

IGC[®] II Integrated Gas Components

Substrates, Manifolds, Mounting Components,
and Assembly Hardware



IGC II Series

- 1.5 in. (38.1 mm) c-ring modular design
- Compact footprint minimizes space requirements
- Lightweight, easy-to-assemble components

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Technical Data

Service Ratings

- Pressure rating: 3000 psig (206 bar) at 70°F (21°C) for substrate and manifold components
- Temperature rating: 120°C (248°F) operating; 150°C (302°F) bakeout.

Materials of Construction

- Wetted flow components: 316L VIM/VAR stainless steel
- Non-wetted components: aluminum (hard-coat anodized, alloy 2024-T351), stainless steel (316, 303, and alloy A286), and plastic (polyethersulfone)

Internal Surface Finish

- Wetted components: electropolished 5 µin. (0.13 µm) R_a avg

Cleaning and Processing

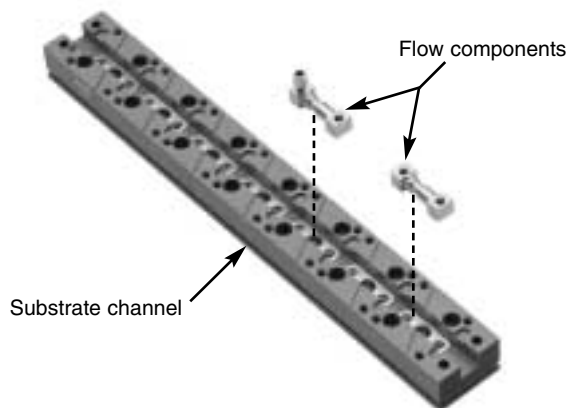
- Wetted components: Swagelok Ultrahigh-Purity Process Specification (SC-01)

The IGC II System

- A typical IGC II system consists of three layers—a substrate assembly, a manifold assembly, and mounting components.
- The manifold and substrate assemblies are combined to form the conduit for the process gas and can be customized for any flow configuration.
- The IGC II system is assembled with simple mounting components and standard hardware.
- The IGC II system accepts any 1.5 in. (38.1 mm) c-ring surface mount component. See *Swagelok Modular Surface Mount Components and Seals* catalog for details.
- The Swagelok IGC II System Configurator is available on CD-ROM software to simplify the layout, selection, and ordering of IGC II components.

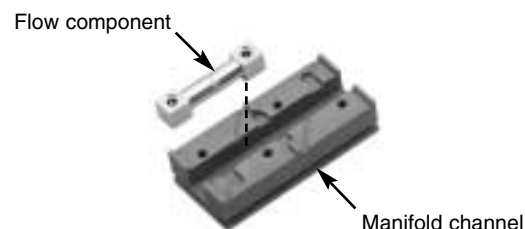
Substrate Assembly

- The assembly provides the flow path for the process gas through the gas stick.
- The substrate assembly consists of a substrate channel and a variety of drop-in flow components.
- The substrate channels are available in a variety of lengths to accommodate up to 14 surface-mount components.
- See pages 4 through 7 for ordering numbers.



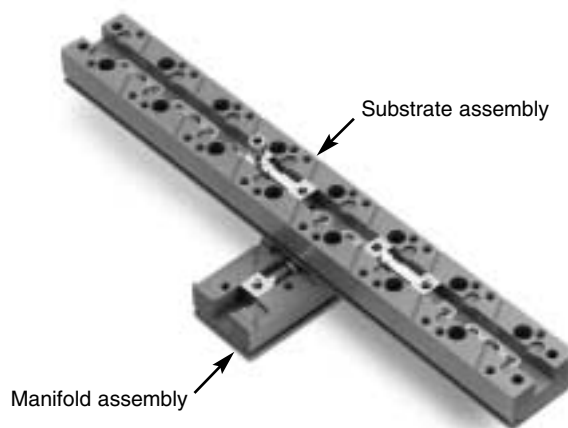
Manifold Assembly

- The manifold assembly provides the flow path *between* two or more parallel gas sticks.
- The manifold assembly consists of a manifold channel and a variety of drop-in flow components.
- The manifold channels are available in a variety of lengths to accommodate up to 10 parallel gas sticks.
- Optional parallel manifold assemblies are available to provide an additional flow path *parallel* to the gas stick.
- See pages 7 through 11 for ordering numbers.



Substrate-Manifold Assembly

- The substrate assembly bolts over the manifold assembly.
- A c-ring gasket assembly (not visible) provides a leak-tight seal between the substrate component and the manifold below.
- The substrate-manifold assembly accepts any 1.5 in. (38.1 mm) c-ring surface mount component.



Mounting Components and Caps

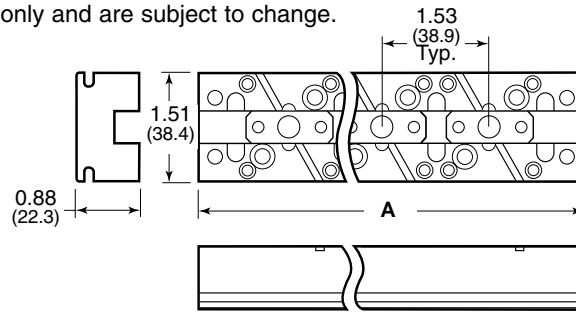
- A foot block bolts to each end of the gas stick, providing panel-mount capability.
- A support block provides mid-line support for longer gas sticks.
- A conversion plate provides the mounting capacity for a mass flow controller.
- A cap is available to cover an unused position on a substrate or manifold.
- A tube port is available to provide a 1/4 inch vertical tube port on a manifold or substrate.
- See pages 11 and 12 for ordering numbers.



