

## An improved valve with a proven history

We took an alternative path. Unlike many valve manufacturers who often strip valves in their quest to reduce manufacturing costs, we have taken a proven double block and bleed plug valve and improved its design.

With the new DuraSeal™, you get the proven advantages of a valve that has been considered the standard of quality since 1951. To improve the valve's integrity, we have incorporated a superior slip design and more durable body. To improve performance and longevity, we have incorporated a more reliable stem seal design.

In short, the new Franklin DuraSeal™ is made to last - not to make a quick sale.

## Reliable double protection mechanical seal

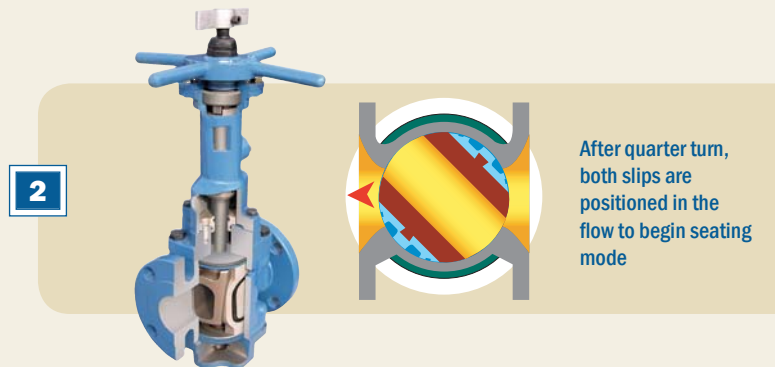
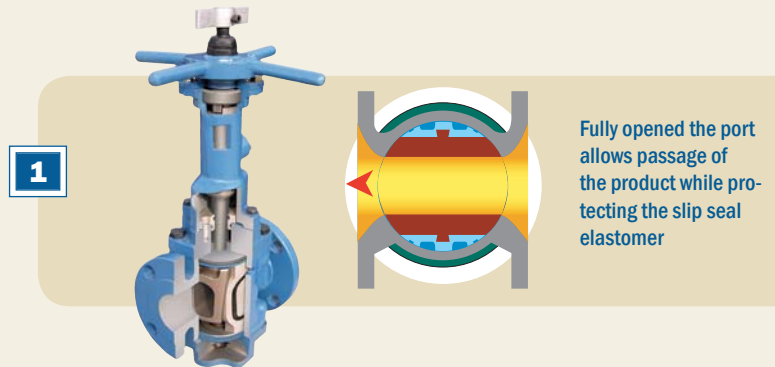
The Franklin DuraSeal™ plug valve seals mechanically. During rotation of the plug there is no abrasion or wear between the sealing surfaces. When the slips reach the closed position they expand firmly into the valve body creating a primary elastomeric and secondary metal-to-metal backup seal. The DuraSeal™ does not require sealant under any circumstance to seal.

## Fast Low Torque Operation

The DuraSeal™ can be easily automated using hydraulic or pneumatic or electric actuators. Torque requirements are low. In smaller sizes only two and one quarter turns can fully open or close the valve.

## Field Repairable/Interchangeable Parts

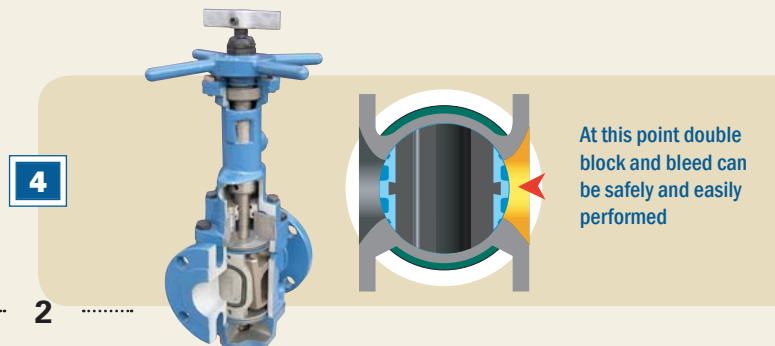
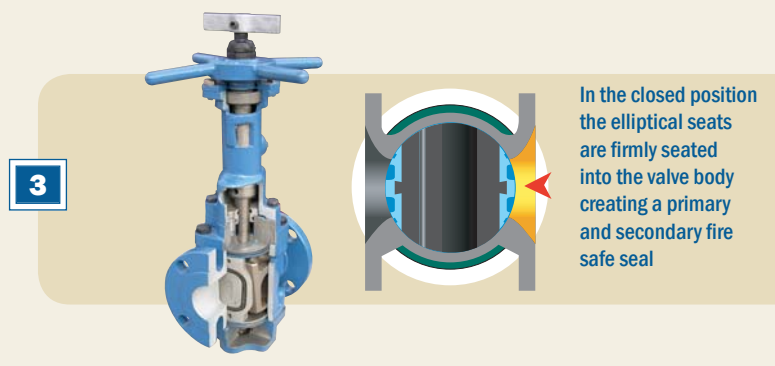
DuraSeal™ parts are completely interchangeable with the original 800 Series General Valve Twin Seal™ double block and bleed plug valve. DuraSeal™ components manufactured from superior materials can upgrade existing TwinSeals™ in the field. The DuraSeal™ can be repaired inline after depressurizing and draining the valve without special tools. Simply remove the valve's lower plate or bonnet and replace the slip/seal assemblies from top or bottom of the valve.

