

# UMS

High precision, restrictive flow orifices for gas flow control

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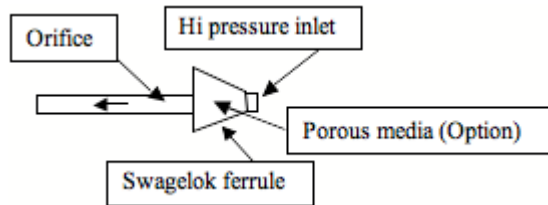
## Tube Flow Restrictor

- Tube restrictors are the fast, easy and inexpensive way to add flow restriction to your system
- Restrictors with sapphire or SS orifices are suitable for welding connections
- Any orifice can be used with compression fittings
- Tube restrictors, unlike gaskets, provide an externally verifiable element in the system, with an observable orifice ID applied to the part
- 1/4" by 1.70" (trim-able to 1/4" by 0.75")

Weldable Tube Restrictor



Add a filter with compression fittings



**T - N03 - FS - 00**

T - 1.20" length  
TL-1.70" length

Orifice ID (tables)

FS- Sapphire & SS orifices  
VS -Silicon orifices

00 - tube stub  
05 - with 5 um filter

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%

## Orifice Information

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

To find the Orifice ID

- The required orifice will flow nitrogen at 20 psia that matches the applications gas, flow and pressure
- To convert the flow of a gas to the equivalent flow of nitrogen at 20 psia divide the flow by K in the right hand column
- Multiply that result by 34.7 and then divide by the square root of the pressure in psia (add 14.7 to psig)
- Match the result to the N<sub>2</sub> flow in table to determine orifice ID

For Stainless Steel Orifices, ID is F  
xx is diameter in 0.001"  
F30 - F80 available  
N<sub>2</sub> sccm @ 20 psig = 13.4 (xx)<sup>2</sup>

Orifice ID	N <sub>2</sub> sccm @ 20 psig	Orifice ID	N <sub>2</sub> sccm @ 20 psig	Orifice ID	N <sub>2</sub> sccm @ 20 psig
S23	13	R07	604	R18	3900
S27	18	R07	652	N18	4280
S28	21	R08	845	R19	4350
S34	30	N08	905	N19	4750
S39	41	R09	970	R20	4820
S45	54	N09	1070	N20	5280
S50	72	R10	1220	R22	5830
S56	84	N10	1340	N22	6380
S62	101	R11	1485	R24	6940
R03	109	N11	1485	N24	7570
N03	114	N11	1625	R26	8140
S79	164	R12	1765	N26	8690
R04	185	N12	1925	N26	8890
N04	191	R13	2040	R28	9450
S95	250	N13	2220	N28	10300
101	272	R14	2360	R30	10800
R05	309	N14	2580	N30	11800
N05	327	R15	2710	R33	13100
120	400	N15	2960	N33	14300
R06	442	R16	3080	R36	15600
N06	475	N16	3370	N36	17000
140	500	R17	3480	R40	19300
150	550	N17	3800	N40	21000