

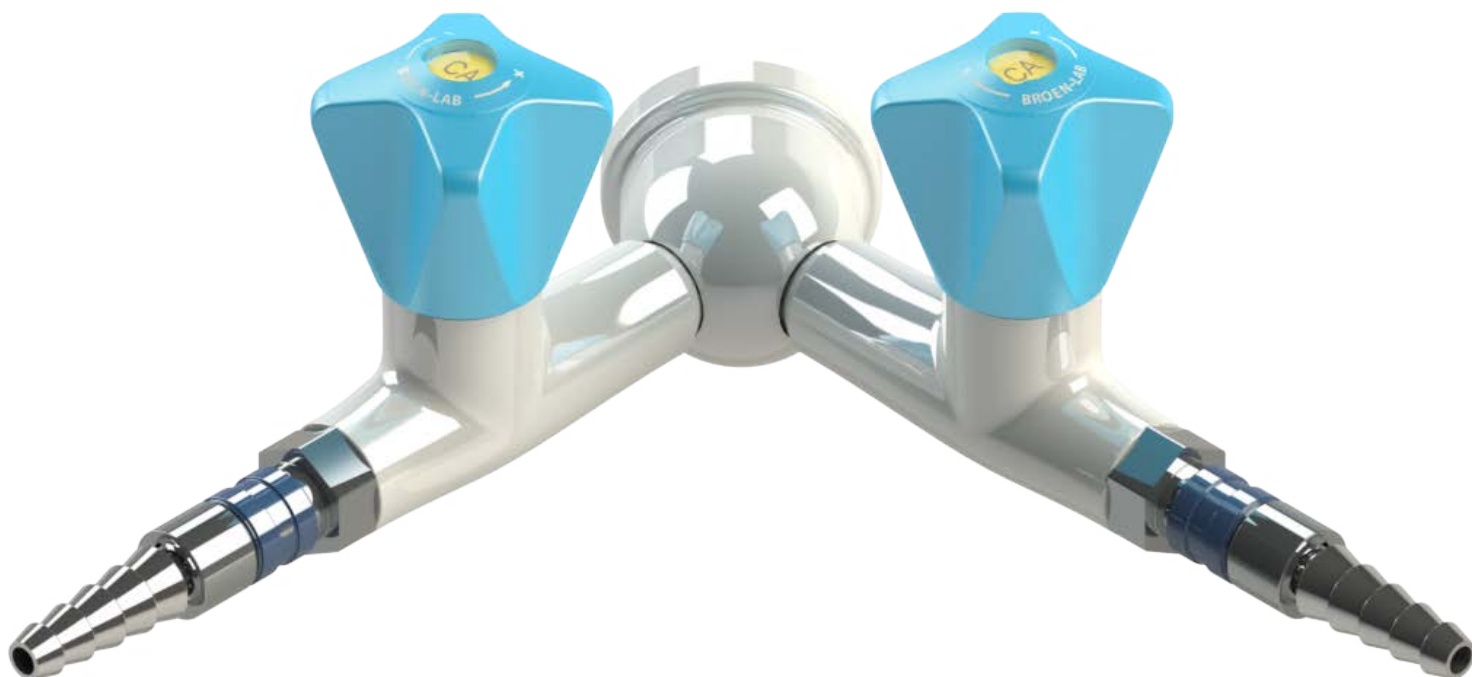
**BROEN-LAB**

Drejervaenget 2, 5610 Assens, Denmark

Phone: +45 6376 6376

E-mail: [lab@broen-lab.com](mailto:lab@broen-lab.com)

Web : [broen-lab.com](http://broen-lab.com)












# FITTINGS FOR NON-BURNING 4.0 GASES AND OXYGEN

**BASIC range**

99B0064 Rev. 1 - 31.05.2023

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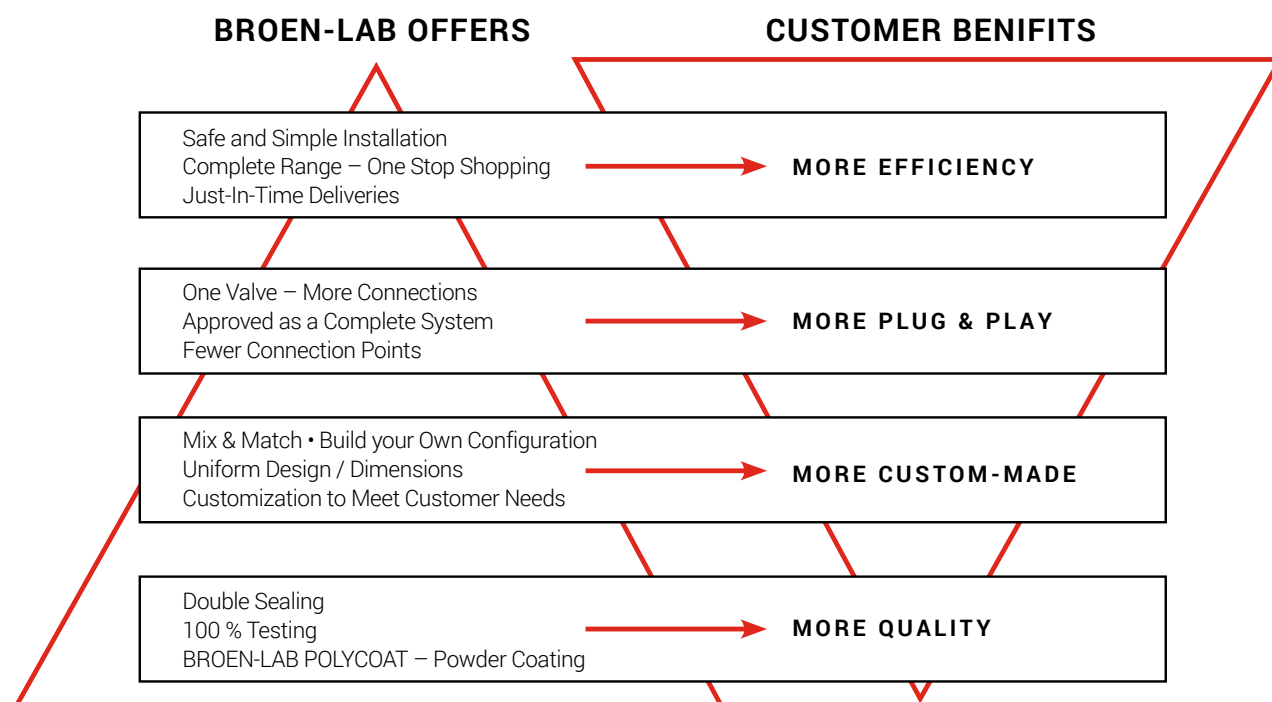
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## BROEN-LAB UNIFLEX™

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### THIS IS BROEN-LAB UNIFLEX™

BROEN-LAB UniFlex™ line offers a very high quality and durability combined with the complete program, which adds up to low LCC (Life Cycle Costs).



BROEN-LAB UniFlex™ fittings for non-burning 4.0 gases are designed for laboratory use and are adapted to Oxygen service.

The operation and the configuration of the fittings are highly adapted to the requirements of a modern laboratory. The fittings are surface treated with BROEN-LAB POLYCOAT powder coating, which is highly resistant to most chemicals, UV fading and heat (for more information please refer to "BROEN-LAB POLYCOAT" brochure).

