

# FlowCon Wafer

**Automatic Balancing Valve - Pre-Set Insert(s)**  
**50-1000 mm / 2"-40"**



## SPECIFICATIONS

Static pressure:	DN50-80: 2500 kPa / 360 psi DN100+: 3400 kPa / 493 psi
Media temperature:	DN50-80: -20°C to +135°C / -4°F to +275°F DN100+: -20°C to +175°C / -4°F to +347°F
Material:	
- Housing:	Ductile iron ASTM A536, Grade 60-40-18
- Insert(s):	AISI type 304 stainless steel AISI type 17-7 PH stainless steel spring
- Retainer clip:	DN50-80: AISI type 302 stainless steel
- O-ring:	DN50-80: EPDM
Flow rate range:	0.883-2286.9 l/sec / 14-36248 GPM
End connections:	DN50-80: EN1092-1, PN10+ DN100-250: EN1092-1, PN25+ DN300: EN1092-1, PN40+ DN350-1000: EN1092-1, PN25+ 2": ANSI B 16.5 300lb class flanges+ 2 1/2"-8": ANSI B 16.5 150lb class flanges+ 10": ANSI B 16.5 300lb class flanges+ 12"-18": ANSI B 16.5 150lb class flanges+ 20"-24": ANSI B 16.5 300lb class flanges+ 30": ANSI B 16.47 300lb class flanges+ 32"-40": ANSI B 16.47 150lb class flanges+ Flanges are not supplied by FlowCon Studs and nuts are available upon request
Housing taps:	1/4" NPT

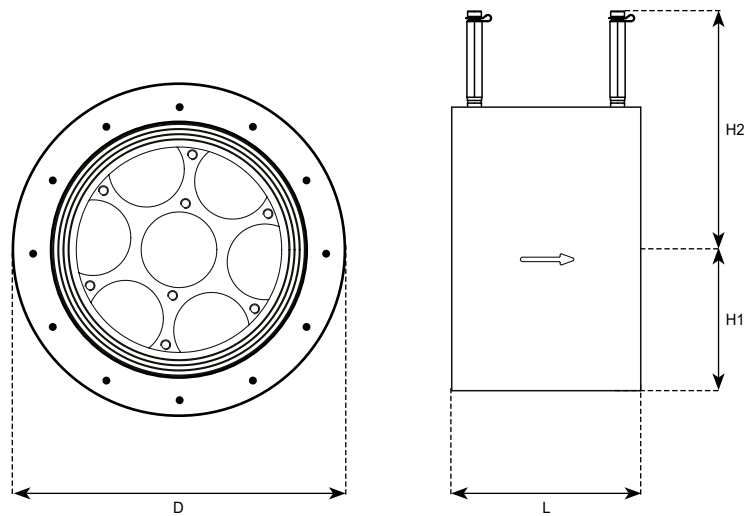
## DIMENSIONS AND WEIGHT (NOMINAL)

