

**BROEN-LAB**

Drejervaenget 2, 5610 Assens, Denmark

Phone: +45 6376 6376

E-mail: lab@broen-lab.com

Web : broen-lab.com














# FITTINGS FOR NON-BURNING 2.0 GASES AND VACUUM

**PREMIUM range**

99B0057 Rev. 3 - 04.03.2024

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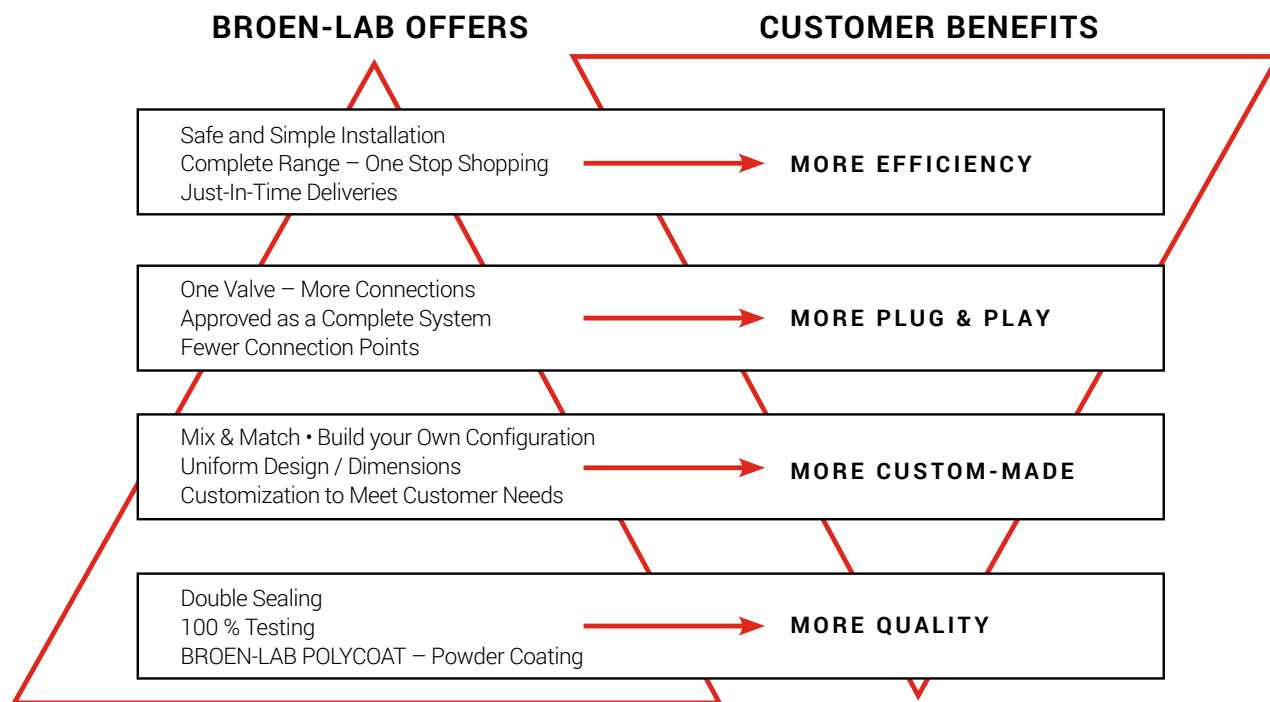
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## BROEN-LAB UNIFLEX™ PREMIUM

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### THIS IS BROEN-LAB UNIFLEX™ PREMIUM

BROEN-LAB UniFlex™ PREMIUM line offers a very high quality and durability combined with the complete program, which adds up to low LCC (Life Cycle Costs). Our PREMIUM line takes the standards in the market to a higher level.



BROEN-LAB UniFlex™ PREMIUM fittings for non-burning 2.0 gases/vacuum are designed for laboratory use.

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™ PREMIUM fittings are delivered with a powder coated metal handle with media indication according to EN13792. As an option it is possible to get fittings with disability-friendly handle for easier operation.