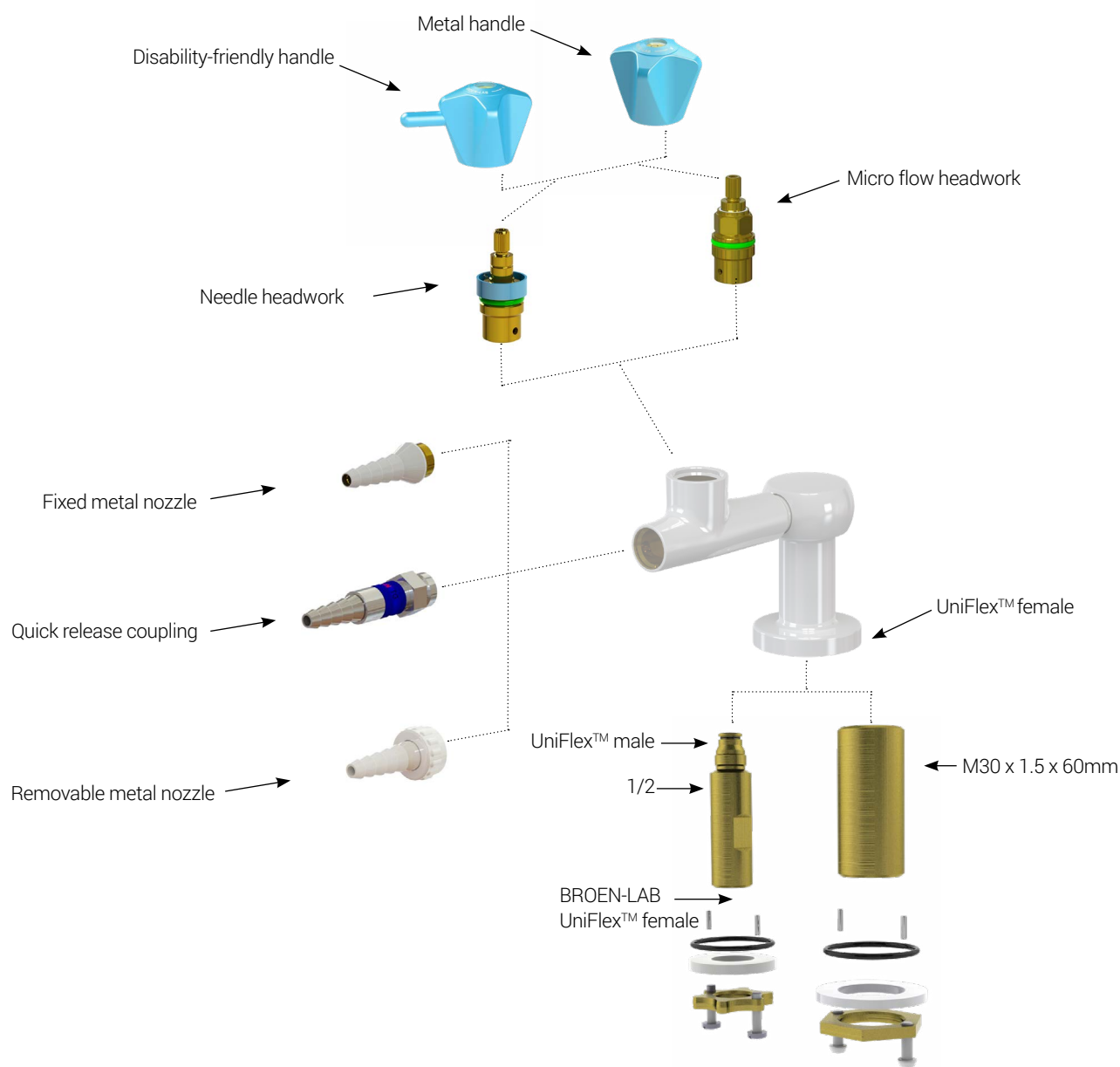
All BROEN-LAB UniFlex™ fittings are delivered with a polypropylene handle with media indication according to EN13792. As an option it is possible to get fittings with disability-friendly handle for easier operation.

BROEN-LAB UniFlex™ fittings for non-burning 4.0 gases / Oxygen are delivered with a fixed metal nozzle (can be removed with Allen key if needed) or a quick release coupling (hexagon coded) for easy and immediate connection and safe disconnection.

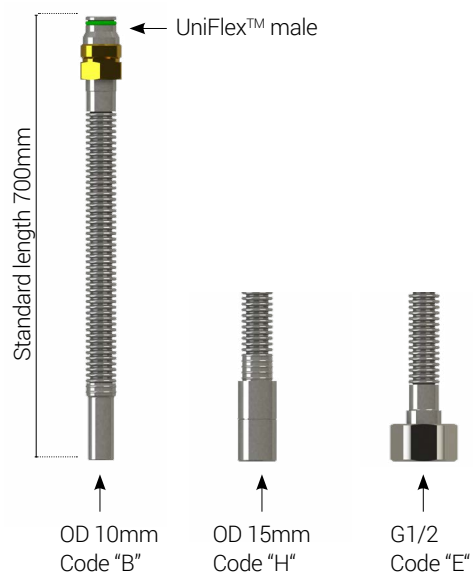
### THIS IS BROEN-LAB UNIFLEX™

BROEN-LAB UniFlex™ is a unique and patented connection, which allows customers to choose from various connection methods, such as hoses, Cu, PEX or Stainless Steel pipes, without changing the valve itself. It provides unique flexibility, not only for the installer, but also for the end-user. Due to the flexibility of the system, the quick installation and savings on fittings, this system offers lower TIC (Total Installed Costs).

CONFIGURATION OVERVIEW



Optional hoses to add



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## TECHNICAL INFORMATION

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### What is Non-burning 4.0 gas?

Non-burning 4.0 gases are typical industrial and technical gases that are 99,99% clean and should be used in applications where impurities must be avoided. Common media that require oil and grease-free fittings are Oxygen, Instrumental, Synthetic and Medical air as well as Helium and other oil-free gases for use with critical instrumentation.

In-

BROEN-LAB UniFlex™ fittings for non-burning 4.0 gases are adapted to Oxygen service, meaning that the presence of mineral based oils and grease is minimized. Materials with media contact are Oxygen approved and ultrasonically cleaned. Assembled fittings are individually packed into sealed plastic bags.

### What is oxygen?

Oxygen is the most abundant element on the earth's surface. In its most well-known form it constitutes 21% of the atmosphere, it is a tasteless, odorless and colorless gas essential to life.

Oxygen itself is not the fuel, but the oxidant and can ignite or support a fire if it comes into contact with flammable substances.

Oxygen is used in innumerable application in industries such as:

- chemicals
- pharmaceuticals
- healthcare
- laboratory and analysis
- food and beverage
- electronics, etc.

### System requirements

Due to the physical and chemical properties of Oxygen the following requirements are set up to an Oxygen system:

- valves and fittings that should be applied with Oxygen must be free of mineral based oil and grease
- materials that come into contact with Oxygen (metals, O-rings, gaskets, plastics, lubricants, etc.) must be Oxygen approved
- recommended working pressure for Oxygen must not be exceeded
- valves must be opened slowly in order to avoid possible ignition.

### Our headworks

BROEN-LAB UniFlex™ fittings for non-burning 4.0 gases can be delivered with 2 different types of headworks depending on the requirements set by applications with regards to regulation of media flow.

**Needle headwork**



**Micro flow headwork**



As a standard all BROEN-LAB UniFlex™ fittings for non-burning 4.0 gases are delivered with a needle headwork that allows fine regulation of media flow and the valve is fully opened after 3 x 360° rotations of a handle.

In cases where media flow is close to zero and when a microscopic flow rate is required then it is an option to choose a micro flow headwork, which provides a very fine regulation of media flow.

For more information about BROEN-LAB headworks and technical details please refer to page 18 in this catalogue.