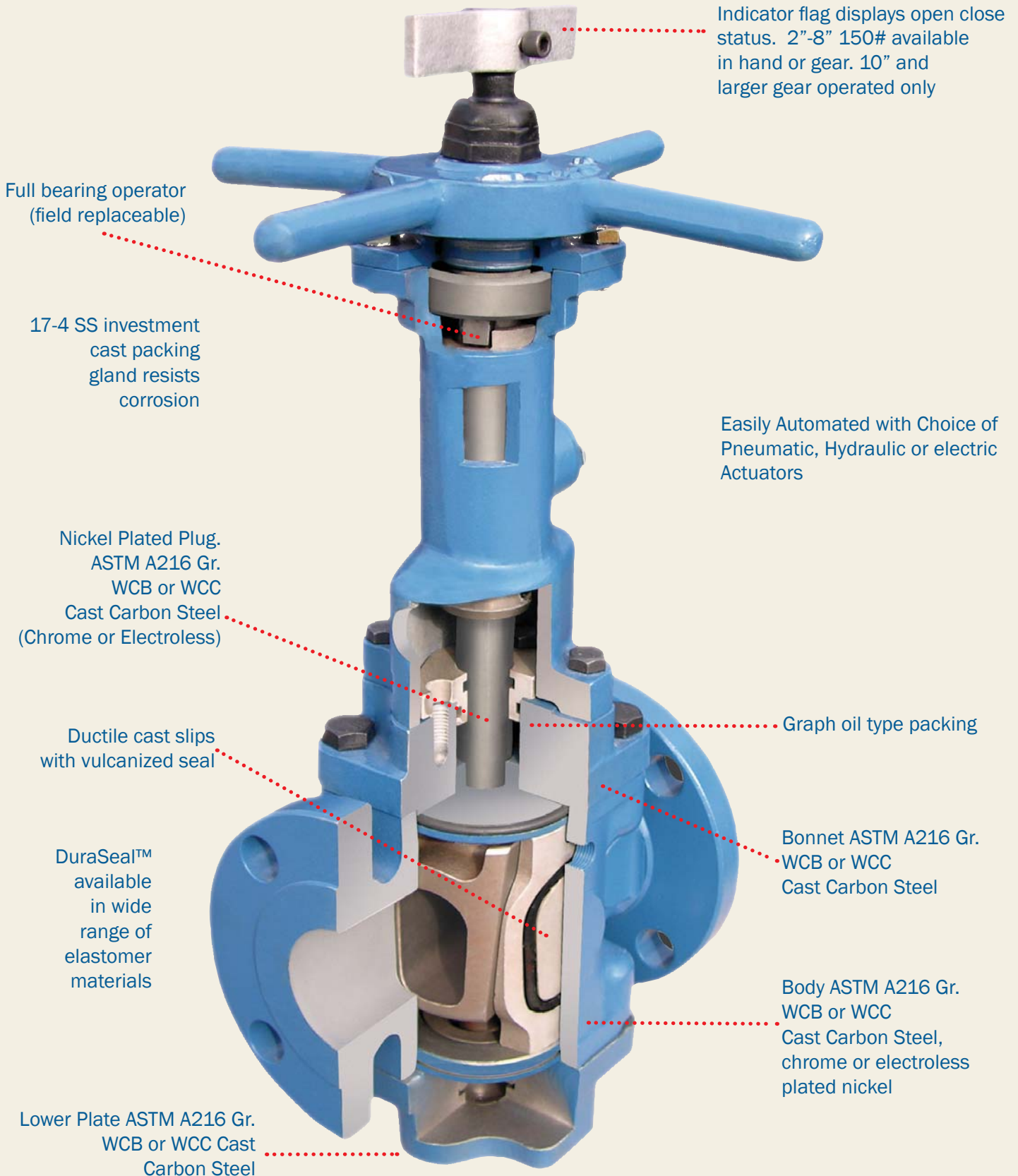


## Applications

With bubble-tight fire-safe sealing integrity and the ability to double block and bleed from a single valve, the DuraSeal is an excellent choice for applications that require frequent isolation and testing of gas or liquids.

- Product manifolds • Measurement units
- Isolation of processing equipment
- Loading Racks and Tank Isolation





Franklin Valve reserves the right to change trim codes w/o prior notification

## VALVE OPERATION

**Opening the Valve:** Turn the hand-wheel counter clockwise. During this operation the plug is raised while the slips are retracted away from the body. When the slips are fully retracted from the body seating area, the plug is then able to rotate 90 degrees to the fully open position. When the valve is in the full open position, the slips and slip seals are completely protected from line flow.

**Closing the Valve:** Turn the hand-wheel clockwise. During this operation the retracted plug and slips are rotated 90 degrees without body contact. This rotation continues until the slips are positioned over the upstream and downstream port areas. Continued rotation of hand-wheel mechanically forces the plug downward and forces the slips outward to seal firmly against the valve body. This produces a secondary metal to metal seal on both upstream and downstream areas providing double isolation.

## APPLICATION NOTES

- **Biofuels Product Isolation:** Secure sealing of Biofuels is critical in protecting the environment. The Duraseal® DBB with its verifiable secure shutoff is perfect when process must be contained.
- **Multi-Product Manifolds:** Some pipeline manifolds need to flow various products (e.g. diesel, jet fuel, gasoline, etc.) reliably and without contaminating one another. This DURASEAL® DBB Valve is used to provide positive shut off and zero leakage to prevent cross contamination.
- **Prover Loops:** In prover loops, the calibration of flow meters requires that every valve in the system must have zero leak rates. Any leak could mean an error in calibration. The DURASEAL® DBB Valve is used to ensure that when the valves in the system are closed, they are leak tight.
- **Custody Transfer Units:** Transfer of valuable media relies on accurate measurement of product. The DURASEAL® DBB provides secure tight shutoff ensuring that the transfer is accurate.
- **Terminals:** Loading and unloading tanker vessels requires positive sealing in order to prevent spillage into the water. The DURASEAL® DBB provides such positive sealing and is the most reliable in the market.
- **Tank Farms (Oil Depots):** Valves used for tank isolation needs to work reliably with zero leak rate. These valves are also operated frequently. The DURASEAL® DBB valves provide a reliable long term high integrity seal designed for frequent use with verifiable zero leak
- **Aviation Fueling Systems:** Fuel hydrants at airports need to allow for quick maintenance, repair, leak locating and testing. This requires a valve that can close quickly and positively seal off the relevant sections. The DURASEAL® DBB Valve's variable zero leak rate ensures that maintenance, repair, leak locating and hydrant testing can be done quickly and safely. Import/Export Facilities
- **Offshore Platforms:** Secure shutoff is imperative on an offshore platform in that leakage can result in contamination of the water and possible equipment damage. The DURASEAL® DBB is the best choice for low pressure positive shutoff.
- **Blending Units:** The accurate blending of high grade fuels requires valves of high sealing integrity to insure accurate addition of additives in blending operations.

700 VALVE SERIES	ANSI 150	ANSI 300	ANSI 600
Body	CAST CARBON STEEL ASTM A216 WCB WITH CHROME PLATED BORE	CAST CARBON STEEL ASTM A216 WCB WITH CHROME PLATED BORE	CAST CARBON STEEL ASTM A216 WCB WITH CHROME PLATED BORE
Bonnet/Lower Plate	CARBON STEEL – ASTM A216 WCB & ASTM A350 LF2 (2-6")	CARBON STEEL – ASTM A216 WCB & ASTM A350 LF2 (2-6")	CARBON STEEL ASTM A216 WCB & ASTM A350 LF2 (2-4")
Plug	ASTM A216 & ASTM A487 – 4D (14") WCB WITH ELECTROLESS NICKEL PLATING (1)	ASTM A216 WCB WITH ELECTROLESS NICKEL PLATING (1)	ASTM A216 WCB & ASTM A487 – 4D (2-6") WITH ELECTROLESS NICKEL PLATING (1)
Stem	A216 WCB WITH ELECTROLESS NICKEL PLATING (CASTED PLUG) (1)	A216 WCB WITH ELECTROLESS NICKEL PLATING (CASTED PLUG) (1)	A216 WCB & ASTM A487 – 4D (2-6") WITH ELECTROLESS NICKEL PLATING (1)
Slips	Ductile Iron ASTM A536 Gr 80-55-06, ASTM A 395 60-40-18 & ASTM A516 70	Ductile Iron ASTM A536 Gr 80-55-06, ASTM A 395 60-40-18 & ASTM A516 70	Ductile Iron ASTM A536 Gr 80-55-06, ASTM A 395 60-40-18 & ASTM A516 70
Gland	17-4 SS	17-4 SS	17-4 SS
Gland Packing	Graphite	Graphite	Graphite
Body Fire Seals	Graphite	Graphite	Graphite
O-Rings & Slip Seals	See trim selection	See trim selection	See trim selection
Fasteners	ASTM A193 Gr. B7 / 2H	ASTM A193 Gr. B7 / 2H	ASTM A193 Gr. B7 / 2H

