

JFS

BEIJING JOINT FLOW SYSTEM CO.



PLUG VALVE



PRESSURE BALANCED PIPING PLUG VALVE

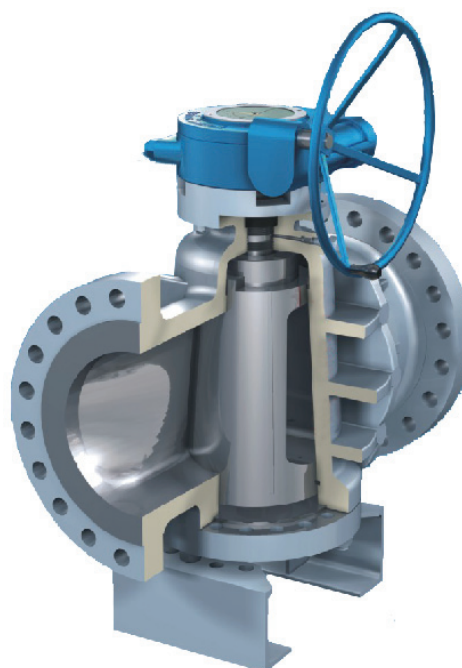
Plug valves are extremely versatile valves that are found widely in industrial applications, especially petroleum pipelines, chemical processing and related fields, and power plants. GX Series Pressure Balanced Pipeline Plug Valve is widely used as on/off valve for long distance transmission pipeline of natural gas. Pressure rating: class 150 - class 2500, size: NPS2- NPS24, working temperature: $\leq 180^{\circ}\text{C}$. This kind valve is more suitable for high-pressure difference, throttling, venting and draining in natural gas pipeline conditions.

FEATURE

- Grease sealing system improves plug valve sealing performance.
- Pressure balance function
- Anti-Blowout stem
- Balance ring
- Pre-loaded spring can control the clearance between sealing surfaces.
- Easy to operate
- Regulate the flow of liquids.
- Poison free Epoxy coating surface can meet different media requirements. The Epoxy thickness is not less than 0.3mm.
- Easy to maintain, and reduces plugging problems
- Less erosion, longer service life and reduced pumping costs
- Low torque to open
- High quality body material
- Superior sealing surface performance and zero leakage

WORKING PRINCIPLE

Valve main parts: body, stem, plug, gimbal, bottom cap, spring washer, adjusting screw, adjusting gasket, injection valve and actuator etc. It can be closed by 90 degrees clockwise rotation, while opened by reverse direction rotate 90 degrees. The port is designed to be Venturi type, the min. Flow area is more than 50% of full capacity.



PRESSURE BALANCED PIPING PLUG VALVE

TECHNICAL SPECIFICATION

- Rating: 150lb, 300lb, 600lb, 900lb, 1500lb
- Size: NPS2~NPS24 (DN50~DN600)
- Suitable temperature: < 46℃~180℃ (standard)
- Applicable specification
 - 1) Face to face: ASME B16.10
 - 2) Flange connection: ASME B16.5
 - 3) Inspection and pressure test: API598
 - 4) Design standard: API599, API6D etc
- Body material: WCB, A105, CF8, CF8M, 410 etc

PARTS LIST



No.	Parts Name
1	Actuator
2	Bolt
3	Key
4	Top plate
5	Nut
6	Inner protection ring
7	Outer protection ring
8	Gland
9	Packing
10	Check Valve
11	Injection Valve
12	Body
13	Stem
14	Balance ring plate
15	Pressure balanced valve
16	Plug
17	Spring
18	Spring support
19	Adjusting pad
20	Washer
21	Bottom cap
22	Thrust pad

PRESSURE BALANCED PIPING PLUG VALVE

MAIN PARTS MATERIAL

Category	Body/Bonnet	Plug	Stem	Bolt/Nut
Carbon steel	A105 A216 WCB/WCC Max C 0.25%	A105 A216 WCB/WCC	A29 Gr.4140	A193-B7 A194-2H
Low-temperature carbon	A350-LF2 A352 LCB/LCC Max C 0.23%	A350-LF2 A352 LCB/LCC	A29 Gr.4140	A320-L7 A194 Gr.7
Super stainless steel	UNS S31254 A351 CK3MCuN A182 F44 (Mo)	UNS S31254 A182 F44	UNS S31254 A182 F44	A453 Gr.660A
Duplex stainless steel	UNS S31803 A890 A182 F51 J92205 (Duplex 22% Cr)	UNS S31803 A182 F51	UNS S31803 A182 F51	A453 Gr.660A UNS S32760
Super duplex stainless steel	UNS S32750 A890 A182 F55 J93404 (Super Duplex 25% Cr)	UNS S32750 A182 F55	UNS S32750 A182 F55	UNS S32750
20# alloy steel	UNS N08020 A351 CN7M (Alloy 20)	UNS N08020 A351 CN7M	UNS S32750 UNS S322760	A453 Gr.660A UNS S32760

*Below material for bolt and nut is alternative.