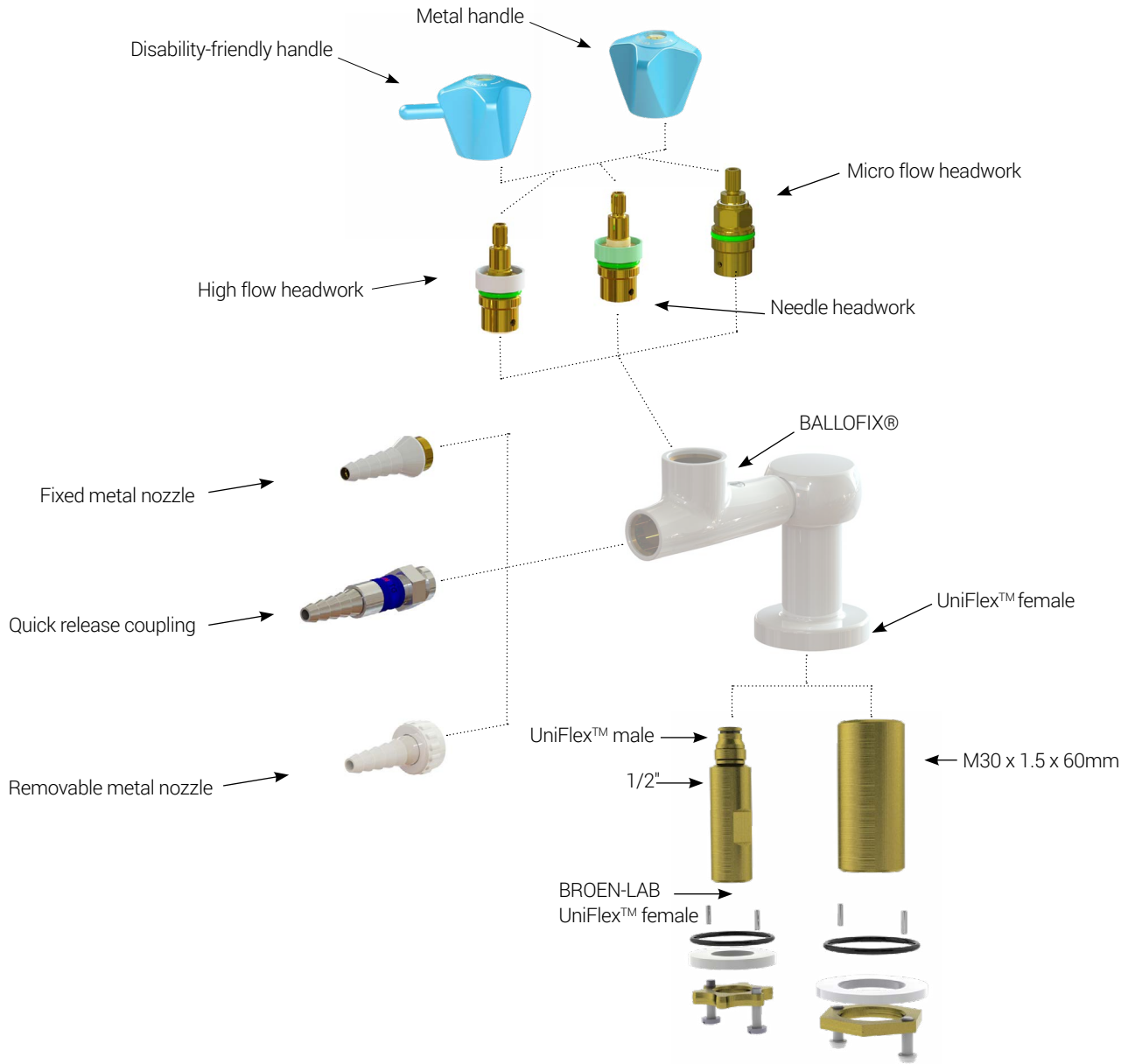
BROEN-LAB UniFlex™ PREMIUM fittings for non-burning gases/vacuum incorporate a BALLOFIX® ball valve, which offers a number of advantages such as local shut-off (e.g. in connection with product service) and pre-setting for experimental purposes.

As standard fittings 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.