# BENCH MOUNTED FITTING

## Specifications

Handle: Polypropylene with media indication according to EN13792  
Hose nozzle: Metal, fixed (can be unscrewed with Allen key, thread: male G3/8)  
Headwork: Needle  
Opening/closing function: 3 x 360°  
Max. working pressure:  
16 bar / 232 psi  
Allowable test pressure after installation:  
1.5 x max working pressure without function of the valve

## Materials with media contact

Materials with media contact are Oxygen approved and ultrasonically cleaned.

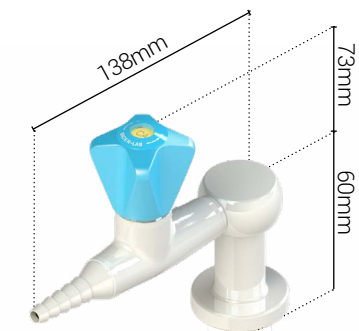
Metals: Brass  
Plastics: PVDF, PTFE (hose)  
Sealing: FKM  
Lubricant: Perfluoropolyether based

## Ordering information

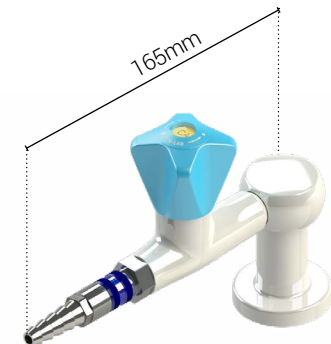
For standard configuration please refer to the item numbers below.

- Other options:
- different media
  - removable hose nozzle with union nut
  - disability-friendly handle (single valve only)
  - micro flow headwork
  - alternative hose inlet connection / without a hose
  - other inlet options (type, length)

## With fixed nozzle







## With quick release coupling







## Configuration options

**4.0 Gases:** Choose outlet connection, number of valves and media type:

	 1-way valve	 2-way 90° valve	 2-way 180° valve	 4-way valve
Fixed nozzle	2532 075 10 <b>XX-YY</b>	2532 063 10 <b>XX-YY</b>	2532 076 10 <b>XX-YY</b>	2532 091 10 <b>XX-YY</b>
Quick release nozzle	2532 127 10 <b>XX-YY</b>	2532 128 10 <b>XX-YY</b>	2532 129 10 <b>XX-YY</b>	2532 130 10 <b>XX-YY</b>

Replace **XX** with one of these media types:

-  **21** • Compressed air     **22** • Oxygen     **23** • Nitrogen     **24** • Carbon dioxide  
 **25** • Argon     **26** • Helium     **27** • Dinitrogen monoxide

Replace **YY** with the inlet type you need on page 21

# SUSPENDED FITTING WITH 90° VALVES

## Specifications

Handle: Polypropylene with media indication according to EN13792  
Hose nozzle: Metal, fixed (can be unscrewed with Allen key, thread: male G3/8)  
Headwork: Needle  
Opening/closing function: 3 x 360°  
Max. working pressure:  
16 bar / 232 psi  
Allowable test pressure after installation:  
1.5 x max working pressure without function of the valve

## Materials with media contact

Materials with media contact are Oxygen approved and ultrasonically cleaned.

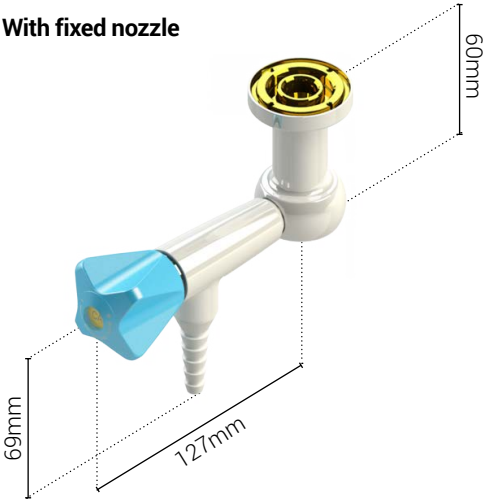
Metals: Brass  
Plastics: PVDF, PTFE (hose)  
Sealing: FKM  
Lubricant: Perfluoropolyether based

## Ordering information

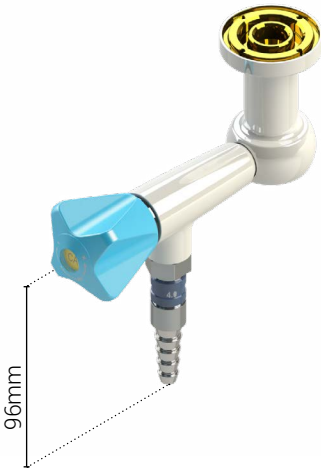
For standard configuration please refer to the item numbers below.

- Other options:
- different media
  - removable hose nozzle with union nut
  - micro flow headwork
  - alternative hose inlet connection / without a hose
  - other inlet options (type, length)

With fixed nozzle



With quick release coupling



## Configuration options

**4.0 Gases:** Choose outlet connection, number of valves and media type:



	1-way valve	2-way 90° valve	2-way 180° valve	4-way valve
Fixed nozzle	2530 072 10XX - YY	2530 131 10XX - YY	2530 073 10XX - YY	2530 253 10XX - YY
Quick release nozzle	2530 238 10XX - YY	2530 239 10XX - YY	2530 240 10XX - YY	2530 241 10XX - YY

Replace **XX** with one of these media types:



**21** • Compressed air



**22** • Oxygen



**23** • Nitrogen



**24** • Carbon dioxide



**25** • Argon



**26** • Helium



**27** • Dinitrogen monoxide

Replace **YY** with the inlet type you need on page 21

# SUSPENDED FITTING WITH 45° VALVES

## Specifications

Handle: Polypropylene with media indication according to EN13792  
Hose nozzle: Metal, fixed (can be unscrewed with Allen key, thread: male G3/8)  
Headwork: Needle  
Opening/closing function: 3 x 360°  
Max. working pressure:  
16 bar / 232 psi  
Allowable test pressure after installation:  
1.5 x max working pressure without function of the valve

## Materials with media contact

Materials with media contact are Oxygen approved and ultrasonically cleaned.

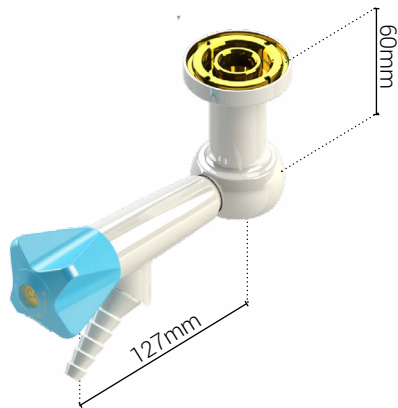
Metals: Brass  
Plastics: PVDF, PTFE (hose)  
Sealing: FKM  
Lubricant: Perfluoropolyether based

## Ordering information

For standard configuration please refer to the itemnumbers below.

- Other options:
- different media
  - removable hose nozzle with union nut
  - micro flow headwork
  - alternative hose inlet connection / without a hose
  - other inlet options (type, length)

With fixed nozzle







With quick release coupling



## Configuration options

**4.0 Gases:** Choose outlet connection, number of valves and media type:

	 1-way valve	 2-way 90° valve	 2-way 180° valve	 4-way valve
Fixed nozzle	2530 242 10XX - YY	2530 254 10XX - YY	2530 243 10XX - YY	2530 244 10XX - YY
Quick release nozzle	2530 245 10XX - YY	2530 246 10XX - YY	2530 247 10XX - YY	2530 248 10XX - YY

Replace **XX** with one of these media types:



**21** • Compressed air



**22** • Oxygen



**23** • Nitrogen



**24** • Carbon dioxide



**25** • Argon



**26** • Helium



**27** • Dinitrogen monoxide

Replace **YY** with the inlet type you need on page 21



# WALL MOUNTED DOUBLE FITTING WITH 90° VALVES

## Specifications

Handle: Polypropylene with media indication according to EN13792  
Hose nozzle: Metal, fixed (can be unscrewed with Allen key, thread: male G3/8)  
Headwork: Needle  
Opening/closing function: 3 x 360°  
Max. working pressure:  
16 bar / 232 psi  
Allowable test pressure after installation:  
1.5 x max working pressure without function of the valve

## Materials with media contact

Materials with media contact are Oxygen approved and ultrasonically cleaned.

