



**VARIABLE ORIFICE ANGLE DRAIN**  
DURBIN INDUSTRIAL VALVE

Durbin Industrial Valve  
Dual Angle Valve Series



## VARIABLE ORIFICE ANGLE DRAIN DURBIN INDUSTRIAL VALVE



### **Features:**

**Valve Type:** Angle [Globe](#)

**Function:** 2-way adjustable orifice drain

**Action:** Normally Open

**Actuation:** Dual Pneumatic

**Pilot Range:** 35-40 psi (2.4-2.8 bar)

**Sizes:** ¾" -1½" (DN 20 to DN 40)

**Pressure Ratings:** Up to 500 psi (34 bar) ASME Class 300

**Temperature Ratings:** -40°F to 450°F (-40°C to 231°C)

**Connection Style:** Threaded (NPT/BSPT) & Flanged (B16.5)

**Seat Type:** Soft Seat

**Leakage Rate:** ANSI/FCI 70-2 class VI

**Cv:** Maximum of 45

**Media:** Most process fluid types; gas, liquids and steam

**Overview:** The Durbin Variable Orifice Drain Valve (DV) is designed to provide the user with a customizable three position valve. The DV can be fully closed, fully open, and have a preset partial open position to create a controlled "leak" through the valve. This unique design allows the user to accomplish with one single valve what previously took two valves and possibly an orifice plate. This valve's angle-body design allows for improved flow efficiency over traditional globe-style valves when quick evacuation is required.

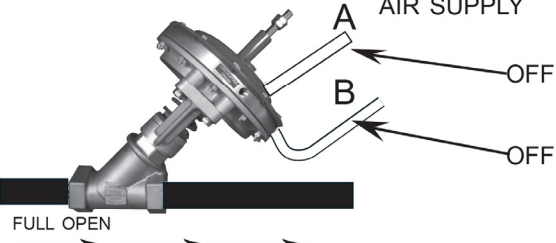
**Materials of Construction:** The wetted components are constructed entirely from corrosion-resistant materials. The valve body, actuating stem and seat are all constructed from stainless steel. The valve seal is made from a durable thermoplastic that withstands high temperatures and extreme process conditions. Packing consists of a strong PTFE material. Powder-coated spring and lids finish off this durable product offering to give an exceptional service life.

**Application:** The DV is designed to withstand the toughest environments. Typically, this valve is used on the drain side or downstream side of a vessel where high velocity evacuations are the normal service application. This angled design is superior in allowing any foreign material to exit the valve rather than getting lodged in the valve body, as is the case with traditional up-and-over globe-style valves.

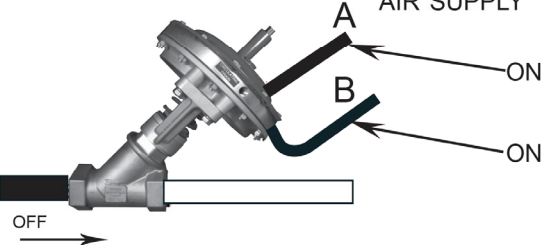
# VARIABLE ORIFICE ANGLE DRAIN

DURBIN INDUSTRIAL VALVE

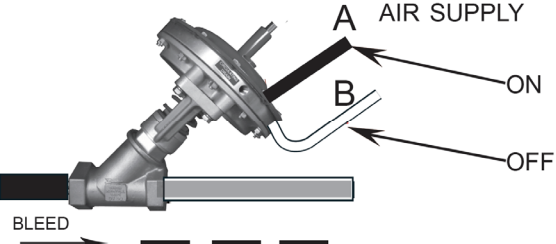
## VARIABLE ORIFICE ANGLE DRAIN OPERATING SEQUENCE



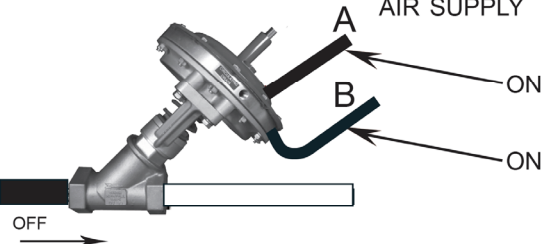
**SEQUENCE 1:**  
FULLY OPEN VALVE  
NO AIR TO DIAPHRAGMS, VALVE IS FULLY OPEN.



