

1	WITH TEMPERATURE COMPENSATION	13.6	.Adjustable abutment positioned within working chamber
2	ONE WORKING MEMBER RECIPROCATES AND ANOTHER ROTATES COMMON OUTPUT MEMBER	13.7	.BY adjusting or limiting motion of relatively movable power transmission element
3	WITH DISENGAGEABLE ROTARY DRIVE FOR MOVING WORKING MEMBER	13.8	.Adjustment means includes external axially extending threaded piston stem
5 R	WITH (1) SIGNAL OR INDICATOR OR (2) INSPECTION WINDOW IN EXPANSIBLE CHAMBER WALL PORTION	14	WORKING MEMBER MOVES LOAD AND LATCHING MEANS FOR LOAD
5 L	.With lock	15	WITH RELEASABLE STOP OR LATCH MEANS TO PREVENT MOVEMENT OF WORKING MEMBER
6 R	EFFECTIVE AREA OF WORKING MEMBER END FACE SELECTIVELY VARIABLE	16	.With timing or delay means
6 D	.With diaphragm	17	.Engages member coaxial with and rotatable relative to working member
7	WITH OVERCENTER MEANS TO BIAS WORKING MEMBER IN OPPOSITE DIRECTIONS OVER DIFFERENT PORTIONS OF STROKE	18	.Includes interfitting parts engageable at plural positions including position intermediate stroke limits
8	WITH MEANS TO CONTROL FLOW OF NON-WORKING ARRESTING FLUID FOR WORKING MEMBER	19	..Self-engaging
9	.Flow control means positioned between chambers having a common wall movable with working member	20	.Engages power element movable relative to working member
10	.Work member position control	21 R	.Plural selectively operable actuators for releasable means
11	..With auxiliary adjustable throttle (12)	21 MR	..Manual release
12	.Adjustable throttle (11)	22	.Relatively movable working members with interdependent means
12.1	DISPLACEMENT CONTROL OF PLURAL CYLINDERS ARRANGED IN PARALLEL, RADIAL, OR CONICAL RELATIONSHIP WITH ROTARY TRANSMISSION AXIS	23	.Means includes element interfitting between working member and fixed part
12.2	.Parallel cylinders	24	..Element actuated or retained in operative position by relatively movable fluid responsive member
13	..WITH ADJUSTABLE MEANS TO VARY STROKE OF WORKING MEMBER	25	...With pivoted link between element and member
13.1	.Having motor-operated adjustment	26	...Resilient element
13.2	.Flexible wall-type working member	27	..Fluid actuated (28)
13.3	.Stroke of one working member adjustable relative to another	28	.Fluid actuated (27)
13.4	.Predetermined discrete incremental adjustment positions	29	WITH RELEASABLE LATCH MEANS BETWEEN WORKING MEMBER AND POWER TRANSMISSION ELEMENT AXIALLY SLIDABLE THEREIN
13.41	..Adjustment by assembly or disassembly	30	WITH RESILIENT DETENT
13.5	.Independent adjustment of opposite stroke limits of single reciprocating working member	31	RECTILINEARLY MOVING WORKING MEMBER AND COAXIAL OR PARALLEL ELEMENT SLIDABLY INTERENGAGED FOR RELATIVE ROTARY MOVEMENT
13.51	.Axial adjustment of spaced, rigidly interconnected working member faces		