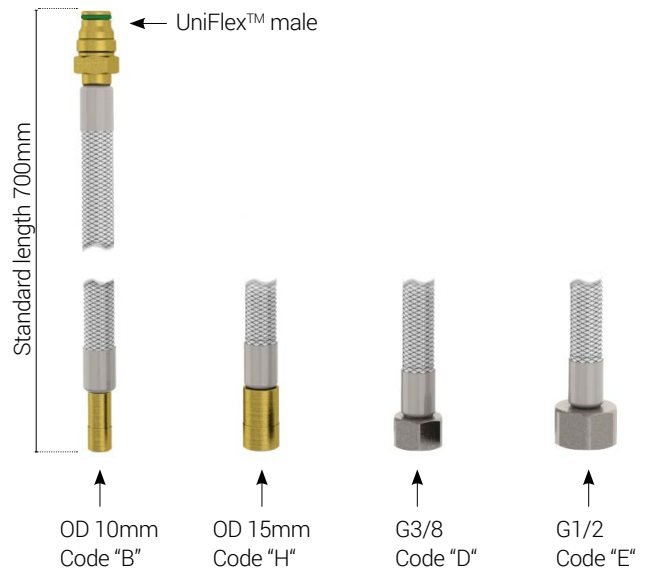
### THIS IS BROEN-LAB UNIFLEX™

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 2.0 GAS?

Non-burning 2.0 gases are typical industrial and technical gases that are 99% clean.

BROEN-LAB UniFlex™ fittings for non-burning gases can be used for non-toxic, non-corrosive, non-burning 2.0 gases, such as Compressed Air, Nitrogen, Carbon Dioxide, Argon, etc.

These gases are typically commercially manufactured and sold to be used in applications within:

- laboratory and instrumentation
- chemical industry
- cutting and welding
- food processing, etc.

### WHAT IS VACUUM?

Vacuum is a volume of space that is essentially empty of matter, such that its gaseous pressure is much less than atmospheric pressure.

Vacuum is usually measured by its absolute pressure and is divided into several types (according to EN 13792):

- Low Vacuum: 1000 to 1mbar
- Fine Vacuum : 1 to 10<sup>-3</sup> mbar
- High Vacuum: 10<sup>-3</sup> to 10<sup>-7</sup> mbar

Laboratory applications usually require use of suction. Suction is a flow of media into a partial vacuum, or region with low pressure. It is being used to clear surfaces, containers or tubing of residues or other materials.

### OUR HEADWORKS

BROEN-LAB UniFlex™ fittings for non-burning 2.0 gases can be delivered with 4 different types of headworks depending on the requirements set by applications with regards to regulation of media flow.

Needle headwork



High flow headwork



Micro flow headwork



1/4-turn headwork



As a standard all BROEN-LAB UniFlex™ PREMIUM fittings for non-burning 2.0 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.

As a standard all BROEN-LAB UniFlex™ PREMIUM fittings for vacuum are delivered with a high flow headwork. If there is a need for high flow of other media than vacuum, or a valve should function as a shut-off, then it is possible to get a fitting with a high flow headwork for 2.0 non-burning gases.

In cases where media flow (2.0 non-burning gases) 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 pages 19-20 in this catalogue.

## BENCH MOUNTED FITTING

### Specifications

The fitting is delivered with an integrated BALLOFIX® ball valve.  
 Handle: Metal, BROEN-LAB POLYCOAT powder coated with media indication according to EN13792  
 Hose nozzle: Metal, fixed (can be unscrewed with Allen key, thread: male G3/8")

#### Non-burning 2.0 gases

Headwork: Needle  
 Opening/closing function: 3 x 360°  
 Max. working pressure: 16 bar / 232 psi

#### Vacuum / High Flow

Headwork: High flow  
 Opening/closing function: 1.5 x 360°  
 Working pressure: -1 bar to 16 bar / -14.5 psi to 232 psi

Allowable test pressure after installation:  
 1.5 x max working pressure without function of the valve

### Materials with media contact

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

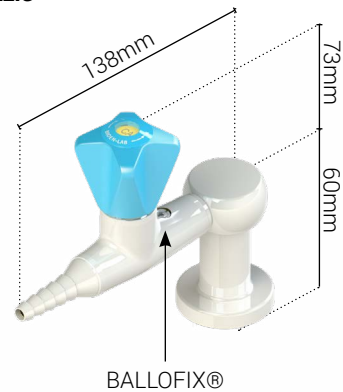
### Ordering information

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 (for 2.0 non-burning gases)
- high flow headwork (for 2.0 non-burning gases)
- alternative hose inlet connection / without a hose
- other inlet options (type, length)

### With fixed nozzle



### With quick release coupling



### Configuration options

**2.0 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 023 10 <b>XX-YY</b>	2532 031 10 <b>XX-YY</b>	2532 027 10 <b>XX-YY</b>	2532 035 10 <b>XX-YY</b>
Quick release nozzle	2532 056 10 <b>XX-YY</b>	2532 079 10 <b>XX-YY</b>	2532 081 10 <b>XX-YY</b>	2532 083 10 <b>XX-YY</b>

