| Symbol | Typ | Titel |
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| **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 |