

# Product Group Connectors & Fittings.

Product Category Gas Transport.





Straight GL adapter for flexible tube with GL nut and GL sealing ring

## Fittings for GL Glass Connections

Compression tube fittings, straight and elbow adapters, adjustable elbow adapters

### Special Features

- **Corrosion-resistant**
- **Gas-tight**
- **Easy to handle**

### Application

The M&C "GL" glass connections with GL sealing rings are only suitable for connecting rigid plastic tubes or stainless steel tubes.

For flexible tubes, e.g. made of PVC, FKM or PTFE, GL connection adapters must be used for secure connections. At higher operating pressures > 1 bar, these adapters must also be used for rigid plastic tubes and stainless steel tubes.

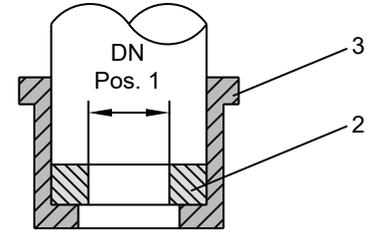
When ordering connecting adapters for new devices, an additional order for GL sealing rings and GL nuts is not necessary, as the devices are equipped according to the specific requirements.

	Material PP (Polypropylene)	Material PVDF (Polyvinylidenfluoride)
Pressure	0.4 to 6 bar abs.	0.4 to 6 bar abs.
Operating temperature	Max. +60 °C [140 °F]	Max. +80 °C [176 °F]
Storage temperature	-20 to +80 °C [-4 to 176 °F]	-20 to +120 °C [-4 to 248 °F]

## Compression Tube Fittings

The compression tube fitting consists of the GL nut (material: pressed material) and the GL sealing ring (materials: PTFE, silicone). As standard, GL 18 connections are equipped with a 6 mm sealing ring and GL 25 connections with a 12 mm sealing ring.

GL 18 nut (Pos. 3)	Part No. (Pos. 3)	GL 18 sealing ring (Pos. 2)	DN [mm] (Pos. 1)	Part No. (Pos. 2)
GL 18	91F1005	GL 18 - 6 mm	6	91F1010
		GL 18 - 8 mm	8	91F1015
		GL 18 - 10 mm	10	91F1020
GL 18/14*	91F1007	GL 18 - 6 mm	6	91F1010
		GL 18 - 8 mm	8	91F1015
		GL 18 - 10 mm	10	91F1020



Pos. 1: Inner diameter of the GL sealing ring  
Pos. 2: GL sealing ring  
Pos. 3: GL nut

GL 25 nut (Pos. 3)	Part No. (Pos. 3)	GL 25 sealing ring (Pos. 2)	DN [mm] (Pos. 1)	Part No. (Pos. 2)
GL 25	90F0020	GL 25 - 8 mm	8	90F0035
		GL 25 - 10 mm	10	90F0030
		GL 25 - 12 mm	12	90F0025
GL 25/18*	90F0022	GL 25 - 8 mm	8	90F0035
		GL 25 - 10 mm	10	90F0030
		GL 25 - 12 mm	12	90F0025

\* With large bore hole

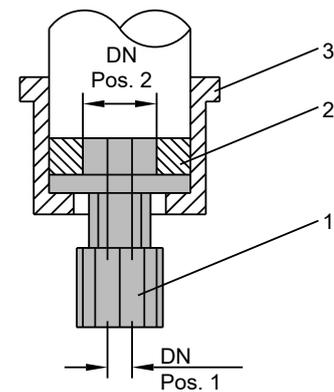
## Straight GL Adapter for Flexible Tube

The straight GL adapter for flexible tube is made of PVDF. Each straight GL adapter requires a matching GL nut and a matching GL sealing ring. The sealing ring is made of PTFE, silicone and the GL nut of pressed material.

Straight GL adapter for flexible tube (Pos. 1)	Part No. (Pos. 1)	GL 18 nut, GL 18 sealing ring (Pos. 3 und 2)	Part No. (Pos. 3 und 2)
GL 18 - 4/6	09F9500	GL 18, GL 18 - 8 mm	91F1005, 91F1015
GL 18 - 6/8	09F9510	GL 18/14*, GL 18 - 8 mm	91F1007, 91F1015

Straight GL adapter for flexible tube (Pos. 1)	Part No. (Pos. 1)	GL 25 nut, GL 25 sealing ring (Pos. 3 und 2)	Part No. (Pos. 3 und 2)
GL 25 - 4/6	09F9520	GL 25, GL 25 - 12 mm	90F0020, 90F0025
GL 25 - 6/8	09F9525	GL 25,, GL 25 - 12 mm	90F0020, 90F0025
GL 25 - 10/12	09F9530	GL 25/18*, GL 25 - 12 mm	90F0022, 90F0025

\* With large bore hole

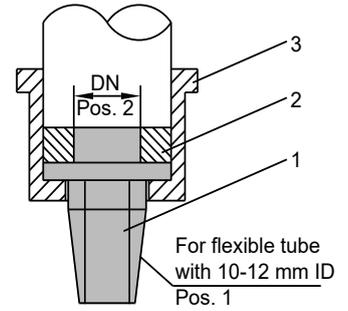


Pos. 1: Straight GL adapter for flexible tube  
Pos. 2: GL sealing ring  
Pos. 3: GL nut

## Straight GL Adapter with Barbed Fitting

The straight GL adapter with barbed fitting is made of PVDF. Each straight GL adapter with barbed fitting requires a matching GL nut and a matching GL sealing ring. The sealing ring is made of PTFE, silicone and the GL nut of pressed material.