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



**21** • Compressed air



**23** • Nitrogen



**24** • Carbon dioxide



**25** • Argon



**26** • Helium

**Vacuum:** Choose outlet connection:

	1-way valve	2-way 90° valve	2-way 180° valve	4-way valve
Fixed nozzle	2532 024 1028 - <b>YY</b>	2532 032 1028 - <b>YY</b>	2532 028 1028 - <b>YY</b>	2532 036 1028 - <b>YY</b>
Quick release nozzle	2532 057 1028 - <b>YY</b>	2532 080 1028 - <b>YY</b>	2532 082 1028 - <b>YY</b>	2532 084 1028 - <b>YY</b>



**28** • Low vacuum (1000 to 1 mbar)

Replace **YY** with the inlet type you need on page 23

## SUSPENDED FITTING WITH 90° VALVES

### Specifications

The fitting is delivered with an integrated BALLOFIX® ball valve.

Handle: Metal, BROEN-LAB POLYCOAT powder coated with media indication according to EN13792

Hose nozzle: Metal, fixed (can be unscrewed with Allen key, thread: male G3/8")

#### Non-burning 2.0 gases

Headwork: Needle

Opening/closing function:  
3 x 360°

Max. working pressure:  
16 bar / 232 psi

#### Vacuum / High Flow

Headwork: High flow

Opening/closing function:  
1.5 x 360°

Working pressure:  
-1 bar to 16 bar /  
-14.5 psi to 232 psi

Allowable test pressure after installation:

1.5 x max working pressure without function of the valve

### Materials with media contact

Metals: Brass

Plastics: PVDF

Sealing: FKM

Lubricant: Perfluoropolyether based

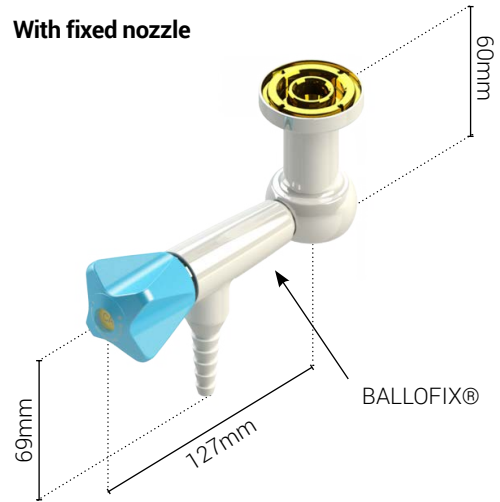
### Ordering information

For standard configuration please refer to the item numbers below.

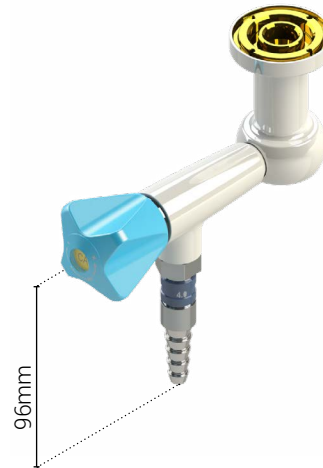
Other options:

- different media
- removable hose nozzle with union nut
- disability-friendly handle (single valve only)
- micro flow headwork (for 2.0 non-burning gases)
- high flow headwork (for 2.0 non-burning gases)
- alternative hose inlet connection / without a hose
- other inlet options (type, length)

With fixed nozzle



With quick release coupling



### Configuration options

**2.0 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 090 10XX - YY	2530 092 10XX - YY	2530 037 10XX - YY	2530 094 10XX - YY
Quick release nozzle	2530 096 10XX - YY	2530 098 10XX - YY	2530 100 10XX - YY	2530 102 10XX - YY

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



**21** • Compressed air



**23** • Nitrogen



**24** • Carbon dioxide



**25** • Argon



**26** • Helium

**Vacuum:** Choose outlet connection:

	1-way valve	2-way 90° valve	2-way 180° valve	4-way valve
Fixed nozzle	2530 091 1028 - YY	2530 093 1028 - YY	2530 039 1028 - YY	2530 095 1028 - YY
Quick release nozzle	2530 097 1028 - YY	2530 099 1028 - YY	2530 101 1028 - YY	2530 103 1028 - YY



**28** • Low vacuum (1000 to 1 mbar)

Replace **YY** with the inlet type you need on page 23

## SUSPENDED FITTING WITH 45° VALVES

### Specifications

The fitting is delivered with an integrated BALLOFIX® ball valve.  
 Handle: Metal, BROEN-LAB POLYCOAT powder coated with media indication according to EN13792  
 Hose nozzle: Metal, fixed (can be unscrewed with Allen key, thread: male G3/8")