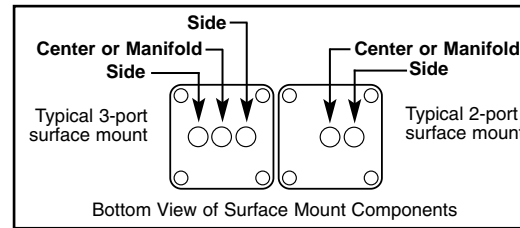
Substrate Channels

Dimensions, in inches (millimeters), are for reference only and are subject to change.

Number of Surface Mount Positions	Ordering Number	A in. (mm)
1	A-IG2-SB-01	2.60 (66.0)
2	A-IG2-SB-02	4.13 (105)
3	A-IG2-SB-03	5.66 (144)
4	A-IG2-SB-04	7.19 (183)
5	A-IG2-SB-05	8.72 (221)
6	A-IG2-SB-06	10.2 (259)
7	A-IG2-SB-07	11.8 (300)
8	A-IG2-SB-08	13.3 (338)
9	A-IG2-SB-09	14.8 (376)
10	A-IG2-SB-10	16.4 (416)
11	A-IG2-SB-11	17.9 (455)
12	A-IG2-SB-12	19.4 (493)
13	A-IG2-SB-13	21.0 (533)
14	A-IG2-SB-14	22.5 (572)



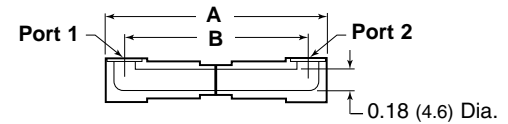
Port Descriptions for Substrate Components



From left to right:
Port 1 corresponds to the connection port on the first surface mount component.
Port 2 corresponds to the connection port on the second surface mount component.

Substrate Components

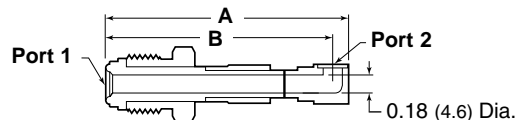
Surface Mount Connectors



Cutaway	Description		Ordering Number	Dimensions, in. (mm)		Wetted Surface Area in. ² (cm ²)	Internal Volume in. ³ (cm ³)
	Port 1	Port 2		A	B		
	Side	Side	6LVV-IG2-WS-SHSH	1.22 (31.0)	0.92 (23.4)	0.69 (4.4)	0.031 (0.51)
		Center	6LVV-IG2-WS-SHLG	1.53 (38.9)	1.23 (31.2)	0.86 (5.5)	0.039 (0.64)
		Center and manifold	6LVV-IG2-WS-SHDT			1.18 (7.6)	0.054 (0.89)
		Manifold	6LVV-IG2-WS-SHDE			1.15 (7.4)	0.052 (0.85)
	Center	Center	6LVV-IG2-WS-LGLG			1.83 (46.5)	1.53 (38.9)
		Center and manifold	6LVV-IG2-WS-LGDT	1.36 (8.7)	0.062 (1.0)		
		Manifold	6LVV-IG2-WS-LGDE	1.32 (8.5)	0.060 (0.97)		
	Center and manifold	Center and manifold	6LVV-IG2-WS-DTDT	1.68 (10.8)	0.078 (1.3)		
		Manifold	6LVV-IG2-WS-DTDE	1.65 (10.6)	0.075 (1.2)		
	Manifold	Manifold	6LVV-IG2-WS-DEDE	1.61 (10.3)	0.073 (1.2)		

Substrate Components

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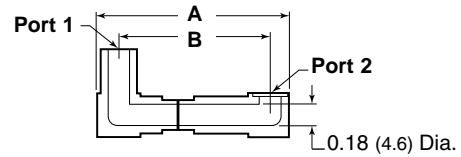


Substrate End Connectors

Cutaway	Description		Ordering Number	Dimensions, in. (mm)		Wetted Surface Area in. ² (cm ²)	Internal Volume in. ³ (cm ³)
	Port 1	Port 2		A	B		
	1/4 in. male VCR fitting	Side	6LVV-IG2-WS-SHVM	2.31 (58.7)	2.16 (54.9)	1.31 (8.4)	0.059 (0.96)
		Center	6LVV-IG2-WS-LGVM	2.61 (66.3)	2.46 (62.5)	1.48 (9.5)	0.067 (1.1)
		Center and manifold	6LVV-IG2-WS-DTVM			1.80 (11.6)	0.082 (1.3)
		Manifold	6LVV-IG2-WS-DEVM			1.77 (11.4)	0.080 (1.3)
		Standard MFC	6LVV-IG2-WS-VMMA			2.36 (59.9)	2.18 (55.4)
		Compact MFC	6LVV-IG2-WS-VMMB	2.60 (66.0)	2.42 (61.5)	1.68 (10.8)	0.076 (1.2)
	1/4 in. female VCR fitting	Side	6LVV-IG2-WS-SHVF	2.31 (58.7)	2.16 (54.9)	1.31 (8.4)	0.059 (0.96)
		Center	6LVV-IG2-WS-LGVF	2.61 (66.3)	2.46 (62.5)	1.48 (9.5)	0.067 (1.1)
		Center and manifold	6LVV-IG2-WS-DTVF			1.80 (11.6)	0.082 (1.3)
		Manifold	6LVV-IG2-WS-DEVF			1.77 (11.4)	0.080 (1.3)
		Standard MFC	6LVV-IG2-WS-VFMA			2.36 (59.9)	2.18 (55.4)
		Compact MFC	6LVV-IG2-WS-VFMB	2.60 (66.0)	2.42 (61.5)	1.68 (10.8)	0.076 (1.2)
	1/4 x 0.035 in. butt weld	Side	6LVV-IG2-WS-SHEC	1.48 (37.6)	1.33 (33.8)	0.84 (5.4)	0.038 (0.62)
		Center	6LVV-IG2-WS-LGEC	1.78 (45.2)	1.63 (41.4)	1.01 (6.5)	0.045 (0.74)
		Center and manifold	6LVV-IG2-WS-DTEC			1.33 (8.6)	0.061 (0.99)
		Manifold	6LVV-IG2-WS-DEEC			1.30 (8.4)	0.059 (0.96)
		Standard MFC	6LVV-IG2-WS-ECMA			1.53 (38.9)	1.35 (34.3)
		Compact MFC	6LVV-IG2-WS-ECMB	1.77 (45.0)	1.59 (40.4)	1.21 (7.8)	0.054 (0.89)

