FRANKLIN

DURASEAL™

High Integrity, Double Block and Bleed Plug Valve

www.franklinvalve.com

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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

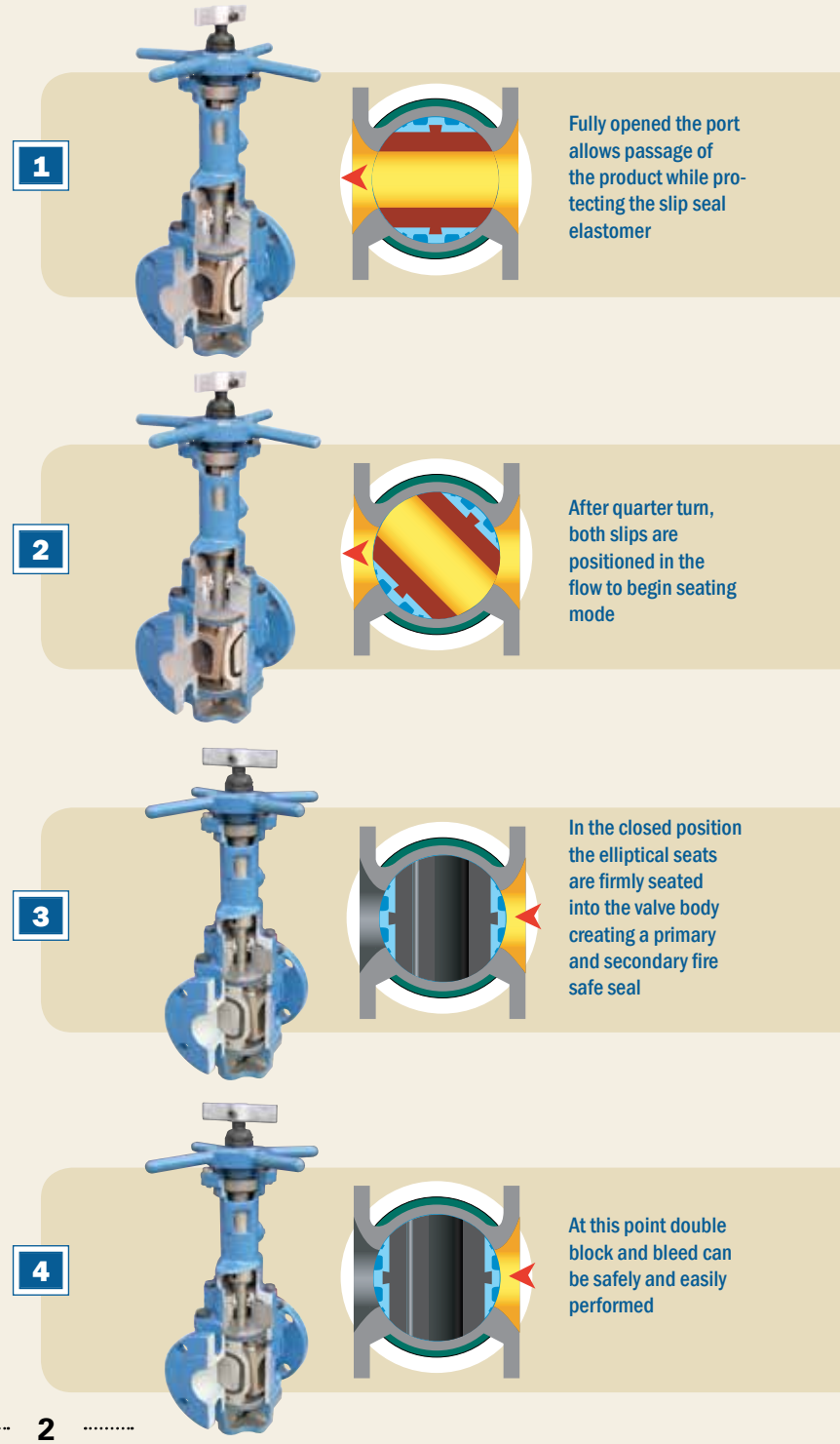
The Franklin DuraSeal™ plug valve seals mechanically. During rotation of the plug there is no abrasion or wear between the sealing surfaces. When the slips reach the closed position they expand firmly into the valve body creating a primary elastomeric and secondary metal-to-metal backup seal. The DuraSeal™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

Fast Low Torque Operation

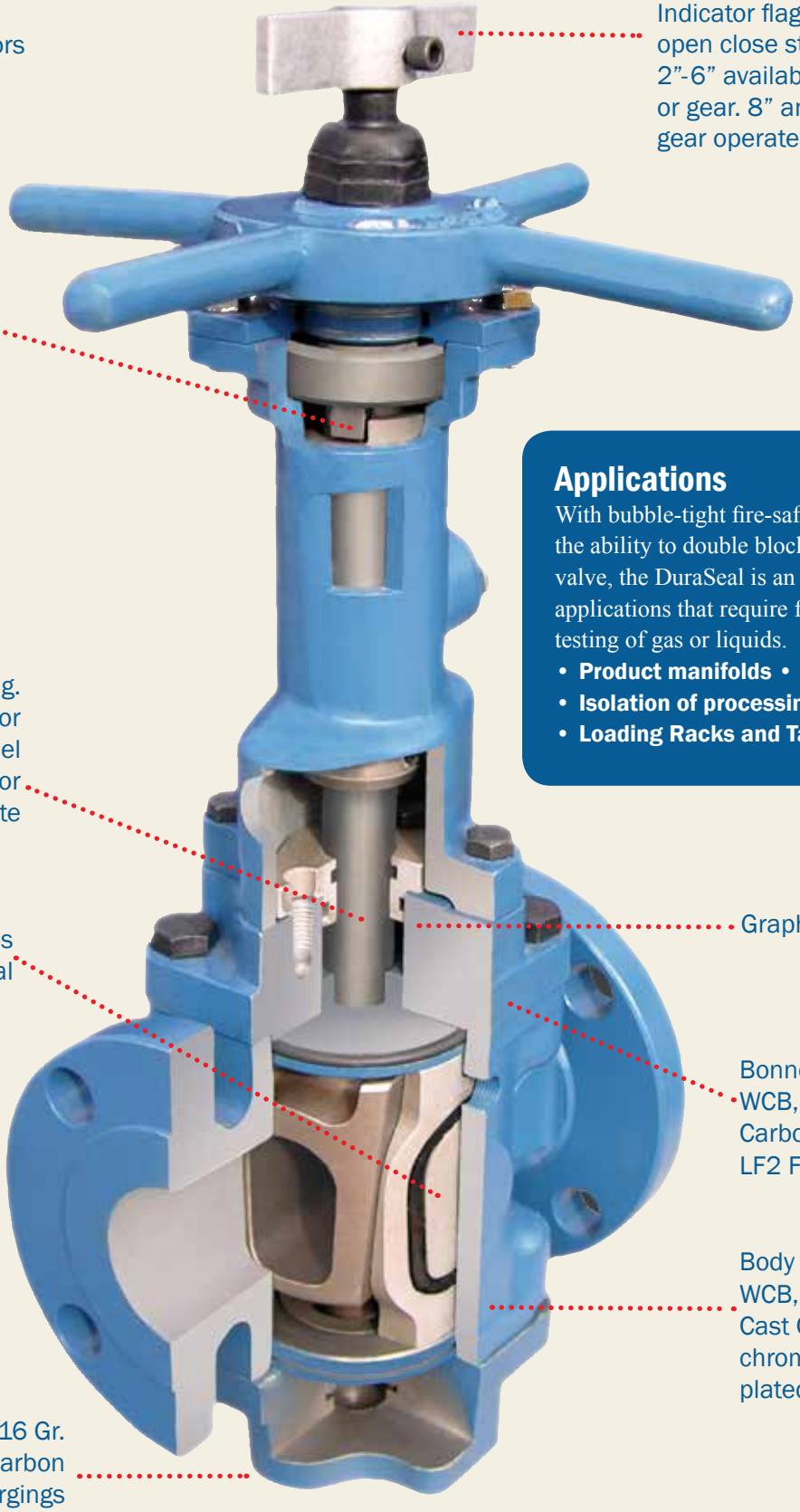
The DuraSeal™ can be easily automated using hydraulic or pneumatic or electric actuators. Torque requirements are low. In smaller sizes only two and one quarter turns can fully open or close the valve.