#### Non-burning 2.0 gases

Headwork: Needle  
 Opening/closing function: 3 x 360°  
 Max. working pressure: 16 bar / 232 psi

#### Vacuum / High Flow

Headwork: High flow  
 Opening/closing function: 1.5 x 360°  
 Working pressure: -1 bar to 16 bar / -14.5 psi to 232 psi

Allowable test pressure after installation:  
 1.5 x max working pressure without function of the valve

### Materials with media contact

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

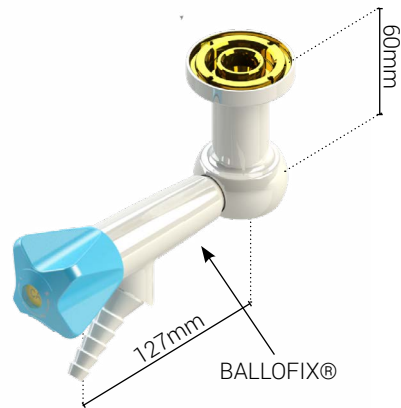
### Ordering information

For standard configuration please refer to the item numbers below.

Other options:

- different media
- removable hose nozzle with union nut
- micro flow headwork (for 2.0 non-burning gases)
- high flow headwork (for 2.0 non-burning gases)
- alternative hose inlet connection / without a hose
- other inlet options (type, length)

### With fixed nozzle



### With quick release coupling



### Configuration options

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



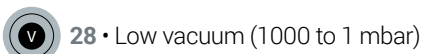
	1-way valve	2-way 90° valve	2-way 180° valve	4-way valve
Fixed nozzle	2530 104 10XX - YY	2530 106 10XX - YY	2530 044 10XX - YY	2530 108 10XX - YY
Quick release nozzle	2530 110 10XX - YY	2530 112 10XX - YY	2530 114 10XX - YY	2530 116 10XX - YY

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



**Vacuum:** Choose outlet connection:

	1-way valve	2-way 90° valve	2-way 180° valve	4-way valve
Fixed nozzle	2530 105 1028 - YY	2530 107 1028 - YY	2530 045 1028 - YY	2530 109 1028 - YY
Quick release nozzle	2530 111 1028 - YY	2530 113 1028 - YY	2530 115 1028 - YY	2530 117 1028 - YY



Replace **YY** with the inlet type you need on page 23



## WALL MOUNTED DOUBLE FITTING WITH 90° VALVES

### Specifications

The fitting is delivered with an integrated BALLOFIX® ball valve.

Handle: Metal, BROEN-LAB POLYCOAT powder coated with media indication according to EN13792

Hose nozzle: Metal, fixed (can be unscrewed with Allen key, thread: male G3/8")

#### Non-burning 2.0 Gases

Headwork: Needle

Opening/closing function:  
3 x 360°

Max. working pressure:  
16 bar / 232 psi

#### Vacuum / High Flow

Headwork: High flow

Opening/closing function:  
1.5 x 360°

Working pressure:  
-1 bar to 16 bar /  
-14.5 psi to 232 psi

Allowable test pressure after installation:

1.5 x max working pressure without function of the valve

### Materials with media contact

Metals: Brass

Plastics: PVDF

Sealing: FKM

Lubricant: Perfluoropolyether based

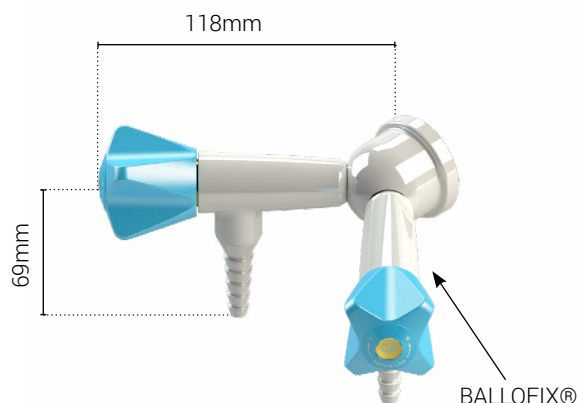
### Ordering information

For standard configuration please refer to the item numbers below.

