**Gas Mixer**: **VarioMix**

**Compact gasmixer with proportional mixing valve.**

Gas mixer varioMixfor the production of mixtures of two gases

Highlights

• **Individual adjustment of mixture and flow rate**

• **High mixing precision**

• Infinitely variable up to 205 l/min (related to air)

• **Does not depend on input pressure differences due to integrated constant pressure regulation**

• Mixture production stops automatically when gas supply is interrupted

• Does not depend on the input pressure difference due to integrated
constant pressure regulation

• Gas inlet filters protect the device against contamination

• Cost savings due to the avoidance of storage of different premixes

• Low maintenance

• Compact, space saving and sturdy design

• Easy to operate and to assemble

• No power supply required

Accessories:

• Safety devices for use with fuel gas

Maintenance:

Gas mixers are to be tested for leaks at least once a month.

The inlet filters are only to be cleaned and exchanged by qualified person..

Gas mixers are only to be opened and repaired by the manufacturer.

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| **Technical Data:** |
| **Carrier Gas:** | Argon (Ar) | Nitrogen(N2) | Air |
| **Additive Gas:** | Carbon Dioxide (CO2)Helium (He)Nitrogen (N2)Hydrogen (H2)Oxygen (O2) | Carbon Dioxide (CO2)Helium (He)Hydrogen ( H2)Oxygen (O2) | Carbon Dioxide (CO2)Oxygen (O2) |
| **Mixing Range:** | 5 – 95 Vol % |
| **Inlet Pressure:** | Min -.5 MPa (5bar)Max – 1 MPa (10 bar) |
| **Outlet Pressure:** | 0.4 – 0.9 MPa (4-9 bar) depending on the inlet pressure |
| **Mixed Gas Capacity:** | 1 – 188 l/min, infinitely variable (related to Nitrogen) |
| **Mixing Precision:** | ± 0,5 % abs: 1-5 Vol. % additive gas± 10 % of nominal value: >5-20 Vol. % additive gas± 2 % abs: > 20 Vol. % additive gas |
| **Temperature:** | -10 to + 50°C |
| **Connection****Inlet****Outlet** | G1/4-FG1/4FOptional: G1/4-M E560 quick plug-in connection for 8mm hose  |
| **Material:** | Housing: aluminium, anodisd: in built parts: Brass , stainless steel, elastomer |
| **Measure & Weight****Without connection:** | Height88mm | Width130mm | Depth68mm | WeightApprox. 1.62kg |

Further gas mixer versions for the production of gas mixtures of two gases are available on request

Type: **varioMix**

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| Flow table (Nl/min, related to air) \*1) |
|  | Outlet pressure [bar]→ \*3) | 0,75 | 1,25 | 1,75 | 2,2 | 2,7 | 3,2 | 3,65 | 4,15 | 4,5 | 5,1 | 5,6 | 6,0 | 6,5 | 7,0 | 7,5 | 8,0 |
| Inletpresure[bar] \*2)↓ | Workingpressure[bar]↓ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2,5 bis 10 | 1,2 | 32 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1,7 | 46 | 35 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2,2 | 59 | 52 | 37 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2,7 | 69 | 64 | 54 | 42 |  |  |  |  |  |  |  |  |  |  |  |  |
| 3,2 | 84 | 79 | 72 | 62 | 44 |  |  |  |  |  |  |  |  |  |  |  |
| 3,7 | 94 | 91 | 79 | 77 | 64 | 47 |  |  |  |  |  |  |  |  |  |  |
| 4,1 | 104 | 101 | 96 | 91 | 82 | 69 | 52 |  |  |  |  |  |  |  |  |  |
| 4,6 | 116 | 114 | 109 | 104 | 96 | 79 | 72 | 52 |  |  |  |  |  |  |  |  |
| 5,1 | 129 | 126 | 124 | 119 | 111 | 104 | 91 | 77 | 57 |  |  |  |  |  |  |  |
| 5,6 | 138 | 138 | 136 | 133 | 124 | 119 | 109 | 96 | 82 | 62 |  |  |  |  |  |  |
| 6,1 | 151 | 151 | 148 | 143 | 138 | 133 | 126 | 116 | 101 | 87 | 62 |  |  |  |  |  |
| 6,5 | 163 | 163 | 161 | 158 | 153 | 148 | 141 | 133 | 124 | 109 | 94 | 64 |  |  |  |  |
| 7,0 | 173 | 173 | 171 | 168 | 163 | 158 | 151 | 143 | 138 | 129 | 114 | 96 | 64 |  |  |  |
| 7,5 | 183 | 183 | 180 | 178 | 176 | 173 | 168 | 161 | 153 | 143 | 133 | 119 | 94 | 72 |  |  |
| 8,0 | 193 | 193 | 193 | 190 | 188 | 183 | 178 | 173 | 163 | 153 | 148 | 131 | 124 | 106 | 79 |  |
| 8,5 | 205 | 205 | 205 | 203 | 200 | 195 | 193 | 185 | 178 | 173 | 163 | 153 | 141 | 129 | 104 | 84 |
| \*1) Max flow valve at 100% (all shown pressure information are for fluent pressures)\*2) Constant Inlet pressure. Must be 1,5 bar higher than working pressure.\*3) The outlet pressure depends on the quantity of users and has to be controlled at the pipeline. |

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| Application table:

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| Gas mixture CO2/Ar |
| % CO2 | % Ar | Conversion factor |
| 5 | 95 | 0,987 |
| 10 | 90 | 0,975 |
| 15 | 85 | 0,962 |
| 20 | 80 | 0,951 |
| 25 | 75 | 0,940 |

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| Gas mixture He/Ar |
| % He | %Ar | Conversion factor |
| 5 | 95 | 0,874 |
| 10 | 90 | 0,896 |
| 15 | 85 | 0,919 |
| 20 | 80 | 0,943 |
| 25 | 75 | 0,970 |
| 40 | 60 | 1,068 |
| 50 | 50 | 1,152 |

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| Gas mixture CO2/N2 |
| % **CO2** | %**N2** | Conversion factor |
| 5 | 95 | 1.002 |
| 10 | 90 | 0.989 |
| 15 | 85 | 0.975 |
| 20 | 80 | 0.962 |
| 25 | 75 | 0.950 |
| 40 | 60 | 0.916 |
| 50 | 50 | 0.895 |

 | Application example:

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| Gas mixture: 15% CO2 in Ar |
| Consumption:  | 3 work places each14 l/min=42 l/min |
| Flow rate (air): | 42 x 0,962 = 44 l/min |
| Outlet pressure: | 2,2 bar |
| Flow regulator: | (44 : 62) x 100 = 71 % |
| Working pressure: | 3,2 bar |
| Inlet pressure: | 3,2 + 1,5 ≥ 4,7 bar |
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| Gas mixture: 25% He in Ar |
| Consumption:  | 5 work places each 20 l/min = 100 l/min |
| Flow rate (air): | 100 x 0,970 = 103 l/min |
| Outlet pressure:: | 3,65 bar |
| Flow regulator: | (103 : 126) x 100 = 82 % |
| Working pressure: | 6,1 bar |
| Inlet pressure:: | 6,1 + 1,5 ≥ 7,6 bar |

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Certification/ Technical Standards/ Rules

TRBS German Technical rules for operation safety, DVS German Association for Welding, Cutting and Allied Processes,
DGUV German Employer´s liability insurance association rules and regulations.

Standards/ Approvals

Company certified according to
ISO 9001:2015 and ISO 14001:2015,
CE-marking according to: Pressure Equipment Directive 2014/68/EU

(Subject to change without notice)