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.



The Franklin DuraSeal™ High Integrity Double Block and Bleed Valve



Easily Automated with Choice of electric Actuators

Indicator flag displays open close status. 2”-6” available in hand or gear. 8” and larger gear operated only

Full bearing operator (field replaceable)

17-4 SS investment cast packing gland resists corrosion

Nickel Plated Plug. ASTM A216 Gr. WCB or WCC Cast Carbon Steel (Chrome or Electroless) or Manganese Phosphate

Graph oil type packing

Ductile cast slips with vulcanized seal

DuraSeal™ available in wide range of elastomer materials

Bonnet ASTM A216 Gr. WCB, WCC or LCC Cast Carbon Steel or A350 LF2 Forgings

Body ASTM A216 Gr. WCB, WCC or LCC Cast Carbon Steel, chrome or electroless plated nickel

Lower Plate ASTM A216 Gr. WCB, WCC or LCC Cast Carbon Steel or A350 Forgings

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**

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.

Standard Materials of Construction D700 Reduced and D600 FULL BORE

700 & 600 SERIES	D711 & D611 ANSI 150	D721 & D621 ANSI 300	D741, D751 & D641 ANSI 600 & 900
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 or ASTM A350 LF2	CARBON STEEL ASTM A216 WCB or ASTM A350 LF2	CARBON STEEL ASTM A216 WCB or ASTM A350 LF2
Plug	ASTM A216 WCB or ASTM A487 – 4D WITH ELECTROLESS NICKEL PLATING (1)	ASTM A216 WCB WITH ELECTROLESS NICKEL PLATING (1)	ASTM A216 WCB & ASTM A487 – 4D WITH ELECTROLESS NICKEL PLATING (1)
Stem	A216 WCB or ASTM A487 – 4D WITH ELECTROLESS NICKEL PLATING (1)	A216 WCB WITH ELECTROLESS NICKEL PLATING (CAST PLUG) (1)	A216 WCB or ASTM A487 – 4D WITH ELECTROLESS NICKEL PLATING (1)
Slips	Ductile Iron ASTM A536 Gr 80-55-06, ASTM A 395 60-40-18 or ASTM A516 gr 70	Ductile Iron ASTM A536 Gr 80-55-06, ASTM A 395 60-40-18 or ASTM A516 gr70	Ductile Iron ASTM A536 Gr 80-55-06, ASTM A395 60-40-18 or ASTM A516 gr70
Gland	Stainless Steel	Stainless Steel	Stainless Steel
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
(1) In accordance with NACE MR0175 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. **Additional elastomer material available:**

Fluoro Elastomers Slip Seal Materials		
VGF	Viton GF	FV Standard Material. Viton with Enhanced Chem. Resistance
V9	Viton 90 Durometer	Standard HIDP
VFR	Fiber Reinforced Viton	Optional HIDP
VXT	Viton Extreme	Harsh chemical, sour crude
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		
KZ	Kalrez	MTBE, high temp., aggressive process environments
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 6D & 6FA testing

Preferred Mounting Positions for DuraSeal Valve

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.

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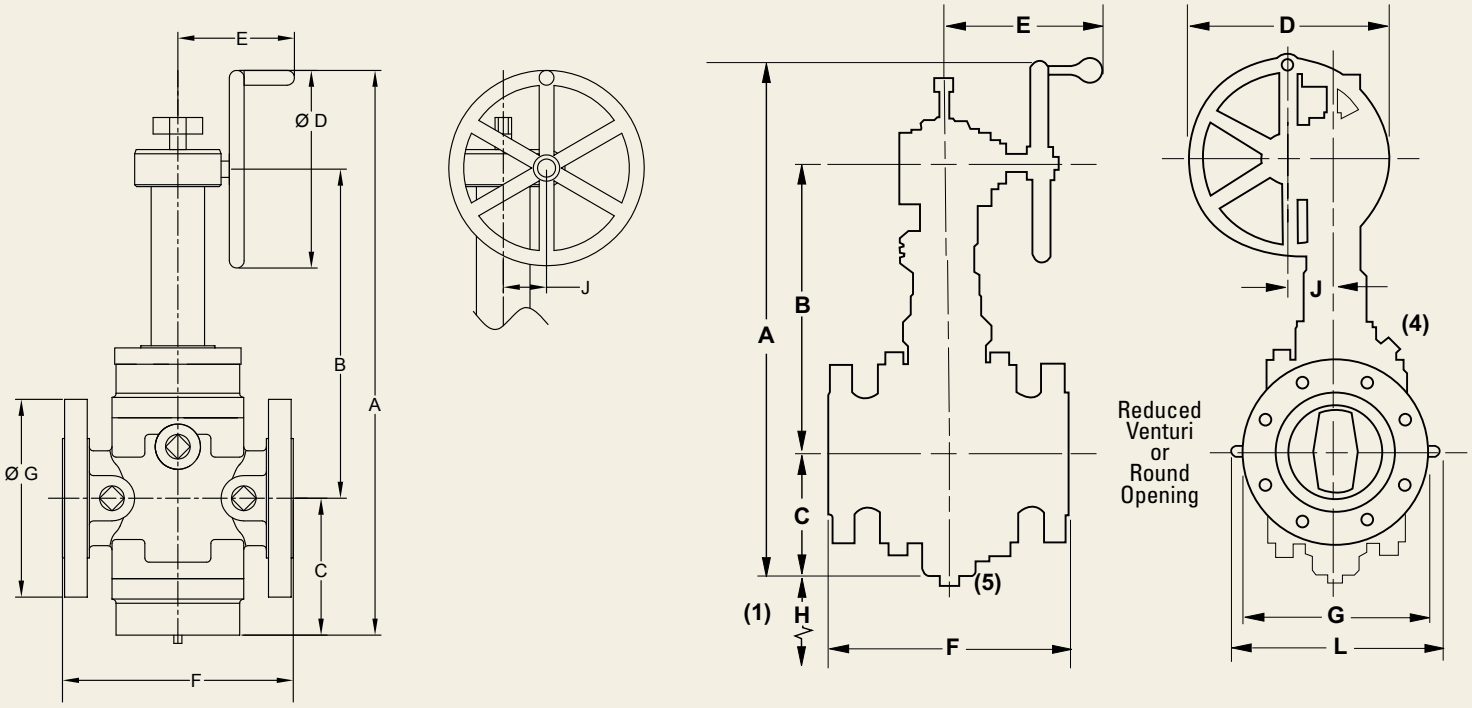
Gear Operated DuraSeal D700 Series Reduced Bore ANSI 150