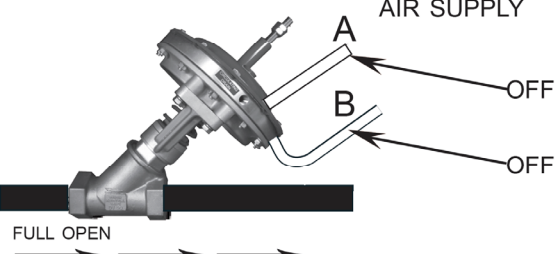
**SEQUENCE 2:**  
FULLY CLOSED VALVE  
APPLY AIR TO SIDE DIAPHRAGM INLET "B" AS WELL AS UPPER DIAPHRAGM INLET "A". AT THIS POINT OF OPERATION, BOTH DIAPHRAGMS HAVE AIR SUPPLIED AND THE VALVE IS FULLY CLOSED.



**SEQUENCE 3:**  
CIRCULATING DRAIN  
PARTIALLY OPEN VALVE  
TO ACTIVATE ORIFICE BLEED DOWN, REMOVE AIR FROM SIDE DIAPHRAGM INLET "B" WHILE STILL SUPPLYING AIR TO UPPER DIAPHRAGM INLET "A".



**SEQUENCE 4:**  
FULLY CLOSED VALVE  
WHEN THE DESIRED DROP IS COMPLETE, REAPPLY AIR TO SIDE DIAPHRAGM INLET "B" FOR TOTAL SHUT OFF.

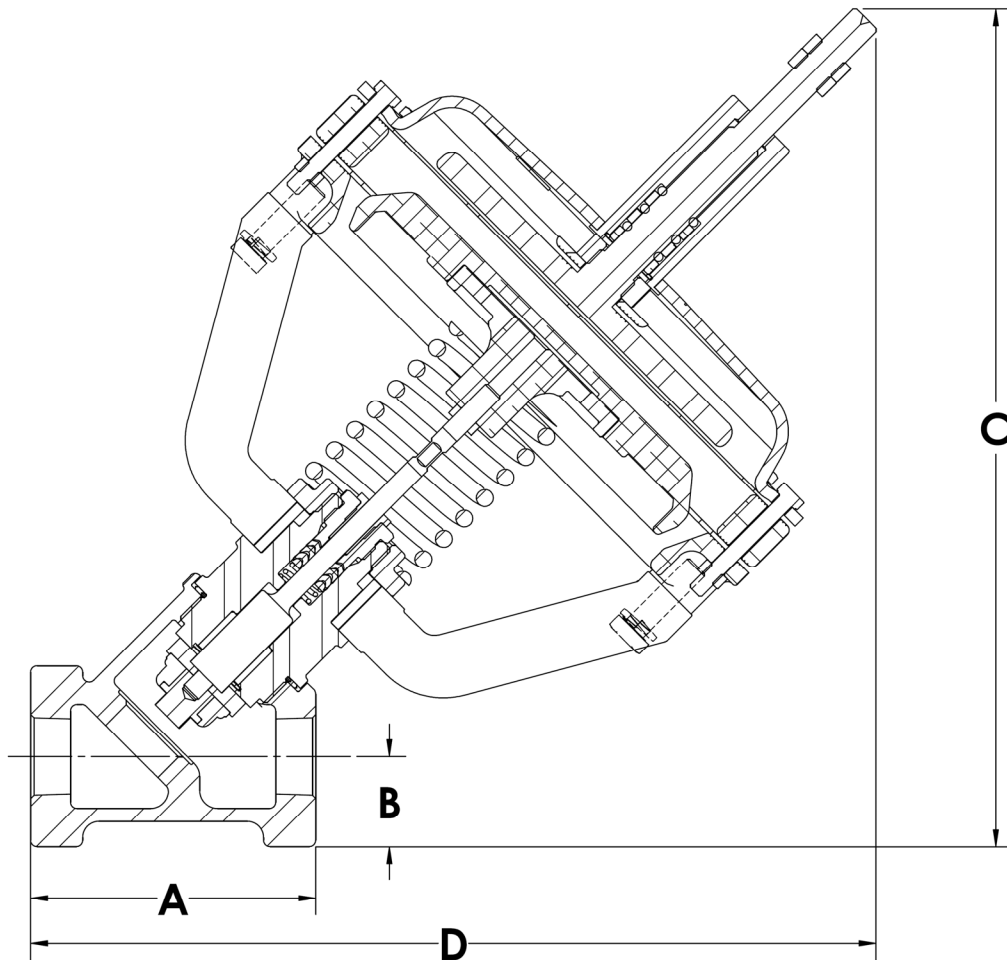


**SEQUENCE 5:**  
FULLY OPEN VALVE  
AT THE END OF THE CURE. REMOVE AIR FROM BOTH TOP "A" AND SIDE "B" DIAPHRAGM INLETS. THE VALVE IS NOW OPEN TO DRAIN.