Straight GL adapter with barbed fitting (Pos. 1)	Part No. (Pos. 1)	GL 25 nut, GL 25 sealing ring (Pos. 3 and 2)	Part No. (Pos. 3 and 2)
GL 25 10 - 12 PVDF	09F9540	GL 25, GL 25 - 12 mm	90F0020, 90F0025



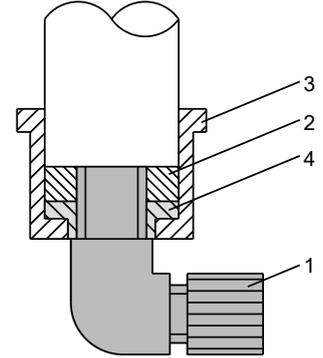
Pos. 1: Straight GL adapter with barbed fitting  
Pos. 2: GL sealing ring  
Pos. 3: GL nut

## GL Elbow Adapter for Flexible Tube

GL elbow adapter for flexible tube are used wherever a 90° tube routing is necessary due to space restrictions and operating pressures  $\geq 1$  bar to 5 bar are present.

The sample-contacting part of the GL elbow adapter for flexible tube is made of PVDF. Each GL elbow adapter requires a matching GL nut and a matching GL sealing ring. The sealing ring is made of PTFE, silicone and the GL nut of pressed material.

GL elbow adapter for flexible tube (Pos. 1 and 4)	Part No. (Pos. 1 and 4)	GL 25 nut, GL 25 sealing ring (Pos. 3 and 2)	Part No. (Pos. 3 and 2)
GL 25 - 4/6	05V6035	GL 25, GL 25 - 10 mm	90F0020, 90F0030
GL 25 - 6/8	05V6030	GL 25, GL 25 - 10 mm	90F0020, 90F0030



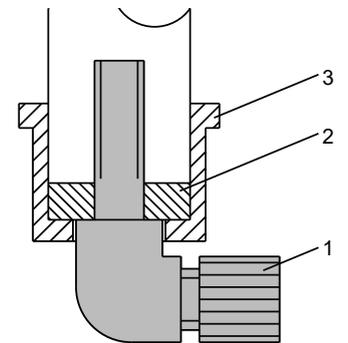
Pos. 1 and 4: GL elbow adapter for flexible tube  
Pos. 2: GL sealing ring  
Pos. 3: GL nut  
Pos. 4: GL expander ring (GL elbow adapter for flexible tube)

## Adjustable GL Elbow Adapter for Flexible Tube

The adjustable GL elbow adapter for flexible tube are used wherever a 90° tube routing is necessary due to space restrictions and operating pressures  $< 1$  bar are present.

The adjustable GL elbow adapter for flexible tube is made of PP or PVDF. Each adjustable GL elbow adapter requires a matching GL nut and a matching GL sealing ring. The sealing ring is made of PTFE, silicone and the GL nut of pressed material.

Adjustable GL elbow adapter for flexible tube, PVDF (Pos. 1)	Part No. (Pos. 1)	GL 18 nut, GL 18 sealing ring (Pos. 3 and 2)	Part No. (Pos. 3 and 2)
EV PVDF D 6 - DN 4/6	05V6010	GL 18, GL 18 - 6 mm	90F1005, 91F1010
EV PVDF D 8 - DN 6/8	05V6025	GL 18, GL 18 - 8 mm	90F1005, 91F1015



Pos. 1: Adjustable GL elbow adapter for flexible tube  
Pos. 2: GL sealing ring  
Pos. 3: GL nut

Adjustable GL elbow adapter for flexible tube, PVDF (Pos. 1)	Part No. (Pos. 1)	GL 25 nut, GL 25 sealing ring (Pos. 3 and 2)	Part No. (Pos. 3 and 2)
EV PVDF D 8 - DN 4/6	05V6011	GL 25, GL 25 - 8 mm	90F0020, 90F0035
EV PVDF D 8 - DN 6/8	05V6025	GL 25, GL 25 - 8 mm	90F0020, 90F0035
EV PVDF D 12 - DN 10/12	05V6015	GL 25, GL 25 - 12 mm	90F0020, 90F0025

Adjustable GL elbow adapter for flexible tube, PP (Pos. 1)	Part No. (Pos. 1)	GL 18 nut, GL 18 sealing ring (Pos. 3 and 2)	Part No. (Pos. 3 and 2)
EV PP D 6 - DN 4/6	05V6000	GL 18, GL 18 - 6 mm	90F1005, 91F1010
EV PP D 8 - DN 6/8	05V6003	GL 18, GL 18 - 8 mm	90F1005, 91F1015

Adjustable GL elbow adapter for flexible tube, PP (Pos. 1)	Part No. (Pos. 1)	GL 25 nut, GL 25 sealing ring (Pos. 3 and 2)	Part No. (Pos. 3 and 2)
EV PP D 8 - DN 4/6	05V6001	GL 25, GL 25 - 8 mm	90F0020, 90F0035
EV PP D 8 - DN 6/8	05V6003	GL 25, GL 25 - 8 mm	90F0020, 90F0035
EV PP D 12 - DN 10/12	05V6005	GL 25, GL 25 - 12 mm	90F0020, 90F0025

## GL Glass Connections are Featured on the Following M&C Products:



M&C Product	Connection type	Connection dimensions
Compressor-gas coolers: EC; EC-S; EC-EX; EC-30; EC-30C; ECC; ECM	Sample gas IN/OUT Condensate OUT	GL 18 GL 25
Peltier-gas coolers: ECP-1/GL; ECP-1000/2000/3000; ECP-1000C/2000C/3000C; ECP-20-1/2	Sample gas IN/OUT Condensate OUT	GL 18 GL 25
Filter: F...-D	Condensate OUT	GL 25
Flow meter: FM-1	Sample gas IN/OUT	GL 18
Flow meter with needle valve: FM-10	Sample gas OUT	GL 18



Male elbow connector for flexible tube, PVDF

## Flexible and rigid tube fittings, plugs and connectors with barbed fitting

out of PP, PVDF or PTFE

### Special Features

- Corrosion-resistant
- Gas-tight
- Easy to handle
- Different connection threads

### Application

Flexible and rigid tube fittings, plugs and connectors with barbed fitting made out of plastics are indispensable and well-proven accessories in the analytical technology in order to guarantee a safe and gas-tight connection of equipment with flexible and rigid tubes.