	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	1/2 NPT
	3	D711	101	21	12	4 ½	8	10 ½	8	7 ½	3	1 ½	76	NONE	3/8 NPT	1/2 NPT
	4	D711	201	27	15 ½	7	10	11	9	9	4 ½	1 ¾	140	NONE	1/2 NPT	1/2 NPT
	6	D711	301	36	20 ½	8 ½	14	12 ½	10 ½	11	8	3	264	(4) ¾" 10 UNC	1/2 NPT	1/2 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	1/2 NPT
	10	D711	301	42	23	12	14	12 ½	13	16	14	3	532	(4) 7/8" 9 UNC	1/2 NPT	1/2 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	1/2 NPT
	14	D711	401	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 NPT
	18	D711	501	67	39	18	20	14	17	25	21	5	1600	(8) 1.125" 8UNC	1 NPT	1/2NPT
	20*	D711	501	64	37	17	20	14 ½	40	27 ½	17	5	3326	NONE	1 NPT	1/4 NPT
	20**	D711RVP	501	74	40	25	20	15	32	27.5	35	5	2700	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
	24**	D711RVP	501	82	44	30	20	15	36	32	42	5	4300	NONE	1 NPT	1/2 NPT
	30	D711	601	98	56	31	32	17	60	38.8	35	9	13300	NONE	1 NPT	1 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.
(6) Contact factory for size requirements not listed
(7) Dimensions are not certified. Contact factory for certified drawings.
(8) Consult factory for additional sizes

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

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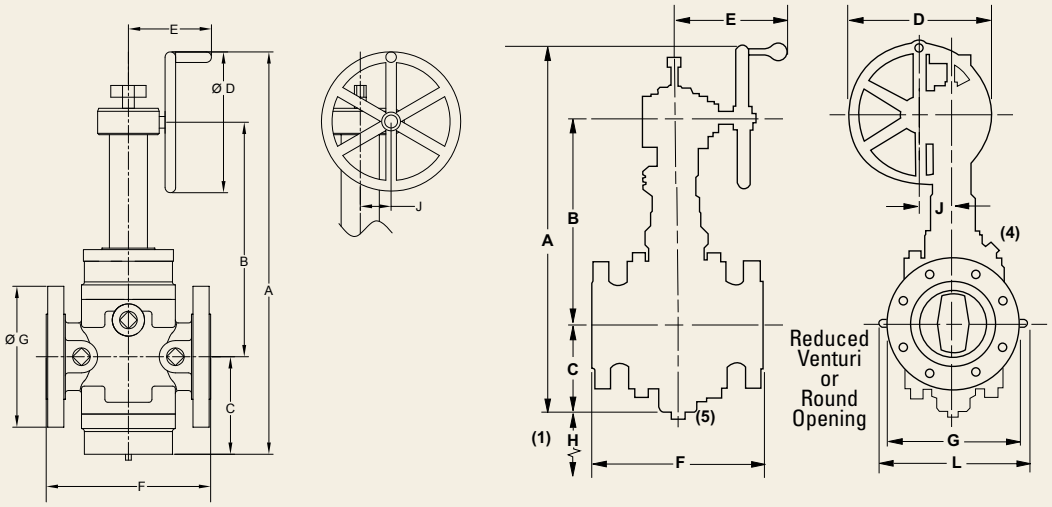
Gear Operated DuraSeal D700 Series Reduced Bore ANSI 300, 600 & 900