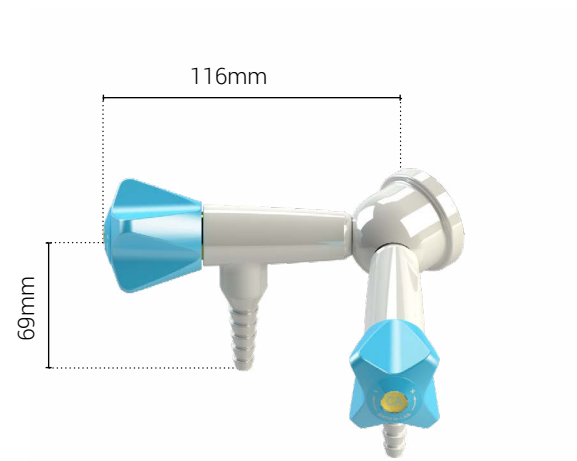
Metals: Brass  
Plastics: PVDF, PTFE (hose)  
Sealing: FKM  
Lubricant: Perfluoropolyether based

## Ordering information

For standard configuration please refer to the item numbers below.

- Other options:
- different media
  - removable hose nozzle with union nut
  - disability-friendly handle
  - micro flow headwork
  - alternative hose inlet connection / without a hose
  - other inlet options (type, length)

## With fixed nozzle



## With quick release coupling



## Configuration options

**4.0 Gases:** Choose outlet connection, number of valves and media type:

	2-way 90° valve
Fixed nozzle	2530 249 10XX - YY
Quick release nozzle	2530 250 10XX - YY

Replace **XX** with one of these media types:

-  **21** • Compressed air
-  **22** • Oxygen
-  **23** • Nitrogen
-  **24** • Carbon dioxide
-  **25** • Argon
-  **26** • Helium
-  **27** • Dinitrogen monoxide

Replace **YY** with the inlet type you need on page 21

# WALL MOUNTED DOUBLE FITTING WITH STRAIGHT VALVES

## Specifications

Handle: Polypropylene with media indication according to EN13792  
Hose nozzle: Metal, fixed (can be unscrewed with Allen key, thread: male G3/8)  
Headwork: Needle  
Opening/closing function: 3 x 360°  
Max. working pressure:  
16 bar / 232 psi  
Allowable test pressure after installation:  
1.5 x max working pressure without function of the valve

## Materials with media contact

Materials with media contact are Oxygen approved and ultrasonically cleaned.

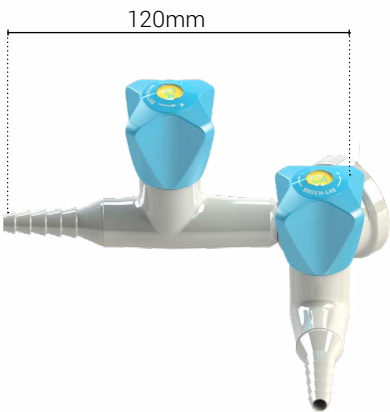
Metals: Brass  
Plastics: PVDF, PTFE (hose)  
Sealing: FKM  
Lubricant: Perfluoropolyether based

## Ordering information

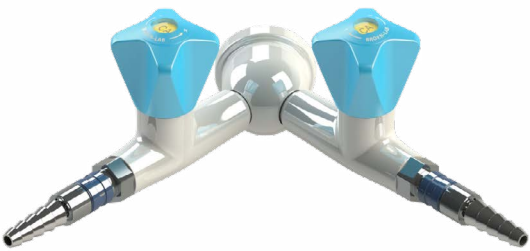
For standard configuration please refer to the item numbers below.

- Other options:
- different media
  - removable hose nozzle with union nut
  - micro flow headwork
  - alternative hose inlet connection / without a hose
  - other inlet options (type, length)

## With fixed nozzle



## With quick release coupling



## Configuration options

**4.0 Gases:** Choose outlet connection, number of valves and media type:

	2-way 90° valve
Fixed nozzle	2532 064 10XX - YY
Quick release nozzle	2532 132 10XX - YY

Replace **XX** with one of these media types:



**21** • Compressed air



**22** • Oxygen



**23** • Nitrogen



**24** • Carbon dioxide



**25** • Argon



**26** • Helium



**27** • Dinitrogen monoxide

Replace **YY** with the inlet type you need on page 21

# WALL MOUNTED FITTING WITH 90° VALVES FOR EXPOSED PIPING

## Specifications

Handle: Polypropylene with media indication according to EN13792  
Hose nozzle: Metal, fixed (can be unscrewed with Allen key, thread: male G3/8)  
Headwork: Needle  
Opening/closing function: 3 x 360°  
Max. working pressure:  
16 bar / 232 psi  
Allowable test pressure after installation:  
1.5 x max working pressure without function of the valve

## Materials with media contact

Materials with media contact are Oxygen approved and ultrasonically cleaned.

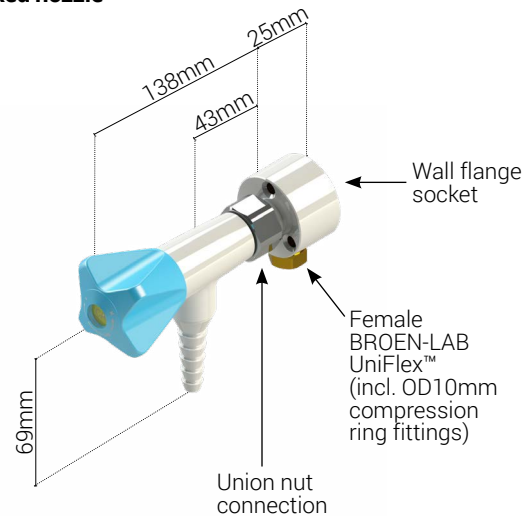
Metals: Brass  
Plastics: PVDF, PTFE (hose)  
Sealing: FKM  
Lubricant: Perfluoropolyether based

## Ordering information

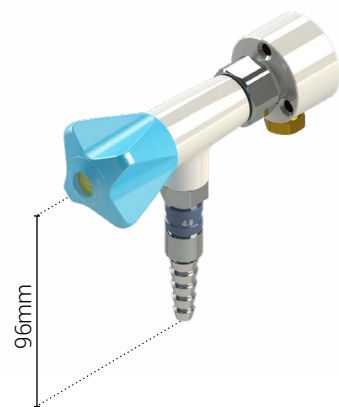
For standard configuration please refer to the item numbers below.