Note: All Materials subject to change without notice. \*Manganese Phosphate Coating available \* NACE SPECIFICATION AVAILABLE \*ENP Bore available  
In accordance with NACE MRO175 Latest Edition

Proper seal selection requires a number of considerations such as media, pressure class, differential pressure, low temperature, high temperature, seal type, etc. To that end we have included a selection of slip seal materials and a brief list of considerations:

### Fluoro Elastomers Slip Seal Materials

V	Viton	Our Standard Material
V9	Viton 90 Durometer	Standard HIDP
VFR	Fiber Reinforced Viton	Optional HIDP
VGF	Viton GF	Viton with Enhanced Chem. Resistance
VGLT	Viton GFLT	Low Temp Viton GF
VGLT9	Viton 90 Durometer GFLT	HIDP Low Temp Viton GF

### Nitrile Elastomers Slip Seal Materials

H	Nitrile	Standard Nitrile
H9	Nitrile 90 Durometer	HIDP Nitrile
LH	Low Temp Nitrile	Low Temp Nitrile
H5	Modified Nitrile	Reformulate Gasoline Seal Material

### Specialty Slip Seal Materials

C	Epichlorohydrin	Good Low Temp Material
E	Ethylenepropylene	Ammonia but not Hydrocarbon
UHS	Fluorosilicone	Good High and Low Temp
AFL	AFLAS	Amines, exp. decomp., steam, 450° F

All specifications and materials are subject to change without notice. DURASEAL conforms to API 6FA testing

**1.0 SCOPE OF INSTRUCTION**

- 1.1 This information is provided for support of the Duraseal Valve in maintaining the maximum life and function of the valve.
- 1.2 The contained information is subject to change without notice.
- 1.3 This document provides information for typical installations. In the event of unique situations, please contact your representative or the factory.

**2.0 DEFINITIONS**

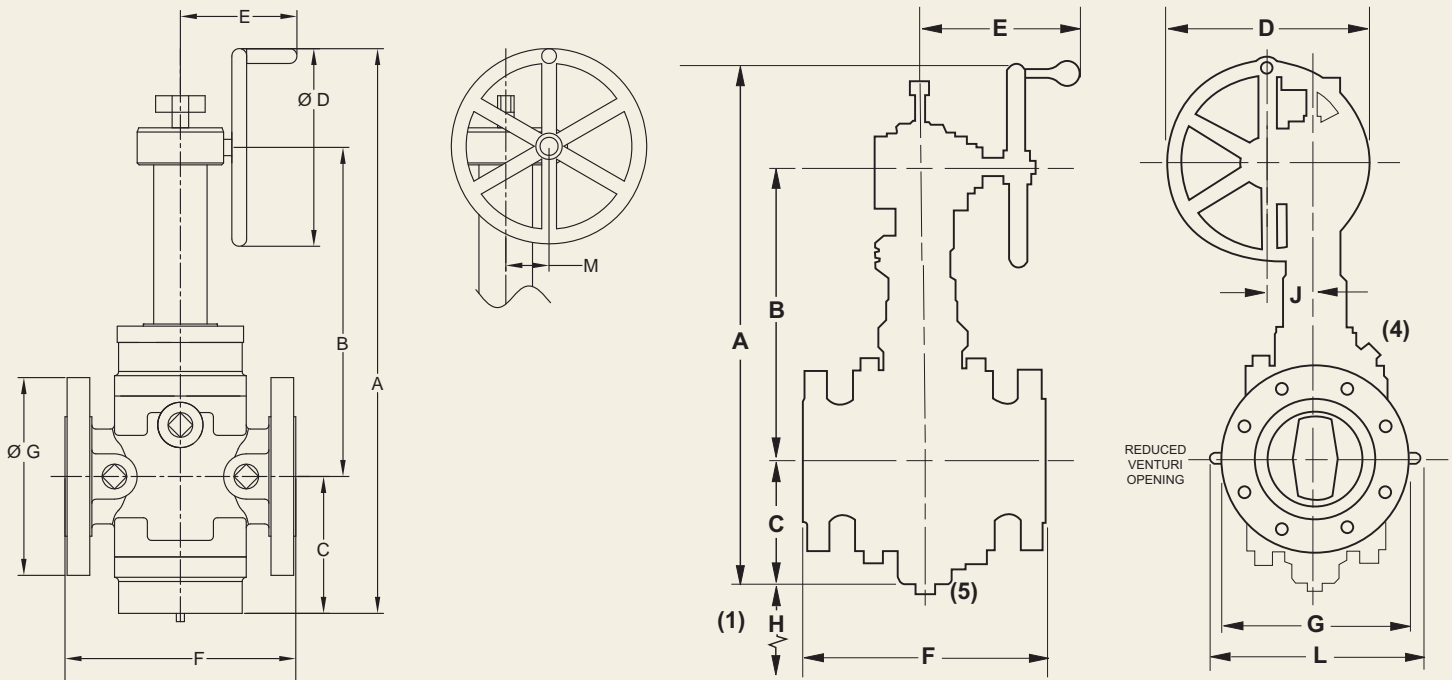
- 2.1 DBB - Double Block and Bleed, method to test seat integrity with valve closed while under pressure.
- 2.2 DIB-1 - Double Isolation and Bleed, Bi-Directional seating. API 6D definition of redundant sealing surfaces in both flow directions.
- 2.3 DTR - Differential Thermal Relief, provides the cavity relief functions of API 6D. Also contains DBB bleed function.

**3.0 CONSIDERATIONS**

- 3.1 Positioning of valve to provide operational access in installation. This is of particular concern for manually operated valves in pipe racks. Operator and handwheel extensions are available to improve access. See PUB-002-EN for details on the extension of DTR systems.
- 3.2 Positioning of DTR to provide proper function. The DTR relief direction should be toward the pressure side to be isolated. In a typical piping system, there is often a specific direction. When isolating equipment such as pumps, the preferred isolation may be different from the prevailing flow direction. See PUB-002-EN for DTR details.
- 3.3 Positioning of bleeds and drains to provide adequate operation. On valves which require complete draining, ensure that drains are positioned to provide complete draining. On valves which require DBB operation, it is typically preferable to position bleed valves for an elevated position so that DBB bleeds the minimum amount of liquid.
- 3.4 Positioning for reducing damage due to solids contained in fluids. With solids in the fluids it is preferable to have regular draining of the body cavity to reduce accumulation and reduction of performance. It is also preferable to have the DTR to the upper side so that solids do not damage the DTR checks or valves.

**4.0 PREFERRED MOUNTING POSITIONS**

- 4.1.1 Positioning of the stem in the vertical position or with the stem above horizontal is acceptable. User must take drain and bleed issues into consideration.
- 4.1.2 If the valve is oriented with the stem in the horizontal position, it is preferable that the left flange is receiving the prevailing flow and that the DTR is on the upper side. This provides an inlet flow upon opening that tends to flush out any accumulated solids.
- 4.1.3 Mounting of the valve with the waterway oriented vertically is acceptable. This provides an inherent cavity flushing characteristic in both the upward and downward flow directions.
- 4.1.4 Mounting the valve with the stem facing down is non-preferred, but may be acceptable for very clean conditions. This exposes the stem and stem seals to potential damage from settling solids and exposes the DTR to potential accumulations.