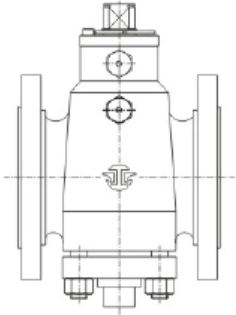
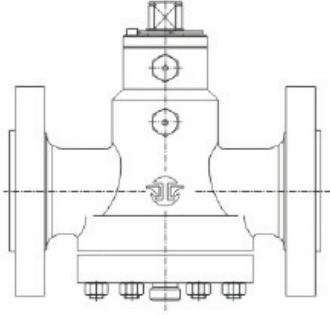
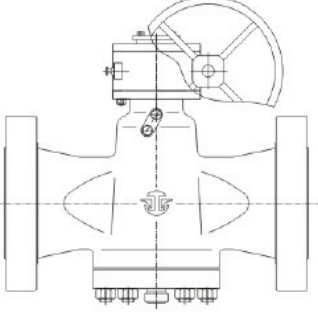
*ASTM A193 B7M, ASTM A194-2HM and ASTM A320-L7M used for NACE requirement condition.

*ASTM A320-L7 and A194-4 are for low- temperature condition.

PRESSURE BALANCED PIPING PLUG VALVE

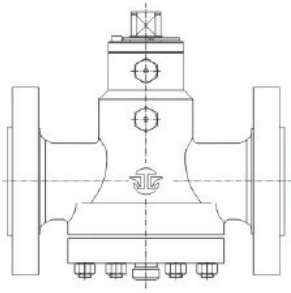
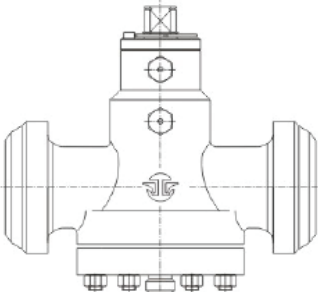
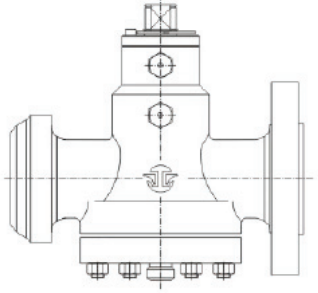
VALVE PATTERN AND PORT TYPE

We can manufacture series of plug valves that accords with API6D, API599 and BS5353. The main pattern such as: short pattern, regular, Venturi and full bore type all defined in these standards. The difference is face to face dimension and port type.

Valve Pattern	Short Pattern	Regular Pattern	Venturi Pattern
Description	This valve face to face dimension is in accordance with gate valve	This port is larger than Venturi type. The face to face dimension meets ANSI standard. It has small pressure loss for the body port, seat opening and plug port are transferred smoothly without any big shape changes.	This port is smaller than other two types. The port is Venturi pattern, it has small pressure loss because it can restore the velocity result from the head loss.
Figure			

