Symbol	Typ	Titel
F	**Sektion**	**SECTION F — MECHANICAL ENGINEERING; LIGHTING; HEATING; WEAPONS; BLASTING**
F16	**Klasse**	**ENGINEERING ELEMENTS OR UNITS; GENERAL MEASURES FOR PRODUCING AND MAINTAINING EFFECTIVE FUNCTIONING OF MACHINES OR INSTALLATIONS ; THERMAL INSULATION IN GENERAL**
F16J	**Unterklasse**	**PISTONS; CYLINDERS; PRESSURE VESSELS IN GENERAL; SEALINGS**
F16J 1/00	**Hauptgruppe**	**Pistons; Trunk pistons; Plungers (bellows pistons F16J 3/06; piston-rings or seats therefor F16J 9/00; rotary pistons, e.g. for "Wankel" type engines, F01C; specific for combustion engines, i.e. constructed to withstand high temperature or modified for guiding, igniting, vaporising, or otherwise treating the charge, F02F; pistons specially adapted for reciprocating-piston liquid engines F03C 1/28; for pumps F04B; floats F16K 33/00)**
F16J 1/01	1-Punkt Untergruppe	. characterised by the use of particular materials (F16J 1/02 takes precedence) [3]
F16J 1/02	1-Punkt Untergruppe	. Bearing surfaces
F16J 1/04	1-Punkt Untergruppe	. Resilient guiding parts, e.g. skirts, particularly for trunk pistons
F16J 1/06	2-Punkt Untergruppe	. . with separate expansion members; Espansion members
F16J 1/08	1-Punkt Untergruppe	. Constructional features providing for lubrication
F16J 1/09	1-Punkt Untergruppe	. with means for guiding fluids (F16J 1/08 takes precedence) [3]
F16J 1/10	1-Punkt Untergruppe	. Connection to driving members
F16J 1/12	2-Punkt Untergruppe	. . with piston-rods, i.e. rigid connections
F16J 1/14	2-Punkt Untergruppe	. . with connecting-rods, i.e. pivotal connections
F16J 1/16	3-Punkt Untergruppe	. . . with gudgeon-pin; Gudgeon-pins
F16J 1/18	4-Punkt Untergruppe	. . . . Securing of gudgeon-pins
F16J 1/20	3-Punkt Untergruppe	. . . with rolling contact, other than in ball or roller bearings
F16J 1/22	3-Punkt Untergruppe	. . . with universal joint, e.g. ball-joint
F16J 1/24	2-Punkt Untergruppe	. . designed to give the piston some rotary movement about its axis
F16J 3/00	**Hauptgruppe**	**Diaphragms; Bellows; Bellows pistons (connection of valves to inflatable elastic bodies B60C 29/00; bellows or the like used in instruments G12B 1/04; diaphragms for electromechanical transducers H04R 7/00)**
F16J 3/02	1-Punkt Untergruppe	. Diaphragms [2]
F16J 3/04	1-Punkt Untergruppe	. Bellows [2]
F16J 3/06	1-Punkt Untergruppe	. Bellows pistons [2]
F16J 7/00	**Hauptgruppe**	**Piston-rods, i.e. rods rigidly connected to the piston (connecting-rods or like links pivoted at both ends F16C 7/00)**
F16J 9/00	**Hauptgruppe**	**Piston-rings, seats therefor; Ring sealings of similar construction in general (other sealings between pistons and cylinders F16J 3/06, F16J 15/16; tools for mounting or removing piston-rings or the like B25B; piston sealing arrangements on brake master cylinders B60T 11/236) [2, 5]**
F16J 9/02	1-Punkt Untergruppe	. L-section rings
F16J 9/04	1-Punkt Untergruppe	. Helical rings
F16J 9/06	1-Punkt Untergruppe	. using separate springs expanding the rings; Springs therefor

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F16J 9/08	1-Punkt Untergruppe	. with expansion obtained by pressure of the medium
F16J 9/10	1-Punkt Untergruppe	. Special members for adjusting the rings
F16J 9/12	1-Punkt Untergruppe	. Details
F16J 9/14	2-Punkt Untergruppe	. . Joint-closures
F16J 9/16	3-Punkt Untergruppe	. . . obtained by stacking of rings
F16J 9/18	3-Punkt Untergruppe	. . . with separate bridge-elements
F16J 9/20	2-Punkt Untergruppe	. . Rings with special cross-section (L-section rings F16J 9/02); Oil-scraping rings
F16J 9/22	2-Punkt Untergruppe	. . Rings for preventing wear of grooves or like seatings
F16J 9/24	2-Punkt Untergruppe	. . Members preventing rotation of rings in grooves
F16J 9/26	1-Punkt Untergruppe	. characterised by the use of particular materials [3]
F16J 9/28	2-Punkt Untergruppe	. . of non-metals [3]
F16J 10/00	**Hauptgruppe**	**Engine or like cylinders (pressure vessels in general F16J 12/00; cylinders for engines or other apparatus of particular kinds, see the appropriate subclasses, e.g. for combustion engines F02F); Features of hollow, e.g. cylindrical, bodies in general [3]**
F16J 10/02	1-Punkt Untergruppe	. Cylinders designed to receive moving pistons or plungers [3]
F16J 10/04	2-Punkt Untergruppe	. . Running faces; Liners [3]
F16J 12/00	**Hauptgruppe**	**Pressure vessels in general (covers therefor F16J 13/00; for particular applications, see the relevant subclasses, e.g. B01J, F17C, G21C) [3]**
F16J 13/00	**Hauptgruppe**	**Covers or similar closure members for pressure vessels in general (for engine or like cylinders F16J 10/00; sealings F16J 15/02; covers for box-like containers B65D 43/00; devices for securing or retaining closure members B65D 45/00; closures for containers not otherwise provided for B65D 51/00; manholes, covers for large containers B65D 90/10; gates or closures for large containers B65D 90/54; for vessels for containing or storing compressed, liquefied or solidified gases F17C 13/06; steam boilers F22B)**
F16J 13/02	1-Punkt Untergruppe	. Detachable closure members; Means for tightening closures (F16J 13/16, F16J 13/22 take precedence) [3]
F16J 13/04	2-Punkt Untergruppe	. . attached with a bridge member
F16J 13/06	2-Punkt Untergruppe	. . attached only by clamps along the circumference
F16J 13/08	2-Punkt Untergruppe	. . attached by one or more members actuated to project behind a part or parts of the frame (similar constructions for doors or windows E05C 9/00)
F16J 13/10	2-Punkt Untergruppe	. . attached by means of a divided ring
F16J 13/12	2-Punkt Untergruppe	. . attached by wedging action by means of screw-thread, interrupted screw-thread, bayonet closure, or the like
F16J 13/14	2-Punkt Untergruppe	. . attached exclusively by spring action or elastic action
F16J 13/16	1-Punkt Untergruppe	. Pivoted closures (F16J 13/22 takes precedence) [3]
F16J 13/18	2-Punkt Untergruppe	. . pivoted directly on the frame
F16J 13/20	2-Punkt Untergruppe	. . mounted by mobile fastening on swinging arms
F16J 13/22	1-Punkt Untergruppe	. with movement parallel to the plane of the opening [3]