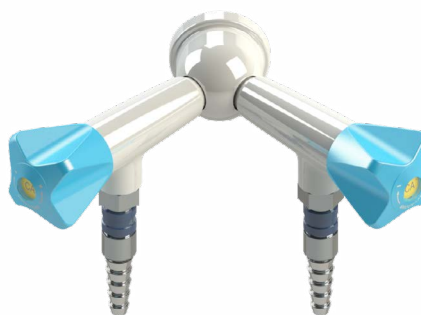
Other options:

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

### With fixed nozzle



### With quick release coupling



### Configuration options

**2.0 Gases:** Choose outlet connection, and media type:

	2-way 90° valve
Fixed nozzle	2530 118 10XX - YY
Quick release nozzle	2530 120 10XX - YY

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



**21** • Compressed air



**23** • Nitrogen



**24** • Carbon dioxide



**25** • Argon



**26** • Helium

**Vacuum:** Choose outlet connection:

	2-way 90° valve
Fixed nozzle	2530 119 1028 - YY
Quick release nozzle	2530 121 1028 - YY



**28** • Low vacuum (1000 to 1 mbar)

Replace **YY** with the inlet type you need on page 23

## WALL MOUNTED DOUBLE FITTING WITH STRAIGHT VALVES

### Specifications

The fitting is delivered with an integrated BALLOFIX® ball valve.  
 Handle: Metal, BROEN-LAB POLYCOAT powder coated with media indication according to EN13792  
 Hose nozzle: Metal, fixed (can be unscrewed with Allen key, thread: male G3/8")

#### Non-burning 2.0 Gases

Headwork: Needle  
 Opening/closing function:  
 3 x 360°  
 Max. working pressure:  
 16 bar / 232 psi

#### Vacuum / High Flow

Headwork: High flow  
 Opening/closing function:  
 1.5 x 360°  
 Working pressure:  
 -1 bar to 16 bar /  
 -14.5 psi to 232 psi

Allowable test pressure after installation:  
 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

For standard configuration please refer to the item numbers below.

Other options:

- different media
- removable hose nozzle with union nut
- micro flow headwork (for 2.0 non-burning gases)
- high flow headwork (for 2.0 non-burning gases)
- alternative hose inlet connection / without a hose
- other inlet options (type, length)

### With fixed nozzle



### With quick release coupling



### Configuration options

**2.0 Gases:** Choose outlet connection, and media type:

	2-way 90° valve
Fixed nozzle	2532 062 10 <b>XX</b> - <b>YY</b>
Quick release nozzle	2532 085 10 <b>XX</b> - <b>YY</b>

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



**Vacuum:** Choose outlet connection:

	2-way 90° valve
Fixed nozzle	2532 061 1028 - <b>YY</b>
Quick release nozzle	2532 086 1028 - <b>YY</b>

**V** 28 • Low vacuum (1000 to 1 mbar)

Replace **YY** with the inlet type you need on page 23

## WALL MOUNTED FITTING WITH 90° VALVES FOR EXPOSED PIPING

### Specifications

The fitting is delivered with an integrated BALLOFIX® ball valve.  
 Handle: Metal, BROEN-LAB POLYCOAT powder coated with media indication according to EN13792  
 Hose nozzle: Metal, fixed (can be unscrewed with Allen key, thread: male G3/8")

#### Non-burning 2.0 gases

Headwork: Needle  
 Opening/closing function: 3 x 360°  
 Max. working pressure: 16 bar / 232 psi

#### Vacuum / High Flow

Headwork: High flow  
 Opening/closing function: 1.5 x 360°  
 Working pressure: -1 bar to 16 bar / -14.5 psi to 232 psi

Allowable test pressure after installation:  
 1.5 x max working pressure without function of the valve

### Materials with media contact

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

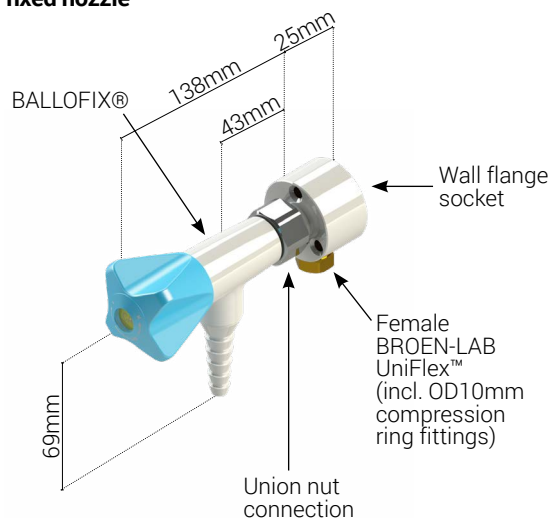
### Ordering information

For standard configuration please refer to the item numbers below.