- Other options:
- different media
  - removable hose nozzle with union nut
  - disability-friendly handle
  - micro flow headwork
  - alternative hose inlet connection / without a hose
  - other inlet options (type, length)
  - model with straight valve

## With fixed nozzle



## With quick release coupling



## Configuration options

**4.0 Gases:** Choose outlet connection, number of valves and media type:

	1-way valve
Fixed nozzle	2530 151 10XX - T
Quick release nozzle	2530 152 10XX - T

Replace **XX** with one of these media types:

 **21** • Compressed air

 **22** • Oxygen

 **23** • Nitrogen

 **24** • Carbon dioxide

 **25** • Argon

 **26** • Helium

 **27** • Dinitrogen monoxide

# BENCH OR WALL MOUNTED 90° FITTING WITH LEAD-IN

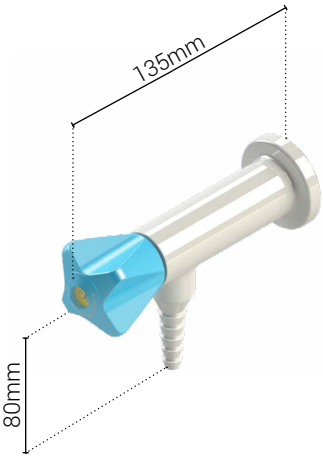
## Specifications

Handle: Polypropylene with media indication according to EN13792  
Hose nozzle: Metal, fixed (can be unscrewed with Allen key, thread: male G3/8)  
Headwork: Needle  
Opening/closing function: 3 x 360°  
Max. working pressure:  
16 bar / 232 psi  
Allowable test pressure after installation:  
1.5 x max working pressure without function of the valve

## Materials with media contact

Materials with media contact are Oxygen approved and ultrasonically cleaned.

Metals:: Brass  
Plastics: PVDF  
Sealing: FKM  
Lubricant: Perfluoropolyether based



## Ordering information

For standard configuration please refer to the item numbers below.


- Other options:
- different media
  - removable hose nozzle with union nut
  - micro flow headwork
  - alternative hose inlet connection / without a hose
  - other inlet options (type, length)


## Configuration options


**4.0 Gases:** Choose outlet connection, number of valves and media type:


	1-way valve
Fixed nozzle	2530 331 10XX - YY
Quick release nozzle	2530 332 10XX - YY


Replace **XX** with one of these media types:


 **21** • Compressed air


 **22** • Oxygen

 **23** • Nitrogen

 **24** • Carbon dioxide

 **25** • Argon

 **26** • Helium

 **27** • Dinitrogen monoxide

Replace **YY** with the inlet type you need on page 21

# BENCH OR WALL MOUNTED 45° FITTING WITH LEAD-IN

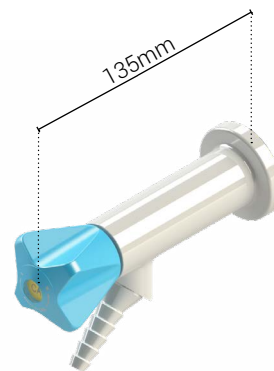
## Specifications

Handle: Polypropylene with media indication according to EN13792  
Hose nozzle: Metal, fixed (can be unscrewed with Allen key, thread: male G3/8)  
Headwork: Needle  
Opening/closing function: 3 x 360°  
Max. working pressure:  
16 bar / 232 psi  
Allowable test pressure after installation:  
1.5 x max working pressure without function of the valve

## Materials with media contact

Materials with media contact are Oxygen approved and ultrasonically cleaned.

Metals:: Brass  
Plastics: PVDF  
Sealing: FKM  
Lubricant: Perfluoropolyether based



## Ordering information

For standard configuration please refer to the item numbers below.

Other options:

- different media
- removable hose nozzle with union nut
- micro flow headwork
- alternative hose inlet connection / without a hose
- other inlet options (type, length)

## Configuration options

**4.0 Gases:** Choose outlet connection, number of valves and media type:

	2-way 90° valve
Fixed nozzle	2530 349 10XX - YY
Quick release nozzle	2530 350 10XX - YY

Replace **XX** with one of these media types:



**21** • Compressed air



**22** • Oxygen



**23** • Nitrogen



**24** • Carbon dioxide



**25** • Argon



**26** • Helium



**27** • Dinitrogen monoxide

Replace **YY** with the inlet type you need on page 21

# SUSPENDED OR WALL MOUNTED STRAIGHT FITTING WITH LEAD-IN

## Specifications

Handle: Polypropylene with media indication according to EN13792  
Hose nozzle: Metal, fixed (can be unscrewed with Allen key, thread: male G3/8)  
Headwork: Needle  
Opening/closing function: 3 x 360°  
Max. working pressure:  
16 bar / 232 psi  
Allowable test pressure after installation:  
1.5 x max working pressure without function of the valve

## Materials with media contact

Materials with media contact are Oxygen approved and ultrasonically cleaned.

Metals:: Brass  
Plastics: PVDF  
Sealing: FKM  
Lubricant: Perfluoropolyether based



## Ordering information

For standard configuration please refer to the item numbers below.


- Other options:
- different media
  - removable hose nozzle with union nut
  - micro flow headwork
  - alternative hose inlet connection / without a hose
  - other inlet options (type, length)


## Configuration options


**4.0 Gases:** Choose outlet connection, number of valves and media type:


	2-way 90° valve
Fixed nozzle	2532 168 10XX - YY
Quick release nozzle	2532 170 10XX - YY


Replace **XX** with one of these media types:


 **21** • Compressed air


 **22** • Oxygen

 **23** • Nitrogen

 **24** • Carbon dioxide

 **25** • Argon

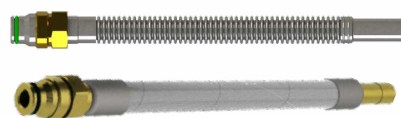
 **26** • Helium

 **27** • Dinitrogen monoxide

Replace **YY** with the inlet type you need on page 21

## BROEN-LAB UNIFLEX™ PIPES AND HOSES FOR NON-BURNING 4.0 GASES AND VACUUM

BROEN-LAB UniFlex™ flexible pipes and hoses



BROEN-LAB LAB offers BROEN-LAB UniFlex™ pipes and hoses as an easy way to make the installation in the laboratory where safety and efficiency are required. BROEN-LAB UniFlex™ pipes and hoses are the ideal solution where there is a higher requirement for flexibility. Installation with flexible hoses saves you time and labor - in other words reduced installation costs.

BROEN-LAB UniFlex™ pipes and hoses for non-burning 4.0 gases and vacuum are manufactured of corrugated Stainless Steel or PTFE with a Stainless Steel braiding that ensures long service life and durability.

A wide range of fittings and lengths is available for BROEN-LAB UniFlex™ hoses enables customers to choose the perfect hose for their application. Please request document No. 99G0005 for complete range of BROEN-LAB UniFlex™ hoses and technical specifications.

If you still prefer a standard way of installation with Cu, Stainless Steel, or PEX-pipes, BROEN-LAB LAB offers a wide range of connection fittings and adaptors for pipes of different dimensions. Please request document No. 99G0004 for a complete range of BROEN-LAB UniFlex™ compression ring fittings.

BROEN-LAB UniFlex™ connection fittings and adaptors  
for CU, Stainless Steel and PEX pipes



The total design of the system must be taken into consideration when selecting the type of BROEN-LAB UniFlex™ flexible hose or pipe for specific media. Only then products will provide safe, trouble-free operation.



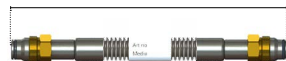






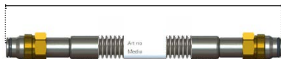
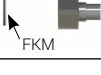
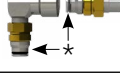

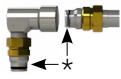
### Please always check local requirements/regulations regarding installation and maintenance of hoses/flexible pipes!

A very high quality of materials applied for production of hoses and Stainless Steel flexible pipes, which are supplied by BROEN-LAB, and a long-time experience in making installations worldwide, combined with optimal installation conditions, may assure a lifetime for a hose to be more than 10 years. Expected lifetime can only be achieved under normal use and proper installation methods, which are described in technical specifications, i.e. max. working pressure, max. temperature, physical installation methods and other. Any nonconformity to specifications decreases the lifetime of a hose/flexible pipe.

