

## Gas mixer: iMixproX

### Compact gas mixer with integrated constant pressure regulators and diffusion mixing system

Gas mixer range iMixproX for the production of gas mixtures of two gas types.

#### Highlights

- Optimal factory calibration according to customer's requirement (within the permissible range)
- **High accuracy, according to ISO 14175**
- No accidental mixture changes
- Mixture production stops automatically when gas supply is interrupted
- **Does not depend on gas withdrawal variations**
- Gas inlet filters protect the device against contamination
- No additional buffer vessel needed for discontinuous withdrawal of gas
- **Does not depend on input pressure differences due to integrated constant pressure regulation**
- Sturdy and compact design, low maintenance
- No power supply required for production of the gas mixture
- Inlet and outlet pressure regulator



#### Optional:

- External gas analysis for process control

#### Maintenance:

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

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

Technical Data:				
<b>Carrier gas:</b>	Argon (Ar)	Nitrogen (N <sub>2</sub> )	Carbon dioxide (CO <sub>2</sub> )	
<b>Additive gas:</b>	Carbon dioxide (CO <sub>2</sub> ) Helium (He) Nitrogen (N <sub>2</sub> ) Oxygen (O)	Carbon dioxide (CO <sub>2</sub> ) Helium (He) Oxygen (O)	Oxygen (O)	
<b>Mixing range:</b>	5 – 95 Vol. %			
<b>Inlet pressure:</b>	min. 0.4 MPa (4 bar) max. 1 MPa (10 bar)			
<b>Outlet pressure:</b>	Adjustable 0.05 – 0.8 MPa (0.5 - 8 bar) depending on the inlet pressure			
<b>Mixed gas capacity:</b>	See flow table			
<b>Mixing precision:</b>	± 0.5 % abs: 1-5 Vol. % additive gas ± 10 % of nominal value: >5-20 Vol. % additive gas ± 2 % abs: > 20 Vol. % additive gas			
<b>Temperature:</b>	-10 up to +50°C			
<b>Connection Gas inlet/Gas outlet:</b>	G1/2RH-F			
<b>Material:</b>	Housing: stainless steel In-built parts: brass, stainless steel, elastomer, copper, anodised aluminum			
<b>Measure and weight:</b>	height:	width:	depth:	weight:
<b>without connection</b>	400 mm	350 mm	190 mm	approx. 10-15 kg

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

## Type: iMixproX

Flow capacity in Nm<sup>3</sup>/h related to Nitrogen:

Mixed gas capacity: **iMixproX-25**

Outlet pressure [barÜ] →	0.5	1	2	3	4	5	6	7	8
Inlet pressure [barÜ] ↓									
4	9.0	8.3	6.0	-	-	-	-	-	-
5	13.8	12.8	10.8	7.5	-	-	-	-	-
6	16.8	16.3	15.0	12.5	9.3	-	-	-	-
7	21.0	20.0	19.0	17.0	14.3	10.5	-	-	-
8	25.0	24.0	23.3	21.8	19.3	16.3	12.0	-	-
9	28.5	27.8	27.0	26.0	23.8	21.3	17.3	13.3	-
10	31.5	31.0	30.0	29.5	28.5	25.0	23.5	19.0	14.3

Mixed gas capacity: **iMixproX-45**

Outlet pressure [barÜ] →	0.5	1	2	3	4	5	6	7	8
Inlet pressure [barÜ] ↓									
4	12.0	11.0	8.0	-	-	-	-	-	-
5	18.3	17.0	14.3	10.0	-	-	-	-	-
6	22.3	21.7	20.0	16.7	12.3	-	-	-	-
7	28.0	26.7	25.3	22.7	19.0	14.0	-	-	-
8	33.3	32.0	31.0	29.0	25.7	21.7	16.0	-	-
9	38.0	37.0	36.0	34.7	31.7	28.3	23.0	17.7	-
10	42.0	41.3	40.0	39.3	38.0	33.3	31.3	25.3	19.0

Mixed gas capacity: **iMixproX-75**

Outlet pressure [barÜ] →	0.5	1	2	3	4	5	6	7	8
Inlet pressure [barÜ] ↓									
4	18.0	16.5	12.0	-	-	-	-	-	-
5	27.5	25.5	21.5	15.0	-	-	-	-	-
6	33.5	32.5	30.0	25.0	18.5	-	-	-	-
7	42.0	40.0	38.0	34.0	28.5	21.0	-	-	-
8	50.0	48.0	46.5	43.5	38.5	32.5	24.0	-	-
9	57.0	55.5	54.0	52.0	47.5	42.5	34.5	26.5	-
10	63.0	62.0	60.0	59.0	57.0	50.0	47.0	38.0	28.5

The following table shows the correction factors as an example for different gas mixtures.

Application table

Gas mixture	Vol. % CO <sub>2</sub>	Vol. % Ar	Conversion factor
18	82		0.8812
4	96		0.8336
25	75		0.9050

Application table

Gas mixture	Vol. % CO <sub>2</sub>	Vol. % N <sub>2</sub>	Conversion factor
30	70		1.048
5	95		1.008
80	20		1.128

Vol. % He	Vol. % Ar	Conversion factor
20	80	0.8660
60	40	0.9580

Vol. % He	Vol. % N <sub>2</sub>	Conversion factor
10	90	1.005

Vol. % O <sub>2</sub>	Vol. % Ar	Conversion factor
4	96	0.8224
10	90	0.8260

Vol. % O <sub>2</sub>	Vol. % N <sub>2</sub>	Conversion factor
4	96	0.9952
25	75	0.9700

Vol. % O <sub>2</sub>	Vol. % CO <sub>2</sub>	Conversion factor
50	50	1.020
85	15	0.922

### Application example:

Gas mixture setting:	
Gas mixture (Ar in CO <sub>2</sub> ) [%]:	82/18
Gas mixture conversion factor (F):	0.8812
Flow rate according to table [m <sup>3</sup> /h]:	19
Gas mixture flow rate [m <sup>3</sup> /h]:	19 x 0.8812 = 16.75

### 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)