For GL connections, please use the special M&C GL connecting adapters. You can find corresponding rigid/flexible tubes and flexible tube cutters in the M&C catalogue.

– See data sheets “Fittings for GL Glass Connections” and “Sample Lines Type SL1-8 DN...” –

### Description

Flexible tube fittings are used to connect connectors with male or female thread to soft, flexible tubes or as a connection for two or more soft, flexible tubes. The soft or flexible tubes need to have specified inside and outside diameter.

The sealing and clamp system of the flexible tube fitting is based on a special fittings body with a centered barbed fitting. The flexible tube must be cut straight before it is pushed over the barbed fitting up to the end stop. The knurled nut presses the clamping ring lightly onto the flexible tube, which is thereby locked.

The flexible tube is locked via the clamping ring that is slightly pressed on the tube by a knurled nut. This prevents shearing and torsional effects. For safety reasons, the clamping ring has a stop collar which is pushed against the body of the fitting during assembly, to ensure that the flexible tube is pressed on in a controlled manner.

Rigid tube fittings are used for unflexible, rigid tubes with a specific outside diameter. The rigid tube needs to be cut straight and deburred before mounting. The rigid tube is then pushed into the fitting as far as possible. For sealing, a double taper ring or a combination of sealing and clamping ring is pressed through the hexagon nut onto the rigid tube.

Plugs and connectors with barbed fitting complement the range of requirements.

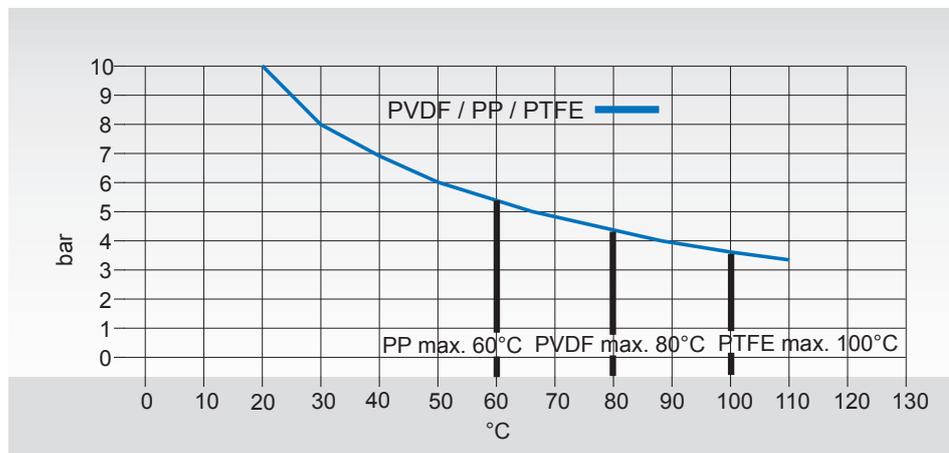
The following fittings are preferred standard versions and available from stock.

Other versions, materials, dimensions (in inches as well) upon request (please note the minimum order quantity).

## Technical Data

Fitting Series 1-3	Material PVDF (Polyvinylidene fluoride)	Material PP (Polypropylene)
Operating temperature	-20 to +80 °C [-4 to 176 °F]	-5 to +60 °C [23 to 140 °F]
Storage temperature	-30 to +110 °C [-22 to 230 °F]	-20 to +80 °C [-4 to 176 °F]
Max. permitted operating pressure at 20 °C [68 °F]	PN 10, 10 bar	
Connection thread*	G 1/8" 1/4", 3/8", 1/2" pipe thread, DIN ISO 228 1/8", 1/4", 3/8", 1/2" NPT thread, USAS B2.1 M 10 x 1.5 metric screw thread, DIN 13	
Flexible tube connection dimensions	DN 4/6, 6/8, 8/10, 10/12 mm inside/outside diameter	
Rigid tube connection dimensions	6, 8, 10, 12 mm outside diameter	

\* The fittings are manufactured with both male and female threads. All our threads, which include the complete thread element and sealing collar, are guaranteed to be seam-free. The thread lengths of the screw-in threads correspond to the respective applicable standard. The tolerances of the thread standards are matched to metal threads and cannot be applied to plastic threads.



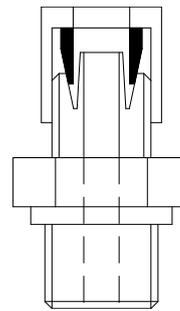
The max. operation pressure decreases with increasing temperature.  
The temperature of 20 °C [ 68 °F] is related to 65 % air humidity (DIN 50014).