Hose Factors*	SS 93Q	PTFE 93R
Inner hose material with media contact	Corrugated Stainless Steel AISI 316	PTFE**
Outer hose material / braiding	None	Stainless Steel AISI 304
Sealing material	FKM	FKM
Inside diameter	8.5 mm	6.3 mm
Outside diameter	12 mm	9.5 mm
Max. working pressure	21 bar	21 bar
Max. working temperature	50°C	50°C
Min. bending radius (inner)	15 mm (Single bend) 130 mm (Dynamic bend)	60 mm
Leakage rate	<1x10 <sup>-7</sup> mbar l/s [He] (93Q)	**
UV resistance	+++	++
Range of connections	++	+++

\*\* PTFE and rubber are penetrable materials meaning that gases, vapors, and liquids may diffuse through them. Therefore, for applications where a defined gas content is required, or absorbed gases might disturb applications, alternative materials could be considered. Check compatibility with gases in application!

## 93Q - BROEN-LAB UNIFLEX™ FLEXIBLE STAINLESS STEEL PIPES FOR OXYGEN AND HIGH PURITY GASES UP TO 5.0

INLET CONNECTIONS			OUTLET CONNECTIONS			LENGTH		
93 Q <b>XX</b> XX XXXX			93 Q XX <b>XX</b> XXXX			93 Q XX XX <b>XXXX</b>		
10	OD10 mm connection for compression fittings		20	Straight BROEN-LAB UniFlex™ connection with EPDM O-ring		Stainless steel 1.4404 flexible pipe		
12	OD12 mm connection for compression fittings		30	90° BROEN-LAB UniFlex™ connection with EPDM O-ring				
15	OD15 mm connection for compression					Marking for water with Part no. and Media indication		
09	OD3/8" connection for compression fittings					<b>HOSE LENGTHS</b>		
20	Straight BROEN-LAB UniFlex™ connection with EPDM O-ring					Definition of length (L)		
34	3/8" NPT fixed male connection							
70	1/4" NPT fixed male connection							
41	Female G3/8" union nut connection							
40	Female G1/2" union nut connection							
30	90° BROEN-LAB UniFlex™ connection with EPDM O-ring							
						0500 = 500 mm		
						0700 = 700 mm		
						1000 = 1000 mm		
						1200 = 1200 mm		
						1500 = 1500 mm		
						2000 = 2000 mm		
						2500 = 2500 mm		
						3000 = 3000 mm		
						Length tolerance of hoses:		
						L = ≤400 mm (- 0, +10 mm)		
						L = 401 mm to 1000 mm (- 0, + 20 mm)		
						L = >1000 mm (- 0, + 30 mm)		
			*All O-rings are lubricated with perfluoropolyether based lubricant			** Other lengths are available on request		

### SPECIFICATIONS

Inner hose material: Corrugated\*\*\* Stainless Steel 1.4404 similar to AISI 316L (acc. to EN 10028-7). Cleaned for use with gases having purity coefficient 6.0 (99,9999% pure gases)

Braiding: None

Materials with media contact: Stainless Steel 1.4404, FKM (Viton) with Perfluoropolyether based lubricant

Inside diameter: 8.5 mm

Outside diameter: 12 mm

Max. working pressure: 21bar

Max. working temperature: 50°C

Bending radius (inner):

- ≥ 15 mm (static)
- ≥ 130 mm (dynamic)

Min. length with connections: 500 mm

Max. movements (Bending radius 130 mm): 10.000\*\*

Leakage rate: <1x10<sup>-7</sup> mbar l/s [He]

\*\* In accordance with ISO 10380

### EXAMPLE OF HOSE CONFIGURATION

1200 mm hose with OD 12 mm inlet connection and straight UniFlex™ outlet connection



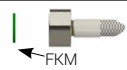






**93Q12201200**

\*\*\* Corrugated hoses have a large inner surface with media contact, therefore extended flushing may be required before taking into use! BROEN-LAB recommends purging by pressurizing a system by 10 bar to be repeated for 5-7 times.



## 93R - BROEN-LAB UNIFLEX™ HOSES FOR OXYGEN AND HIGH PURITY GASES UP TO 5.0




### INLET CONNECTIONS 93 R **XX** XX XXXX

<b>40</b>	Female G1/2" union nut connection	
<b>10</b>	OD10 mm connection for compression fittings	
<b>12</b>	OD12 mm connection for compression fittings	
<b>15</b>	OD15 mm connection for compression fittings	
<b>20</b>	Straight BROEN-LAB UniFlex™ connection with FKM O-ring	
<b>25</b>	45° BROEN-LAB UniFlex™ connection with FKM O-ring	
<b>30</b>	90° BROEN-LAB UniFlex™ connection with FKM O-ring	

### SPECIFICATIONS

Inner hose material: PTFE\*\*\*  
 Braiding: Stainless Steel  
 Materials with media contact: PTFE, Brass, FKM\*\*\* with perfluoropolyether based lubricant (Oxygen approved)  
 Inside diameter: 6.3 mm  
 Outside diameter: 9.5 mm  
 Max. working pressure: 21 bar  
 Max. working temperature: 50°C  
 Bending radius (inner): ≥ 60 mm  
 Min. length with connections: 160 mm  
 Packaging: individually packed in sealed bags

### OUTLET CONNECTIONS 93 R XX **XX** XXXX

<b>20</b>	Straight BROEN-LAB UniFlex™ connection with FKM O-ring	
<b>25</b>	45° BROEN-LAB UniFlex™ connection with FKM O-ring	
<b>30</b>	90° BROEN-LAB UniFlex™ connection with FKM O-ring	

\*All O-rings are lubricated with perfluoropolyether based lubricant

\*\*\* PTFE and FKM are penetrable materials meaning that gases, vapors, and liquids may diffuse through them. Therefore, for applications where a defined gas content is required, or absorbed gases might disturb applications, alternative materials could be considered i.e.  
 • 93Q Flexible Stainless Steel pipe on page 16

Check compatibility with gases in application!

### LENGTH 93 R XX XX **XXXX**

PTFE hose with braiding in stainless steel



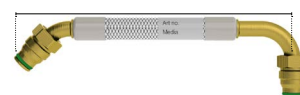
Marking for water with Part no. and Media indication

#### HOSE LENGTHS

Definition of length (L)



Definition of length (L)



If 45° and 90° elbows occur on the same hose, it will as default be mounted in U-form

\*\*Standard lengths of hoses (L):

**0500** = 500 mm  
**0700** = 700 mm  
**1000** = 1000 mm  
**1200** = 1200 mm  
**1500** = 1500 mm  
**2000** = 2000 mm  
**2500** = 2500 mm  
**3000** = 3000 mm

Length tolerance of hoses:  
 L = ≤400 mm (- 0, +10 mm)  
 L = 401 mm to 1000 mm (- 0, + 20 mm)  
 L = >1000 mm (- 0, + 30 mm)

\*\* Other lengths are available on request

### EXAMPLE OF HOSE CONFIGURATION

1200 mm hose with OD 12 mm inlet connection and straight UniFlex™ outlet connection



**93R12201200**

## TECHNICAL INFORMATION

### NEEDLE HEADWORK

#### Specifications

BROEN-LAB UniFlex™ fittings for non-burning 4.0 gases / Oxygen are as a standard delivered with needle headwork for fine regulation of media flow.