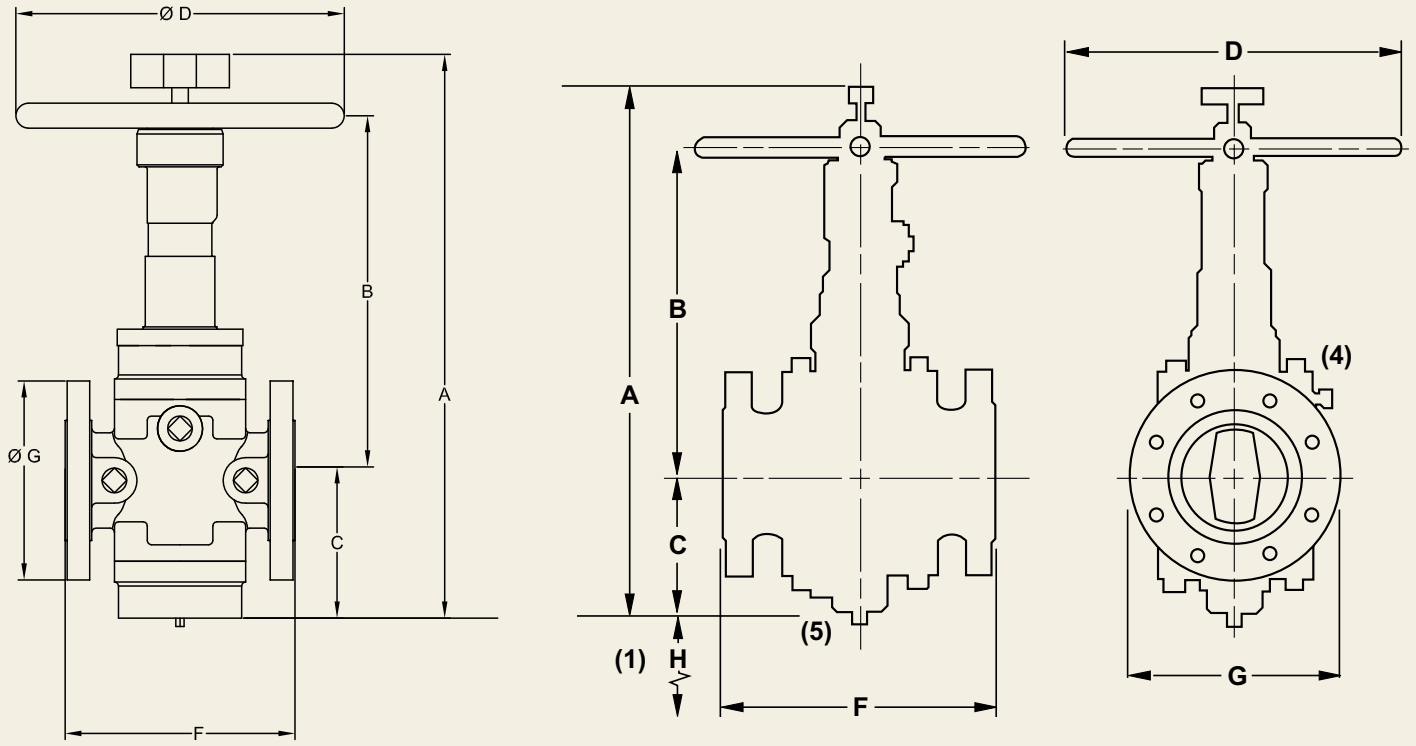


	SIZE	MODEL	OPER.	A	B	C	D	E	F	G	H	J	WEIGHT(lbs)	(3)	(4)	(5)
ANSI 300	2	D721	101	21	12	4 ½	8	10 ½	8 ½	6 ½	3	1 ½	78	NONE	3/8 NPT	3/8 NPT
	3	D721	101	21	12	4 ½	8	10 ½	11 1/8	8 ¼	3	1 ½	102	NONE	3/8 NPT	3/8 NPT
	4	D721	201	27	15 ½	7	10	11	12	10	4 ½	1 ¾	162	NONE	1/2 NPT	1/2 NPT
	6	D721	301	36	20 ½	8 ½	14	12 ½	15 ⅞	12 ½	8	3	348	NONE	1/2 NPT	1/2 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	1/2 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	1/2 NPT
	12	D721	401	63 ½	36 ½	16 ½	20	14 ½	19 ¾	20 ½	16	5	1414	(8) 11/8" 8 UNC	1/2 NPT	1/2 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
	16	D721	501	69	38	21	20	15	33	25.5	15	5	3400	NONE	1/2 NPT	1/2 NPT
	18	D721	501	69	38	21	20	15	36	28	15	5	3500	NONE	1/2 NPT	1/2 NPT
ANSI 600	2	D741	201	24 ½	15 ½	15 ½	20	10 ½	11 ½	6 ½	2 ½	1 ½	100	NONE	1/2 NPT	1/4 NPT
	3	D741	201	26	16	16	20	10 ½	14	8 ¼	3 ½	1 ½	142	NONE	1/2 NPT	1/4 NPT
	4	D741	301	29 ½	19	19	20	11	17	10 ¾	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
	14	D741	501	60	35	14	20	14	35	23 ¾	11	5	2500	NONE	1/2 NPT	1/2 NPT
	16	D741	601	83	44	23	32	17	39	27	15	9	4700	NONE	1/2 NPT	1/2 NPT
	18	D741	601	83	44	23	32	17	43	29	15	9	5000	NONE	1/2 NPT	1/2 NPT
ANSI 900	2	D751	301	34	18	9	14	13	14.5	8.5	10	3	265	NONE	NONE	1/2 NPT
	3	D751	301	34	18	9	14	13	15	9.5	10	3	290	NONE	NONE	1/2 NPT
	4	D751	401	46	26	10	20	13	18	11.5	12	4	800	(4) 1"-8UNC	NONE	1/2 NPT
	6	D751	401	48	27	11	20	13	24	15	12	4	905	NONE	NONE	1/2 NPT
	8	D751	501	59	34	15	20	14	29	18.5	15	5	1750	NONE	NONE	1/2 NPT
	10	D751	601	74	43	16	32	17	33	21.5	16	9	3000	NONE	NONE	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.
(6) Contact factory for size requirements not listed
(7) Dimensions are not certified. Contact factory for certified drawings.
(8) Consult factory for additional sizes

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

D700 Series Handwheel Operated DuraSeal



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	300	32 ½	20 ½	9	20	10 ½	11	8	214	(4) ¾" 10 UNC	1/2 NPT	1/4 NPT
ANSI 300	2	D721	100	17	11	4 ½	10	8½	6 1/2	3	54	NONE	3/8 NPT	1/4 NPT
	3	D721	100	17	11	4 ½	10	11 1/8	8 1/4	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
*ANSI 600	2	D741	200	24 1/2	15 1/2	15 1/2	20	11 1/2	6 1/2	2 1/2	100	NONE	1/2 NPT	1/4 NPT
	3	D741	200	26	16	16	20	14	8 1/4	3 1/2	142	NONE	1/2 NPT	1/4 NPT
	4	D741	300	29 1/2	19	19	20	17	10 3/4	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.
(6) *Gear Operator recommended for Class 600. Contact factory for torque & turn data

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

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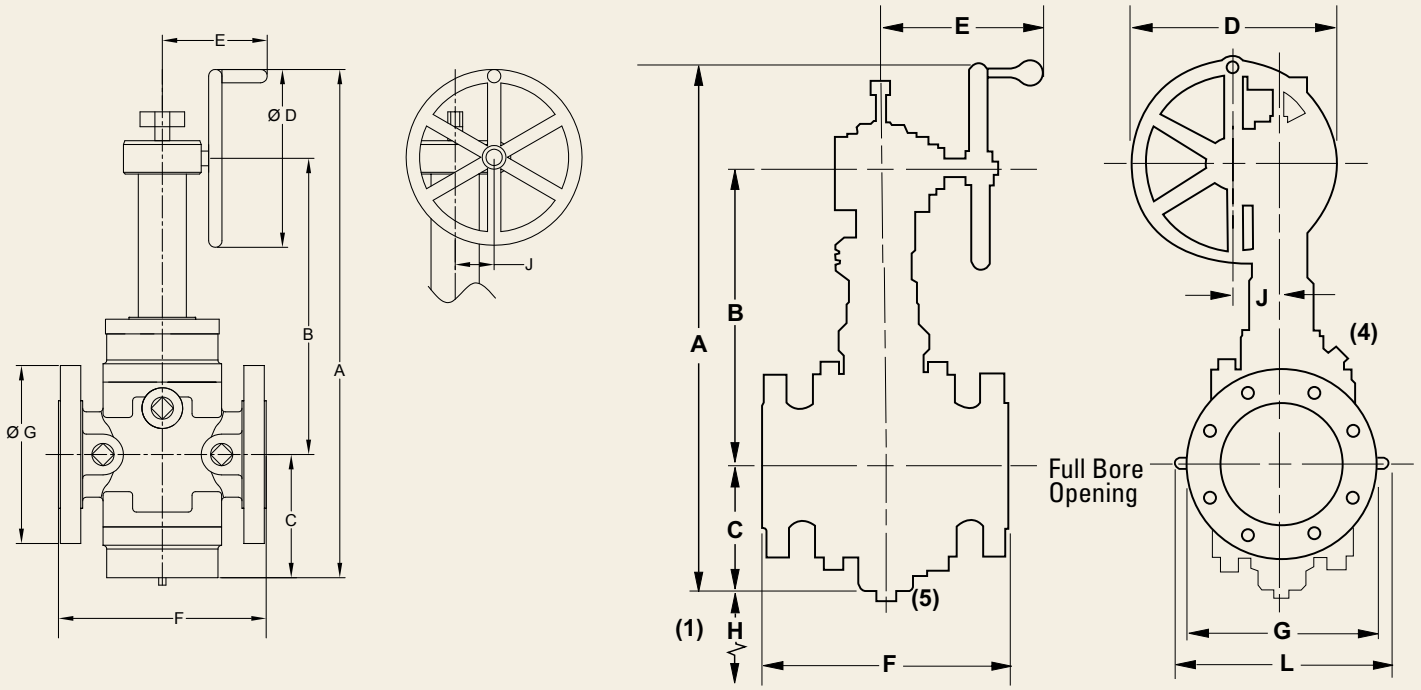
Gear Operated DuraSeal D600 Series FULL BORE ANSI 150



	SIZE	MODEL	OPER.	A	B	C	D	E	F	G	H	J	WEIGHT(lbs)	(3)	(4)	(5)
ANSI 150	2	D611	201	27	15	7	10	11	10.5	6	7	2	147	NONE	1/2	1/2 NPT
	3	D611	201	27	15	7	10	11	13.5	7.5	7	2	154	NONE	1/2	1/2 NPT
	4	D611	301	36	20	9	14	13	17	9	12	3	262	NONE	1/2 NPT	1/2 NPT
	6	D611	401	48	27	11	20	13	21	11	15	4	515	NONE	1/2 NPT	1/2 NPT
	8	D611	401	50	28	11	20	13	25	13.5	14	4	964	NONE	1/2 NPT	1/2 NPT
	10	D611	401	60	35	15	20	14	31	16	13	5	1658	NONE	1/2 NPT	1/2 NPT
	12	D611	401	68	38	21	20	15	36	19	15	5	3000	NONE	1/2 NPT	1/2 NPT
	16	D611	501	67	37	20	20	14	35	23.5	17	5	3250	NONE	1 NPT	1/4 NPT
	20	D611	501	77	43	24	20	15	48	27.5	24	5	6264	NONE	1 NPT	1 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.
(6) Contact factory for size requirements not listed
(7) Dimensions are not certified.
Contact factory for certified drawings.
(8) Consult factory for additional sizes