32	.Working fluid-actuated interengaging means permits unidirectional rotation of element relative to fixed part	58.1	KNOCKDOWN OR FLOW CONDUIT STORAGE OR RETRIEVAL MEANS
33	.Element extends through working member portion	59	CONVERTIBLE, OR CHANGEABLE BY ASSEMBLY OR DISASSEMBLY WITH FLEXIBLE OR RESILIENTLY BIASED NON-WORKING MEMBER
34	BELLOWS TYPE EXPANSIBLE CHAMBER	60	MOVABLE WALL IN CONSTANT COMMUNICATION WITH WORKING CHAMBER
35	.Expansible chamber formed by concentric bellows		
36	.With non-bellows type expansible chamber	60.5	SELECTIVE CLEARANCE CONTROL
37	.Plural bellows	61	RELATIVELY MOVABLE WORKING MEMBERS
38	..Non-working liquid moved by first bellows effects movement of second bellows	62	.First working member moves second coaxial working member through separating abutment surfaces
39	..With common movable wall		
40	.With separate biasing means	63	..With separate biasing means for a working member
41	.With vibration damping means		
42	.With separate ring-like reinforcing element abutting pleat	64	.One a flexible wall type
43	.With stop means to limit axial movement of bellows	65	.Rigid stem on first working member portion extends through second working member
44	.With guide means	66	.Moving cylinders
45	.Superposed peripherally interconnected elements	67	.Oscillating working members
46	..With nonmetallic portion	68	.Interconnected with common rotatable shaft
47	.Specific or diverse material (103)	69 R	..Oppositely movable walls of common chamber (50) (75)
48	PLURAL FLEXIBLE WALL WORKING MEMBERS	70	...Shaft axis parallel to axes of working members (71)
49	.Diaphragm type having working fluid contacting areas of different size	69 A	...One piston rod passes through opposite piston rod
50	.Oppositely movable walls of common chamber (69) (75)	69 B	...Single crankshaft offset from center of work chamber
51	MUTUALLY RELATIVELY MOVABLE CYLINDER OR SLEEVE, MEMBER SEALINGLY SLIDABLE THEREIN AND OUTER CYLINDER THEREFOR	71	..Shaft axis parallel to axes of working members (70)
52	.Cylinder or sleeve forms working member	72	..Shaft axis intersected by axes of working members
53	.With additional cylinder relatively slidable exteriorly of outer cylinder	73	...Parallel working members
54	ROTATING CYLINDER	74Shaft extends transversely through working members
55	.Fluid conduit coaxial with axis of rotation	75	.Oppositely movable walls of common chamber (50) (69)
56	.Plural cylinders	76	.Interconnected by linkage having relatively movable members
57	..Axes of cylinders parallel to axis of rotation	77	GROUND EMBEDDED EXPANSIBLE CHAMBER
58	..Axes of cylinders intersect axis of rotation at common point	78	WITH FLUID PURIFYING MEANS
		79	.Means separates gas from liquid
		80	WITH FORCE EXERTING MEANS TO MOVE FLUID FROM NON-WORKING CHAMBER
		81	WORKING MEMBER FORMS RESERVOIR FOR NON-COMPRESSIBLE WORKING FLUID

82	WITH MEANS TO CONTROL FLUID FLOW FROM NON-WORKING CHAMBER	98 DRolling diaphragm
83	LIQUID POOL SEALING RELATIVELY MOVABLE CHAMBER WALLS	103 R	...Specific or diverse material (47)
84	RESILIENT MEANS INTERPOSED BETWEEN WORKING MEMBER AND RELATIVELY MOVABLE POWER TRANSMISSION ELEMENT	103 F	...With reinforcement embedded in diaphragm
85 R	WITH CUSHIONING MEANS EFFECTIVE OVER A PORTION ONLY OF STROKE	103 SDSynthetic diaphragm (non-metal and non-rubber)
85 A	.Metal spring	103 M	...Metal diaphragm
85 B	.Fluid spring	104	...Corrugated
86	WITH REMOVAL CONDUIT FOR LIQUID SEEPAGE FROM EXPANSIBLE CHAMBER	105	..Coaxial radially spaced relatively movable undistortable members joined by flexible wall
86.5	PASSAGE IN CYLINDER FOR APPLICATION OF SEPARATE FLUID TO CYLINDER AND PISTON SIDE WALL INTERFACE	106	FLUID CONDUIT IN CONSTANT COMMUNICATION WITH RELATIVELY ROTATABLE WORKING CHAMBER
87	WITH NON-SEALING CLEANING MEANS SEALED OPENING IN LONGITUDINAL WALL OF CHAMBER FOR RECEIVING WORKING MEMBER PORTION	107	ANNULAR WORKING MEMBER OR ANNULAR LINEARLY EXTENDING CHAMBER THEREFOR
88		108	.Axially extending hollow stem on working member
89	COLLAPSIBLE CHAMBER WALL PORTION (E.G., HINGED OR FLEXIBLE WALL)	109	PISTON WITH RIGID AXIALLY EXTENDING HOLLOW STEM
90	.Wall portion formed of flexible material	110	.Hollow stem forms axially extending fluid passage
91	..Envelope having restricted fluid opening	111	..Plural laterally spaced passages
92	...Non-metallic	112	..Passage communicates with lateral port extending through piston side wall portion
93	..Annular flexible wall portion peripherally sealed to spaced relatively fixed concentric rigid members	113	.Relatively movable elongated part within stem
94	..With separate biasing means	114	..Part and stem relatively axially adjustable
95	...Adjustable	115	...Part forms actuator for piston side wall portion adjusting means
96	..Diaphragm type	116	WITH AXIALLY EXTENDING ELEMENT MOUNTED ON WORKING MEMBER FOR RELATIVE ROTARY MOVEMENT ONLY
97	...Axially spaced flexible wall portions with interposed incompressible means	117 R	MOVING CYLINDER
98 R	...Entire periphery secured to rigid working chamber forming wall	118	.Pivoted
99	...With undistortable member secured to central portion of diaphragm	119	..With fluid conduit extending through pivoted connection
100Member includes coextensive plate-like elements secured to opposite side of diaphragm	117 A	.Stationary piston or movable piston with moving cylinder
101	...Abutment connection between diaphragm and power transmission element	120	OSCILLATING WORKING MEMBER OR CYLINDER THEREFOR
102	...With separate seal means between diaphragm and member	121	.Oscillatory shaft with radially extending vane
		122	..Plural angularly related vanes
		123	..With lost motion connection between vane and shaft
		124	..With resiliently biased vane peripheral portion