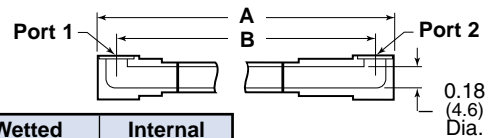
Substrate Components

Dimensions, in inches (millimeters), are for reference only and are subject to change.



Mass Flow Controller Connectors

Cutaway	Description		Ordering Number	Dimensions, in. (mm)		Wetted Surface Area in. ² (cm ²)	Internal Volume in. ³ (cm ³)
	Port 1	Port 2		A	B		
	Standard MFC	Side	6LVV-IG2-WS-SHMA	1.27 (32.2)	0.94 (23.9)	0.93 (5.9)	0.042 (0.68)
		Center	6LVV-IG2-WS-LGMA	1.58 (40.1)	1.25 (31.8)	1.10 (7.1)	0.050 (0.81)
		Center and manifold	6LVV-IG2-WS-DTMA			1.42 (9.2)	0.065 (1.1)
		Manifold	6LVV-IG2-WS-DEMA			1.39 (8.9)	0.063 (1.0)
		Standard MFC	6LVV-IG2-WS-MAMA			1.33 (33.8)	0.97 (24.6)
		Compact MFC	6LVV-IG2-WS-MAMB	1.58 (40.1)	1.21 (30.7)	1.30 (8.4)	0.059 (0.97)
	Compact MFC	Side	6LVV-IG2-WS-SHMB	1.51 (38.4)	1.18 (30.0)	1.06 (6.8)	0.048 (0.78)
		Center	6LVV-IG2-WS-LGMB	1.82 (46.2)	1.49 (37.8)	1.23 (7.9)	0.056 (0.91)
		Center and manifold	6LVV-IG2-WS-DTMB			1.56 (10.0)	0.071 (1.2)
		Manifold	6LVV-IG2-WS-DEMB			1.52 (9.8)	0.069 (1.1)
		Compact MFC	6LVV-IG2-WS-MBMB			1.83 (46.5)	1.45 (36.8)

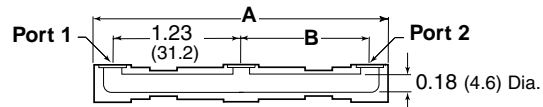


Jumper Tube Connectors

Number of Surface Mount Positions Skipped	Ordering Number	Dimensions, in. (mm)		Wetted Surface Area in. ² (cm ²)	Internal Volume in. ³ (cm ³)
		A	B		
1	6LVV-IG2-WS-SHTB01LG	3.06 (77.7)	2.76 (70.1)	1.73 (11.1)	0.078 (1.3)
2	6LVV-IG2-WS-SHTB02LG	4.59 (116)	4.28 (109)	2.59 (16.7)	0.12 (1.9)
3	6LVV-IG2-WS-SHTB03LG	6.12 (155)	5.82 (148)	3.46 (22.3)	0.16 (2.5)
4	6LVV-IG2-WS-SHTB04LG	7.65 (194)	7.34 (186)	4.32 (27.9)	0.20 (3.2)
5	6LVV-IG2-WS-SHTB05LG	9.18 (233)	8.88 (226)	5.19 (33.5)	0.23 (3.8)
6	6LVV-IG2-WS-SHTB06LG	10.7 (272)	10.4 (264)	6.05 (39.0)	0.27 (4.5)
7	6LVV-IG2-WS-SHTB07LG	12.2 (310)	11.9 (302)	6.92 (44.6)	0.31 (5.1)
8	6LVV-IG2-WS-SHTB08LG	13.8 (350)	13.5 (343)	7.78 (50.2)	0.35 (5.7)
9	6LVV-IG2-WS-SHTB09LG	15.3 (389)	15.0 (381)	8.65 (55.8)	0.39 (6.4)
10	6LVV-IG2-WS-SHTB010LG	16.8 (427)	16.5 (419)	9.51 (61.4)	0.43 (7.0)

Substrate Components

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Spacer Connectors

Cutaway	Description		Ordering Number	Dimensions, in. (mm)		Wetted Surface Area in. ² (cm ²)	Internal Volume in. ³ (cm ³)
	Port 1	Port 2		A	B		
	Side	Side	6LVV-IG2-WS-SHTASH	2.75 (69.9)	1.23 (31.2)	1.06 (10.3)	0.072 (1.2)
	Side	Center	6LVV-IG2-WS-SHTALG	3.06 (77.7)	1.53 (38.9)	1.77 (11.4)	0.080 (1.3)