Opening/closing function: 3 x 360° turn

Media: Non-burning 4.0 (99.99% clean) gases / Oxygen

Max. working pressure: 16 bar / 232 psi

Test pressure: 1.5 x max. working pressure without function of the valve

#### Materials with media contact

Metals: Brass

Plastics: PVDF

Sealing: FKM

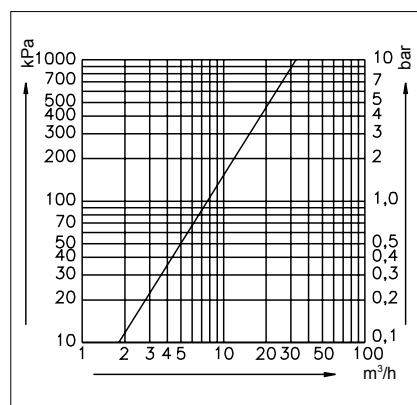
Lubricant: Perfluoropolyether based

#### Ordering information

1. Blue plastic ring • No. 0255 035-6308

2. Needle headwork • Not available as a spare part (for safety reasons)

#### Flow Chart



1. Blue plastic ring



2. Needle headwork

## TECHNICAL INFORMATION

### MICRO FLOW HEADWORK

#### Specifications

BROEN-LAB Micro flow headwork ensures very fine regulation of media where flow of gas is close to zero and microscopic flow rates are required.

Opening/closing function: 7.5 x 360° turn

Media: Non-burning 4.0 (99.99% clean) gases / Oxygen

Working pressure: 16 bar / 232 psi

Test pressure: 1.5 x working pressure

#### Materials with media contact

Metals: Brass

Plastics: PVDF

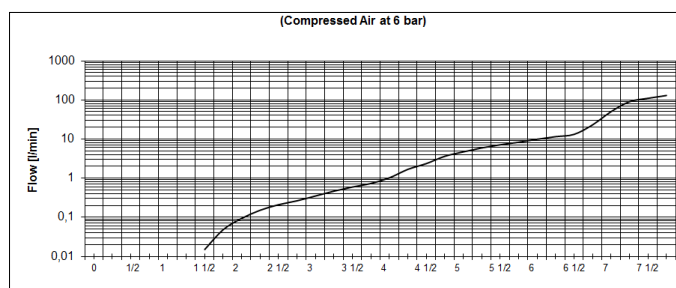
Sealing: FKM

Lubricant: Perfluoropolyether based

#### Ordering information

Not available as a spare part (for safety reasons).

#### Flow Chart



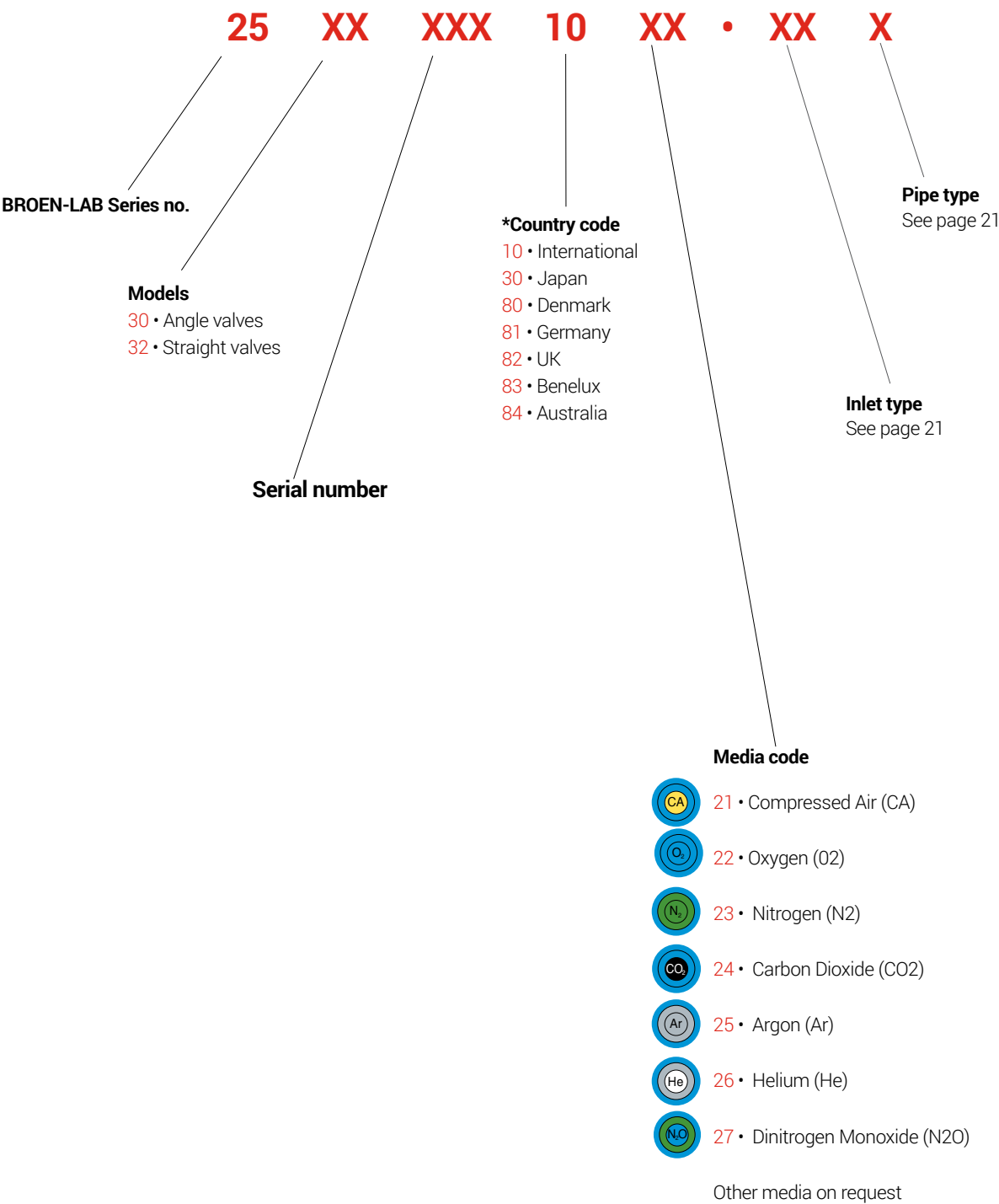
Micro flow headwork

## ACCESSORIES

Illustration	Description	BROEN-LAB item no.
	Adaptor for removable nozzle 3/8 to G1/2"	2539 043 1021
	Removable metal nozzle G1/2"	2538 008 1021
	Fixed metal nozzle 3/8	2538 042 1021
	Quick release coupling (hexagon coded) Coupling unit Nozzle unit	96C0043 96C0040
	Mounting set for G1/2" connection Mounting set for M30x1.5 connection	19 141 999 19 190 000
	G1/2" inlet with female BROEN-LAB UniFlex™ connection (incl. o-ring)  L = 30mm L = 60mm L = 90mm	15 504 330 15 504 120 15 504 460
	Threaded inlet pipe M30x1.5 L = 30mm L = 60mm L = 90mm	19 190 03 19 190 02 19 190 04
	Wall flange socket (for exposed piping)	02 101 300G
	Wall flange socket (for built-in installation)  Recommended visible length 16mm 74mm 25mm Female BROEN-LAB UniFlex™	02 101 310
	Cover flange for 02 101 310	14 923 04G
	Metal handle with media indication according to EN 13792	19 150 140 10XX 19 150 140 10XX  Replace XX/XX with the media on page 23

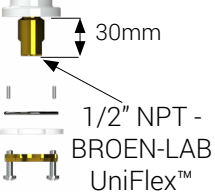
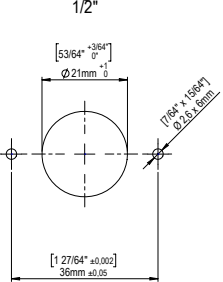