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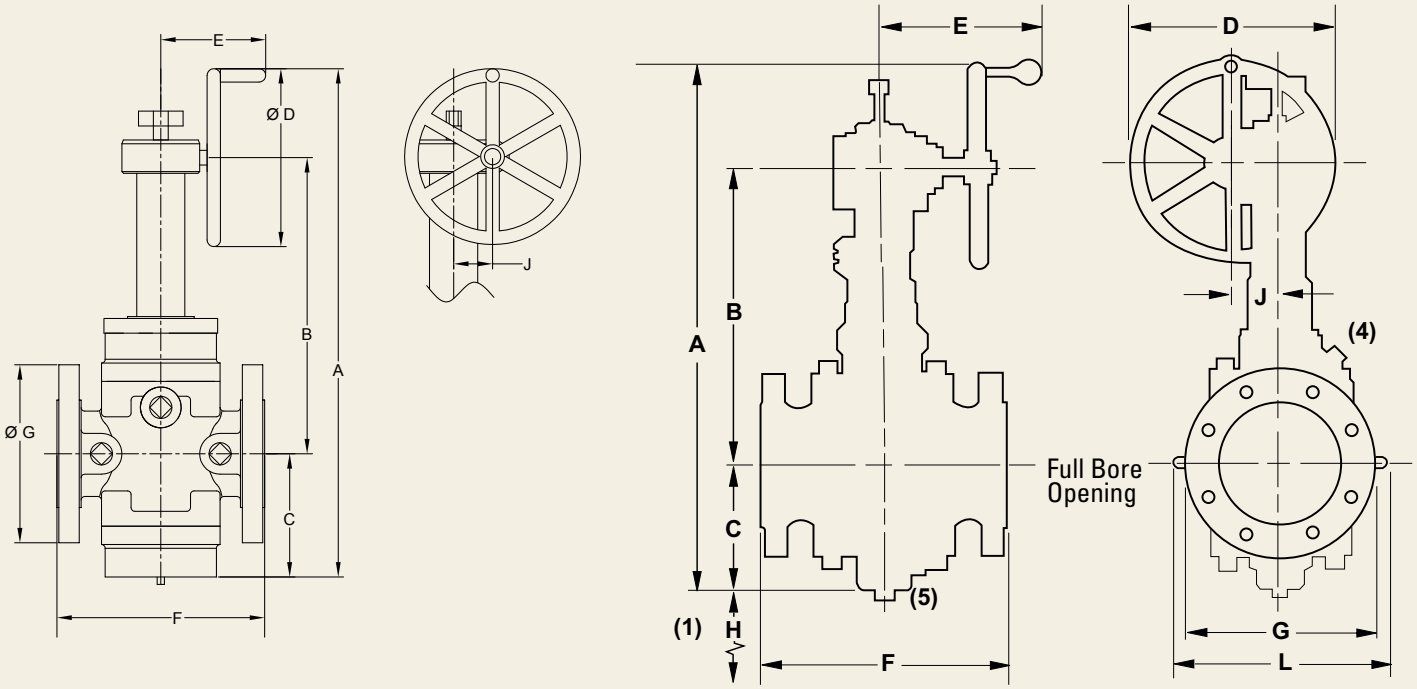
Gear Operated DuraSeal D600 Series FULL BORE ANSI 300 & 600



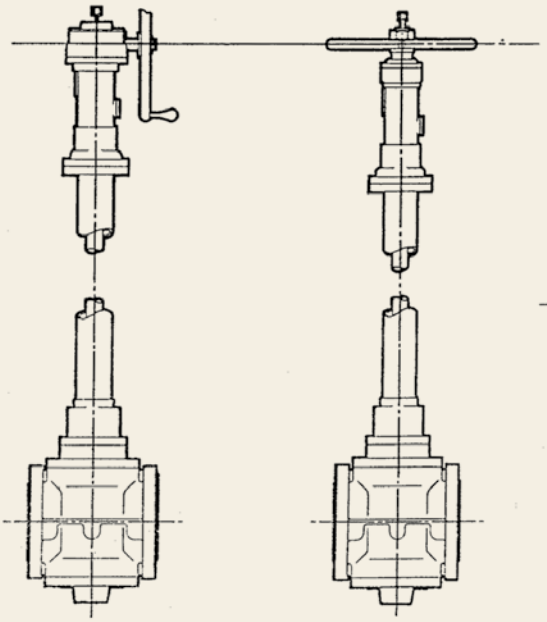
	SIZE	MODEL	OPER.	A	B	C	D	E	F	G	H	J	WEIGHT(lbs)	(3)	(4)	(5)
ANSI 300	2	D621	201	27	15	6	10	11	11.125	6.5	7	2	151	NONE	1/2 NPT	1/2 NPT
	3	D621	201	27	15	7	10	11	15	8.25	7	2	164	NONE	1/2 NPT	1/2 NPT
	4	D621	301	29	20	9	14	13	18	10	12	3	391	NONE	1/2 NPT	1/2 NPT
	6	D621	401	49	27	11	20	13	22	12.5	15	4	553	NONE	1/2 NPT	1/2 NPT
	8	D621	401	50	28	12	20	13	27	15	14	4	1003	NONE	1/2 NPT	1/2 NPT
	10	D621	401	60	35	15	20	14	32.5	17.5	13	5	1720	NONE	1/2 NPT	1/2 NPT
	12	D621	401	68	38	21	20	15	38	20.5	15	5	3000	NONE	1/2 NPT	1/2 NPT
ANSI 600	2	D641	201	27	15	7	10	11	13	6.5	7	2	165	NONE	1/2 NPT	1/2 NPT
	3	D641	201	27	15	7	10	11	17.5	8.25	7	2	183	NONE	1/2 NPT	1/2 NPT
	4	D641	301	46	26	9	20	13	17	11	10	3.5	500	7/8 9UNC	1/2 NPT	1/2 NPT
	6	D641	401	48	27	11	20	13	22	14	12	3.5	671	NONE	1/2 NPT	1/2 NPT
	8	D641	501	57	33	13	20	15	26	16.5	8	5	1520	1-1/8-7UNC	1/2 NPT	1/2 NPT
	10	D641	501	60	35	14	20	14	31	20	11	5	2200	NONE	1/2 NPT	1/2 NPT
	12	D641	501	83	44	23	32	17	33	22	15	9	4200	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.
(6) Contact factory for size requirements not listed
(7) Dimensions are not certified.
Contact factory for certified drawings.
(8) Consult factory for additional sizes

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

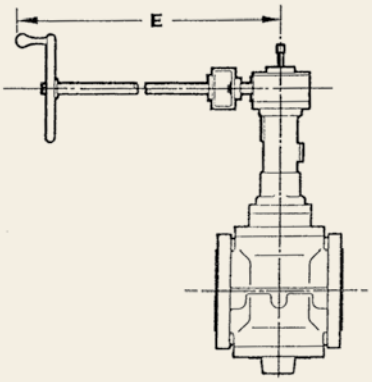
Franklin Valve Extension Kit

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".



