1.1 **BLOW-OUT PREVENTERS (I.E., COOPERATING SEGMENTS OF ANNULUS)**
1.2 .Deformable annulus
1.3 .Radial reciprocating ram
3 **PATTERN TRACER CONTROLLED ACTUATOR**
4 **TUBE COMPRESSORS**
5 .Fluid pressure actuated
6 .Roller tube contacting element
7 .Perpendicularly reciprocating tube contacting element
8 ..Screw actuated
9 .Pivoting tube contacting element
10 ..U-shaped resilient bar or rod
11 **HEAT OR BUOYANCY MOTOR ACTUATED**
12 **FLUID ACTUATED OR RETARDED**
14 .Fluid and non-fluid actuators
15 .Compulsory cut-off after flow period
16 ..Serial main line cut-off and manual valves (e.g., hydraulic "fuses")
17 ...Interconnected motion
18 ....Manual and pilot valves
19 ..Auxiliary pilot valve overrides a first pilot valve
20 ..Forced return of actuator to cut-off position
21 ..Actuator connection released on opening of cut-off valve
22 ..Control fluid released into closed build-up chamber
23 ..Dashpot interconnects actuator and valve
24 .Venturi or line flow effect assisted
25 .Pilot or servo type motor
26 ..Alternative pressure sources or pilot valve
27 ..Servo failure responsive control of main valve
28 ..Fluid actuated pilot valve
29 ...With additional pilot valve control
30.01 ..Electrically actuated pilot valve
30.02 ...Main valve biased closed by fluid pressure
30.03 ....Venting passage within movable main valve
30.04 .....Pilot valve movably mounted within or around main valve
30.05 ....Fluid pressure sole means for biasing valve closed
31 ..Double or oppositely acting motor units
32 ..Latched pilot valve
33 ..Choked pressure type servo motor
34 ...With reverse flow prevenging (nonsiphoning)
35 ...Variable choke passage according to valve position
36 ...With separate dashpot or choked fluid retarding chamber
37 ...With choke or restrictor in main line
38 ...Pilot valve seated in motor or valve element
39 ....Controls inlet to choke chamber
40 ....Tilting pilot valve
41 ...Remote pilot valve actuation
42 ...Adjustable opening limit for main valve
43 ...Main valve biased open by line pressure
44 ....Differential reaction surface for line pressure
45 .....Diaphragm or bellows surface
46 ....Diaphragm or bellows motor element
47 ..With separate dashpot or choked fluid retarder
48 .Dashpot or fluid controlled retarder or timer
49 ..Latch or trip releasing
50 ..Line pressure connected dashpot or choke chamber
51 ...With choke by-pass or relief means
52 ...Chamber fills on closing of main valve
53 ..Line connected open accumulating chamber
54 ..Closed fluid circuit dashpot or choke chamber
55 ..With choke by-pass or relief means
56 .Plural operations (e.g., lifting and rotating rotary valve)
57 .Fluid link or column actuator
58 .With mechanical movement between actuator and valve
59 .Rotary or oscillatory motor

60 .With adjustable limit stop for actuator
61 .Flexible wall expansible chamber reciprocating valve actuator
61.1 ..Flexible wall valves fluid
61.2 ..Coaxial actuator, seat and valve
61.3 ...Valve between coaxial spring biasing means and actuator
61.4 ...Coaxial spring biasing means between valve and actuator
61.5 ...Actuator wall between valve and coaxial spring biasing means
62 .Piston type expansible chamber reciprocating valve actuator
63 ..Unitary piston and valve
63.4 ..Lost motion, abutment or resilient connection between actuator and valve
63.5 ..Coaxial actuator, seat and valve
63.6 ...Coaxial spring biasing means between valve and actuator
64 **WITH NON-FLUID RETARDER**
65 **PERMANENT OR CONSTANTLY ENERGIZED MAGNET ACTUATOR**
66 **BIASED TRIP**
67 .With second diverse control
68 .Electrical trip actuation
69 ..Trip operated on failure of electric power
70 ..With electrical resetting means
71 ...Rotary electric motor
72 .Weight biased trip
73 .Fluid pressure trip actuation
74 .Mechanical movement trip actuation
75 **WITH SNAP ACTION**
76 **IMPACT TYPE ACTUATOR**
77 **LOST MOTION BETWEEN ACTUATOR AND VALVE**
78 .Lever
79 .Overload release
80 ..Elastic
81 ..Slip coupling between actuator and valve
82 .Check valve with external opening and closing means
83 ..Spring
84 **VALVE HEAD MOVABLY CONNECTED FOR ACCOMMODATION TO SEAT**
85 .With yieldable connection
86 .With universal connection
87 .With single plane swing pivoted connection
88 .Rotatable only
89 **WITH MEANS FOR BLOCKING OR DISABLING ACTUATOR**
89.5 .Actuator, or blocking means, includes flow path joint
90 .Attachments
91 ..Requiring modification of valve
92 ..Acting on valve limit stop
93 ...Mounted on valve actuator
94 .Fluid pressure biased latch
95 .Released by non-valving actuator motion
96 ..Linear reciprocation of rotary handle
97 ...Latch connects actuator to body through head
98 ..Pivoted handle
99 ...With spring
100 ..Rotation of reciprocating handle
101 .Latch manipulator mounted on handle or stem
102 ..Constrained linear motion
103 ...With pivoted latch
104 ...With latch rigidly associated with manipulator
105 ....Latch lug extends transversely to axis of manipulator
106 ...With transversely movable latch
107 ..With pivoted latch
108 ...Resilient latch and manipulator
109 ...With spring
110 ..With reciprocating latch
111 .Latch manipulator mounted on valve body
112 ..Set screw
113 ..Constrained linear motion of latch with rigidly associated manipulator
114 ..With pivoted latch
115 ...Resilient latch and manipulator
116 ...With spring
117 **WITH RESTRICTOR IN PARALLEL TO MAIN VALVE**
118 **WITH MATERIAL GUIDE OR RESTRICTOR**
119 .Aspirated stem drain

