>60b-4/00</b>	<b>Circuit elements characterised by their special functions</b>	<b>[69-]</b>
<b>60b-5/00</b>	<b>Manufacture of fluid-circuit elements; Manufacture of assemblages of such elements</b>	<b>[69-]</b>
<b>60c</b>	<b>(IPC: F15D) Fluid dynamics, i.e. methods or means for influencing the flow of gases or liquids</b> (fluid-circuit elements 60b)	<b>[69-]</b>
	<b>Note:</b> <b>This subclass comprises boundary-layer control and other arrangements and methods, not provided for in other classes, for influencing the flow of fluids relative to constraining surfaces and after leaving these surfaces, e.g. producing or removing turbulence, deflecting jets, guiding flow through bends in conduits, affecting distribution of fluid in a conduit, reducing fluid friction.</b>	<b>[69-]</b>
<b>60c-1/00</b>	<b>Influencing the flow of fluids</b>	<b>[69-]</b>
60c-1/02	. in pipes or conduits	[69-]
60c-1/04	. . Arrangements of guide vanes in pipe elbows or duct bends; Construction of pipe conduit elements or elbows with respect to flow, specially for reducing losses of flow	[69-]
60c-1/06	. . by influencing the boundary layer	[69-]
60c-1/08	. of jets leaving an orifice (nozzles or outlets with means for mechanically breaking-up or deflecting the jet 85g-3)	[69-]
60c-1/10	. around bodies of solid material	[69-]
60c-1/12	. . by influencing the boundary layer	[69-]
60c-1/14	. Diverting flow into alternative channels (in hydraulic engineering 84a)	[69-]