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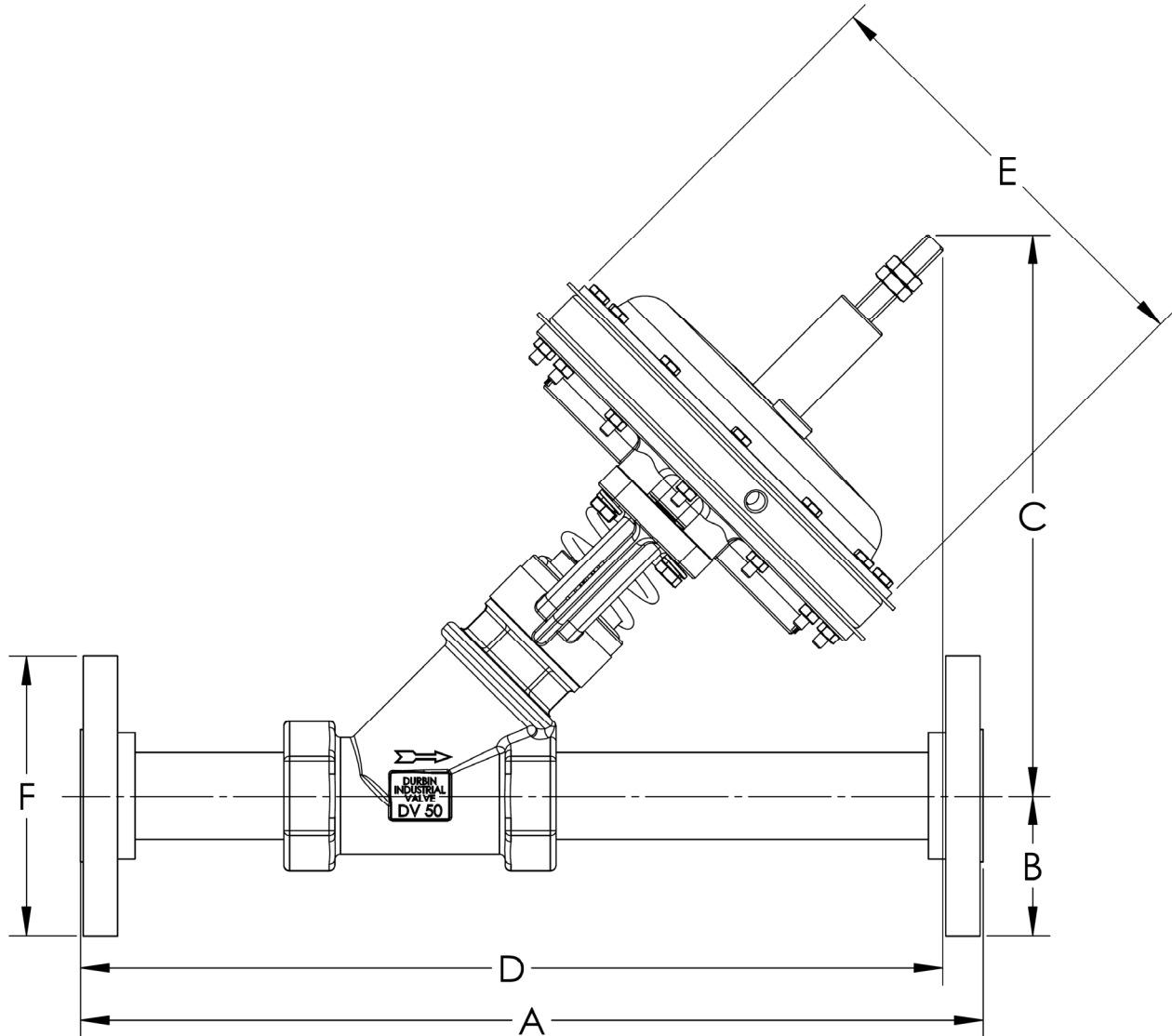
## NPT VALVE DIMENSIONS



ITEM		A	B	C	D
DV20	IN	4.38	1.39	11.88	11.78
	mm	111.0	35.0	302.0	209.0
DV30	IN	4.38	1.39	12.98	12.89
	mm	111.0	35.0	330.0	327.0
DV40	IN	4.38	1.39	12.98	12.89
	mm	111.0	35.0	330.0	327.0
DV50	IN	5.95	1.65	13.90	14.39
	mm	151.0	42.0	353.0	366.0