Model no.	Valve size	Insert size	L	H1	H2	D	Weight <sup>1</sup>	Max no. of inserts per wafer
	mm (in)		(±1%) mm (in)	mm (in)	mm (in)	mm (in)		
F325X	50 (2)	80 (3)	174 (6.85)	53.5 (2.11)	144 (5.67)	165 (6.5)	4.15 (9.15)	1 <sup>2</sup>
F326X	65 (2 1/2)		174 (6.85)	58.5 (2.30)	149 (5.87)	185 (7)	6.65 (14.7)	1 <sup>2</sup>
	80 (3)		200 (7.5)					
F332X	100 (4)		197 (7.76)	86.0 (3.39)	176 (6.93)	235 (9)	15.7 (34.6)	2 <sup>2</sup>
F334X	150 (6)		184 (7.24)	110 (4.33)	200 (7.87)	285 (11)	19.7 (43.4)	4
F337X	200 (8)		184 (7.24)	138 (5.43)	228 (8.98)	360 (13.5)	26.7 (58.9)	7
F368X	250 (10)		203 (8.00)	171 (6.73)	261 (10.3)	425 (17.5)	36.7 (80.9)	11
F369X	300 (12)		203 (8.00)	203 (7.99)	293 (11.5)	515 (19)	61.7 (136)	15
F339X	350 (14)		203 (8.00)	224 (8.82)	314 (12.4)	555 (21)	69.7 (154)	19
F384X	400 (16)		241 (9.49)	256 (10.1)	346 (13.6)	620 (23.5)	103 (227)	24
F385X	450 <sup>3</sup> (18) <sup>3</sup>		241 (9.49)	273 (10.7)	363 (14.3)	640 (25)	115 (254)	31
F338X	500 <sup>3</sup> (20) <sup>3</sup>		279 (11.0)	304 (12.0)	394 (15.5)	715 (30.5)	164 (362)	37
F386X	600 <sup>3</sup> (24) <sup>3</sup>		279 (11.0)	357 (14.1)	447 (17.6)	840 (36)	218 (481)	55
F330X	800 <sup>3</sup> (30) <sup>3</sup>		432 (17.0)	442 (17.4)	532 (20.9)	1015 (43)	402 (886)	85
	800 <sup>3</sup> (32) <sup>3</sup>					1015 (41.75)		
F370X	900 <sup>3</sup> (36) <sup>3</sup>		432 (17.0)	515 (20.3)	605 (23.8)	1185 (46)	706 (1560)	97
F395X	1000 <sup>3</sup> (40) <sup>3</sup>	438 (17.2)	570 (22.4)	660 (26.0)	1320 (53)	841 (1850)	121	

Note 1: Nominal weight, including inserts and p/t plugs, exact weight is dependent on inserts.

Note 2: Hi-flow inserts do not fit in this wafer size.

Note 3: 450 mm (18") and larger supplied with eyebolt for lifting.



## MODEL NUMBER SELECTION

**F3** . . . **B**

Housing type:

- 25** = DN50 / 2"
- 26** = DN65/80 / 2 1/2" / 3"
- 32** = DN100 / 4"
- 34** = DN150 / 6"
- 37** = DN200 / 8"
- 68** = DN250 / 10"
- 69** = DN300 / 12"
- 39** = DN350 / 14"
- 84** = DN400 / 16"
- 85** = DN450 / 18"
- 38** = DN500 / 20"
- 86** = DN600 / 24"
- 30** = DN800 / 30"/32"
- 70** = DN900 / 36"
- 95** = DN1000 / 40"

Pressure range:

- 0** = None
- Standard / Hi-Capacity:**
- 1** = 10-135 kPaD (1.5-20 psid) and 28-135 kPaD (4.0-20 psid)
- 2** = 22-210 kPaD (3.2-30 psid) and 55-210 kPaD (8.0-30 psid)
- 4** = 40-390 kPaD (5.8-57 psid)
- 8** = 90-880 kPaD (13-128 psid)
- Hi-Flow<sup>4</sup>:**
- 3** = 20-125 kPaD (2.9-18 psid)
- 5** = 35-220 kPaD (5.1-32 psid)
- 6** = 55-220 kPaD (8.0-32 psid)

P/t plug requirements:

- B** = pressure/temperature plugs (standard)

Example:

**F3.37.0.B**=Wafer for 200 mm (8") flanges with p/t plugs and no inserts.

**Note: Please specify flow requirements as per selection chart when ordering with insert(s).**

Note 4: Not possible for DN50-100 (2"-4").