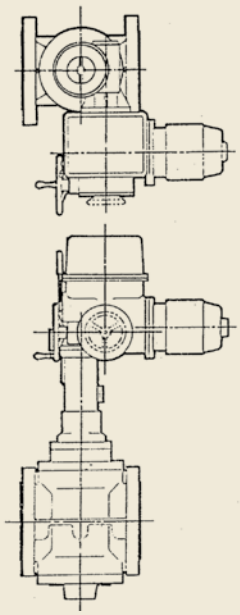
GEAR OPERATOR EXTENSION-CLOSED **TYPE "A"**

HAND OPERATOR EXTENSION-CLOSED **TYPE "A"**

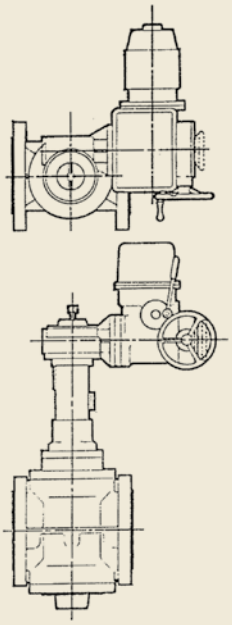


GEAR OPERATOR EXTENSION-LATERAL **TYPE "C"**

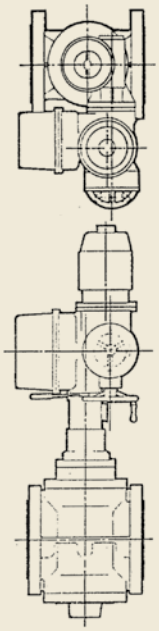
Franklin Electric Motor Actuation



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) and Torque & Turns
DuraSeal ANSI 150 D700 & D600 Series

Flow Coefficients (CV)

VALVE	Cv	Kv
2" 150# D711	195	169
3" 150# D711	200	173
4" 150# D711	530	458
6" 150# D711	1415	1224
8" 150# D711	2400	2076
10" 150# D711	3500	3028
12" 150# D711	4000	3460
14" 150# D711	5500	4758
16" 150# D711	6600	5709
18" 150# D711	6600	5709
20" 150# D711	15700	13581
20" 150# D711RVP	16000	13840
24" 150# D711	24000	20760
24" 150# D711RVP	24000	20760

Cv US gallons per minute of flow with 60 degrees F water at 1 PSI pressure drop in the fully open position

Kv is cubic meters Per hours of flow with 16 degrees C water at 1 Bar pressure drop in the fully open position

Franklin DuraSeal - Torque & Turns

VALVE	OPERATOR	TORQUE FT. LBS.	TORQUE M/KG	TURNS
2" 150# D711	100 HWO	46	6.4	1.8
2" 150# D711	101 Gear	2.4	0.33	17
2" 150# D611	201 Gear	7	0.96	12-14
3" 150# D711	100 HWO	15	2.1	2
3" 150# D711	101 Gear	3	0.83	16
3" 150# D611	201 Gear	7	0.96	12-14
4" 150# D711	200 HWO	25	12.4	2.7
4" 150# D711	201 Gear	7	3.2	20
4" 150# D611	301 Gear	19	2.6	18-22
6" 150# D711	300 HWO	30	4.1	2.7
6" 150# D711	301 Gear	19	2.6	18.5
6" 150# D611	401 Gear	40	5.5	19-23
8" 150# D711	301 Gear	41	5.7	18.5
8" 150# D611	401 Gear	125	17.2	23-29
10" 150# D711	301 Gear	66	9.1	20
10" 150# D611	401 Gear	120	16.5	28-34
12" 150# D711	401 Gear	90	12.4	23
12" 150# D611	501 Gear	160	22.1	59-69
14" 150# D711	401 Gear	92	12.7	28
16" 150# D711	501 Gear	104	14.4	45
16" 150# D611	501 Gear	158	21.8	41-50
18" 150# D711	501 Gear	104	14.4	45
20" 150# D711	501 Gear	158	21.8	45.5
20" 150# D711RVP	501 Gear	160	22.1	45-55
20" 150# D611	501 Gear	167	23.0	48-58
24" 150# D711	501 Gear	167	23.1	53
24" 150# D711RVP	501 Gear	200	27.6	49-59

Flow Coefficients (CV) and Torque & Turns
DuraSeal ANSI 300/600/900 D700 & D600

Flow Coefficients (CV)

VALVE	Cv	Kv
2" 300# D721	205	177
2" 600# D741	290	251
2" 900# D751	160	138
3" 300# D721	210	182
3" 600# D741	300	260
3" 900# D751	250	216
4" 300# D721	570	493
4" 600# D741	850	735
4" 900# D751	650	562
6" 300# D721	1770	1531
6" 600# D741	2265	1959
6" 900# D751	2265	1959
8" 300# D721	3000	2595
8" 600# D741	3600	3114
8" 900# D751	4200	3633
10" 300# D721	3540	3062
10" 600# D741	5100	4412
10" 900# D751	5500	4757
12" 300# D721	4700	4066
12" 600# D741	9200	7958
14" 300# D721	9200	7958
14" 600# D741	9200	7958
16" 300# D721	12000	10380
16" 600# D741	12000	10380
18" 300# D721	12000	10380
18" 600# D741	12000	10380

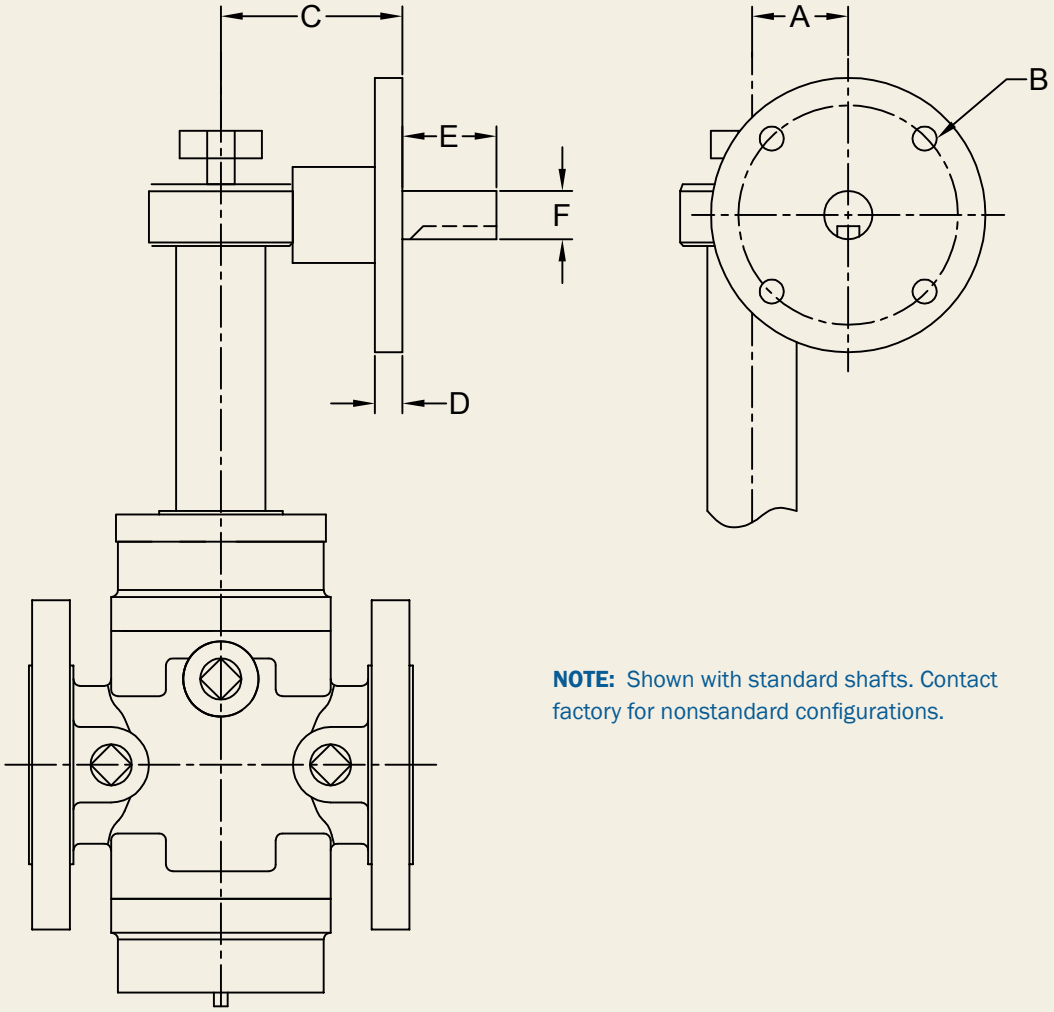
Cv US gallons per minute of flow with 60 degrees F water at 1 PSI pressure drop in the fully open position