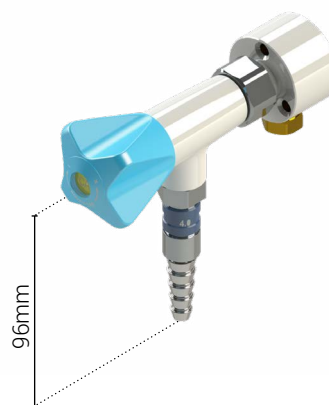
Other options:

- different media
- removable hose nozzle with union nut
- disability-friendly handle
- micro flow headwork (for 2.0 non-burning gases)
- high flow headwork (for 2.0 non-burning gases)
- wall flange socket for built-in installation

### With fixed nozzle



### With quick release coupling



### Configuration options

**2.0 Gases:** Choose outlet connection, and media type:

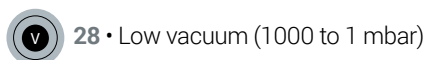
	1-way valve
Fixed nozzle	2530 128 10XX - T
Quick release nozzle	2530 134 10XX - T

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



**Vacuum:** Choose outlet connection:

	1-way valve
Fixed nozzle	2530 069 1028 - T
Quick release nozzle	2530 135 1028 - T



## WALL MOUNTED FITTING WITH STRAIGHT VALVES FOR EXPOSED PIPING

### Specifications

The fitting is delivered with an integrated BALLOFIX® ball valve.  
 Handle: Metal, BROEN-LAB POLYCOAT powder coated with media indication according to EN13792  
 Hose nozzle: Metal, fixed (can be unscrewed with Allen key, thread: male G3/8")

#### Non-burning 2.0 gases

Headwork: Needle  
 Opening/closing function: 3 x 360°  
 Max. working pressure: 16 bar / 232 psi

#### Vacuum / High Flow

Headwork: High flow  
 Opening/closing function: 1.5 x 360°  
 Working pressure: -1 bar to 16 bar / -14.5 psi to 232 psi

Allowable test pressure after installation:  
 1.5 x max working pressure without function of the valve

### Materials with media contact

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

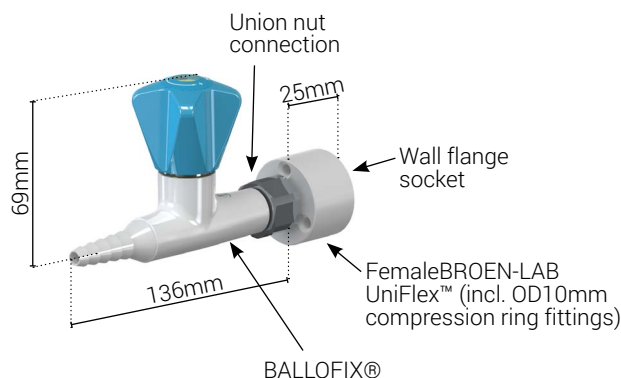
### Ordering information

For standard configuration please refer to the item numbers below.

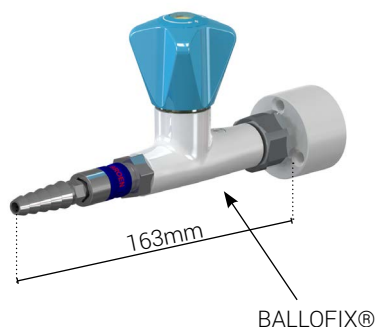
Other options:

- different media
- removable hose nozzle with union nut
- disability-friendly handle
- micro flow headwork (for 2.0 non-burning gases)
- high flow headwork (for 2.0 non-burning gases)
- wall flange socket for built-in installation

### With fixed nozzle



### With quick release coupling



### Configuration options

**2.0 Gases:** Choose outlet connection, and media type:

	1-way valve
Fixed nozzle	2532 090 10XX - T
Quick release nozzle	2532 092 10XX - T

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



**21** • Compressed air



**23** • Nitrogen



**24** • Carbon dioxide



**25** • Argon



**26** • Helium

**Vacuum:** Choose outlet connection:

	1-way valve
Fixed nozzle	2532 074 1028 - T
Quick release nozzle	2532 093 1028 - T



**28** • Low vacuum (1000 to 1 mbar)

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

### Specifications

The fitting is delivered with an integrated BALLOFIX® ball valve.