**SINGLE INSERT FLOW RATE**

**80 mm (3") Stainless Steel Inserts for DN50-DN1000 Valves**



80 mm · 3" · stainless steel insert											
Pressure range, ΔP:			10-135 kPaD 1-20 psid		22-210 kPaD 2-32 psid		40-390 kPaD 4-57 psid		90-880 kPaD 8-128 psid		
			Type 1		Type 2		Type 4		Type 8		
l/sec	l/hr	GPM	Marking	Code	Marking	Code	Marking	Code	Marking	Code	
0.883	3180	14.0	35-1	F324135							
1.01	3630	16.0	40-1	F324140							
1.10	3970	17.5			35-2	F324235					
1.14	4090	18.0	45-1	F324145							
1.26	4540	20.0	50-1	F324150	40-2	F324240					
1.39	5000	22.0	55-1	F324155							
1.42	5110	22.5			45-2	F324245					
1.47	5300	23.3					35-4	F324435			
1.51	5450	24.0	60-1	F324160							
1.58	5680	25.0			50-2	F324250					
1.64	5910	26.0	65-1	F324165							
1.68	6060	26.7					40-4	F324440			
1.73	6250	27.5			55-2	F324255					
1.77	6360	28.0	70-1	F324170							
1.89	6810	30.0	75-1	F324175	60-2	F324260	45-4	F324445			
2.02	7270	32.0	80-1	F324180							
2.05	7380	32.5			65-2	F324265					
2.10	7570	33.3					50-4	F324450			
2.15	7720	34.0	85-1	F324185							
2.21	7950	35.0			70-2	F324270			35-8	F324835	
2.27	8180	36.0	90-1	F324190							
2.31	8330	36.7					55-4	F324455			
2.37	8520	37.5			75-2	F324275					
2.40	8630	38.0	95-1	F324195							
2.52	9080	40.0	100-1	F3241100	80-2	F324280	60-4	F324460	40-8	F324840	
2.65	9540	42.0	105-1	F3241105							
2.68	9650	42.5			85-2	F324285					
2.73	9840	43.3					65-4	F324465			
2.78	9990	44.0	110-1	F3241110							
2.84	10200	45.0			90-2	F324290			45-8	F324845	
2.90	10400	46.0	115-1	F3241115							
2.94	10600	46.7					70-4	F324470			
3.00	10800	47.5			95-2	F324295					
3.03	10900	48.0	120-1	F3241120							
3.15	11400	50.0	125-1	F3241125	100-2	F3242100	75-4	F324475	50-8	F324850	
3.28	11800	52.0	130-1	F3241130							
3.31	11900	52.5			105-2	F3242105					
3.36	12100	53.3					80-4	F324480			
3.41	12300	54.0	135-1	F3241135							
3.47	12500	55.0			110-2	F3242110			55-8	F324855	
3.53	12700	56.0	140-1	F3241140							
3.58	12900	56.7					85-4	F324485			
3.63	13100	57.5			115-2	F3242115					
3.66	13200	58.0	145-1	F3241145							
3.79	13600	60.0	150-1	F3241150	120-2	F3242120	90-4	F324490	60-8	F324860	
3.94	14200	62.5			125-2	F3242125					
4.00	14400	63.3					95-4	F324495			
4.10	14800	65.0			130-2	F3242130			65-8	F324865	
4.21	15100	66.7					100-4	F3244100			
4.26	15300	67.5			135-2	F3242135					
4.42	15900	70.0			140-2	F3242140	105-4	F3244105	70-8	F324870	
4.57	16500	72.5			145-2	F3242145					
4.63	16700	73.3					110-4	F3244110			
4.73	17000	75.0			150-2	F3242150			75-8	F324875	
4.84	17400	76.7					115-4	F3244115			
5.05	18200	80.0					120-4	F3244120	80-8	F324880	
5.26	18900	83.3					125-4	F3244125			
5.36	19300	85.0							85-8	F324885	
5.47	19700	86.7					130-4	F3244130			
5.68	20400	90.0					135-4	F3244135	90-8	F324890	
5.89	21200	93.3					140-4	F3244140			
5.99	21600	95.0							95-8	F324895	
6.10	22000	96.7					145-4	F3244145			
6.31	22700	100					150-4	F3244150	100-8	F3248100	
6.62	23800	105							105-8	F3248105	
6.94	25000	110							110-8	F3248110	
7.26	26100	115							115-8	F3248115	
7.57	27300	120							120-8	F3248120	
7.89	28400	125							125-8	F3248125	
8.20	29500	130							130-8	F3248130	
8.52	30700	135							135-8	F3248135	
8.83	31800	140							140-8	F3248140	
9.15	32900	145							145-8	F3248145	
9.46	34100	150							150-8	F3248150	

Accuracy: ±5% of controlled flow rate.