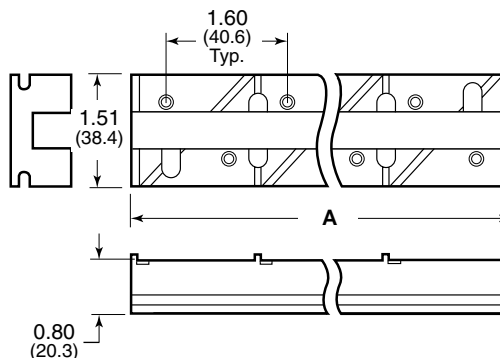
Drop-down Connector and Plugs

Cutaway	Description	Ordering Number	A in. (mm)	Wetted Surface Area in. ² (cm ²)	Internal Volume in. ³ (cm ³)
	Drop-down connector for substrate-to-manifold connection	6LVV-IG2-WC-DD	0.86 (21.8)	0.49 (3.2)	0.022 (0.36)
	Plug for manifold port with a substrate component above	6LVV-IG2-WC-PG	0.50 (12.7)	0.030 (0.19)	—
	Plug for manifold port with no substrate component above	6LVV-IG2-WC-DP	0.86 (21.8)	0.030 (0.19)	—

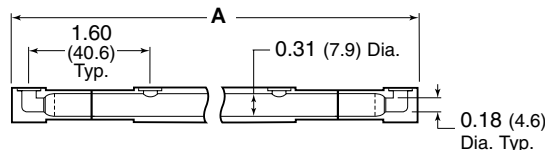


Manifold Channels

Number of Surface Mount Positions	Ordering Number	A in. (mm)
1	A-IG2-MB-01	1.68 (42.7)
2	A-IG2-MB-02	3.28 (83.3)
3	A-IG2-MB-03	4.88 (124)
4	A-IG2-MB-04	6.48 (164)
5	A-IG2-MB-05	8.08 (205)
6	A-IG2-MB-06	9.68 (246)
7	A-IG2-MB-07	11.3 (287)
8	A-IG2-MB-08	12.9 (328)
9	A-IG2-MB-09	14.5 (368)
10	A-IG2-MB-10	16.1 (409)



Manifold Components — Tee Connectors

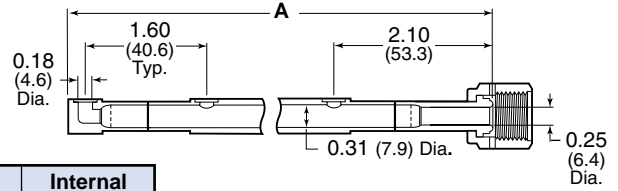


Elbow-to-Elbow

Number of Surface Mount Positions Skipped	Ordering Number	A in. (mm)	Wetted Surface Area in. ² (cm ²)	Internal Volume in. ³ (cm ³)
2	6LVV-IG2-MS-MEME	2.04 (51.8)	1.59 (10.3)	0.10 (1.7)
3	6LVV-IG2-MS-MEMT01ME	3.64 (92.5)	3.15 (20.3)	0.22 (3.7)
4	6LVV-IG2-MS-MEMT02ME	5.24 (133)	4.68 (30.2)	0.34 (5.6)
5	6LVV-IG2-MS-MEMT03ME	6.84 (174)	6.23 (40.2)	0.46 (7.5)
6	6LVV-IG2-MS-MEMT04ME	8.44 (214)	7.76 (50.1)	0.58 (9.5)
7	6LVV-IG2-MS-MEMT05ME	10.0 (254)	9.30 (60.0)	0.70 (11.4)
8	6LVV-IG2-MS-MEMT06ME	11.6 (295)	10.9 (70.0)	0.82 (13.4)
9	6LVV-IG2-MS-MEMT07ME	13.2 (335)	12.4 (80.0)	0.93 (15.3)
10	6LVV-IG2-MS-MEMT08ME	14.8 (376)	13.9 (89.9)	1.05 (17.2)

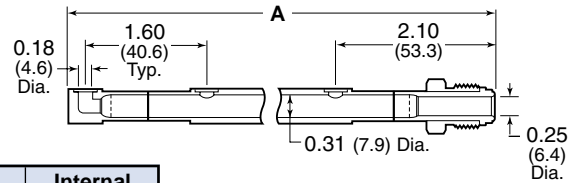
Manifold Components — Tee Connectors

Dimensions, in inches (millimeters), are for reference only and are subject to change.



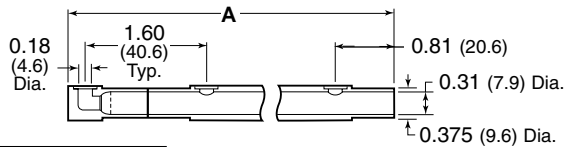
Elbow-to-Female “H” Type VCR Fitting

Number of Surface Mount Positions	Ordering Number	A in. (mm)	Wetted Surface Area in. ² (cm ²)	Internal Volume in. ³ (cm ³)
1	6LVV-IG2-MS-MEMF	2.32 (58.9)	1.86 (12.0)	0.12 (2.0)
2	6LVV-IG2-MS-MEMT01MF	3.92 (99.6)	3.41 (22.0)	0.24 (4.0)
3	6LVV-IG2-MS-MEMT02MF	5.52 (140)	4.94 (31.9)	0.36 (5.9)
4	6LVV-IG2-MS-MEMT03MF	7.12 (181)	6.49 (41.8)	0.48 (7.9)
5	6LVV-IG2-MS-MEMT04MF	8.72 (221)	8.03 (51.8)	0.60 (9.8)
6	6LVV-IG2-MS-MEMT05MF	10.3 (262)	9.57 (61.7)	0.72 (11.7)
7	6LVV-IG2-MS-MEMT06MF	11.9 (302)	11.1 (71.7)	0.84 (13.7)
8	6LVV-IG2-MS-MEMT07MF	13.5 (343)	12.7 (81.7)	0.95 (15.6)
9	6LVV-IG2-MS-MEMT08MF	15.1 (384)	14.2 (91.9)	1.07 (17.6)
10	6LVV-IG2-MS-MEMT09MF	16.7 (424)	15.7 (102)	1.19 (19.5)