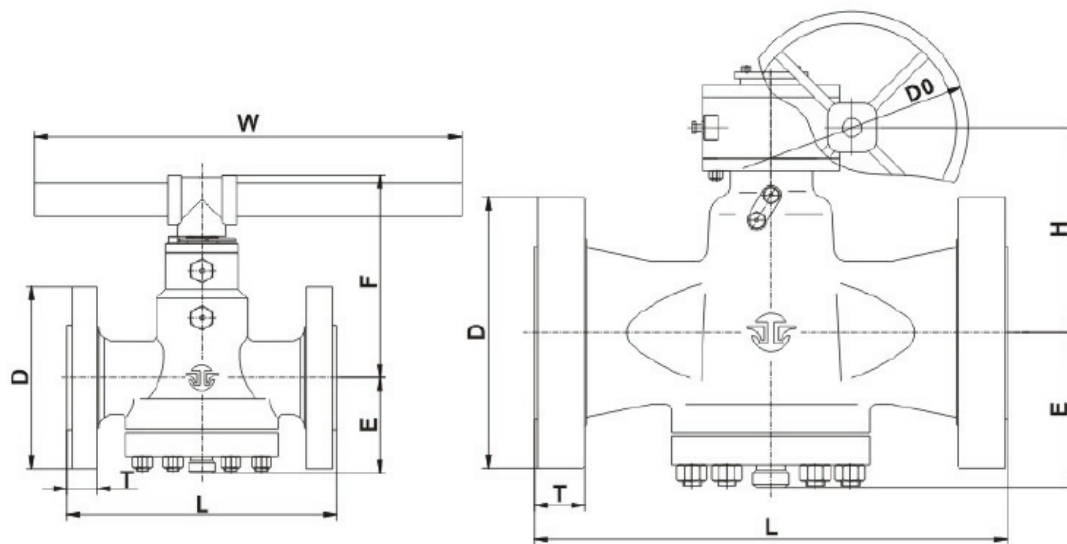
CONNECTION

Valve type end: Flange, butt welding or flange and butt welding end. Flange end: RF flange or RTJ flange

Valve Pattern	Flange	Butt-welding	Flange-BW
Figure			

PRESSURE BALANCED PIPING PLUG VALVE

DIMENSION (Class 150)



Short Pattern (DN50-DN300)

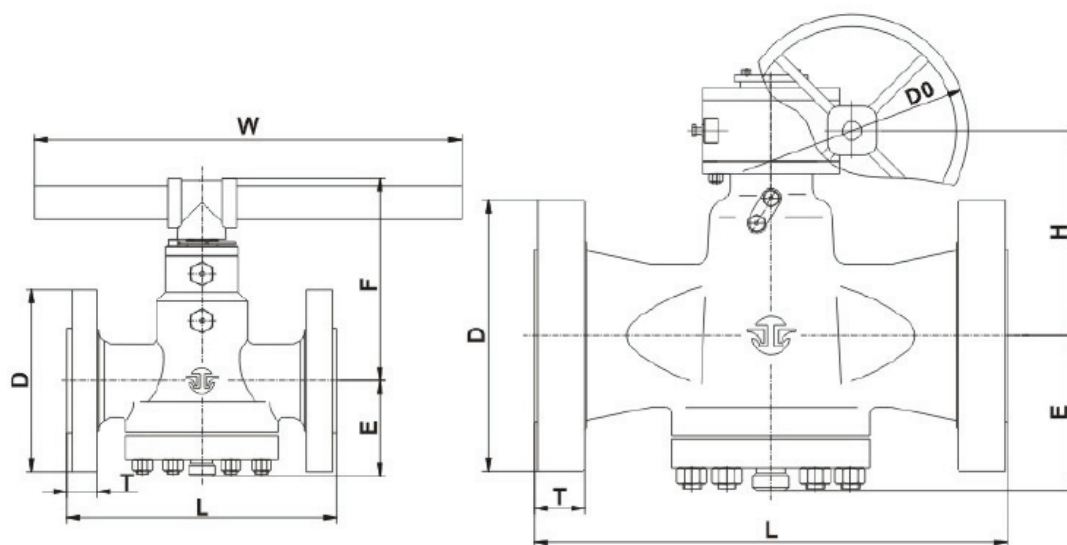
DN	NPS	L(RF)	L(RJ)	L(BW)	D	T	E	F	D0
50	2"	178	-	178	152	16	180	120	-
80	3"	203	-	203	191	19	220	165	-
100	4"	229	-	229	229	24	240	180	-
150	6"	267	-	267	279	26	250	210	560
200	8"	292	-	292	343	29	-	270	560
250	10"	330	-	330	406	31	-	320	560
300	12"	356	-	356	483	32	-	365	560

Venturi Pattern (DN250-DN600)

DN	NPS	L(RF)	L(RJ)	L(BW)	D	T	E	F	D0
250	10"	533	-	559	406	31	320	-	560
300	12"	610	-	635	483	32	365	-	500
350	14"	686	-	686	533	35	380	-	500
400	16"	762	-	762	597	37	400	-	700
450	18"	864	-	864	635	40	420	-	700
500	20"	914	-	914	699	43	470	-	700
600	24"	1067	-	1067	813	48	530	-	800

PRESSURE BALANCED PIPING PLUG VALVE

DIMENSION (Class 300)



Short Pattern (DN50-DN300)