## SINGLE INSERT FLOW RATE

### 80 mm (3") Hi-capacity Stainless Steel Inserts for DN50-DN1000 Valves



80 mm · 3" · hi-capacity stainless steel insert							
Nominal flow rate	Pressure range, ΔP:			28-135 kPaD 4-20 psid		55-210 kPaD 8-32 psid	
	l/sec	l/hr	GPM	Type 1		Type 2	
				Marking	Code	Marking	Code
	5.68	20400	90.0	220-1	F3241220		
6.94	25000	110	270-1	F3241270	220-2		F3242220
8.20	29500	130	320-1	F3241320			
8.52	30700	135				270-2	F3242270
10.1	36300	160				320-2	F3242320

Accuracy: ±5% of controlled flow rate.

### 80 mm (3") Hi-flow Stainless Steel Inserts for DN150-DN1000 Valves



80 mm · 3" · hi-flow stainless steel insert									
Nominal flow rate	Pressure range, ΔP:			20-125 kPaD 3-18 psid		35-220 kPaD 5-32 psid		55-220 kPaD 8-32 psid	
	l/sec	l/hr	GPM	Type 3		Type 5		Type 6	
				Marking	Code	Marking	Code	Marking	Code
	6.31	22700	100	100-3	F117100				
8.52	30700	135			135-5	F118135			
10.1	36300	160			160-5	F118160			
12.6	45400	200			200-5	F118200			
18.9	68100	300						300-8	F119300

Accuracy: ±5% of controlled flow rate.

## FLOW RATE TABLE PER TYPE OF INSERT

80mm · 3" · stainless steel insert, standard flow							
			Pressure range, ΔP:	10-135 kPaD 1-20 psid	22-210 kPaD 2-32 psid	40-390 kPaD 4-57 psid	90-880 kPaD 8-128 psid
				Type 1	Type 2	Type 4	Type 8
Size (mm)	Size (")	Max no. of inserts	min. available l/sec	0.883	1.10	1.47	2.21
			l/sec increments	0.127	0.16	0.21	0.31
50	2	1	max. available l/sec	3.79	4.73	6.31	9.46
65	2 1/2	1		3.79	4.73	6.31	9.46
80	3	1		3.79	4.73	6.31	9.46
100	4	2		7.58	9.46	12.6	18.9
150	6	4		15.2	18.9	25.2	37.8
200	8	7		26.5	33.1	44.2	66.2
250	10	11		41.7	52.0	69.4	104
300	12	15		56.9	71.0	94.7	142
350	14	19		72.0	89.9	120	180
400	16	24		91.0	114	151	227
450	18	31		117	147	196	293
500	20	37		140	175	233	350
600	24	55		208	260	347	520
800	30	85		322	402	536	804
	32						
900	36	97		368	459	612	918
1000	40	121	459	572	764	1144	

Accuracy: ±5% of controlled flow rate.

80mm · 3" · stainless steel insert, high capacity						
			Pressure range, ΔP:	28-135 kPaD 4-20 psid	55-210 kPaD 8-32 psid	
				Type 1	Type 2	
Size (mm)	Size (")	Max no. of inserts	min. available l/sec	5.68	6.94	
			l/sec increments	1.26	1.58	
50	2	1	max. available l/sec	8.20	10.1	
65	2 1/2	1		8.20	10.1	
80	3	1		8.20	10.1	
100	4	2		16.4	20.2	
150	6	4		32.8	40.4	
200	8	7		57.4	70.7	
250	10	11		90.2	111	
300	12	15		123	152	
350	14	19		156	192	
400	16	24		197	242	
450	18	31		254	313	
500	20	37		303	374	
600	24	55		451	556	
800	30	85		697	859	
	32					
900	36	97		795	980	
1000	40	121	992	1222		

Accuracy: ±5% of controlled flow rate.