Elbow-to-Male “H” Type VCR Fitting

Number of Surface Mount Positions	Ordering Number	A in. (mm)	Wetted Surface Area in. ² (cm ²)	Internal Volume in. ³ (cm ³)
1	6LVV-IG2-MS-MEMM	2.32 (58.9)	1.86 (12.0)	0.12 (2.0)
2	6LVV-IG2-MS-MEMT01MM	3.92 (99.6)	3.41 (22.0)	0.24 (4.0)
3	6LVV-IG2-MS-MEMT02MM	5.52 (140)	4.94 (31.9)	0.36 (5.9)
4	6LVV-IG2-MS-MEMT03MM	7.12 (181)	6.49 (41.8)	0.48 (7.9)
5	6LVV-IG2-MS-MEMT04MM	8.72 (221)	8.03 (51.8)	0.60 (9.8)
6	6LVV-IG2-MS-MEMT05MM	10.3 (262)	9.57 (61.7)	0.72 (11.7)
7	6LVV-IG2-MS-MEMT06MM	11.9 (302)	11.1 (71.7)	0.84 (13.7)
8	6LVV-IG2-MS-MEMT07MM	13.5 (343)	12.7 (81.7)	0.95 (15.6)
9	6LVV-IG2-MS-MEMT08MM	15.1 (384)	14.2 (91.6)	1.07 (17.6)
10	6LVV-IG2-MS-MEMT09MM	16.7 (424)	15.7 (102)	1.19 (19.5)

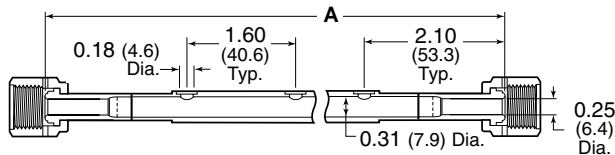


Elbow-to-Butt Weld

Number of Surface Mount Positions	Ordering Number	A in. (mm)	Wetted Surface Area in. ² (cm ²)	Internal Volume in. ³ (cm ³)
1	6LVV-IG2-MS-MEMC	1.02 (25.9)	0.80 (5.1)	0.052 (0.86)
2	6LVV-IG2-MS-MEMT01MC	2.62 (66.5)	2.35 (15.2)	0.17 (2.81)
3	6LVV-IG2-MS-MEMT02MC	4.22 (107)	3.88 (25.1)	0.29 (4.73)
4	6LVV-IG2-MS-MEMT03MC	5.82 (148)	5.43 (35.0)	0.41 (6.68)
5	6LVV-IG2-MS-MEMT04MC	7.42 (188)	6.97 (45.0)	0.53 (8.62)
6	6LVV-IG2-MS-MEMT05MC	9.02 (229)	8.51 (54.9)	0.64 (10.6)
7	6LVV-IG2-MS-MEMT06MC	10.6 (269)	10.1 (64.9)	0.76 (12.5)
8	6LVV-IG2-MS-MEMT07MC	12.2 (310)	11.6 (74.8)	0.88 (14.5)
9	6LVV-IG2-MS-MEMT08MC	13.8 (350)	13.1 (84.8)	1.00 (16.4)
10	6LVV-IG2-MS-MEMT09MC	15.4 (391)	14.7 (94.7)	1.12 (18.3)

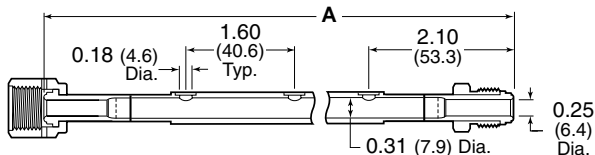
Manifold Components — Tee Connectors

Dimensions, in inches (millimeters), are for reference only and are subject to change.



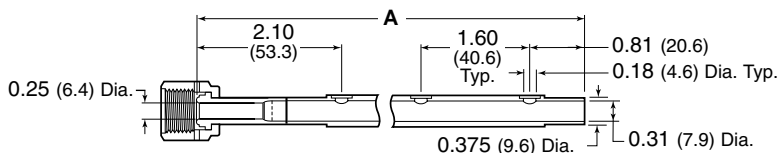
Female “H” Type VCR-to-Female “H” Type VCR Fitting