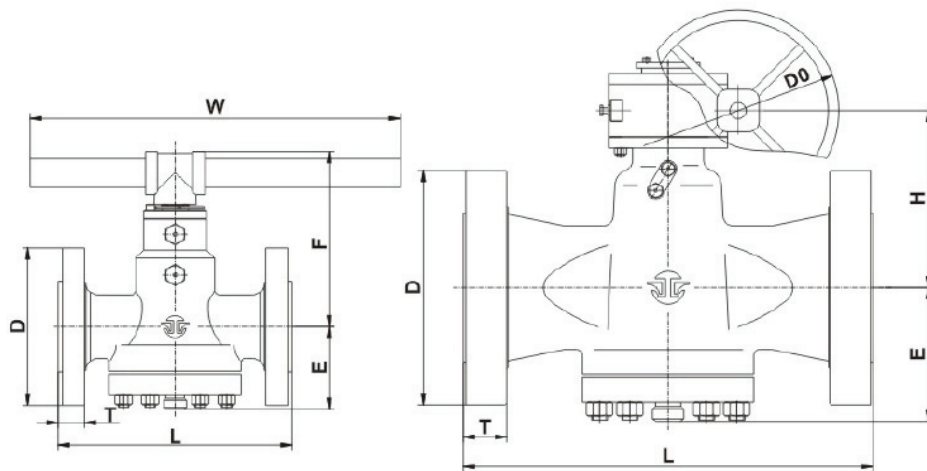
DN	NPS	L(RF)	L(RJ)	L(BW)	D	T	E	F	D0
50	2"	216	232	267	165	23	120	180	-
80	3"	283	298	330	210	29	165	220	-
100	4"	305	321	357	254	32	180	240	-
150	6"	403	419	457	318	37	220	250	560
200	8"	419	435	521	381	42	285	-	560
250	10"	457	473	559	445	48	320	-	560
300	12"	502	517	635	521	51	380	-	700

Venturi Pattern (DN150-DN600)

DN	NPS	L(RF)	L(RJ)	L(BW)	D	T	E	F	D0
150	6"	403	419	457	318	37	250	220	560
200	8"	419	435	521	381	42	-	285	560
250	10"	457	473	559	445	48	-	320	560
300	12"	502	517	635	521	51	-	380	700
350	14"	762	778	762	584	54	-	400	700
400	16"	838	859	838	648	58	-	430	700
450	18"	914	930	914	711	61	-	460	700
500	20"	991	1010	991	775	64	-	510	800
600	24"	1143	1165	1143	914	70	-	580	800

PRESSURE BALANCED PIPING PLUG VALVE

DIMENSION (Class 600)



Short Pattern (DN50-DN600)

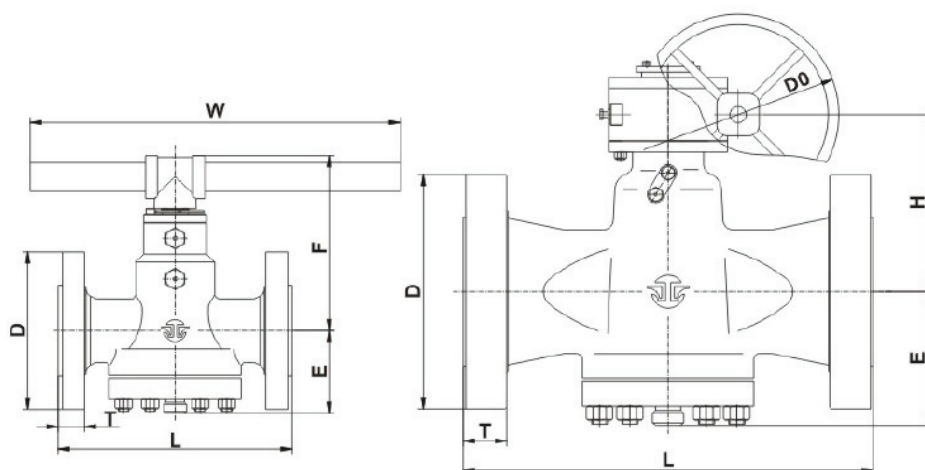
DN	NPS	L(RF)	L(RJ)	L(BW)	D	T	E	F	D0
50	2"	292	295	292	165	26	120	180	-
80	3"	356	359	356	210	32	165	220	-
100	4"	432	435	432	273	38	180	240	560
150	6"	559	562	559	356	48	250	-	560
200	8"	660	663	660	419	56	300	-	700
250	10"	787	790	787	508	64	320	-	800
300	12"	838	841	838	559	67	390	-	800
350	14"	889	892	889	603	70	412	-	800
400	16"	991	994	991	686	77	455	-	800
500	20"	1194	1200	1194	813	89	520	-	800
600	24"	1397	1407	1397	940	102	620	-	800