185 ...Spring in fluid
186 ..Piston
187 .Separate actuators or actuator motion
188 ..Rotary valve
189 ..Piston with expansible packing
190 .Piston
191 ..Packing expands with closing
192 .Rotary valve
193 .Gate valve
194 ..Screw sole actuator of expander and valve
195 ..Bifaced
196 ...In both closed and open positions
197 ...Faces pressed by subsequently movable expander
198 ....With second expander
199 ....Face element directly contacts casing
200 ...Carried expander contacts valve casing
201 ....Pivoting expander
202 ...Faces or carrier contact stationary expander
203 ..Cam or wedge
204 ...Moves with respect to head and seat
205 **WITH SELECTIVE FLOW REGULATION**
206 .Different sized bores in valve head
207 ..Rotary plug
208 .Rotary
209 ..Plug
210 **SEQUENTIAL OPENING OR CLOSING OF SERIAL PORTS IN SINGLE FLOW LINE (E.G., ANTI-SCORING)**
211 **SERIAL ALTERNATELY CLOSED PORTS**
212 **RELATIVELY MOVABLE VALVE ELEMENTS FORM SINGLE PORT CLOSURE (E.G., IRIS DIAPHRAGM)**
213 **MECHANICAL MOVEMENT ACTUATOR**
214 .Particularly packed or sealed
215 .Plural motions of valve
216 ..Screw threads in flow path
217 ..Valve head between actuator and screw
218 ..Encased
219 ...Threadlessly coupled to screw
220 ....Coupling socket in screw
221 ...Threads in removable sleeve
222 ....Sleeve removably in bonnet
223 ....Sleeve is bonnet
224 ....Sleeve flange mounted between body and bonnet
225 ..Threads in removable sleeve
226 ..Biased
227 ...Spring
228 .With pivoted valves
229 .Plural dissimilar mechanical movements
230 .Ratchet
231 .Lever
232 ..Train (plural serial)
233 ..Leverage variable during operation
234 ..Adjustable leverage
235 ..Swiveled
236 ..Biased
237 ...Sliding contact
238 ....Spring
239 .....Spring co-axial with valve arm
240 ......Spring stop on valve stem
241 ......Spring abuts valve stem guide
242 ...Spring
243 ....Co-acts with lever
244 ....Co-axial with valve stem
245 .....Spring stop on valve stem
246 .....Spring abuts valve stem guide
247 ...Weight
248 .Gear
249 ..Mutilated or Geneva gearing
249.5 ..Worm type
250 ..Rectilinear rack
250.5 ..Mating segments
251 .Cam
252 ..Co-axial or parallel axes
253 ...Biased
254 ....Bi-directional
255 .....Non-reciprocating
256 ....Encased
257 ..Encased with seal
258 ...Bi-directional
259 ...Cam is finger-like extension
260 ...Overhung crank type
261 ...Center crank type
262 ..Biased
263 ...Spring
264 .Screw
265 ..Plural thread
266 ..Non-reciprocating actuator
267 ...Internal thread
268 ....Inverted cup-shape
269 .....Separable actuator bushing