125	..Vane includes non-metallic peripheral sealing portion	146	PLURAL UNITARILY MOUNTED CYLINDERS OR FRAME THEREFOR (161)
126	WITH DIFFERENTIAL RADIAL THRUST PRODUCING MEANS FOR WORKING MEMBER	147	.With casing or support for rotary shaft
127	.Fluid pressure type	148	..Three or more radially arranged cylinders
128	WITH ASSEMBLY OR DISASSEMBLY FACILITATING MEANS	149	..V-type
129	ABUTMENT CONNECTION BETWEEN WORKING MEMBER AND POWER TRANSMISSION ELEMENT	150	..Coaxial cylinder (151)
130 R	WITH SEPARATE BIASING MEANS FOR WORKING MEMBER	151	.Coaxial cylinders (150)
131	.Biasing means maintains working member intermediate stroke end limits	152	..With different cross-sectional areas
132	.Tension spring	153	WITH LUBRICATING MEANS
133	.Adjustable	154	.Lubricant entrained by working fluid
134	.Fluid spring	155	.Portion of expansible chamber device includes solid lubricating material
135	.Biasing means engages working fluid contacting portion of working member	156	.Valve means in lubricant passage
130 A	.Bias normally held inoperative by fluid pressure	157	.Lubricant passage extends axially through articulated piston rod
130 B	.Bias other than coil spring	158	.Piston has lubricant retaining or conducting means
130 C	.Bias external of both expanding and contracting chamber	159	..Pocket or chamber
130 D	.Plural coil springs	160	..Port or passage extending through side wall portion
136	WITH TOOTHED GEAR, SPLINE OR THREAD RIGID WITH WORKING MEMBER	161	WITH SUPPORT OR FRAME (146)
137	WITH FLEXIBLE TRANSMISSION ELEMENT SECURED TO WORKING MEMBER	161.5	.Wheel supported
138	WITH LINKAGE OR TRANSMISSION ENGAGING PORTION INTERMEDIATE SPACED WORKING MEMBER END FACES	162 R	SPACED CYLINDER AND PISTON WALLS DEFINE PASSAGE BETWEEN OPPOSED PISTON SIDE WALL ENDS
139	WITH CYLINDER WALL CONTACTING GUIDE ARTICULATED TO PISTON	162 P	.Passage in piston
140	WITH LINKAGE OR TRANSMISSION HAVING RELATIVELY MOVABLE MEMBERS	163	FLUID CONDUIT OR PORT IN FIXED WALL OF WORKING CHAMBER
141	WITH SEPARABLE FLUID DEFLECTING SHIELD OR BAFFLE ON WORKING MEMBER	164	.Port in separable chamber end closure
142	WITH RESERVOIR FOR NON-COMPRESSIBLE WORKING FLUID	165 R	WITH GUIDE OR SEAL ON CYLINDER END PORTION FOR PISTON OR MEMBER MOVED BY PISTON
143	WITH MOVEMENT DAMPING MEANS (E.G., FLUID FLOW RESTRICTOR)	166	.Additional guide is spaced chamber end wall
144	WITH ENCOMPASSING HEAT EXCHANGE MODIFYING SPACE OR JACKET	167	.Guide movable laterally
145	COMBINED	168	.Non-metallic seal means between piston or member and end portion
		165 PR	.Prevent rotation
		169.1	CYLINDER DETAIL
		169.2	.With reinforcing member
		169.3	..Extending through working member
		169.4	...Coaxial sleeve or tube
		170.1	.Nonmetallic piston contacting portion