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F16J 13/24	1-Punkt Untergruppe	. with safety devices, e.g. to prevent opening prior to pressure release [3]
F16J 15/00	**Hauptgruppe**	**Sealings (sealing arrangements for vehicle windows, windscreens, non-fixed roofs, doors, or similar devices B60J 10/00; sealing or packing elements for container closures B65D 53/00; sealing arrangements in rotary-piston machines or engines F01C 19/00; sealings in non-positive-displacement machines or engines F01D 11/00; arrangements of sealings in combustion engines F02F 11/00; sealing arrangements in rotary-piston pumps F04C 27/00; sealing lead-in or lead-through insulators H01B 17/30) [5]**
F16J 15/02	1-Punkt Untergruppe	. between relatively-stationary surfaces (F16J 15/46, F16J 15/48 take precedence)
F16J 15/04	2-Punkt Untergruppe	. . without packing between the surfaces, e.g. with ground surfaces, with cutting edge
F16J 15/06	2-Punkt Untergruppe	. . with solid packing compressed between sealing surfaces
F16J 15/08	3-Punkt Untergruppe	. . . with exclusively metal packing
F16J 15/10	3-Punkt Untergruppe	. . . with non-metallic packing
F16J 15/12	4-Punkt Untergruppe	. . . . with metal reinforcement or covering
F16J 15/14	2-Punkt Untergruppe	. . by means of granular or plastic material, or fluid
F16J 15/16	1-Punkt Untergruppe	. between relatively-moving surfaces (F16J 15/50, F16J 15/52 take precedence; bellows pistons F16J 3/06; piston-rings or ring sealings of similar construction in general F16J 9/00; spindle sealings for valves F16K 41/00) [2]
F16J 15/18	2-Punkt Untergruppe	. . with stuffing-boxes for elastic or plastic packings
F16J 15/20	3-Punkt Untergruppe	. . . Packing materials therefor
F16J 15/22	4-Punkt Untergruppe	. . . . shaped as strands, ropes, threads, ribbons, or the like
F16J 15/24	3-Punkt Untergruppe	. . . with radially or tangentially compressed packing
F16J 15/26	2-Punkt Untergruppe	. . with stuffing-boxes for rigid sealing rings
F16J 15/28	3-Punkt Untergruppe	. . . with sealing rings made of metal
F16J 15/30	3-Punkt Untergruppe	. . . with sealing rings made of carbon
F16J 15/32	2-Punkt Untergruppe	. . with elastic sealing lip
F16J 15/34	2-Punkt Untergruppe	. . with slip-ring pressed against a more or less radial face on one member
F16J 15/36	3-Punkt Untergruppe	. . . connected by a diaphragm to the other member
F16J 15/38	3-Punkt Untergruppe	. . . sealed by a packing [2]
F16J 15/40	2-Punkt Untergruppe	. . by means of fluid
F16J 15/42	3-Punkt Untergruppe	. . . kept in sealing position by centrifugal force
F16J 15/43	3-Punkt Untergruppe	. . . kept in sealing position by magnetic force [6]
F16J 15/44	1-Punkt Untergruppe	. Free-space packings
F16J 15/447	2-Punkt Untergruppe	. . Labyrinth packings [3]
F16J 15/453	3-Punkt Untergruppe	. . . characterised by the use of particular materials [3]
F16J 15/46	1-Punkt Untergruppe	. with packing ring expanded or pressed into place by fluid pressure, e.g. inflatable packings (connection of valves to inflatable elastic bodies B60C 29/00; specially adapted for tube connections F16L)

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F16J 15/48	2-Punkt Untergruppe	. . influenced by the pressure within the member to be sealed
F16J 15/50	1-Punkt Untergruppe	. between relatively-movable members, by means of a sealing without relatively-moving surfaces, e.g. fluid-tight sealings for transmitting motion through a wall
F16J 15/52	2-Punkt Untergruppe	. . by means of sealing bellows or diaphragms (connection of valves to inflatable elastic bodies B60C 29/00)
F16J 15/53	1-Punkt Untergruppe	. using magnetic means [6]
F16J 15/54	1-Punkt Untergruppe	. Other sealings for rotating shafts
F16J 15/56	1-Punkt Untergruppe	. Other sealings for reciprocating rods