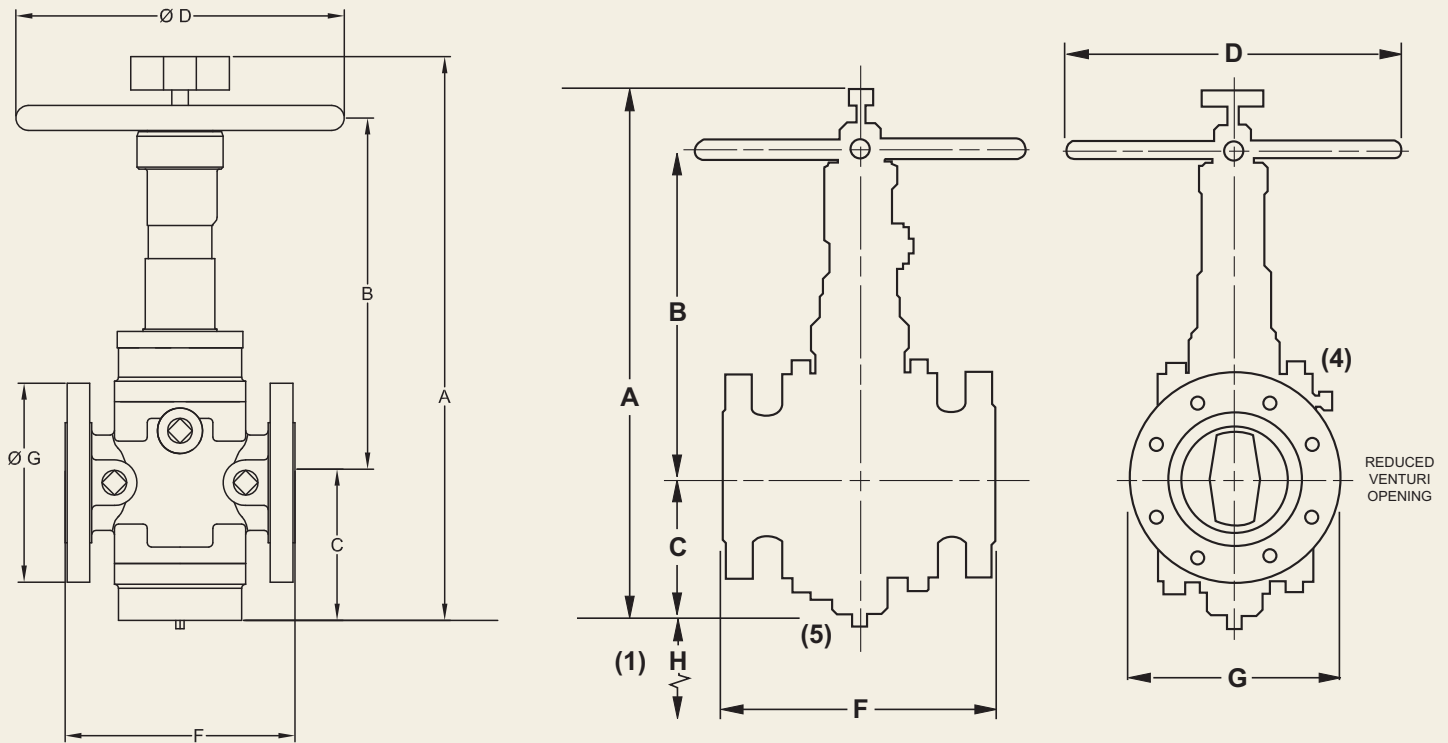
	SIZE	MODEL	OPER.	A	B	C	D	E	F	G	H	J	WEIGHT(lbs)	(3)	(4)	(5)
ANSI 150	2	D711	101	21	12	4 ½	8	10 ½	7	6	3	1 ½	64	NONE	3/8 NPT	1/4 NPT
	3	D711	101	21	12	4 ½	8	10 ½	8	7 ½	3	1 ½	76	NONE	3/8 NPT	1/4 NPT
	4	D711	201	27	15 ½	7	10	11	9	9	4 ½	1 ¾	140	NONE	1/2 NPT	1/4 NPT
	6	DA711	301	36	20 ½	8 ½	14	12 ½	10 ½	11	8	3	264	(4) ¾" 10 UNC	1/2 NPT	1/4 NPT
	8	D711	301	39 ½	22	10 ½	14	12 ½	11 ½	13 ½	11	3	436	(4) ¾" 10 UNC	1/2 NPT	1/4 NPT
	10	D711	301	42	23	12	14	12 ½	13	16	14	3	532	(4) 7/8" 9 UNC	1/2 NPT	1/4 NPT
	12	D711	401	55 ½	31	14 ½	20	12 ½	14	19	16	3 ½	844	(4) 7/8" 9 UNC	1/2 NPT	1/4 NPT
	14	D711	401G	57	32 ½	16	20	12 ½	15	21	19	3 ½	1074	(4) 1" 8 UNC	1/2 NPT	1/4 NPT
	16	D711	501	67	39	18	20	14 ½	16	23 ½	21	5	1488	(8) 1" 8 UNC	1/2 NPT	1/2 NPT
	20*	D711	501	64	37	17	20	14 ½	40	27 ½	17	5	3326	NONE	1 NPT	1/4 NPT
24*	D711	501	78 ½	44	24 ½	20	14 ½	48	32	20	5	6264	NONE	1 NPT	1 NPT	
ANSI 300	2	D721	101	21	12	4 ½	8	10 ½	8 ½	6 ½	3	1 ½	78	NONE	3/8 NPT	1/4 NPT
	3	D721	101	21	12	4 ½	8	10 ½	11 1/8	8 1/4	3	1 ½	102	NONE	3/8 NPT	1/4 NPT
	4	D721	201	27	15 ½	7	10	11	12	10	4 ½	1 ¾	162	NONE	1/2 NPT	1/4 NPT
	6	D721	301	36	20 ½	8 ½	14	12 ½	15 7/8	12 ½	8	3	348	NONE	1/2 NPT	1/4 NPT
	8	D721	401	49 ½	28	11	20	12 ½	16 ½	15	11	3 ½	666	(4) 7/8" 9 UNC	1/2 NPT	1/4 NPT
	10	D721	401	52	29	12 ½	20	12 ½	18	17 ½	13	3 ½	888	(4) 1" 8 UNC	1/2 NPT	1/4 NPT
	12	D721	501	63 ½	36 ½	16 ½	20	14 ½	19 ¾	20 ½	16	5	1414	(8) 1 1/8" 8 UNC	1/2 NPT	1/4 NPT
	14	D721	401	58 ½	34 ½	14 ½	20	14 ½	30	23	15	5	1990	NONE	1/2 NPT	1/2 NPT
ANSI 600	2	D741	201	24 ½	15 ½	15 1/2	20	10 ½	11 ½	6 1/2	2 1/2	1 ½	100	NONE	1/2 NPT	1/4 NPT
	3	D741	201	26	16	16	20	10 ½	14	8 1/4	3 1/2	1 ½	142	NONE	1/2 NPT	1/4 NPT
	4	D741	301	29 ½	19	19	20	11	17	10 3/4	4	1 ¾	230	NONE	1/2 NPT	1/4 NPT
	6	D741	401	45	26	9	20	12 ½	22	14	10	3 ½	696	NONE	1/2 NPT	1/4 NPT
	8	D741	401	48	27	11	20	13 ½	26	16 ½	12	5	1102	NONE	1/2 NPT	1/4 NPT
	10	D741	501	62 ½	36 ½	16	20	14 ½	31	20	8	5	1974	NONE	1/2 NPT	1/2 NPT
	12	D741	501	62 ½	38	17	20	14 ½	33	22	10	5	2532	NONE	1/2 NPT	1/2 NPT