Venturi Pattern (DN150-DN600)

DN	NPS	L(RF)	L(RJ)	L(BW)	D	T	E	F	D0
150	6"	559	562	559	356	48	190	-	560
200	8"	660	663	660	419	56	250	-	560
250	10"	787	790	787	508	64	315	-	700
300	12"	838	841	838	559	67	340	-	700
350	14"	889	892	889	603	70	380	-	700
400	16"	991	994	991	686	77	430	-	800
450	18"	1092	1095	1092	743	83	460	-	800
500	20"	1194	1200	1194	813	89	480	-	800
600	24"	1397	1407	1397	940	102	510	-	800

PRESSURE BALANCED PIPING PLUG VALVE

DIMENSION (Class 900)



Short Pattern (DN50-DN100)

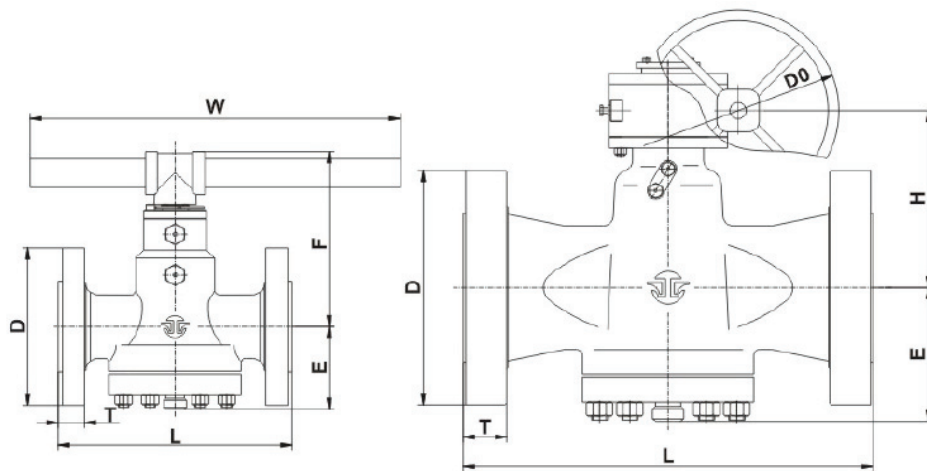
DN	NPS	L(RF)	L(RJ)	L(BW)	D	T	E	F	D0
50	2"	368	371	368	217	38.5	130	180	-
80	3"	381	384	381	242	38.5	180	220	-
100	4"	457	460	457	292	45	190	240	560

Venturi Pattern (DN50-DN600)

DN	NPS	L(RF)	L(RJ)	L(BW)	D	T	E	F	D0
50	2"	368	371	368	217	38.5	130	180	-
80	3"	381	384	381	242	38.5	180	220	-
100	4"	457	460	457	292	45	190	240	560
150	6"	610	613	610	381	56	200	-	560
200	8"	737	740	737	470	64	270	-	560
250	10"	838	841	838	546	70	350	-	700
300	12"	965	968	965	610	80	380	-	700
350	14"	1029	1038	1029	642	86	430	-	700
400	16"	1130	1140	1130	705	89	470	-	800
500	20"	1321	1330	1321	857	108	500	-	800
600	24"	1549	1558	1549	1041	140	580	-	800

PRESSURE BALANCED PIPING PLUG VALVE

DIMENSION (Class 1500)



Short Pattern (DN50-DN100)

DN	NPS	L(RF)	L(RJ)	L(BW)	D	T	E	F	D0
50	2"	368	371	368	216	38.5	180	210	-
80	3"	470	473	470	267	48	190	235	-
100	4"	546	549	546	311	54	200	-	560

Venturi Pattern (DN50-DN600)

DN	NPS	L(RF)	L(RJ)	L(BW)	D	T	E	F	D0
50	2"	368	371	368	216	38.5	180	210	-
80	3"	470	473	470	267	48	190	235	-
100	4"	546	549	546	311	54	200	-	560
150	6"	705	711	705	394	83	225	-	560
200	8"	832	841	832	483	92	280	-	560
250	10"	991	1000	991	584	108	390	-	700
300	12"	1130	1146	1130	673	124	440	-	700
350	14"	1257	1276	1257	749	133.5	490	-	700
400	16"	1384	1406	1384	825	146.5	530	-	800
500	20"	1664	1686	1664	984	178	560	-	800
600	24"	1943	1962	1943	1168	203.5	600	-	800