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Engineering and Design
CONTROL GATES AND VALVES LISTING

1. Purpose. This pamphlet provides a list of pertinent data on water control gates and valves designed for and used on Corps of Engineers projects, and should eliminate duplication of design.
2. Applicability. This pamphlet applies to all field operating activities having civil works responsibilities.
3. Discussion. This listing includes gates and valves that control the flow of water and excludes lock gates that control navigation, except where the same gate is used under flow conditions to control the flow of water. This listing will also inform designers as to available gate and valve designs. This pamphlet will be updated periodically as warranted by new data.
4. Action. In designing gates and/or valves for future Corps' projects, the designer should make inquiries to other field operating activities listed in his/her pamphlet that have a similar gate or valve.

FOR THE COMMANDER:


JAMES W. RAY
Colonel, Corps of Engineers
Chief of Staff

BUTTERFLY VALVES (Cont'd)

NO	SIZE		TYPE MATERIAL	WEIGHT KIPS	DESIGN HEAD FT	GATE OR VALVE LOCATION	PROJECT NAME AND LOCATION	DESIGN ORGANIZATION
	H	X W						
32	42"		Ductile Iron	3.16	150 psi	Valve Vault Near Pumping Station	Emergency Water Pumping Station Potomac Estuary	Baltimore Dist., North Atlantic Div.
33	72"		Ductile Iron	10.5	25 psi	Intake to Pumping Station	Emergency Water Pumping Station Potomac Estuary	Baltimore Dist., North Atlantic Div.
34	30"		Ductile Iron	1.5	150 psi	Blow-off Valve	Emergency Water Pumping Station Potomac Estuary	Baltimore Dist., North Atlantic Div.
35	48"		Cast Iron	2.0	59.0	Low Flow Intake	Lewisville Lake Elm Fork, Trinity River, Texas	Fort Worth Dist., Southwestern Div.
36	60"		Cast Steel	1.5	161.0	Low Flow Intake	Warm Springs Dam Lake Sonoma, Dry Creek, Calif.	San Francisco Dist., South Pacific Div.
37	30"		Cast Steel	1.0	239.0	Low Flow Intake	Warm Springs Dam Lake Sonoma, Dry Creek, Calif.	San Francisco Dist., South Pacific Div.
38	4'H X 4'W (Commercial)		Structural Steel	-	-	Lock	Lock & Dam 52 Ohio River, Illinois	Louisville Dist., Ohio River Div.
39	3'-9"		Cast Iron	950	10.0	Lock Wall Culvert	Monongahela L&D No. 3, Penn.	Pittsburg Dist., Ohio River Div.
40	10'H X 8'W		Structural Steel	5.7	24.0	Lock Wall Culvert	Allegheny River New Lock No. 3	Pittsburg Dist., Ohio River Div.

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BUTTERFLY VALVES (cont'd)

39. Type seals - steel on steel; type machinery - hydraulic cylinder (rack, sector, gear, vertical stem - blade; remote push button operation; operating rate - 30 seconds; 33 valves; problems - valve blade corrosion. Keys formerly used to attach sector to shaft tended to loosen and were a constant maintenance problem. Gears are now welded to shaft; other info. - valve frame liners and lower 8 portion of valve shaft are corrosion resistant steel.
40. Type framing - horizontal I - beams and vertical angles welded to skin plate. Blade rotates about central horizontal axes; type seals - steel on steel; type machinery - hydraulic cylinder (connecting rod; rocker, strut, valve); manual operation; operating rate - 1 minute; 4 valves; problems - vibrations.
41. Type seals - steel on steel; type machinery - hydraulic cylinder (rack gear, sector gear, vertical shaft, valve); remote push button operation; operating rate - 30 sec.; 44 valves; problems - valve blade corrosion. Keys formally used to attach sector gear to shaft tended to loosen and were a constant service problem. Sector gears are now welded to shaft. Other info. - valve frame liners and lower 6'-8" portion of valve shaft are corrosion resistant steel.
42. Type seals - steel; type machinery - electric motor with gears; manual operation; operating rate - 50% per minute; 2 valves; problems - the cross head member of No. 1 butterfly broke due to 30 years of use and galvanic corrosion. The company that supplied the valves had gone out of business and a new cross head piece had to be machined.
43. Manual operation; 1 valve.
44. Type seals - 1 rubber; type machinery - 1 electric motor, 1 gear; manual operation; operating rate - 60 sec., 2 valves.
45. Type seals - metal to metal; type machinery - hydraulic controls; manual or automatic operation; operating rate - full closure in 5 min.; 2 valves.
46. Type seals - iron discs with bronze disc rings; type machinery - worm gear; manual operation; operating rate - 30 min.; 1 valve.
47. Type seals - iron discs with bronze disc rings; type machinery - motor - driven, 3-phase, type D-FRT56; motor operated; operating rate - 1 min.; 1 valve.
48. Type seals - shut-off rubber, low flow steel seals; type machinery - electric motor; manual operation; operating rate - 30 sec.; 1 valve.
49. Type machinery - electric motor; manual operation; operation rate - 4 min.; 2 valves; problems - contacts have a tendency to get dirty and not operate properly. Valve does not seal completely.
50. Manual or electrical operation; 2 valves.