- (1) H-Minimum clearance required to replace slips.
- (2) Approximate Weights (Lbs.)
- (3) Number and size tapped holes.
- (4) Tapped bleeder hole.
- (5) Bottom plate drain hole.

Dimensions "F", "G" & "J" are exact. All others are rounded off to the nearest half-inch.

(6) Dimensions are not certified. Contact the factory for certified drawings.

\* Reduced Round Opening



CLASS	SIZE	MODEL	OPER.	A	B	C	D	F	G	H	WEIGHT(lbs)	(3)	(4)	(5)
ANSI 150	2	D711	100	17	11	4 ½	10	7	6	3	48	NONE	3/8 NPT	1/4 NPT
	3	D711	100	17	11	4 ½	10	8	7 ½	3	62	NONE	3/8 NPT	1/4 NPT
	4	D711	200	27	16	7	20	9	9	4 ½	132	NONE	1/2 NPT	1/4 NPT
	6	D711	200	32 ½	20 ½	9	20	10 ½	11	8	214	(4) ¾" 10 UNC	1/2 NPT	1/4 NPT
	8	D711	300	36	22	10 ½	20	11 ½	13 ½	11	388	(4) ¾" 10 UNC	1/2 NPT	1/4 NPT
ANSI 300	2	D721	100	17	11	4 ½	10	8 ½	6 ½	3	54	NONE	3/8 NPT	1/4 NPT
	3	D721	100	17	11	4 ½	10	11 ⅛	8 ¼	3	76	NONE	3/8 NPT	1/4 NPT
	4	D721	200	27	16	7	20	12	10	5	158	NONE	1/2 NPT	1/4 NPT
	6	D721	300	32 ½	20 ½	9	20	15 ⅞	12 ½	8	318	NONE	1/2 NPT	1/4 NPT
ANSI 600	2	D741	200	24 ½	15 ½	15 ½	20	11 ½	6 ½	2 ½	100	NONE	1/2 NPT	1/4 NPT
	3	D741	200	26	16	16	20	14	8 ¼	3 ½	142	NONE	1/2 NPT	1/4 NPT
	4	D741	300	29 ½	19	19	20	17	10 ¾	4	230	NONE	1/2 NPT	1/4 NPT

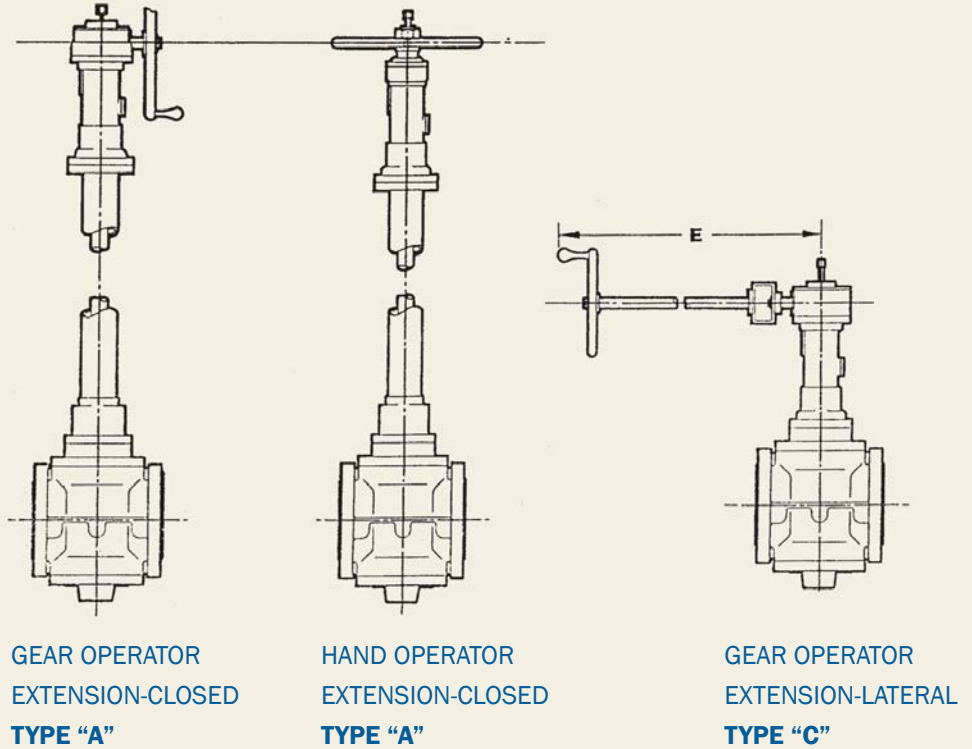
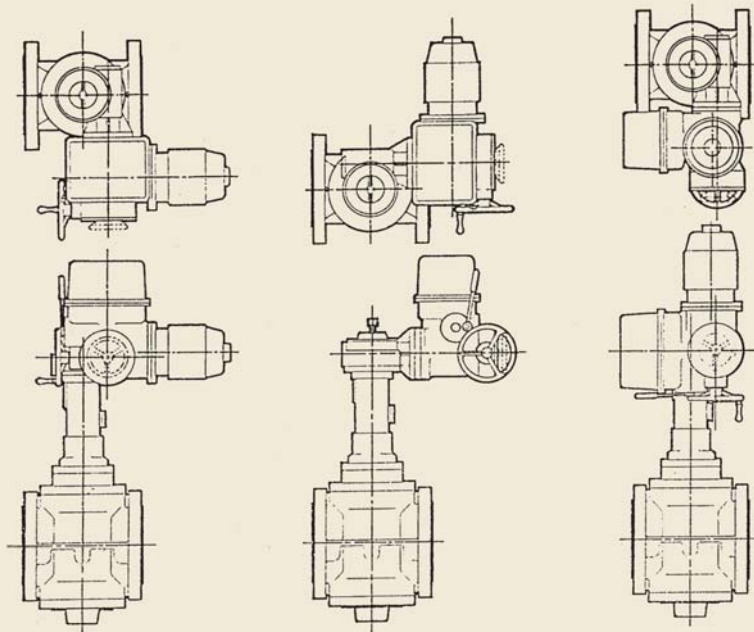
(1) H-Minimum clearance required to replace slips.  
 (3) Number and size tapped holes. Each flange.

