Universal Microsystems
48531 Warm Springs Blvd. #415
Fremont, CA 94539
Tel: (408) 828-1460
www.flowrestrictor.com

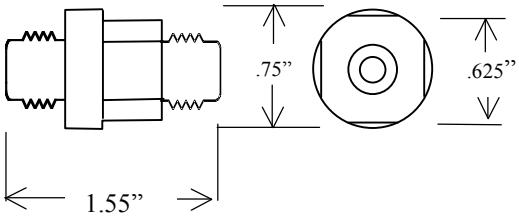
B series body with flow direction arrow and part number. Serial ID, option

B - N03 - FS - 2C

Orifice ID (tables)

FS- Sapphire & SS orifices
VS -Silicon orifices

2, 3 – # of ports
C, O Port with restrictor



Material Specifications

Orifice Material	Sapphire & SS	Silicon
Internal Seal	Embedded SS	Viton
Body Material	316 L SS /SEMI F20 specification	316 L SS /SEMI F20 specification
Passivation	Cr:Fe > 2:1	Cr:Fe > 2:1
Surface Roughness	10 Ra ave. 15 Ra max	10 Ra ave. 15 Ra max
Surface Analysis	C<30%, S<1 %, P<2%, Si <1.5%	C<30%, S<1%, P<2%, Si <1.5%

To find the Orifice ID

- The required orifice will flow nitrogen at 20 psig with a value that matches the applications gas, flow and pressure
- To convert the flow of a gas other than nitrogen, divide the flow by K in the right hand column below.
- Multiply that result by 34.7 and then divide by the inlet pressure in psia (add 14.7 to psig)
- Match the result to the flow in a table below to determine Orifice ID

Stock Si & Sapphire Orifices

Sxx & 3 digit Si, Nxx bevel side inlet, Rxx bevel side outlet , sapphire

Orifice ID	N2 sccm @ 20 psig		Orifice ID	N2 sccm @ 20 psig		Orifice ID	N2 sccm @ 20 psig		Gas	K
S23	13		R07	604		R18	3900		Air	0.98
027	18		N07	652		N18	4260		Ar	0.84
S28	21		R08	845		R19	4350		Br2	0.42
S34	30		N08	905		N19	4750		C2H2	1.04
S39	41		R09	970		R20	4820		CCl4	0.43
S45	54		N09	1070		N20	5260		CH4	1.32
050	72		R10	1220		R22	5830		Cl2	0.63
S56	84		N10	1340		N22	6360		CO2	0.80
S62	101		230	1390		R24	6940		H2	3.73
R03	109		R11	1485		N24	7570		He	2.65
N03	114		N11	1625		R26	8140		N2	1.00
S79	164		R12	1765		580	8690		N2O	0.80
R04	185		N12	1925		N26	8890		Ne	1.18
N04	191		R13	2040		R28	9450		NF3	0.63
S95	250		N13	2220		N28	10300		NH3	1.28
101	272		R14	2360		R30	10800		O2	0.94
R05	309		N14	2580		N30	11800		SF6	0.44
N05	327		R15	2710		R33	13100		SiCl4	0.41
120	400		N15	2960		N33	14300		SiH2Cl2	0.53
R06	442		R16	3080		R36	15600		SiH4	0.94
N06	475		N16	3370		N36	17000		TEOS	0.37
140	500		R17	3480		R40	19300		WF6	0.31
150	550		N17	3800		N40	21000		Xe	0.46

3 digit ID code for Si orifices

N2 Flow ***Inlet Pressure PSIG***

sccm	5	10	15	20	25	30	35	40	45	50
100	085	075	065	060	055	050				
150	105	090	080	075	070	065	060	060	055	050
200	120	110	100	090	080	075	070	065	065	060
300	150	130	120	110	100	095	090	085	080	075
400	180	150	140	130	120	110	100	100	090	090
500	200	170	150	140	130	120	120	110	105	100
750	240	220	200	180	165	150	140	140	130	120
1,000	280	240	220	200	180	180	165	160	150	140
1,500	360	300	280	240	230	220	200	200	180	180
2,000	400	360	300	280	260	240	240	220	210	200
3,000	500	440	400	360	330	300	300	280	260	250
4,000	580	500	450	410	380	350	330	320	300	280
5,000	650	550	500	440	420	400	360	360	330	300
7,500	800	700	600	550	500	480	440	440	400	400
10,000	900	800	700	650	600	550	525	500	480	450

Fxx Stainless Steel Orifices xx is diameter in .001"

F30 – F80 available

N_2 sccm @ 20 psig = 13.4 $(xx)^2$