## FLANGED VALVE DIMENSIONS

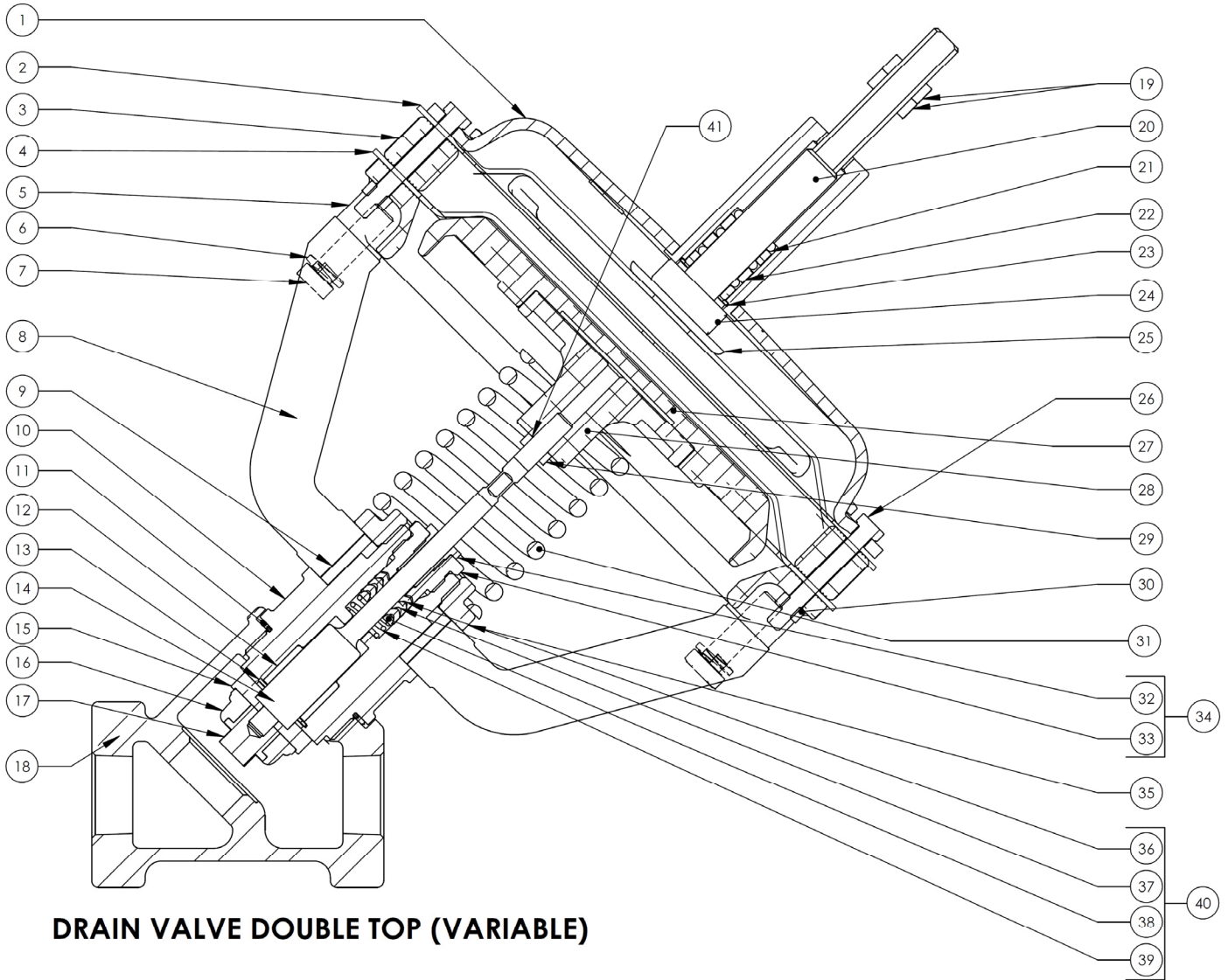


ITEM		A	B	C	D	E	F
DV30F	IN	15.38	2.44	11.50	15.97	9.50	4.88
	mm	391.0	62.0	292.0	406.0	241.0	124.0
DV50F	IN	19.71	3.06	12.26	18.83	9.50	6.12
	mm	501.0	78.0	311.0	478.0	241.0	156.0

# VARIABLE ORIFICE ANGLE DRAIN

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## VARIABLE ORIFICE ANGLE DRAIN PARTS LIST



**DRAIN VALVE DOUBLE TOP (VARIABLE)**

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## VARIABLE ORIFICE ANGLE DRAIN PARTS LIST