(4) Tapped bleeder hole.  
 (5) Bottom plate drain hole.

Dimensions "F" & "G" are nominal.  
 All others are rounded off to the nearest half-inch.

**Franklin Valve Extension Kit**

Franklin makes available both vertical and lateral extensions. In ordering, always specify dimensions B or E. Type A extension is suitable for underground burial. Type C extension should be supported if dimension E is over 36"


**Franklin Electric Motor Actuation**


**STYLE "A" -**  
(Standard mounting)  
MOTOR OPERATOR  
MOUNTED PARALLEL  
TO PIPE LINE

**STYLE "B" -**  
MOTOR  
OPERATOR  
MOUNTED AT  
RIGHT ANGLE  
TO PIPE LINE

**STYLE "C" -**  
MOTOR  
OPERATOR  
MOUNTED  
VERTICAL  
TO PIPE LINE

**WHEN ORDERING ELECTRIC MOTOR OPERATORS, SPECIFY THE FOLLOWING DATA:**
**INSTALLATION**

1. Mounting style
2. Valve installation attitude (for proper location of breathers and drains)

**TYPE OF VALVE**

3. Valve figure number
4. Size
5. ANSI rating

**OPERATING CONDITIONS**

6. Differential pressure in psi
7. Operating time in seconds

**ELECTRICAL DATA**

8. Explosion proof NEMA VII or weatherproof NEMA IV
9. Phase, Cycle, Volts - controls and motors

**SPECIAL FEATURES**

10. Gear limit switch (2 or 4 train)
11. Reversing controller (if separate, it is to be explosion proof NEMA VII, or weatherproof)
12. Breather or drains, if desired
13. Space heater, if desired
14. Control transformer, if desired (specify voltage)
15. Other special requirements



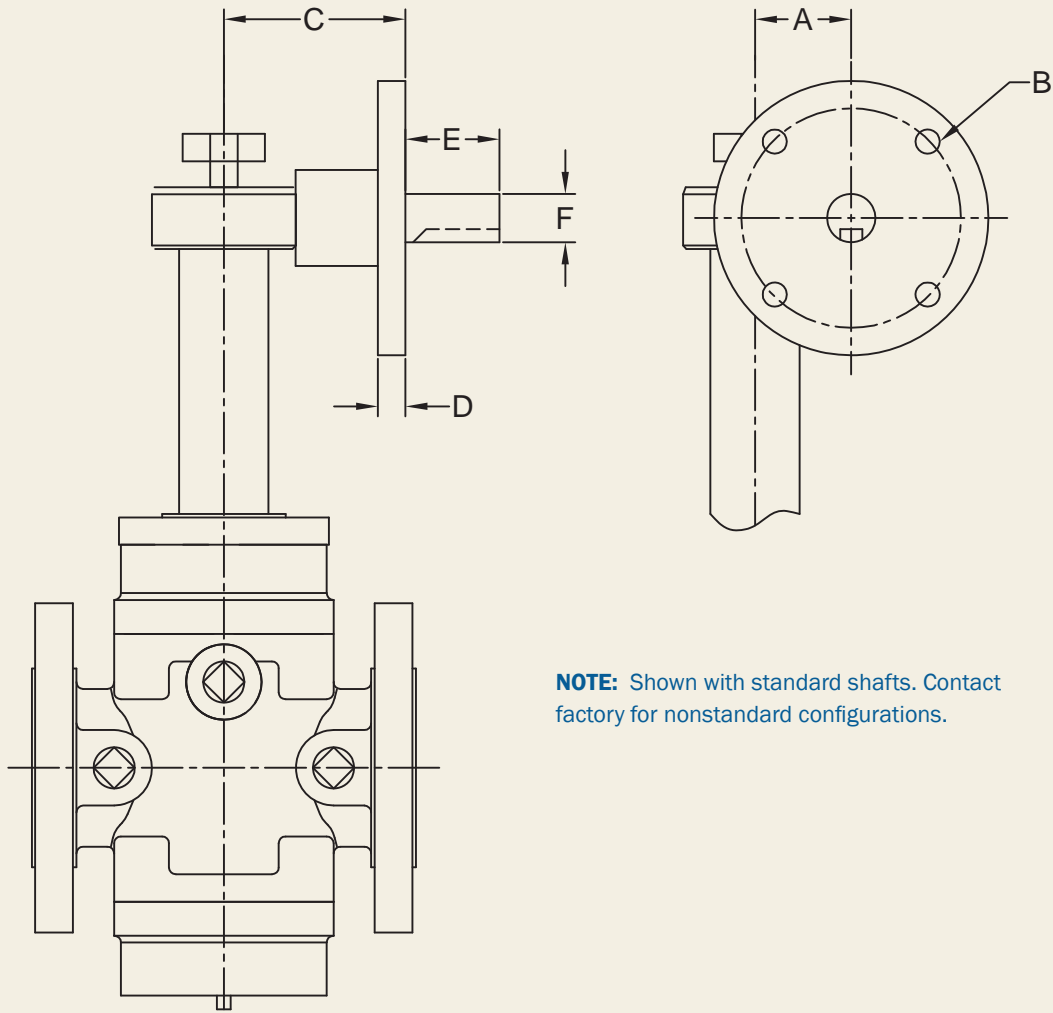
## Flow Coefficients (CV)

VALVE	CV
2" 150# D711	195
2" 300# D721	205
2" 600# D741	290
3" 150# D711	200
3" 300# D721	210
3" 600# D741	300
4" 150# D711	530
4" 300# D721	570
4" 600# D741	850
6" 150# D711	1415
6" 300# D721	1770
6" 600# D741	2265
8" 150# D711	2400
8" 300# D721	3000
8" 600# D741	3600
10" 150# D711	3500
10" 300# D721	3540
10" 600# D741	5100
12" 150# D711	4000
12" 300# D721	4700
12" 600# D741	9200
14" 150# D711	5500
14" 300# D721	6000
16" 150# D711	6600
16" 300# D721	9400
20" 150# D711	15700
24" 150# D711	24000

The Cv listing above is in gallons per minute of flow of water at 60 degrees F w/ (1) PSI pressure drop across the valve