80mm · 3" · stainless steel insert, high flow						
			Pressure range, ΔP:	20-125 kPaD 3-18 psid	35-220 kPaD 5-32 psid	55-220 kPaD 8-32 psid
				Type 3	Type 5	Type 6
Size (mm)	Size (")	Max no. of inserts	min. available l/sec	6.31	8.52	18.9
			l/sec increments	n/a	n/a <sup>5</sup>	n/a
150	6	4	max. available l/sec	18.9	37.8	56.7
200	8	7		37.9	75.6	113
250	10	11		69.4	139	208
300	12	15		94.7	189	284
350	14	19		120	239	359
400	16	24		151	302	454
450	18	31		196	391	586
500	20	37		233	466	699
600	24	55		347	693	1040
800	30	85		536	1071	1607
	32					
900	36	97		612	1222	1833
1000	40	121	764	1525	2287	

Accuracy: ±5% of controlled flow rate.

Note 5: For flow rates in between min. and max. please contact FlowCon.

## FLANGE MATCH

Model no.	Flange size (inch)	ASME B16.5 weld neck		Flange size (mm)	EN1092-1 weld neck			
		Class 150	Class 300		PN10	PN16	PN25	PN40
F325X	2		✓	50	✓	✓	✓	✓
F326X	2 1/2	✓	✓	65	✓	✓	✓	✓
	3	✓	✓	80	✓	✓	✓	✓
F332X	4	✓	✓	100			✓ <sup>6</sup>	✓ <sup>6</sup>
F334X	6	✓	✓	150	✓	✓	✓	✓
F337X	8	✓	✓	200			✓	✓
F368X	10		✓	250			✓	✓
F369X	12	✓	✓	300				✓
F339X	14	✓	✓	350			✓	✓
F384X	16	✓	✓	400			✓	✓
F385X	18	✓	✓	450			✓	✓
F338X	20		✓	500			✓	✓
F386X	24		✓	600			✓	✓
<b>ASME B16.47A weld neck</b>								
F330X	30		✓ <sup>7</sup>	800			✓	✓
	32	✓ <sup>7</sup>	✓ <sup>7</sup>					
F370X	36	✓ <sup>7</sup>	✓ <sup>7</sup>	900			✓	✓
F395X	40	✓ <sup>7</sup>		1000			✓	✓

Note 6: Fits PN25 and PN40 flanges with M18 studs or studs from ACC3320BD25.

Note 7: According to ASME B16.47 series A.

## GENERAL SPECIFICATIONS

### 1. AUTOMATIC BALANCING VALVES - FLOWCON WAFER

- 1.1. Contractor shall install automatic balancing valves where indicated in drawings.
- 1.2. Valve shall consist of dynamic, flow limiting device.

### 2. VALVE HOUSING

- 2.1. Valve housing shall consist of ductile iron ASTM A536, grade 60-40-18, rated at no less than 2500 kPa (360 psi) static pressure and +135°C (+275°F).
- 2.2. Valve shall be permanently marked to show direction of flow.
- 2.3. Housing shall be for installation between flanges.  
Valve housing shall be compatible with ANSI 150lb/300lb steel flanges (depending on size) according to ASME B16.5/16.47 and be compatible to DIN PN10/PN16/PN25/PN40+ flanges (depending on size) according to EN1092-1.
- 2.4. Dual pressure/temperature test plugs for verifying accuracy of flow performance shall be standard on all valve sizes.
- 2.5. Sizes DN450 (18") and larger supplied with eyebolt for lifting.
- 2.6. Identification label shall be available for all valves.

### 3. FLOW REGULATOR / AUTOMATIC BALANCING UNIT

- 3.1. Flow regulation unit assembly shall be manufactured of AISI type 304 stainless steel and stainless steel 17-7 spring.
- 3.2. Flow regulation unit shall be available in 4 different kPaD operational range; minimum range shall be capable of being activated by minimum 10 kPaD (1 psid). Further, the flow regulation unit shall be capable of controlling flow within ±5% of rated flow.

## UPDATES

**For latest updates please see [www.flowcon.com](http://www.flowcon.com)**

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