## Straight Male Connector for Flexible Tube

Please find the Part No. of all available standard versions in this list:

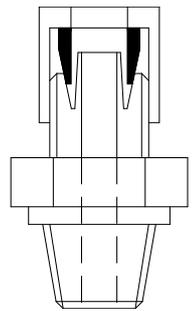
Material: PVDF	Flexible tube	Male thread	Part No.
GE PVDF DN 4/6 - G 1/8"	DN 4/6	G 1/8"	05V1045
GE PVDF DN 4/6 - G 1/4"	DN 4/6	G 1/4"	05V1060
GE PVDF DN 4/6 - G 3/8"	DN 4/6	G 3/8"	05V1075
GE PVDF DN 6/8 - G 1/8"	DN 6/8	G 1/8"	05V1050
GE PVDF DN 6/8 - G 1/4"	DN 6/8	G 1/4"	05V1065
GE PVDF DN 6/8 - G 3/8"	DN 6/8	G 3/8"	05V1080
GE PVDF DN 6/8 - G 1/2"	DN 6/8	G 1/2"	05V1081
GE PVDF DN 8/10 - G 1/8"	DN 8/10	G 1/8"	05V1057
GE PVDF DN 8/10 - G 1/4"	DN 8/10	G 1/4"	05V1067
GE PVDF DN 8/10 - G 3/8"	DN 8/10	G 3/8"	05V1069
GE PVDF DN 10/12 - G 1/8"	DN 10/12	G 1/8"	05V1055
GE PVDF DN 10/12 - G 1/4"	DN 10/12	G 1/4"	05V1070
GE PVDF DN 10/12 - G 3/8"	DN 10/12	G 3/8"	05V1085
GE PVDF DN 10/12 - G 1/2"	DN 10/12	G 1/2"	05V1087
GE PVDF DN 12/16 - G 1/4"	DN 12/16	G 1/4"	05V1071
GE PVDF DN 4/6 - NPT 1/8"	DN 4/6	NPT 1/8"	05V2045
GE PVDF DN 4/6 - NPT 1/4"	DN 4/6	NPT 1/4"	05V2060
GE PVDF DN 4/6 - NPT 3/8"	DN 4/6	NPT 3/8"	05V2075
GE PVDF DN 4/6 - NPT 1/2"	DN 4/6	NPT 1/2"	05V1086
GE PVDF DN 6/8 - NPT 1/8"	DN 6/8	NPT 1/8"	05V2050
GE PVDF DN 6/8 - NPT 1/4"	DN 6/8	NPT 1/4"	05V2065
GE PVDF DN 6/8 - NPT 3/8"	DN 6/8	NPT 3/8"	05V2080
GE PVDF DN 8/10 - NPT 1/8"	DN 8/10	NPT 1/8"	05V2052
GE PVDF DN 8/10 - NPT 1/4"	DN 8/10	NPT 1/4"	05V2066
GE PVDF DN 8/10 - NPT 3/8"	DN 8/10	NPT 3/8"	05V2069
GE PVDF DN 8/10 - NPT 1/2"	DN 8/10	NPT 1/2"	05V2088
GE PVDF DN 10/12 - NPT 1/8"	DN 10/12	NPT 1/8"	05V2055
GE PVDF DN 10/12 - NPT 1/4"	DN 10/12	NPT 1/4"	05V2070
GE PVDF DN 10/12 - NPT 3/8"	DN 10/12	NPT 3/8"	05V2085
GE PVDF DN 10/12 - NPT 1/2"	DN 10/12	NPT 1/2"	05V2087
GE PVDF DN 12/16 - NPT 1/4"	DN 12/16	NPT 1/4"	05V1071
GE PVDF DN 4/6 - M10 x 1.5	DN 4/4	M10 x 1.5	05V3000

Material: PP	Flexible tube	Male thread	Part No.
GE PP DN 4/6 - G 1/8"	DN 4/6	G 1/8"	05V1090
GE PP DN 4/6 - G 1/4"	DN 4/6	G 1/4"	05V1105
GE PP DN 4/6 - G 3/8"	DN 4/6	G 3/8"	05V1120
GE PP DN 6/8 - G 1/8"	DN 6/8	G 1/8"	05V1095
GE PP DN 6/8 - G 1/4"	DN 6/8	G 1/4"	05V1110
GE PP DN 6/8 - G 3/8"	DN 6/8	G 3/8"	05V1125
GE PP DN 10/12 - G 1/8"	DN 10/12	G 1/8"	05V1100
GE PP DN 10/12 - G 1/4"	DN 10/12	G 1/4"	05V1115
GE PP DN 10/12 - G 3/8"	DN 10/12	G 3/8"	05V1130
GE PP DN 10/12 - G 1/2"	DN 10/12	G 1/2"	05V1135
GE PP DN 4/6 - NPT 1/8"	DN 4/6	NPT 1/8"	05V2090
GE PP DN 4/6 - NPT 1/4"	DN 4/6	NPT 1/4"	05V2105
GE PP DN 4/6 - NPT 3/8"	DN 4/6	NPT 3/8"	05V2120
GE PP DN 6/8 - NPT 1/8"	DN 6/8	NPT 1/8"	05V2095
GE PP DN 6/8 - NPT 1/4"	DN 6/8	NPT 1/4"	05V2110
GE PP DN 6/8 - NPT 3/8"	DN 6/8	NPT 3/8"	05V2125
GE PP DN 10/12 - NPT 1/8"	DN 10/12	NPT 1/8"	05V2100
GE PP DN 10/12 - NPT 1/4"	DN 10/12	NPT 1/4"	05V2115
GE PP DN 10/12 - NPT 3/8"	DN 10/12	NPT 3/8"	05V2130
GE PP DN 4/6 - M10 x 1.5	DN 4/6	M10 x 1.5	99A1440



G or M male thread

Flexible tube connection



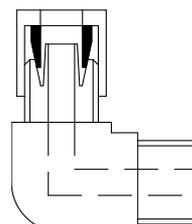
NPT male thread

## Male Elbow Connector for Flexible Tube

Please find the Part No. of all available standard versions in this list:

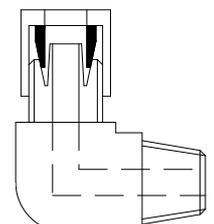
Material: PVDF	Flexible tube	Male thread	Part No.
WE PVDF DN 4/6 - G 1/8"	DN 4/6	G 1/8"	05V4045
WE PVDF DN 4/6 - G 1/4"	DN 4/6	G 1/4"	05V4060
WE PVDF DN 4/6 - G 3/8"	DN 4/6	G 3/8"	05V4075
WE PVDF DN 6/8 - G 1/8"	DN 6/8	G 1/8"	05V4050
WE PVDF DN 6/8 - G 1/4"	DN 6/8	G 1/4"	05V4065
WE PVDF DN 6/8 - G 3/8"	DN 6/8	G 3/8"	05V4080
WE PVDF DN 8/10 - G 1/2"	DN 8/10	G 1/4"	05V4066
WE PVDF DN 10/12 - G 1/8"	DN 10/12	G 1/8"	05V4055
WE PVDF DN 10/12 - G 1/4"	DN 10/12	G 1/4"	05V4070
WE PVDF DN 10/12 - G 3/8"	DN 10/12	G 3/8"	05V4085
WE PVDF DN 10/12 - G 1/2"	DN 10/12	G 1/2"	05V4087
WE PVDF DN 4/6 - NPT 1/8"	DN 4/6	NPT 1/8"	05V6045
WE PVDF DN 4/6 - NPT 1/4"	DN 4/6	NPT 1/4"	05V6060
WE PVDF DN 6/8 - NPT 1/4"	DN 6/8	NPT 1/4"	05V6065
WE PVDF DN 4/6 - NPT 3/8"	DN 4/6	NPT 3/8"	05V6075

Material: PP	Flexible tube	Male thread	Part No.
WE PP DN 4/6 - G 1/8"	DN 4/6	G 1/8"	05V4090
WE PP DN 4/6 - G 1/4"	DN 4/6	G 1/4"	05V4110
WE PP DN 4/6 - G 3/8"	DN 4/6	G 3/8"	05V4125
WE PP DN 6/8 - G 1/8"	DN 6/8	G 1/8"	05V4095
WE PP DN 6/8 - G 1/4"	DN 6/8	G 1/4"	05V4115
WE PP DN 6/8 - G 3/8"	DN 6/8	G 3/8"	05V4130
WE PP DN 10/12 - G 1/8"	DN 10/12	G 1/8"	05V4100
WE PP DN 10/12 - G 1/4"	DN 10/12	G 1/4"	05V4120
WE PP DN 10/12 - G 3/8"	DN 10/12	G 3/8"	05V4135
WE PP DN 4/6 - NPT 1/4"	DN 4/6	NPT 1/4"	05V6110



G male thread

Flexible tube connection



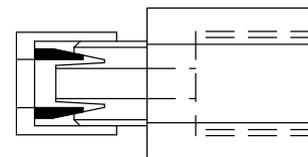
NPT male thread

## Straight Female Connector for Flexible Tube



Please find the Part No. of all available standard versions in this list:

	Material	Flexible tube	Female thread	Part No.
GA PVDF DN 4/6 - G 1/4"	PVDF	DN 4/6	G 1/4"	05V3900
GA PVDF DN 4/6 - G 1/8"	PVDF	DN 4/6	G 1/8"	05V3910
GA PVDF DN 10/12 - G 1/4"	PVDF	DN 10/12	G 1/4"	05V3915
GA PP DN 4/6 - G 1/4"	PP	DN 4/6	G 1/4"	05V3800
GA PP DN 4/6 - G 1/8"	PP	DN 4/6	G 1/8"	05V3805
GA PP DN 4/6 - NPT 1/8"	PP	DN 4/6	NPT 1/8"	05V3806

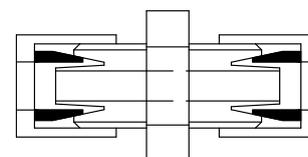


Flexible tube connection      Female thread

## Straight Union for Flexible Tubes

Please find the Part No. of all available standard versions in this list:

	Material	Flexible tubes	Part No.
VS PVDF DN 4/6	PVDF	2 x DN 4/6	05V3015
VS PVDF DN 6/8	PVDF	2 x DN 6/8	05V3020
VS PVDF DN 8/10	PVDF	2 x DN 8/10	05V3022
VS PVDF DN 10/12	PVDF	2 x DN 10/12	05V3025
VS PVDF DN 4/6 - 6/8	PVDF	DN 4/6 and DN 6/8	05V3505
VS PVDF DN 4/6 - 8/10	PVDF	DN 4/6 and DN 8/10	05V3510
VS PVDF DN 4/6 - 10/12	PVDF	DN 4/6 and DN 10/12	05V3515
VS PVDF DN 6/8 - 8/10	PVDF	DN 6/8 and DN 8/10	05V3520
VS PVDF DN 6/8 - 10/12	PVDF	DN 6/8 and DN 10/12	05V3525
VS PVDF DN 8/10 - 10/12	PVDF	DN 8/10 and DN 10/12	05V3530
VS PP DN 4/6	PP	2 x DN 4/6	05V3030
VS PP DN 6/8	PP	2 x DN 6/8	05V3035
VS PP DN 10/12	PP	2 x DN 10/12	05V3040
VS PP DN 4/6 - 6/8	PP	DN 4/6 and DN 6/8	05V3500
VS PP DN 4/6 - 10/12	PP	DN 4/6 and DN 10/12	05V3502

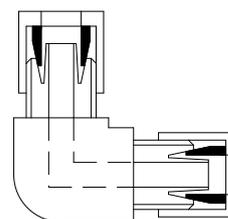


Flexible tube connections

## Elbow Union for Flexible Tubes

Please find the Part No. of all available standard versions in this list:

	Material	Flexible tubes	Part No.
WV PVDF DN 4/6	PVDF	2 x DN 4/6	05V3350
WV PVDF DN 6/8	PVDF	2 x DN 6/8	05V3355
WV PVDF DN 10/12	PVDF	2 x DN 10/12	05V3365