## Franklin Valve DuraSeal Torque & Turns

VALVE	OPERATOR	TORQUE	TURNS	SEATING THRUST	M/KG
2" 150# D711	100 HWO	46	1.8	1,000	6.4
2" 150# D711	101 Gear	2.4	17	1,000	0.33
2" 300# D721	100 HWO	30	1.8	2,618	4.14
2" 300# D721	101 Gear	6	17	2,618	0.83
2" 600# D741	201 Gear	19	13	2,618	2.6
3" 150# D711	100 HWO	15	2	1,605	2.1
3" 150# D711	101 Gear	6	16	1,605	0.83
3" 150# D711	101 Gear	3	17	1,605	0.83
3" 300# D721	101 Gear	6	16	4,202	1.9
3" 300# D721	100 HWO	30	1.8	4,202	4.1
3" 600# D741	201 Gear	28	16	8,407	3.9
4" 150# D711	200 HWO	25	2.7	2,566	12.4
4" 150# D711	201 Gear	7	20	2,566	3.2
4" 300# D721	200 HWO	25	2.7	6,713	3.5
4" 300# D721	201 Gear	45	10	6,713	6.2
4" 600# D741	301 Gear	38	18	13,437	5.3
6" 150# D711	301 Gear	19	18.5	5,218	2.6
6" 150# D711	300 HWO	30	2.7	5,218	4.1
6" 300# D721	301 Gear	60	18.5	13,666	8.3
6" 600# D741	401 Gear	117	29	33,412	16
8" 150# D711	301 Gear	41	18.5	8,893	12
8" 300# D721	401 Gear	105	21	22,500	14.5
8" 600# D741	401 Gear	125	21	31,070	17.3
10" 150# D711	301 Gear	66	20	12,987	9.1
10" 300# D721	401 Gear	138	25	34,000	19
10" 600# D741	501 Gear	185	46	85,500	25.5
12" 150# D711	401 Gear	90	23	18,638	13.1
12" 300# D721	501 Gear	184	41	49,498	13.1
12" 600# D741	501 Gear	219	46	120,948	30.3
14" 150# D711	401 Gear	92	28	22,282	12.7
14" 300# D721	501 Gear	209	43	57,680	28.9
16" 150# D711	501 Gear	104	45	25,004	14.4
20" 150# D711	501 Gear	158	45.5	48,922	21.9
24" 150# D711	501 Gear	167	53	77,140	23



**NOTE:** Shown with standard shafts. Contact factory for nonstandard configurations.

OP#	A	B-BOLT PATTERN	C	D	E	F
201	1 3/4	4 X 00.44 ON 4.0 B.C.D.	5.4	0.50	1.3	00.868 / 0.866 W/KEYWAYS (1) WOODRUFF 605 & (1) 5/16X1.0
301	3	4 X 00.44 ON 4.0 B.C.D.	6.0	0.50	2.4	01.250 / 1.245 W/KEYWAYS (1) WOODRUFF 1009 & (1) 5/16X1.12
		4 X 00.688 ON 5.5 B.C.D.	6.0	0.63	2.4	
401	3 1/2	4 X 00.44 ON 4.0 B.C.D.	6.0	0.50	2.4	01.249 / 1.245 W/KEYWAYS (1) WOODRUFF 1009 & (1) 5/16X2.12
		4 X 00.688 ON 5.5 B.C.D.	6.0	0.63	2.4	
501	5	4 X 00.44 ON 4.0 B.C.D.	7.6	0.50	2.8	01.249 / 1.245 W/KEYWAYS (1) WOODRUFF 1009 & (1) 5/16X2.12
		4 X 00.688 ON 5.5 B.C.D.	8.0	1.05	2.4	
		4 X 00.812 ON 6.5 B.C.D.	8.0	1.05	2.4	

**The Duraseal valve is by design a bidirectional DIB-1 valve:**

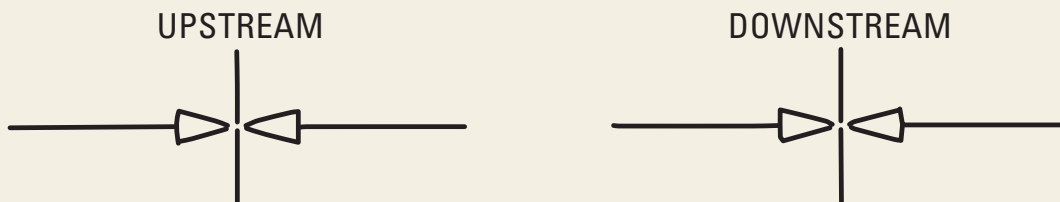
This design has inherent characteristics of trapping body cavity pressure. Because valves in liquid or condensing service can have a thermal hydraulic expansion within the trapped cavity, API 6D requires a cavity pressure relief system. The valves on the configurations permit different directionality characteristics.

These configurations relate to the operational reliefs and DBB operation. The lower body bleeds are not addressed in this document, but should be used as necessary to eliminate line solids from accumulating under the plug.

For the following configurations, the left flange (when facing the piping of an upright valve) is the upstream flange. For installations with clearance issues, a reverse DTR may be ordered which provides the right flange as the upstream flange.

The upstream flange is the flange of preferred pressure isolation. Depending upon the required isolation, the valve preferred pressure direction may not be the direction of flow. For applications where a piece of equipment is being isolated from the piping, the preferred pressure isolation will typically be the flange away from the equipment.

Extending of the Body Bleed Outlets: For convenient bleed positions, the body bleed outlets may be extended from the NPT outlet of the manual bleed valve. this shall retain the original bleed valve for interim isolation.



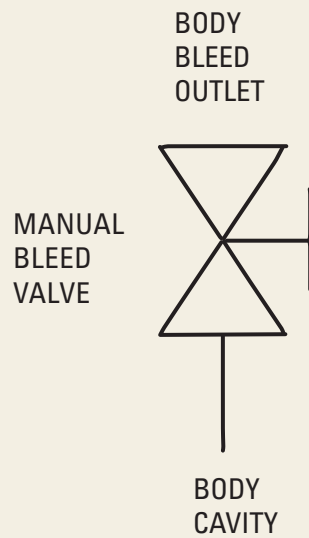
### Optional Manual Bleed Valve

This is only for the purpose of manually venting the body cavity and DBB testing.

This assembly does not alter the bidirectionality of the valve.

It must only be used for gaseous services.

When not being used for bleeding, the valve should be closed and the outlet should be plugged.



### Sealing of valve seats with manual bleed valve



## Standard Differential Thermal Relief (DTR)

This configuration is acceptable for liquid service.

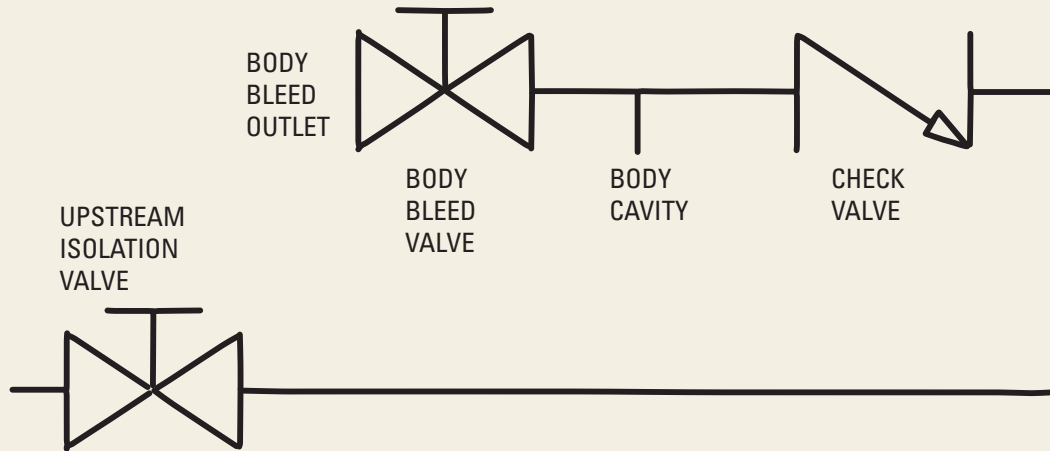
BODY BLEED VALVE is only for the purposes of manually venting the body cavity and DBB testing.