Number of Surface Mount Positions	Ordering Number	A in. (mm)	Wetted Surface Area in. ² (cm ²)	Internal Volume in. ³ (cm ³)
1	6LVV-IG2-MS-MFMT01MF	4.21 (107)	3.68 (23.7)	0.26 (4.24)
2	6LVV-IG2-MS-MFMT02MF	5.81 (148)	5.24 (33.8)	0.38 (6.21)
3	6LVV-IG2-MS-MFMT03MF	7.41 (188)	6.80 (43.8)	0.50 (8.18)
4	6LVV-IG2-MS-MFMT04MF	9.01 (229)	8.36 (53.9)	0.62 (10.1)
5	6LVV-IG2-MS-MFMT05MF	10.6 (269)	9.91 (63.9)	0.74 (12.1)
6	6LVV-IG2-MS-MFMT06MF	12.2 (310)	11.5 (74.0)	0.86 (14.1)
7	6LVV-IG2-MS-MFMT07MF	13.8 (350)	13.0 (84.1)	0.96 (16.1)
8	6LVV-IG2-MS-MFMT08MF	15.4 (391)	14.6 (94.1)	1.10 (18.0)
8	6LVV-IG2-MS-MFMT09MF	17.0 (432)	16.2 (104)	1.22 (20.0)
10	6LVV-IG2-MS-MFMT10MF	18.6 (472)	17.7 (114)	1.35 (22.0)



Female “H” Type VCR-to-Male “H” Type VCR Fitting

Number of Surface Mount Positions	Ordering Number	A in. (mm)	Wetted Surface Area in. ² (cm ²)	Internal Volume in. ³ (cm ³)
1	6LVV-IG2-MS-MFMT01MM	4.21 (107)	3.68 (23.7)	0.26 (4.24)
2	6LVV-IG2-MS-MFMT02MM	5.81 (148)	5.24 (33.8)	0.38 (6.21)
3	6LVV-IG2-MS-MFMT03MM	7.41 (188)	6.80 (43.8)	0.50 (8.18)
4	6LVV-IG2-MS-MFMT04MM	9.01 (229)	8.36 (53.9)	0.62 (10.1)
5	6LVV-IG2-MS-MFMT05MM	10.6 (269)	9.91 (63.9)	0.74 (12.1)
6	6LVV-IG2-MS-MFMT06MM	12.2 (310)	11.5 (74.0)	0.86 (14.1)
7	6LVV-IG2-MS-MFMT07MM	13.8 (350)	13.0 (84.1)	0.96 (16.1)
8	6LVV-IG2-MS-MFMT08MM	15.4 (391)	14.6 (94.1)	1.10 (18.0)
9	6LVV-IG2-MS-MFMT09MM	17.0 (432)	16.2 (104)	1.22 (20.0)
10	6LVV-IG2-MS-MFMT10MM	18.6 (472)	17.7 (114)	1.35 (22.0)

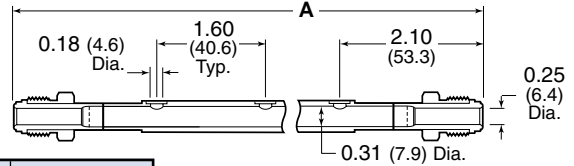


Female “H” Type VCR Fitting-to-Butt Weld

Number of Surface Mount Positions	Ordering Number	A in. (mm)	Wetted Surface Area in. ² (cm ²)	Internal Volume in. ³ (cm ³)
1	6LVV-IG2-MS-MFMT01MC	2.91 (73.9)	1.06 (6.80)	0.07 (1.17)
2	6LVV-IG2-MS-MFMT02MC	4.51 (114)	2.61 (16.8)	0.19 (3.12)
3	6LVV-IG2-MS-MFMT03MC	6.11 (155)	4.14 (26.7)	0.31 (5.05)
4	6LVV-IG2-MS-MFMT04MC	7.71 (196)	5.69 (36.7)	0.43 (7.00)
5	6LVV-IG2-MS-MFMT05MC	9.31 (236)	7.23 (46.6)	0.55 (8.93)
6	6LVV-IG2-MS-MFMT06MC	10.9 (277)	8.77 (56.6)	0.66 (10.9)
7	6LVV-IG2-MS-MFMT07MC	12.5 (318)	10.3 (66.6)	0.78 (12.8)
8	6LVV-IG2-MS-MFMT08MC	14.1 (358)	11.8 (76.5)	0.90 (14.8)
9	6LVV-IG2-MS-MFMT09MC	15.7 (399)	13.4 (86.5)	1.02 (16.7)
10	6LVV-IG2-MS-MFMT10MC	17.3 (439)	14.9 (96.4)	1.14 (18.6)

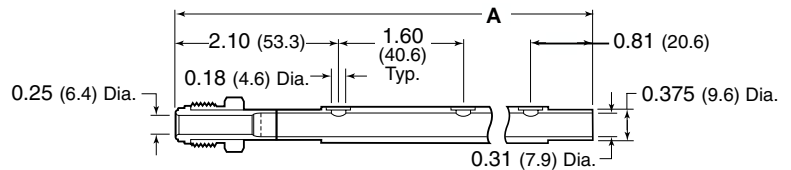
Manifold Components — Tee Connectors

Dimensions, in inches (millimeters), are for reference only and are subject to change.



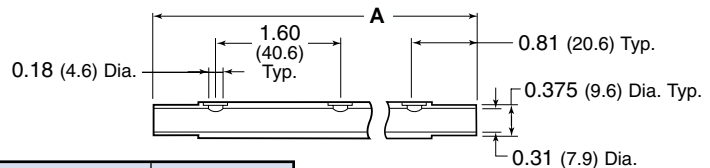
Male “H” Type VCR-to-Male “H” Type VCR Fitting