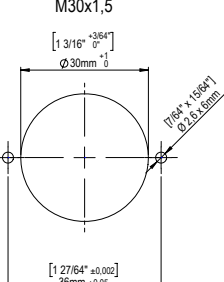
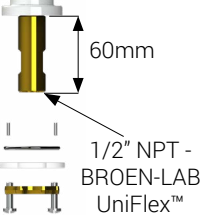
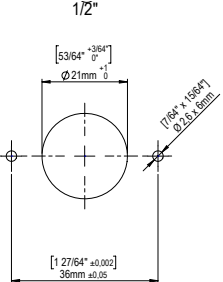
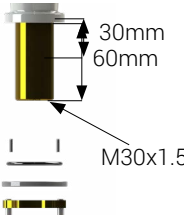
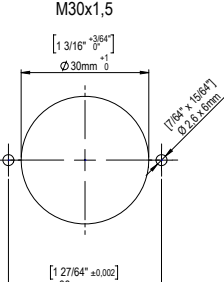
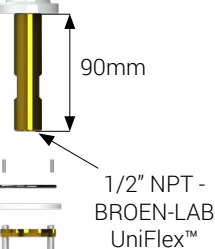
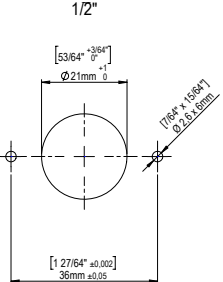
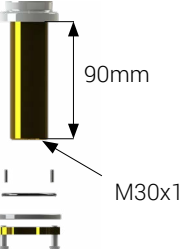
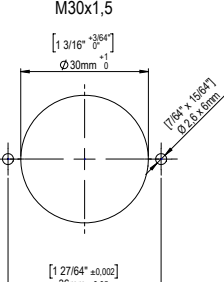




# ORDERING INFORMATION

Generally, item number for BROEN-LAB UniFlex™ fittings has the following structure:



For other configuration options please contact your local BROEN-LAB representative.

## ORDERING INFORMATION

Number	Inlet design	Drilling template	Number	Inlet design	Drilling template
-05	 30mm 1/2" NPT - BROEN-LAB UniFlex™	 1/2" [53/64" <sup>+3/64"</sup> 0"] Ø 21mm <sup>+1</sup> 0 [1 27/64" <sup>+0.002</sup> 0"] 36mm <sup>+0.05</sup> 0 [17/64" <sup>+1/32"</sup> 0"] Ø 2.6 x 6mm	-50	 M30x1.5	 M30x1,5 [1 3/16" <sup>+3/64"</sup> 0"] Ø 30mm <sup>+1</sup> 0 [1 27/64" <sup>+0.002</sup> 0"] 36mm <sup>+0.05</sup> 0 [17/64" <sup>+1/32"</sup> 0"] Ø 2.6 x 6mm
-14	 60mm 1/2" NPT - BROEN-LAB UniFlex™	 1/2" [53/64" <sup>+3/64"</sup> 0"] Ø 21mm <sup>+1</sup> 0 [1 27/64" <sup>+0.002</sup> 0"] 36mm <sup>+0.05</sup> 0 [17/64" <sup>+1/32"</sup> 0"] Ø 2.6 x 6mm	-52	 30mm 60mm M30x1.5	 M30x1,5 [1 3/16" <sup>+3/64"</sup> 0"] Ø 30mm <sup>+1</sup> 0 [1 27/64" <sup>+0.002</sup> 0"] 36mm <sup>+0.05</sup> 0 [17/64" <sup>+1/32"</sup> 0"] Ø 2.6 x 6mm
-18	 90mm 1/2" NPT - BROEN-LAB UniFlex™	 1/2" [53/64" <sup>+3/64"</sup> 0"] Ø 21mm <sup>+1</sup> 0 [1 27/64" <sup>+0.002</sup> 0"] 36mm <sup>+0.05</sup> 0 [17/64" <sup>+1/32"</sup> 0"] Ø 2.6 x 6mm	-54	 90mm M30x1.5	 M30x1,5 [1 3/16" <sup>+3/64"</sup> 0"] Ø 30mm <sup>+1</sup> 0 [1 27/64" <sup>+0.002</sup> 0"] 36mm <sup>+0.05</sup> 0 [17/64" <sup>+1/32"</sup> 0"] Ø 2.6 x 6mm
<div> <div>   Standard length 700mm           </div> <div>   Standard length 310mm           </div> <div>   Standard length 700mm           </div> <div>   Standard length 700mm           </div> </div> <div> <div>No pipe No code</div> <div>OD 10 mm Code "B"</div> <div>CU-pipes Code "C"</div> <div>G 1/2" Union nut Code "E"</div> <div>OD 15 mm Code "H"</div> </div>					

For installation with Cu- and Stainless Steel BROEN-LAB offers a wide range of connection fittings and adapters for pipes of different dimensions.

Please request document No. 99G0004 for a complete range of BROEN-LAB UniFlex™ compression ring fittings.

NOTES

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## HEADQUARTER

### **BROEN-LAB A/S**

Drejervaenget 2  
5610 Assens  
Denmark

Tel. +45 6376 6376  
Fax +45 6471 2476

lab@broen-lab.com  
broen-lab.com

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## INTERNATIONAL OFFICES

### **BROEN-LAB Ltd.**

Tel. +44 121 522 4515  
Fax +44 121 522 4535

lab@broen-lab.com  
broen-lab.com

### **BROEN-LAB Singapore Pte. Ltd.**

25 International Business Park  
#04-60A German Centre  
Singapore 609916

Tel. +65 6298 0662  
Fax +65 62 98 04 68

lab@broen-lab.com  
broen-lab.com

### **BROEN-LAB GmbH**

Tel. +45 6376 6376  
Fax +45 6471 2476

lab@broen-lab.com  
broen-lab.com

### **BROEN-LAB Sverige AB**

Tel. +45 6376 6376  
Fax +45 6471 2476

lab@broen-lab.com  
broen-lab.com

### **BROEN-LAB Inc.**

15 Constitution Drive  
Suite 122  
NH 03110  
Bedford  
USA

Tel. +1 603 310 5089

lab@broen-lab.com  
broen-lab.com

BROEN-LAB develops, manufactures and sells Laboratory Fittings, Emergency Shower Systems and Eye Wash Systems into a broad spectrum of laboratories and industrial locations; sectors include Pharmaceutical, Food&Beverage and Academia. Our expertise and product quality ensure optimal solutions compliant to all relevant international norms setting new standards in risk mitigation in modern research and development facilities.

BROEN-LAB offers solutions that ensure the functionality, compliance, hygiene, durability and safety are of the highest priority. For more than 50 years our products have been integrated into a wide variety of workplaces, laboratories, hospitals and industrial locations, with features that are assessed and designed to be flexible, durable and compliant offering a broad range of options tailored to each location. This inherent design integrity provides confidence in the solution adopted wherever in the world these are applied.

BROEN-LAB is a collaboration partner in the design and layout of your next laboratory and it's integrated safety.



### **BROEN-LAB A/S ISO 9001 certification**

In September 1991 BROEN-LAB A/S was certified according to ISO 9001 as one of the first Danish companies. The certification was carried out by Bureau Veritas, Denmark, for our Danish site in Assens.

The quality management system of BROEN-LAB A/S now complies with detailed specifications laid down by the internationally acknowledged EN ISO 9001:2015. This certification will further contribute to reputation for quality and reliability of BROEN-LAB A/S.

### **BROEN-LAB A/S ISO 14001:2015 certification**

In December 2022 we got certified according to ISO 14001 in Environmental certification. The new certification was carried out by Bureau Veritas, Denmark, for Danish site in Assens. The Environment ISO14001 management system of BROEN-LAB A/S is included in internationally acknowledged EN ISO 9001:2015. Both certifications furthermore contribute to reputation for quality and reliability of BROEN-LAB A/S.