270 ...Removable guide
271 ....Resiliently mounted actuator
272 ...Biased
273 ..Internal thread
274 ..Encased
275 ...Biased
276 ....Spring
277 ..Biased
278 ...Spring
279 .Linkage
280 ..Toggle
281 **BALANCED VALVES**
282 .Reciprocating
283 .Rotary
284 **LIMIT STOP**
285 .Adjustable
286 .Rotary valve
287 ..Stop element on head
288 ..Stop element on actuator
289 **VALVE ACTUABLE FROM PLURAL POSITIONS**
290 **PLURAL SELECTIVE NEUTRAL POSITIONS FOR VALVE OR ACTUATOR**
291 **DETACHABLE ACTUATOR**
292 .Rotary valve
293 **EXTENSION FOR ACTUATOR**
294 **FLEXIBLE ACTUATOR (E.G., BOWDEN WIRE; CHAIN)**
295 **PEDAL ACTUATOR**
296 **PLURAL MOTIONS OF ACTUATOR**
297 **WITH FRICTION DETENT**
298 **PIVOTED VALVES**
299 .Terminal
300 ..Gate
301 .Gate
302 ..Bifaced
303 .Biased
304 **ROTARY VALVES**
305 .Butterfly
306 ..Head and/or seat packing
307 ...Adjustable
308 ..Head and stem connections
309 .Plug
310 ..Axial and radial bore
311 ...Lateral inlet and outlet
312 ..Retainer at actuator end
313 .Biased
315.01 .Ball valve
315.02 ..Having a particular hardness (i.e., durometric property)
315.03 ..Of specific material
315.04 ...Ceramic (e.g., glass or fired clay)
315.05 ...Nonmetallic
315.06 ..Having a swinging actuator
315.07 ..Eccentric seating
315.08 ..Including trunnion opposite axially extending actuating means
315.09 ...With removable trunnion cover
315.1 ..Housing construction
315.11 ...Head removable perpendicular to flow passage
315.12 ....At the actuator side (i.e., top entry)
315.13 ...Assembled around the head
315.14 ...Head removable along one side of flow passage
315.15 ...Having inseparable head
315.16 ..Ball construction
314 .Seat or interface seal
316 ..Replaceable
317 ...Deformable material
317.01 ...Carried by head
318 **RECIPROCATING VALVE**
319 .Push or pull operator
320 ..Biased
321 ...Spring
322 ....Spring stop on valve stem
323 ....Spring abuts valve stem guide
324 .Piston
325 ..With internal flow passage
326 .Gate
327 ..Bifaced
328 ..Seats
329 ..Bodies
330 .Actuator controlled stem seal
331 .Diaphragm
332 .Diverse material seal at valve interface
333 .Particular head and seat cooperation
334 ..Elastic deformation
335.1 **HERMETIC FLEXIBLE WALL SEAL FOR ACTUATOR**
335.2 .Diaphragm
335.3 .Bellows
336 **BIASED VALVE**
337 .Springs and spring retainers
338 .Weight biased
339 **VALVE ACTUATOR EXTENDING THROUGH FLUID INLET OR OUTLET**
340 **VALVE ACTUATOR SURROUNDING PIPE, INLET OR OUTLET**
341 **VALVE ACTUATOR IS VALVE CASING OR EXTENSION THEREOF**
342 .Jointed or flexible wall

343 .Sleeve valve
344 ..Flow passage in sleeve
345 ..Rotary
346 .Plural motions of valve
347 .Reciprocating valve
348 .Biased valve
349 **VALVE ACTUATOR IS INLET OR OUTLET**
350 .Detachable tip
351 .Plural motions of valve
352 .Rotary
353 .Reciprocating spout
354 .Biased valve
355 **WITH ACTUATION LUBRICATING MEANS**
356 **VALVE**
357 .Removable seat engaging element
358 .Reinforced flexible material
359 .Seats
360 ..Removable
361 ...Mounted between casing sections
362 ...Compression or tension retained
363 ...With seal
364 ..Head engaging gasket
365 ..Retained by seat deformation
366 .Bodies
367 ..Sectional
368 .Materials
369 **MISCELLANEOUS**

CROSS-REFERENCE ART COLLECTIONS

900 **VALVES WITH O-RINGS**
901 **CURTAIN TYPE VALVES**
902 **SPRINGS EMPLOYED AS VALVES**
903 **NEEDLE VALVES**
904 **SNAP FIT PLUG VALVES**
905 **MOVABLE COIL ELECTRICAL ACTUATOR (E.G., VOICE COIL)**

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