Number of Surface Mount Positions	Ordering Number	A in. (mm)	Wetted Surface Area in. ² (cm ²)	Internal Volume in. ³ (cm ³)
1	6LVV-IG2-MS-MMMT01MM	4.21 (107)	3.68 (23.7)	0.26 (4.24)
2	6LVV-IG2-MS-MMMT02MM	5.81 (148)	5.24 (33.8)	0.38 (6.21)
3	6LVV-IG2-MS-MMMT03MM	7.41 (188)	6.80 (43.8)	0.50 (8.18)
4	6LVV-IG2-MS-MMMT04MM	9.01 (229)	8.36 (53.9)	0.62 (10.1)
5	6LVV-IG2-MS-MMMT05MM	10.6 (269)	9.91 (63.9)	0.74 (12.1)
6	6LVV-IG2-MS-MMMT06MM	12.2 (310)	11.5 (74.0)	0.86 (14.1)
7	6LVV-IG2-MS-MMMT07MM	13.8 (350)	13.0 (84.1)	0.96 (16.1)
8	6LVV-IG2-MS-MMMT08MM	15.4 (391)	14.6 (94.1)	1.10 (18.0)
9	6LVV-IG2-MS-MMMT09MM	17.0 (432)	16.2 (104)	1.22 (20.0)
10	6LVV-IG2-MS-MMMT10MM	18.6 (472)	17.7 (114)	1.35 (22.0)



Male “H” Type VCR Fitting-to-Butt Weld

Number of Surface Mount Positions	Ordering Number	A in. (mm)	Wetted Surface Area in. ² (cm ²)	Internal Volume in. ³ (cm ³)
1	6LVV-IG2-MS-MMMT01MC	2.91 (73.9)	1.06 (6.80)	0.07 (1.17)
2	6LVV-IG2-MS-MMMT02MC	4.51 (114)	2.61 (16.8)	0.19 (3.12)
3	6LVV-IG2-MS-MMMT03MC	6.11 (155)	4.14 (26.7)	0.31 (5.05)
4	6LVV-IG2-MS-MMMT04MC	7.71 (196)	5.69 (36.7)	0.43 (7.00)
5	6LVV-IG2-MS-MMMT05MC	9.31 (236)	7.23 (46.6)	0.55 (8.93)
6	6LVV-IG2-MS-MMMT06MC	10.9 (277)	8.77 (56.6)	0.66 (10.9)
7	6LVV-IG2-MS-MMMT07MC	12.5 (318)	10.3 (66.6)	0.78 (12.8)
8	6LVV-IG2-MS-MMMT08MC	14.1 (358)	11.8 (76.5)	0.90 (14.8)
9	6LVV-IG2-MS-MMMT09MC	15.7 (399)	13.4 (86.5)	1.02 (16.7)
10	6LVV-IG2-MS-MMMT10MC	17.3 (439)	14.9 (96.4)	1.14 (18.6)



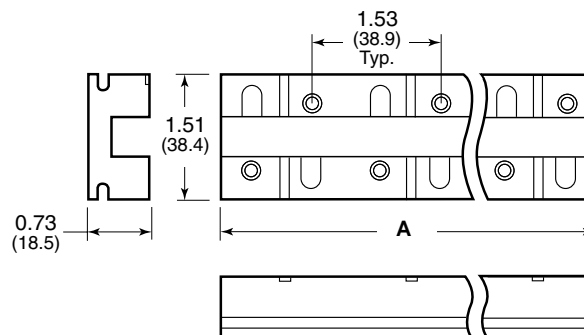
Butt Weld-to-Butt Weld

Number of Surface Mount Positions	Ordering Number	A in. (mm)	Wetted Surface Area in. ² (cm ²)	Internal Volume in. ³ (cm ³)
1	6LVV-IG2-MS-MCMT01MC	1.61 (40.9)	1.55 (10.0)	0.12 (2.0)
2	6LVV-IG2-MS-MCMT02MC	3.21 (81.5)	3.09 (19.9)	0.24 (3.9)
3	6LVV-IG2-MS-MCMT03MC	4.81 (122)	4.63 (29.9)	0.36 (5.8)
4	6LVV-IG2-MS-MCMT04MC	6.41 (163)	6.17 (39.8)	0.47 (7.8)
5	6LVV-IG2-MS-MCMT05MC	8.01 (203)	7.71 (49.7)	0.59 (9.7)
6	6LVV-IG2-MS-MCMT06MC	9.61 (244)	9.26 (59.8)	0.71 (11.7)
7	6LVV-IG2-MS-MCMT07MC	11.2 (284)	10.8 (69.7)	0.83 (13.6)
8	6LVV-IG2-MS-MCMT08MC	12.8 (325)	12.3 (79.6)	0.95 (15.5)
9	6LVV-IG2-MS-MCMT09MC	14.4 (366)	12.3 (79.6)	1.07 (17.5)
10	6LVV-IG2-MS-MCMT10MC	16.0 (406)	15.4 (99.5)	1.18 (19.4)

Parallel Manifold Channels

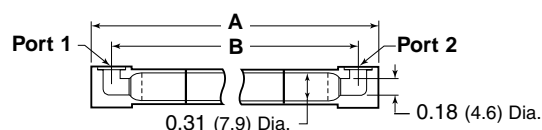
Dimensions, in inches (millimeters), are for reference only and are subject to change.