When not being used for bleeding, the body bleed valve should be closed and the outlet should be plugged.

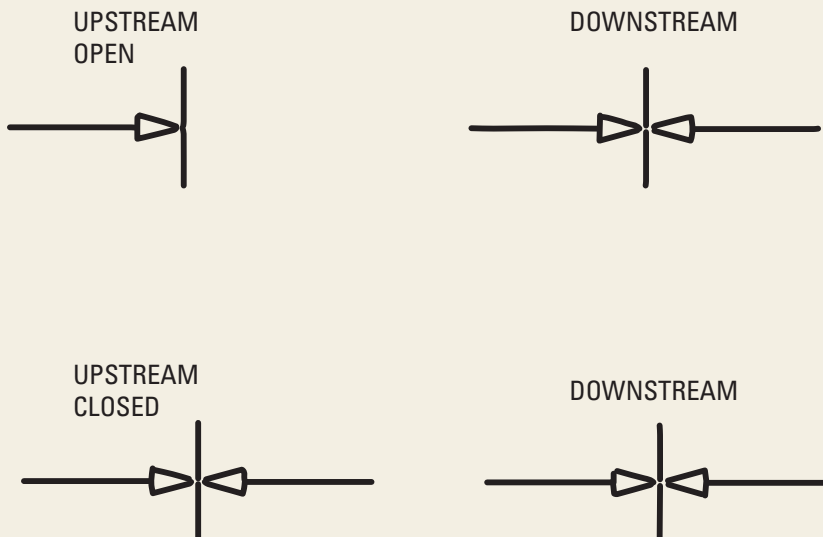
UPSTREAM ISOLATION VALVE must be left open for cavity relief to function.

It should only be closed for maintenance and leakage management in the event of damage.

Directionality characteristics of valve are shown below.



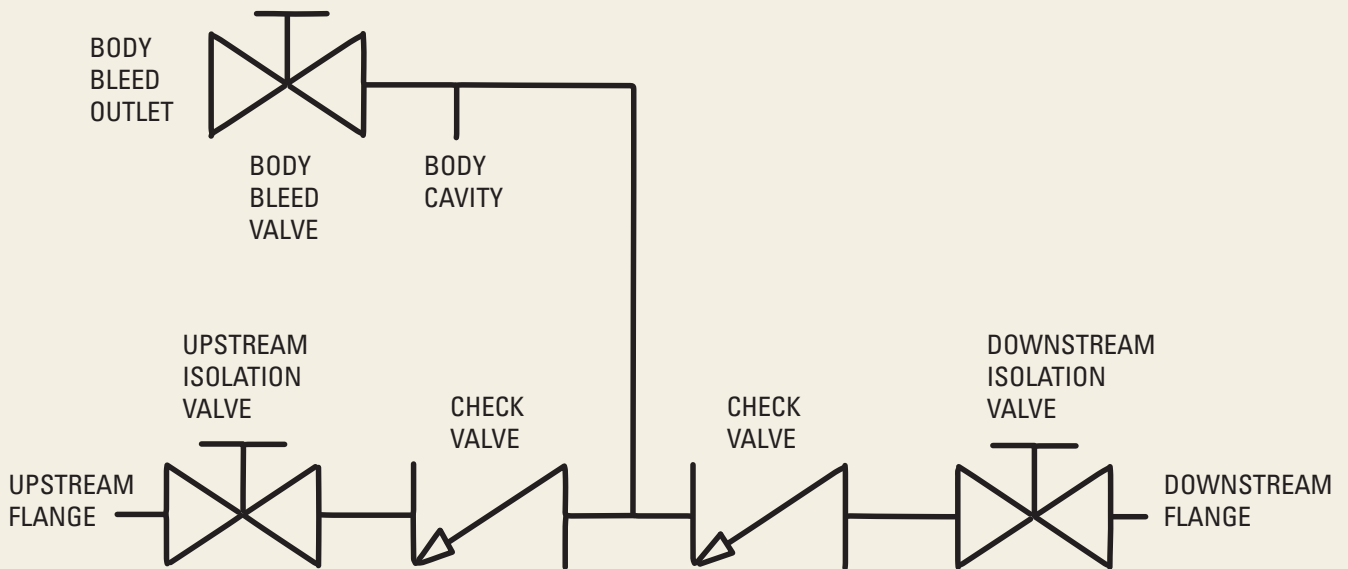
Sealing of valve seats with different isolation settings.



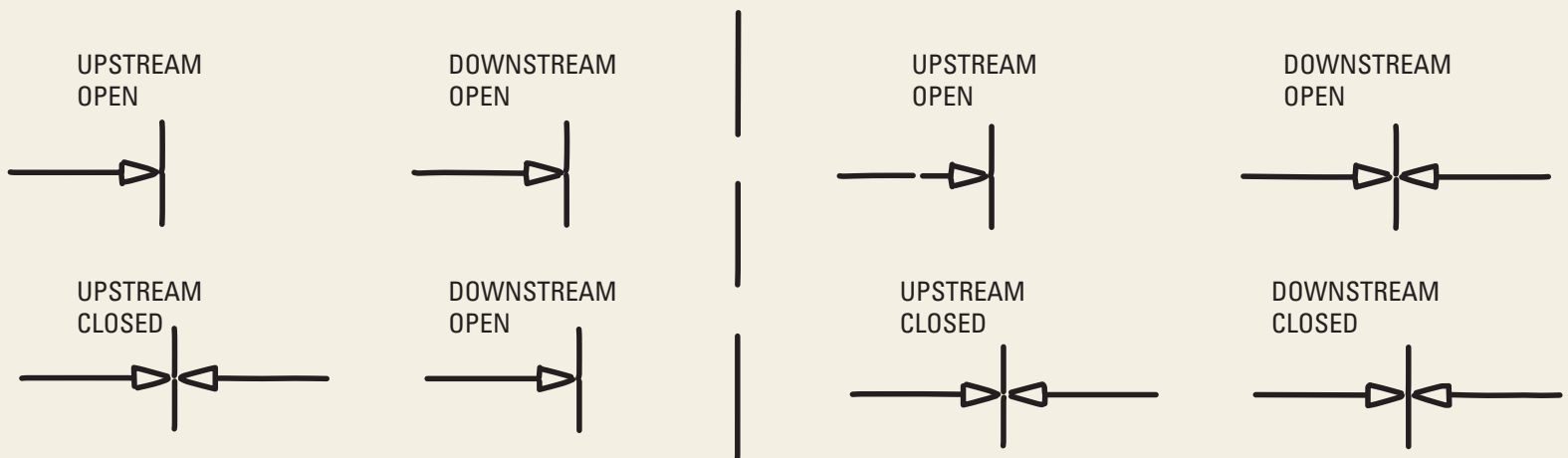
## Optional Line Relieving Differential Thermal Relief (LRDTR)

This configuration may be used to relieve trapped piping downstream from the valve. Downstream isolation valve must be closed for DBB confirmation.

When not being used for bleeding, the body bleed valve should be closed and the outlet should be plugged.



### Sealing of valve seats with different isolation settings.



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