THROUGH CONDUIT API 6D EXPANDING GATE VALVES

Expanding Gate Valves for High-Temperature Service

These high performance valves are capable of handling fluids, gases, steam and heated water at temperatures up to 1,000˚F (538˚C). Their unique design and outstanding features put them in a class by themselves for many critical service applications.

Metal-to-metal mechanical sealing. No elastomers used. Design does not depend on line pressure for shut-off seal, and is not affected by pressure surges, vibration or heat.

Adjustable external packing gland. Proven best for extremely hot service.

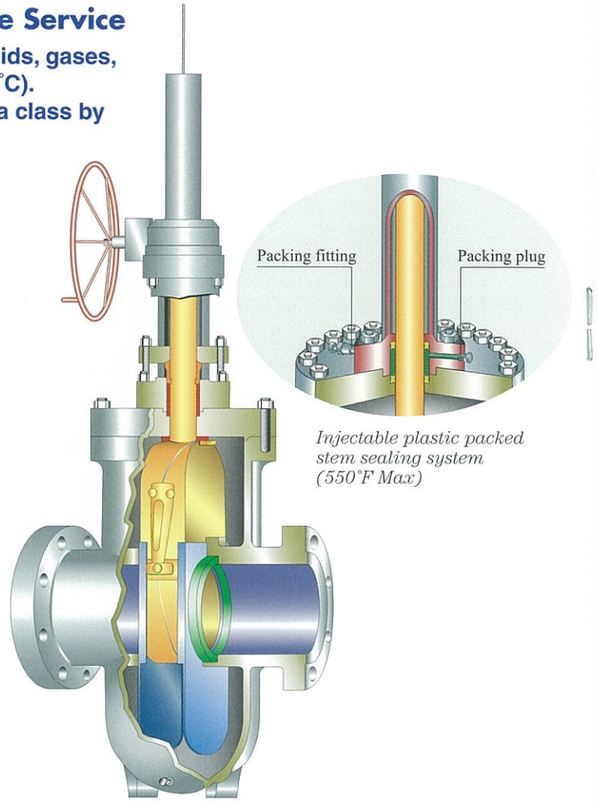
Metal-to-metal bonnet sealing. The bolted design is used on all valve sizes provides very effective sealing for high temperature applications.

Protected seat faces. An attractive feature of the through-conduit design. Seat faces are held away from the flow stream and are in full contact with the sliding gate in both the open and closed positions.

The flow stream passes smoothly through the valve body without turbulence. The pressure drop through the valve has a similar value as that of a flow through an equal length of pipe having the same diameter.

The rising stem design places stem threads well outside the critical heat area.

Block and bleed feature. In the closed position the gate provides a mechanical seal in both directions simultaneously, so allowing the body cavity to be bled. Serviceable in line.



Injectable plastic packed stem sealing system (550˚F Max)

THROUGH CONDUIT API 6D SLAB GATE VALVES

Floating Seat Design

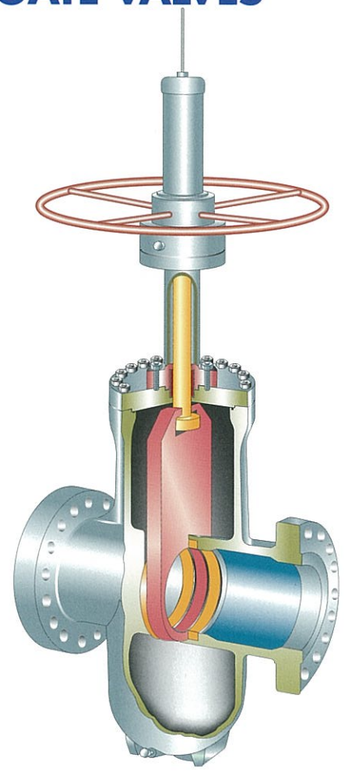
Operating Temperature Range:
-20˚F to 250˚F (-29˚C to 121˚C) with standard seat sealing materials.
550˚F (288˚C) with special seat sealing materials.

The simple and robust design of Through Conduit Slab Gate Valves provides a high degree of reliability and efficiency in operation. The two floating seats of hardened steel result in a complete seal with the gate. Each seat has two high temperature peripheral elastomer O-rings. As pressure mounts in the conduit, the floating action of gate and seats produces a tight seal in both the upstream and downstream directions. Stem back seat available.

The smooth continuous bore of the valve body minimizes turbulence, and the pressure drop through the valve is no greater than that of an equal length of same diameter pipe. Seat faces are away from the stream flow so are protected from contact with abrasive steam or heated water in both the open and closed positions.