171.1	.Cylinder or liner retained in casing by casing closure or closure associated means	194	..Biased portion comprises peripheral axially extending flexible lip
172	PISTON	195	..Open ended hollow skirt comprises biased portion
173	.With rotation imparting fluid impinging surface on piston part	196	...Spring part positioned in skirt slit
174	.Liquid between axially spaced side wall portions	197	...Adjustable bias (199)
175	.Spaced faces joined by rigid stem (e.g., spool)	198	...Split annular type spring (200)
176	.With enclosed insulating space in piston part	199	..Adjustable bias (197)
177	.Non-circular	200	..Split annular type spring (198)
178	.With ball or roller anti-friction means on side wall portion	201	.Radially adjustable side wall portion
179	.Articulated connecting rod end forms portions of piston face	202	..Adjustable portion comprises open-ended hollow skirt
181 R	.With fluid passage in piston face	203	...Adjustment effected by wedge member movable relative to skirt (207)
182	..Passage communicates with packing receiving recess	204	..Adjustment effected by selectively removable spacer or skim element between relatively movable parts
183	...Valved	205	..Side wall portion positioned between relatively axially adjustable rigid end members
184	...Passage in opposed piston faces	206	...With beveled abutting surfaces between side wall portion and an end member
185Passages communicate with common packing receiving recess	207	..Adjustment effected by wedge member movable relative to side wall portion (203)
181 P	..Passage thru piston to opposite chamber	208	.Open-ended hollow skirt type (e.g., trunk type)
186	.With ported chamber in piston part for circulating heat exchange fluid	209	..Frusto conical skirt
187	.With separable means for pivotally mounting connecting rod to piston	210	..With weight balancing means
188	..Means retained by annulus positioned about piston periphery	211	..Element of diverse material extending through skirt wall abuts circumferentially extending resilient ring
189	..Piston formed of separable end face and side wall portion	212	..With nonmetallic portion
190	...Means secures end face portion to side wall portion	213	..End face surface includes areas of diverse material
191	..Fastener for separable means extends through end face portion	214	..Spaced wall skirt
192	.Plural integral radially extending resilient metallic sealing tongues on side wall portion	215	..Separate resilient elements secures end face portion to skirt portion
193	.With spring means for biasing side wall portion radially	216	..Plural separable parts
		217	...Interconnected by relative rotation of parts
		218	...With means to prevent relative rotation of parts
		219	...Interconnected without separate fastening means
		220	...Threaded fastener

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|-----|---|-----|--|
| 221 | ...Fastener extends through end face | 250 | ...Flexible side wall portion between separable axially spaced rigid members |
| 222 | ..Specific or diverse material; or welded, brazed or soldered joint | 251 | ...Wall portion comprises plural axially aligned flexible elements |
| 223 | ...Coated | 252 |Three or more elements |
| 224 | ...End face and skirt periphery of diverse material | 253 | ..Axially spaced flexible side wall forming elements with interposed rigid spacer member |
| 225 | ...Element of diverse material for limiting radial movement of skirt part | 254 | ...With imbedded reinforcing means (241) |
| 226 | ...Bi-metallic restraining element | 255 | .Plural separable parts |
| 227 | ...Element positioned about periphery of skirt | 256 | ..Fastening means for parts include resilient element |
| 228 | ...Element portion embedded in piston part | 257 | ..Side wall portion interposed between separable axially spaced rigid members |
| 229 |Annular element | 258 | ..Rigid members connected by coaxial rigid stem or rod |
| 230 |Element encircles connecting rod pin supporting boss | 259 | ..Side wall portion and relatively movable piston part having abutting inclined surfaces |
| 231 | ..Welded, brazed or soldered (260) | 260 | .Welded, brazed or soldered (231) |
| 232 | ..Spaced skirt parts jointed by resilient arcuate web | 261 | MISCELLANEOUS (E.G., CRANKCASE) |
| 233 | ..Oval-shaped skirt portion | | |
| 234 | ..Skirt includes slit | | |
| 235 | ...Slit transverse to skirt axis | | |
| 236 | ...With additional angularly related slit | | |
| 237 | ..Circumferentially spaced portions at free end of skirt | | |
| 238 | ..Connecting rod pin supporting boss laterally spaced from skirt portion | | |
| 239 | ..With rib or strut means on piston part | | |
| 240 | ..Side wall portion includes peripheral axially extending flexible lip | | |
| 241 | ..With embedded reinforcing means in lip portion (254) | | |
| 242 | ..Plural axially spaced lips | | |
| 243 | ...Oppositely facing | | |
| 244 | ...Lips formed on separable elements | | |
| 245 | ..Lip forms peripheral portion of imperforate cup shaped element | | |
| 246 | ..Metallic lip | | |
| 247 | ..Fluid pressure responsive axial movement of end face portion radially moves side wall portion | | |
| 248 | ..Nonmetallic portion | | |
| 249 | ..Flexible | | |

FOREIGN ART COLLECTIONSFOR 000 **CLASS-RELATED FOREIGN DOCUMENTS****DIGESTS**

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| DIG 1 | BEARING ON PISTON OR CYLINDER |
| DIG 2 | FLUID BEARING |
| DIG 3 | FLEXIBLE DRIVE |
| DIG 4 | LOST MOTION |