VARIABLE ORIFICE DRAIN VALVE NPT					
	VALVE NUMBER	DV20	DV30	DV40	DV50
	Cv RATING	Cv 26	Cv 28	Cv 32	Cv 45
ITEM	DESCRIPTION	PART #	PART #	PART #	PART #
1	LID	293-023D2R	C293-30D2R	C293-30D2R	C293-030D2R
2*	UPPER DIAPHRAGM	C333-053-A	DV-051	DV-051	DV-051
3	SPACER RING	DV333-AL	DV533-AL	DV533-AL	DV533-AL
4*	LOWER DIAPHRAGM	C333-053D	C333-051D	C333-051D	C333-051D
5	RING	C893-015D-SS	C893-022D-SS	C893-022D-SS	C893-022D-SS
6	LOCK WASHER	H175-21	H175-21	H175-21	H175-21
7	HEX BOLT 3/8	H096-55	H096-50	H096-50	H096-50
8	YOKE	DV258-SS	DV58-SS	DV58-SS	DV58-SS
9	SPACER YOKE		DV315	DV315	
10	PACKING GLAND	DV259-SS	DV259-SS	DV259-SS	DV59-SS
11*	GASKET	C383-074D	C383-074D	C383-074D	C383-028D
12	PACKING GLAND BUSHING	DV522	DV522	DV522	DV522
13	RETAINING RING	H090-19	H090-19	H090-19	H090-19
14	STEM	DV211	DV311	DV311	DV511
15	DISK WASHER	DV212	DV312	DV312	DV512
16*	SEAL	DV223	DV323	DV323	DV513
17	STEM NUT	DV214	DV314	DV314	DV514
18	BODY	DV234-SS	DV334-SS	DV434-SS	DV534-SS
19	HEX JAM 1/2	DV517	DV517	DV517	DV517
20	UPPPER PISTON	DV216-SS	DV516-SS	DV516-SS	DV516-SS
21	ORING	H135-13	H135-13	H135-13	H135-13
22	LID BUSHING	DV526	DV526	DV526	DV526
23	RETAINING RING	H090-19	H090-19	H090-19	H090-19
24	HEX JAM 3/4	DV519	DV519	DV519	DV519
25	TOP WASHER	DV520	DV520	DV520	DV520
26	HEX BOLT 1/4	H096-60	H096-60	H096-60	H096-60
27	PISTON	DV221-IC	C783-081D-AL	C783-081D-AL	C783-081D-AL
28	SPRING RET		C883-321D	C883-321D	C883-521D
29	HEX JAM 5/16	C133-008D	C133-008D	C133-008D	C133-008D
30	HEX NUT 1/4	H060-03	H060-03	H060-03	H060-03
31	NO SPRING	D293-069DR	D293-070DR	D293-070DR	D293-300DR
32	PACKING NUT BUSHING	VP524	VP524	VP524	VP524
33	PACKING NUT	C853-092D	C853-092D	C853-092D	C853-092D
34	PACKING NUT ASSY	C853-090D	C853-090D	C853-090D	C853-090D
35	YOKE NUT	DV231-SS	DV231-SS	DV231-SS	DV531-SS
36*	BLACK PACKER	C683-070D	C683-070D	C683-070D	C683-070D
37*	WHITE PACKER	C683-069D	C683-069D	C683-069D	C683-069D
38	PACKER SPREADER	C713-012D	C713-012D	C713-012D	C713-012D
39	PACKING SPRING	D293-104Y	D293-104Y	D293-104Y	D293-104Y
40	PACKING KIT	C242-015D	C242-015D	C242-015D	C242-015D
41	TOOTH WASHER	H177-05	H177-05	H177-05	H177-05
18-F	FLANGED BODY		DV334F-SW		DV534F-SW



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## VARIABLE ORIFICE ANGLE DRAIN VALVE SIZING CHAR

NOMINAL VALVE SIZE	STYLE	DESCRIPTION		PSI	BAR	C <sub>v</sub>
3/4"	2WNO	3/4"	MODEL	DV20		26
			PRESSURE RATING	500	34	
1"	2WNO	1"	MODEL	DV30		28
			PRESSURE RATING	500	34	
1-1/2"	2WNO	1-3/4"	MODEL	DV40		32
			PRESSURE RATING	500	34	
1-1/2"	2WNO	1-3/2"	MODEL	DV50		45
			PRESSURE RATING	500	34	

## ORDERING INFORMATION

Example: DV30N = 1" with NPT Threaded Ports