Kv is cubic metersPer hours of flow with 16 degrees C water at 1 Bar pressure drop in the fully open position

Franklin DuraSeal - Torque & Turns

VALVE	OPERATOR	TORQUE FT. LBS.	TORQUE M/KG	TURNS
2" 300# D721	100 HWO	30	4.2	1.8
2" 300# D721	101 Gear	6	0.83	17
2" 300# D621	201 Gear	14	1.9	12-14
2" 600# D741	201 Gear	19	2.6	13
2" 600# D641	201 Gear	28	3.8	12-14
2" 900# D751	301 Gear	30	4.1	12-14
3" 300# D721	100 HWO	30	4.1	1.8
3" 300# D721	101 Gear	6	0.83	17
3" 300# D621	201 Gear	14	1.9	12-14
3" 600# D741	201 Gear	28	3.9	16
3" 600# D641	201 Gear	28	3.9	12-14
3" 900# D751	301 Gear	68	9.4	15-19
4" 300# D721	200 HWO	25	3.5	2.7
4" 300# D721	201 Gear	45	6.2	20
4" 300# D621	301 Gear	60	8.2	18-22
4" 600# D741	301 Gear	38	5.3	18
4" 600# D641	301 Gear	117	16.1	29
4" 900# D751	401 Gear	150	20.7	26-32
6" 300# D721	301 Gear	60	8.3	18.5
6" 300# D621	401 Gear	90	12.4	19-23
6" 600# D741	401 Gear	117	16.2	29
6" 600# D641	401 Gear	125	17.2	19-23
6"900# D751	401 Gear	185	25.6	21-27
8" 300# D721	401 Gear	105	14.5	21
8" 300# D621	401 Gear	200	27.6	23-29
8" 600# D741	401 Gear	125	17.3	21
8" 600# D641	501 Gear	185	25.6	32-40
8" 900# D751	501 Gear	200	27.6	29-35
10" 300# D721	401 Gear	138	19.1	25
10" 300# D621	401 Gear	219	30.2	33-35
10" 600# D741	501 Gear	185	25.6	46
10" 600# D641	501 Gear	220	30.4	33-35
10" 900# D751	601 Gear	300	41.5	31-37
12" 300# D721	401 Gear	184	25.4	41
12" 300# D621	401 Gear	184	25.4	33-55
12" 600# D741	501 Gear	219	30.3	46
12" 600# D641	501 Gear	390	53.9	67-71
14" 300# D721	401 Gear	130	17.9	33-35
14" 600# D741	501 Gear	220	30.4	33-35
16" 300# D721	501 Gear	225	31.1	58-71
16" 600# D741	601 Gear	390	53.9	67-71
18" 300# D721	501 Gear	200	27.6	33-35
18" 600# D741	601 Gear	390	53.9	67-71

Actuator Adaption-Gear Operator Mounting



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

Model	A	B-BOLT PATTERN	C	D	E	F
101	1 1/2	4 X 00.44 ON 4.0 B.C.D.	5.5	0.50	2.0	0.745 / 0.740 W/KEYWAYS (1) WOODRUFF 605 & (1) 3/16X1.0
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	
		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	
601		Consult Factory				

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

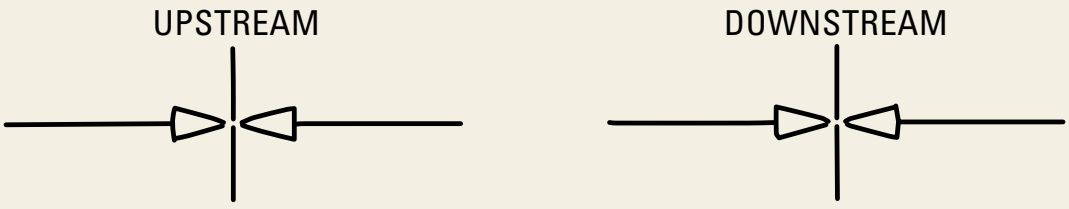
This design has inherent characteristics of trapping body cavity pressure. Because valves in liquid or condensing service can have a thermal hydraulic expansion within the trapped cavity, API 6D requires a cavity pressure relief system. The valves on the configurations permit different directionality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



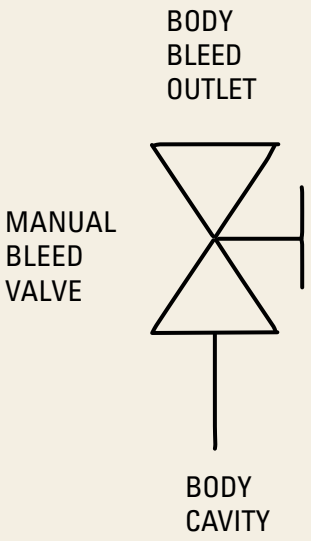
Optional Manual Bleed Valve

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

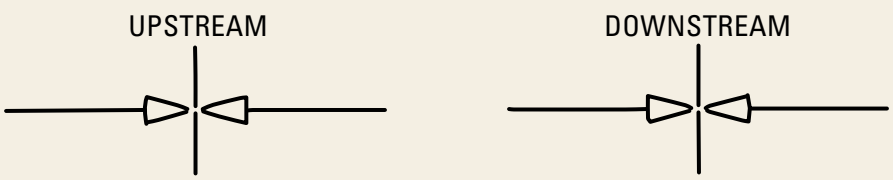
This assembly does not alter the bidirectionality of the valve.

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)

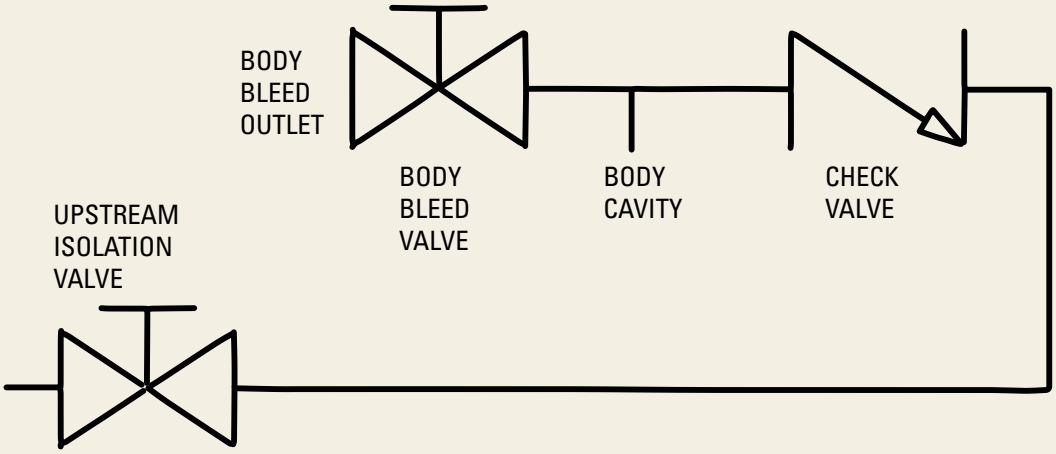
This configuration is acceptable for liquid service.