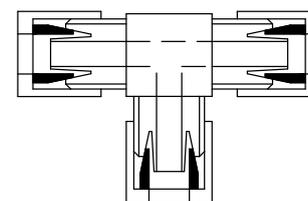


Flexible tube connections

## Union Tee for Flexible Tubes

Please find the Part No. of all available standard versions in this list:

	Material	Flexible tubes	Part No.
TV PVDF DN 4/6	PVDF	3 x DN 4/6	05V5015
TV PVDF DN 6/8	PVDF	3 x DN 6/8	05V5020
TV PVDF DN 8/10	PVDF	3 x DN 8/10	05V5045
TV PVDF DN 10/12	PVDF	3 x DN 10/12	05V5025
TV PP DN 4/6	PP	3 x DN 4/6	05V5030
TV PP DN 6/8	PP	3 x DN 6/8	05V5035
TV PP DN 10/12	PP	3 x DN 10/12	05V5040

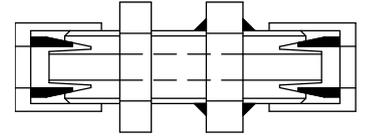


Flexible tube connections

## Straight Bulkhead Union for Flexible Tubes

Please find the Part No. of all available standard versions in this list:

	Material	Flexible tubes	Part No.
SV PVDF DN 4/6	PVDF	2 x DN 4/6	05V3215
SV PVDF DN 6/8	PVDF	2 x DN 6/8	05V3220
SV PVDF DN 8/10	PVDF	2 x DN 8/10	05V3222
SV PVDF DN 10/12	PVDF	2 x DN 10/12	05V3225
SV PVDF DN 4/6 - 6/8	PVDF	DN 4/6 and DN 6/8	05V3216
SV PP DN 4/6	PP	2 x DN 4/6	05V3230
SV PP DN 6/8	PP	2 x DN 6/8	05V3235
SV PP DN 10/12	PP	2 x DN 10/12	05V3240



Flexible tube connections

## Straight or Elbow Union for Flexible and Rigid Tubes

Compression fittings for tube connections are used where rigid tubes, e.g. made of PTFE, PE, etc. need to be connected to stainless steel tubes. Compression fittings are featured on the following M&C products:

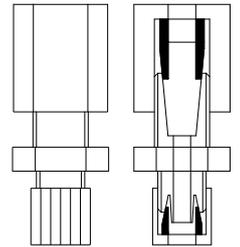
M&C product	Connection type	Connection dimensions
ECP-1	Sample gas IN/OUT Condensate OUT	6 mm 12 mm
ECM-2SS, ECM-2PV	Sample gas IN/OUT	6 mm

## Straight Union for Flexible and Rigid Tubes

Please find the Part No. of all available standard versions in this list:

	Material	Flexible tube	Rigid tube	Part No.
VS PVDF DN 4/6 - D6	PVDF	DN 4/6	D 6 mm	05V3115
VS PVDF DN 4/6 - D8	PVDF	DN 4/6	D 8 mm	05V3119
VS PVDF DN 4/6 - D12	PVDF	DN 4/6	D 12 mm	05V3128
VS PVDF DN 6/8 - D6	PVDF	DN 6/8	D 6 mm	05V3190
VS PVDF DN 6/8 - D8	PVDF	DN 6/8	D 8 mm	05V3120
VS PVDF DN 10/12 - D12	PVDF	DN 10/12	D 12 mm	05V3125
VS PP DN 4/6 - D6	PP	DN 4/6	D 6 mm	05V3130
VS PP DN 4/6 - D12	PP	DN 4/6	D 12 mm	05V3150
VS PP DN 6/8 - D8	PP	DN 6/8	D 8 mm	05V3135
VS PP DN 10/12 - D12	PP	DN 10/12	D 12 mm	05V3140

Rigid tube connection



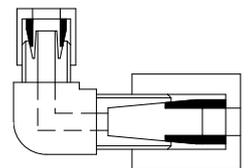
Flexible tube connection

## Elbow Union for Flexible and Rigid Tubes

Please find the Part No. of all available standard versions in this list:

	Material	Flexible tube	Rigid tube	Part No.
WV PVDF DN 4/6 - D6	PVDF	DN 4/6	D 6 mm	05V3180
WV PVDF DN 4/6 - D12	PVDF	DN 4/6	D 12 mm	05V3185
WV PP DN 4/6 - D6	PP	DN 4/6	D 6 mm	05V3160
WV PP DN 4/6 - D12	PP	DN 4/6	D 12 mm	05V3165

Flexible tube connection

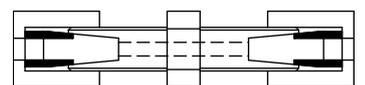


Rigid tube connection

## Straight Union for Rigid Tubes

Please find the Part No. of all available standard versions in this list:

	Material	Rigid tube	Part No.
VS PTFE D 6	PTFE	2 x D6	06V1000



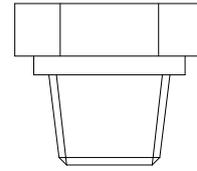
Rigid tube connections

## Plug with Male Thread

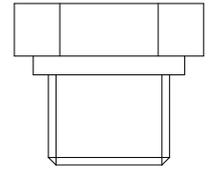


Please find the Part No. of all available standard versions in this list:

	Material	Male thread	Part No.
Plug PTFE G 1/8"	PTFE	G 1/8"	06V7000
Plug PTFE G 1/4"	PTFE	G 1/4"	06V7005
Plug PTFE G 3/8"	PTFE	G 3/8"	06V7010
Plug PTFE M10 x 1.5	PTFE	M10 x 1.5	06V7001
Plug PTFE 1/8" NPT	PTFE	1/8" NPT	06V7002
Plug PVDF G 1/8"	PVDF	G 1/8"	06V7015
Plug PVDF G 1/4"	PVDF	G 1/4"	06V7020
Plug PVDF G 3/8"	PVDF	G 3/8"	06V7025