Completely Serviceable in Line

The simple design of these valves allows them to be completely serviced without removing the body from the line. Replacement of seats can be readily carried out as the bonnet is connected immediately above the conduit body and the seat can easily be withdrawn.



MATERIALS

MAIN VALVE TRIMS FOR GEOTHERMAL

VALVE MODEL	SIZE	PRESSURE CLASS	TRIM	BODY	BONNET	GATE	SEATS	STEM	STEM PACKING
EA0/EAE EXPANDING GATE	2" - 4"	300 - 900	T-GE	Carbon Steel	Carbon Steel	Low Alloy Steel with HF6	Low Alloy Steel with HF6	17-4PH	FILLED TFE
EA0/EAE EXPANDING GATE	2.1/16" - 4.1/16"	2000 & 3000	T-GE	Alloy Steel	Alloy Steel	Low Alloy Steel with HF6	Low Alloy Steel with HF6	17-4PH	FILLED TFE
EB EXPANDING GATE	6"-18"	150 - 600 900	T-GE	Carbon Steel	Alloy Steel	Carbon Steel with HF6	Carbon Steel with HF6	17-4PH	FILLED TFE
ECW EXPANDING GATE	20"-36"	150 - 600	T-GE	Carbon Steel	Alloy Steel	Carbon Steel with HF6	Carbon Steel with HF6	17-4PH	FILLED TFE
SB SLAB GATE	6"-18"	150 - 300 400 - 600	T-GE	Carbon Steel	Alloy Steel	Carbon Steel with HF6	Carbon Steel with HF6	17-4PH	FILLED TFE
SD SLAB GATE	14"-36"	150	T-GE	Carbon Steel	Alloy Steel	Carbon Steel with HF6	Carbon Steel with HF6	17-4PH	FILLED TFE
SCW SLAB GATE	20"-36"	300 - 600	T-GE	Carbon Steel	Alloy Steel	Carbon Steel with HF6	Carbon Steel with HF6	17-4PH	FILLED TFE

1.All comforms to NACE MR-01-75
2.Special : Stainless Steel Gate and Seat on request. INCONEL or DUPLEX stems on request.
INCONEL Clad trims are available.
3.HF-6 : Cobalt base alloy (Stellite No.6) overlay.
4.Explanation of Trims : T-GE used in high temperature corrosive abrasive geothermal service.

PRESSURE-TEMPERATURE DERATING CHART

TEMPERATURE °F (°C)	BODY MATERIALS FOR API 6D	WORKING PRESSURE, PSIG													
		API 6D VALVES												API 6A VALVES	
		ANSI Class												API Class	
		300		400		600		900		1500		2500		2000	3000
		psi	MPa	psi	MPa	psi	MPa	psi	MPa	psi	MPa	psi	MPa	psi MPa	psi MPa
-20 to 100°F (-29 to 38°C)	WCC	750	5.2	1000	6.9	1500	10.3	2250	15.5	3750	25.9	6250	43.1	2000 13.8	3000 20.7
200°F (93°C)		750	5.2	1000	6.9	1500	10.3	2250	15.5	3750	25.8	6250	43.0	2000 13.8	3000 20.7
300°F (149°C)		730	5.0	970	6.7	1455	10.0	2185	15.1	3640	25.1	6070	41.8	1955 13.5	2930 20.2
400°F (204°C)		705	4.8	940	6.5	1405	9.7	2110	14.5	3520	24.2	5865	40.4	1860 12.8	2735 18.9
500°F (260°C)		665	4.6	885	6.1	1330	9.1	1995	13.7	3325	22.8	5540	38.0	1735 12.0	2605 18.0
600°F (316°C)		605	4.2	805	5.6	1210	8.4	1815	12.6	3025	20.9	5040	34.9	1540 10.6	2310 15.9
650°F (343°C)		590	4.1	785	5.4	1175	8.1	1765	12.2	2940	20.3	4905	33.8	1430 9.9	2145 14.8
700°F (371°C)		570	3.9	755	5.2	1135	7.8	1705	11.7	2840	19.5	4730	32.5		
750°F (399°C)		530	3.7	710	4.9	1065	7.3	1595	11.0	2660	18.4	4430	30.6		
800°F (427°C)	WC6	510	3.5	675	4.7	1015	7.0	1525	10.5	2540	17.5	4230	29.1		
850°F (454°C)		485	3.3	650	4.5	975	6.7	1460	10.0	2435	16.7	4060	27.9		
900°F (482°C)		450	3.0	600	4.1	900	6.0	1350	9.0	2245	15.0	3745	25.0		
950°F (510°C)		320	2.3	425	2.9	640	4.6	955	6.8	1595	11.4	2655	19.0		
1000°F (538°C)		215	1.5	290	2.0	430	3.0	650	4.5	1080	7.5	1800	12.4		