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

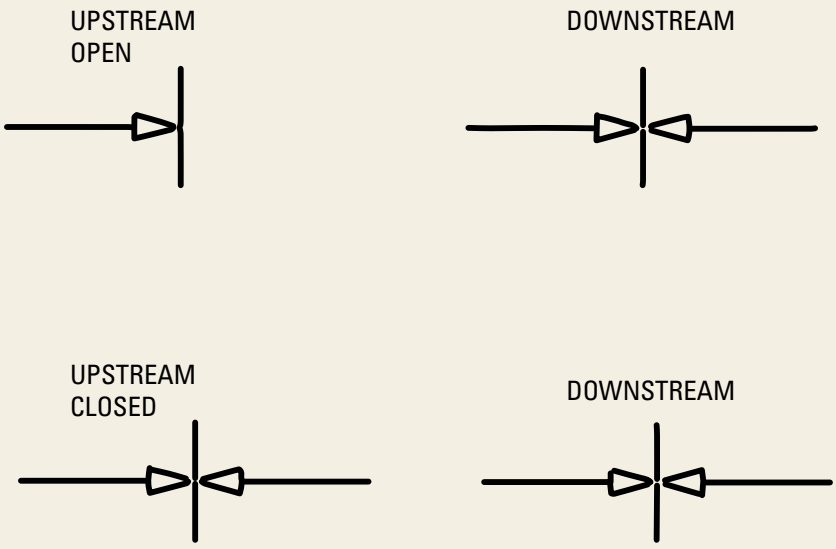
When not being used for bleeding, the body bleed valve should be closed and the outlet should be plugged.

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.



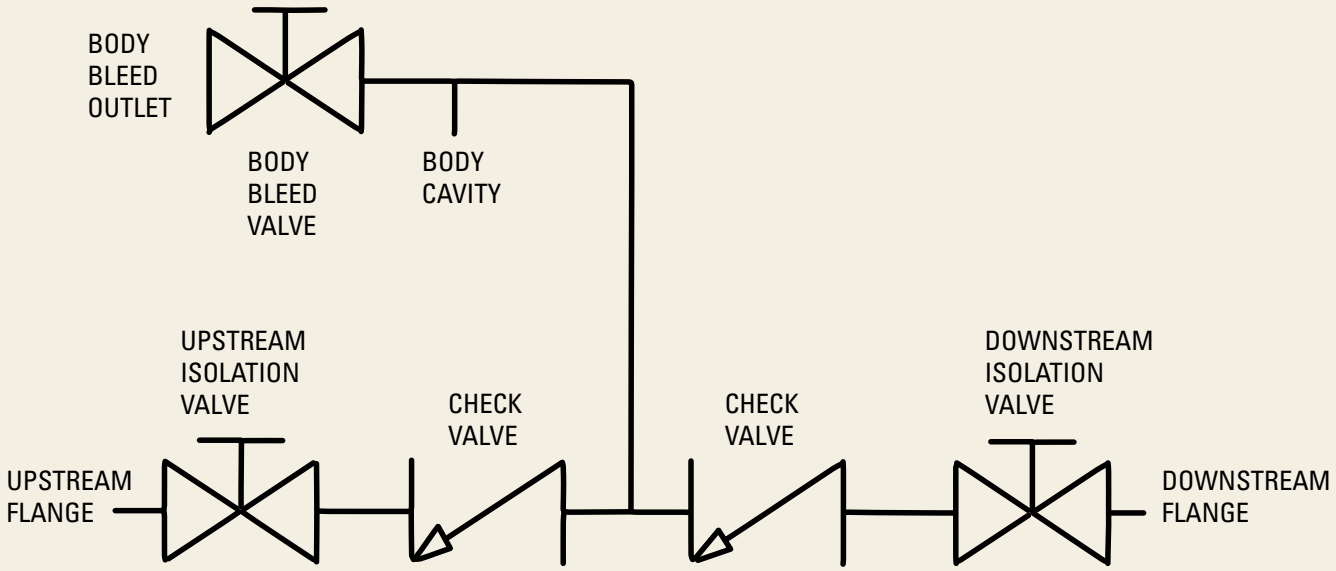
Sealing of valve seats with different isolation settings.



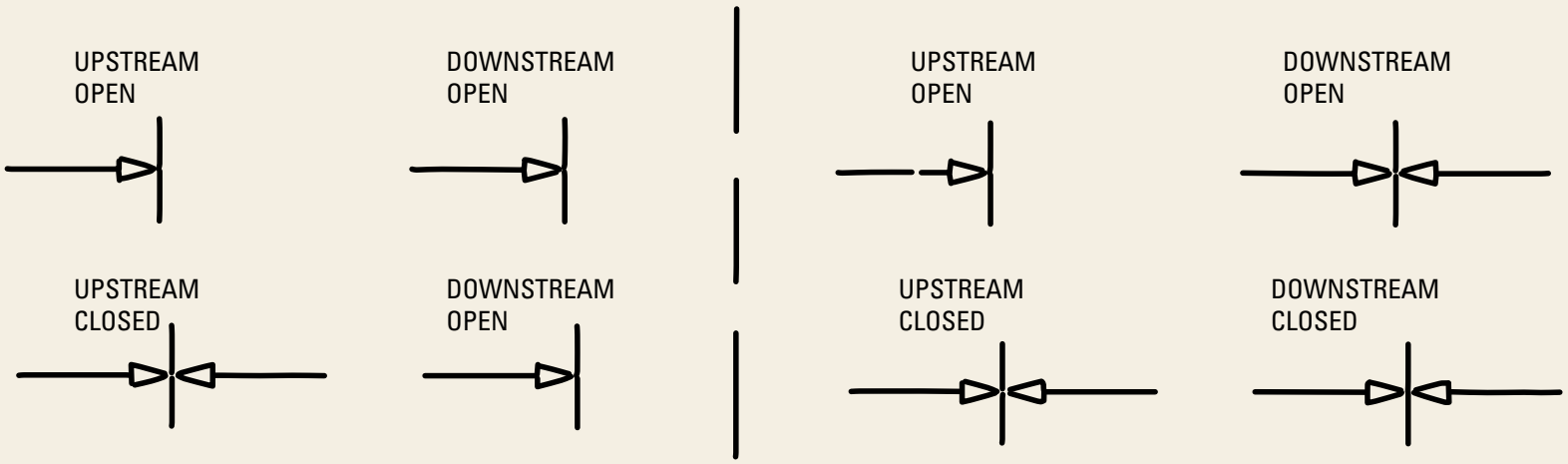
Optional Line Relieving Differential Thermal Relief (LRDTR)

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.



Manufacturing Facility

Located in the valve capital of the world, Franklin Valve functions from a fully operational state of the art manufacturing facility.

Value Proposition

Franklin Valve manufactures the DuraSeal Double Block and Bleed Plug valve in multiple configurations. Franklin places the highest value on product quality and customer service. Franklin Valve manufactures and inventories **reduced** and **full bore** DBB plug valve designs: 2"-30" Class 150, 2"-18" in Class 300 & 600, 2"-10" Class 900 as well as the Franklin 4-Way Diverter Valve in Class 150, 300 & 600.

SERVICE is what sets Franklin Valve apart. The DuraSeal DBB plug valve does meet the requirements under the 'Buy American Act'; is API 6D monogrammed, API 6FA (firesafe), API 591 (destructive), API 622 (emissions), PED/CE & CRN certified with ISO 9001 approval. Franklin Valve is **globally** distributed, represented and approved with high profile end users and Original Equipment Manufacturers.

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