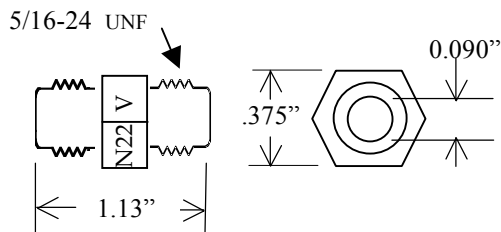




1/8" M/M VCR union
 restrictor with flow direction
 arrow and orifice ID



SS - 2 - VCR - N03 - DM

Orifice ID (tables)

FLOW

Material Specifications

Orifice Material	Sapphire & SS orifices	Silicon orifices
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 application's gas and flow must be converted to the equivalent of nitrogen gas flowing at 20 psig
- If the application's gas is not nitrogen, divide the application's flow by K in the right hand column below.
- To convert that flow at the applications pressure to that at 20 psig multiply the 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

$$N_2 \text{ sccm @ 20 psig} = 13.4 (xx)^2$$