Number of Surface Mount Positions	Ordering Number	A in. (mm)
3	A-IG2-PB-03	4.47 (114)
4	A-IG2-PB-04	6.00 (152)
5	A-IG2-PB-05	7.53 (191)
6	A-IG2-PB-06	9.06 (230)
7	A-IG2-PB-07	10.6 (269)
8	A-IG2-PB-08	12.1 (307)
9	A-IG2-PB-09	13.6 (345)
10	A-IG2-PB-10	15.2 (386)
11	A-IG2-PB-11	16.7 (424)
12	A-IG2-PB-12	18.2 (462)



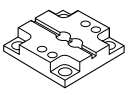
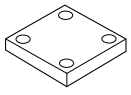
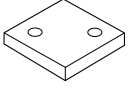
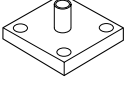
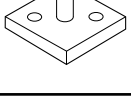
Parallel Manifold Components

Jumper Tube Connectors

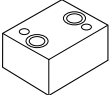
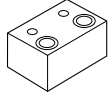
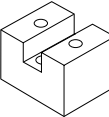


Number of Surface Mount Positions	Ordering Number	Dimensions, in. (mm)		Wetted Surface Area in. ² (cm ²)	Internal Volume in. ³ (cm ³)
		A	B		
3	6LVV-IG2-MS-MEPT01ME	3.50 (88.9)	3.06 (77.7)	3.00 (19.4)	0.21 (3.5)
4	6LVV-IG2-MS-MEPT02ME	5.03 (128)	4.59 (116)	4.47 (28.8)	0.32 (5.3)
5	6LVV-IG2-MS-MEPT03ME	6.56 (167)	6.12 (155)	5.94 (38.3)	0.44 (7.1)
6	6LVV-IG2-MS-MEPT04ME	8.09 (205)	7.65 (194)	7.41 (47.8)	0.55 (9.0)
7	6LVV-IG2-MS-MEPT05ME	9.62 (244)	9.18 (233)	8.87 (57.3)	0.66 (10.8)
8	6LVV-IG2-MS-MEPT06ME	11.1 (282)	10.7 (272)	10.3 (66.7)	0.77 (12.7)
9	6LVV-IG2-MS-MEPT07ME	12.7 (322)	12.2 (310)	11.8 (76.2)	0.88 (14.5)
10	6LVV-IG2-MS-MEPT08ME	14.2 (361)	13.8 (350)	13.3 (85.7)	1.01 (16.3)
11	6LVV-IG2-MS-MEPT09ME	15.7 (499)	15.3 (389)	14.8 (95.1)	1.11 (18.2)
12	6LVV-IG2-MS-MEPT10ME	17.3 (439)	16.8 (427)	16.2 (105)	1.22 (20.0)

Caps and Conversion Plate






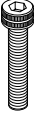
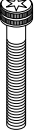
Item	Description	Ordering Number	Function	Material
	Conversion plate	6LVV-IG2-DM-01	Provides mounting capability for MFC	316L VIM/VAR SS
	Substrate cap	6LVV-IG2-DM-04	Covers unused position on substrate	
	Manifold cap	6LVV-IG2-DM-05	Covers unused position on manifold	
	Substrate tube port	6LVV-IG2-DM-06	Provides a vertical tube port on a substrate	
	Manifold tube port	6LVV-IG2-DM-07	Provides a vertical tube port on a manifold	

Support Blocks

Item	Description	Ordering Number	Function	Material
	Support	A-IG2-MH-01	Bolts to bottom of a substrate to provide mid-line support to a substrate channel with five or more positions	Aluminum alloy 2024-T351
	Foot	A-IG2-MH-02	Bolts to each end of a gas stick to provide mounting capability to the base plate ^①	
	Tube support	A-IG2-MH-15	Adapts the Swagelok tube support system to the center-line of the substrate	

^① The base plate is a customer-supplied plate to which the assembled gas stick(s) is mounted.

Assembly Hardware

Item	Description	Ordering Number	Function	Material
	Lock-down plate	SS-IG2-MH-03	Secures the substrate components at each end of the substrate channel	303 SS
	Substrate clip	PES-IG2-MH-04	Provides horizontal alignment of substrate components in a channel	Polyethersulfone
	Manifold clip #1	PES-IG2-MH-05	Provides horizontal alignment of manifold components in a channel	Polyethersulfone
	Manifold clip #2	PES-IG2-MH-17	Provides horizontal alignment of manifold end connections and parallel manifold components in a channel	Polyethersulfone
	C-ring gasket assembly	SS-IG2-MH-07	Provides seal between a substrate drop-down component and the manifold	316L SS
 Hex socket cap screw  Torx® head cap screw	Hex socket cap screw, 10-32 × 0.50 in.	A286-IG2-MH-10	Secures MFC conversion plate to substrate assembly	Alloy A286
	Torx head cap screw, 10-32 × 0.75 in.	A286-IG2-MH-11	Secures surface mount ^② to substrate assembly	
	Hex socket cap screw, 10-32 × 1.00 in.	A286-IG2-MH-12	Secures substrate assembly to manifold assembly	
	Torx head cap screw, 10-32 × 1.25 in.	A286-IG2-MH-13	Secures MFC component with 25 or 26 mm flange thickness to MFC conversion plate	
	Hex socket cap screw, 10-32 × 1.375 in.	A286-IG2-MH-20	Secures substrate assembly to foot	
	Torx head cap screw, 10-32 × 1.50 in.	A286-IG2-MH-25	Secures MFC component with 32 mm flange thickness to MFC conversion plate	303 SS
	Hex socket cap screw, 1/4-20 × 0.75 in.	SS-IG2-MH-14	Secures foot to base plate	

^② Designed for use with 1.5 in. (38.1 mm) c-ring surface mount components with a 0.312 in. (7.9 mm) base thickness.

Safe Product Selection

When selecting a product, the total system design must be considered to ensure safe, trouble-free performance. Function, material compatibility, adequate ratings, proper installation, operation, and maintenance are the responsibilities of the system designer and user.

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Printed in U.S.A. GLL
July 2003, R2
MS-02-134