NPT male thread

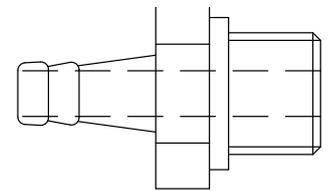


G or M male thread

## Straight Male Connector with Barbed Fitting

Please find the Part No. of all available standard versions in this list:

	Material	Barbed fitting	Male thread	Part No.
ST PP DN 4 - G 1/8"	PP	DN 4	G 1/8"	06V8000
ST PP DN 6 - G 1/8"	PP	DN 6	G 1/8"	06V8010
ST PP DN 8 - G 1/8"	PP	DN 8	G 1/8"	06V8015
ST PP DN 4 - G 1/4"	PP	DN 4	G 1/4"	06V8020
ST PP DN 6 - G 1/4"	PP	DN 6	G 1/4"	06V8025
ST PP DN 8 - G 1/4"	PP	DN 8	G 1/4"	06V8030
ST PP DN 4 - G 3/8"	PP	DN 4	G 3/8"	06V8035
ST PP DN 6 - G 3/8"	PP	DN 6	G 3/8"	06V8040
ST PP DN 8 - G 3/8"	PP	DN 8	G 3/8"	06V8045



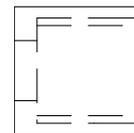
Barbed fitting

G male thread

## Spare Parts: Clamping Ring and Knurled Nut for Flexible Tube Connection

Please find the Part No. of all available standard versions in this list:

	Material	Flexible tube	Part No.
Knurled nut DN 4/6	PVDF	DN 4/6	05V6605
Knurled nut DN 6/8	PVDF	DN 6/8	05V6607
Knurled nut DN 10/12	PVDF	DN 10/12	05V6609
Clamping ring DN 4/6	PVDF	DN 4/6	05V6600
Clamping ring DN 6/8	PVDF	DN 6/8	06V6602
Clamping ring DN 8/10	PVDF	DN 8/10	05V6603
Clamping ring DN 10/12	PVDF	DN 10/12	05V6604
Knurled nut DN 4/6	PP	DN 4/6	05V6505
Knurled nut DN 6/8	PP	DN 6/8	05V6506
Knurled nut DN 10/12	PP	DN 10/12	05V6608
Clamping ring DN 4/6	PP	DN 4/6	05V6500
Clamping ring DN 6/8	PP	DN 6/8	06V6502
Clamping ring DN 10/12	PP	DN 10/12	05V6504



Knurled nut



Clamping ring



T6-H1

## Electrically Heated Connectors

### Series T...-H1, V...-H1

Versions T6-H1, T8-H1: Tee union tube connector, electrically heated to 180 °C;

Versions V6-H1, V8-H1: Straight tube connector, electrically heated to 180 °C

#### Special Features

- Electrically heated up to max. 180 °C [356 °F]
- Regulated constant temperature
- Integrated temperature control
- No cold bridges
- Consistent connection technique
- Status contact output
- Maintenance-friendly design

#### Application

In analytical technology, temperatures must often be maintained above the sample gas dew point. Therefore, it is absolutely necessary to avoid cold bridges.

In order to ensure this, the temperature-controlled M&C tube/hose connectors T...H1 and V...H1 are used to connect the heated sample lines type 3/4/5-N/M/H up to 180 °C [356 °F] operating temperature.

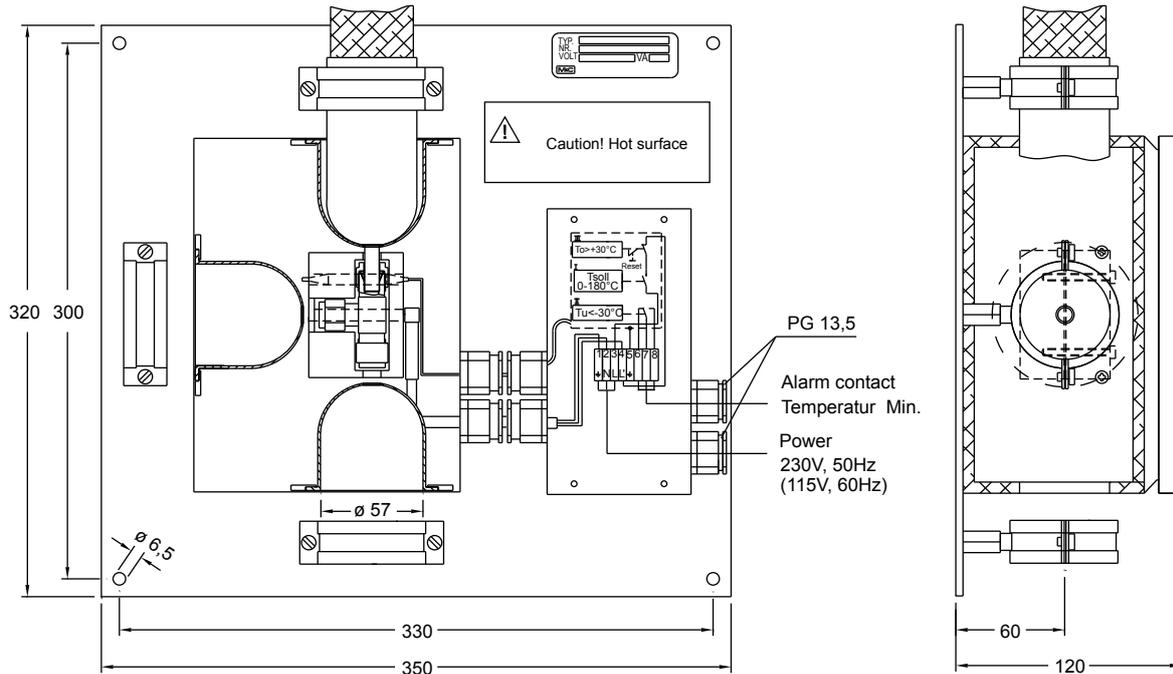
#### Description

The M&C tube/hose connectors T...H1 and V...H1 are fixed to a mounting plate in a heat-insulated protective housing with thermal decoupling.

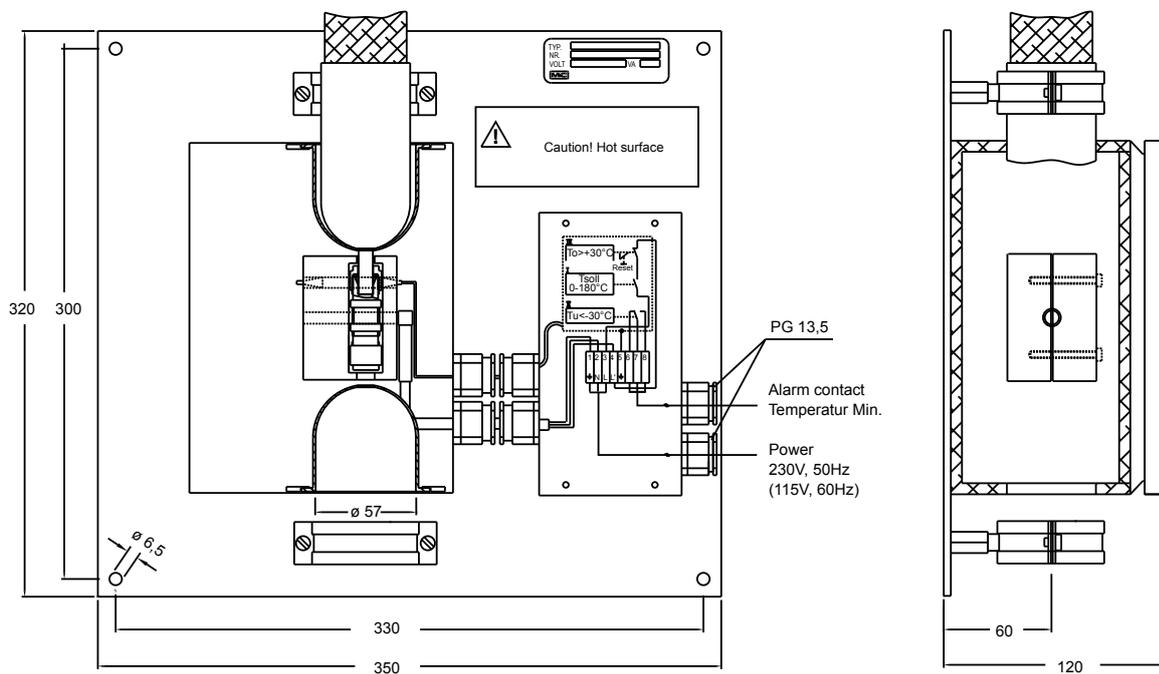
Heating is provided by a high-performance heating element. The control temperature can be adjusted up to 180 °C [356 °F] on the integrated control thermostat with high-temperature limiter and low-temperature alarm contact. The electrical junction box with integrated thermostat for heating is located outside the heated housing.

The openings in the thermally insulated protective housing for connecting the heated lines are sealed with temperature-resistant silicone sleeves. To avoid cold bridges, the screw connector is completely heated by means of a two-part heat-conducting jaw. For fixing the electrically heated sample lines 3/4/5-N/M/H (see data sheet "Electrically Heated Sample Lines Type 3/4/5-N/M/H"), mounting brackets are available.

Electrically heated Tee union connector version T6-H1/T8-H1



Electrically heated, straight tube connector version V6-H1/V8-H1



Dimensions in mm

## Technical Data



	T6-H1	T8-H1	V6-H1	V8-H1
Part No.	10B1001 (a)**	10B1101 (a)**	10B1011 (a)**	10B1111 (a)**
Connector version	Tee union connector	Tee union connector	Straight connector	Straight connector
Connector dimensions	3 x ø 6 mm	3 x ø 8 mm	2 x ø 6 mm	2 x ø 8 mm
Fitting system	Tube connectors made of stainless steel type Swagelok			
Operating pressure	Max. 200 bar			
Operating temperature	Max. +180 °C [356 °F]			
Ambient temperature	-25 to +60 °C [-13 to 140 °F]			
Storage temperature	-25 to +80 °C [-13 to 176 °F]			
Temperature controller	Capillary thermostat with high-temperature limiter and low-temperature alarm integrated in electrical connection box			
Operating temperature	Adjustable from 0 to 180 °C [32 to 356 °F], factory-set at 180 °C [356 °F]			
Low-temperature alarm contact	Alarm point ΔT 30 °C, change-over contact, voltage-free; contact rating 250 V, 3 A~, 0.25 A =			
Power supply	230 V/50 Hz, 100 VA **optionally 115 V/60 Hz (a)			
Electrical connections	Terminals 4 mm <sup>2</sup> , 2 x cable gland PG13			
Degree of protection	IP54 EN 60529			
Electrical standard	EN 61010, EN 60519-1			
Dimensions (W x H x D)	350 x 320 x 120 mm [≈ 13.8" x 12.6" x 4.7"]			
Weight	4.5 kg [≈ 9.9 lbs]			
Material of sample-contacting parts	Stainless steel 316Ti			
Type of mounting	Wall-mounting			