Handle: Metal, BROEN-LAB POLYCOAT powder coated with media indication according to EN13792

Hose nozzle: Metal, fixed (can be unscrewed with Allen key, thread: male G3/8") or quick release coupling (hexagon coded)

#### Non-burning 2.0 Gases

Headwork: Needle

Opening/closing function:  
3 x 360°

Max. working pressure:  
16 bar / 232 psi

#### Vacuum / High Flow

Headwork: High flow

Opening/closing function:  
1.5 x 360°

Working pressure:  
-1 bar to 16 bar /  
-14.5 psi to 232 psi

Allowable test pressure after installation:

1.5 x max working pressure without function of the valve

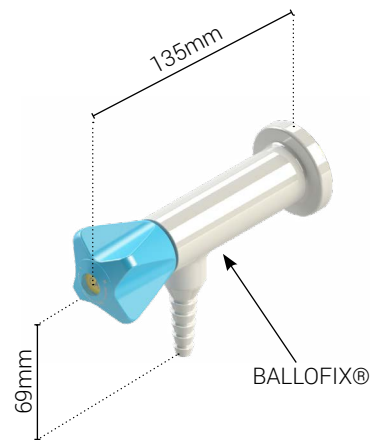
### Materials with media contact

Metals: Brass

Plastics: PVDF

Sealing: FKM

Lubricant: Perfluoropolyether based



### Ordering information

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 (for 2.0 non-burning gases)
- high flow headwork (for 2.0 non-burning gases)
- alternative hose inlet connection / without a hose
- other inlet options (type, length)

### Configuration options

**2.0 Gases:** Choose outlet connection and media type:

	1-way valve
Fixed nozzle	2530 299 10 <b>XX</b> - <b>YY</b>
Quick release nozzle	2530 302 10 <b>XX</b> - <b>YY</b>

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



**21** • Compressed air



**23** • Nitrogen



**24** • Carbon dioxide



**25** • Argon



**26** • Helium

**Vacuum:** Choose outlet connection:

	1-way valve
Fixed nozzle	2530 300 1028 - <b>YY</b>
Quick release nozzle	2530 303 1028 - <b>YY</b>



**28** • Low vacuum (1000 to 1 mbar)

Replace **YY** with the inlet type you need on page 23

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

### Specifications

The fitting is delivered with an integrated BALLOFIX® ball valve.

Handle: Metal, BROEN-LAB POLYCOAT powder coated with media indication according to EN13792

Hose nozzle: Metal, fixed (can be unscrewed with Allen key, thread: male G3/8") or quick release coupling (hexagon coded)

#### Non-burning 2.0 Gases

Headwork: Needle

Opening/closing function: 3 x 360°

Max. working pressure: 16 bar / 232 psi

#### Vacuum / High Flow

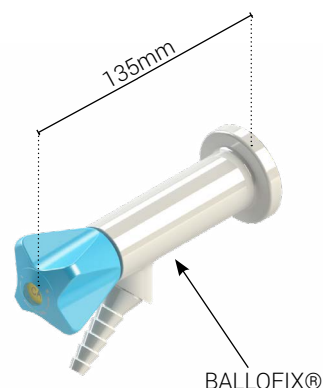
Headwork: High flow

Opening/closing function: 1.5 x 360°

Working pressure: -1 bar to 16 bar / -14.5 psi to 232 psi

Allowable test pressure after installation:

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

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 (for 2.0 non-burning gases)
- high flow headwork (for 2.0 non-burning gases)
- alternative hose inlet connection / without a hose
- other inlet options (type, length)

### Configuration options

**2.0 Gases:** Choose outlet connection and media type:

	1-way valve
Fixed nozzle	2530 353 10 <b>XX</b> - <b>YY</b>
Quick release nozzle	2530 355 10 <b>XX</b> - <b>YY</b>

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



**21** • Compressed air



**23** • Nitrogen



**24** • Carbon dioxide



**25** • Argon



**26** • Helium

**Vacuum:** Choose outlet connection:

	1-way valve
Fixed nozzle	2530 354 1028 - <b>YY</b>
Quick release nozzle	2530 356 1028 - <b>YY</b>



**28** • Low vacuum (1000 to 1 mbar)

Replace **YY** with the inlet type you need on page 23

## SUSPENDED OR WALL MOUNTED STRAIGHT FITTING WITH LEAD-IN

### Specifications

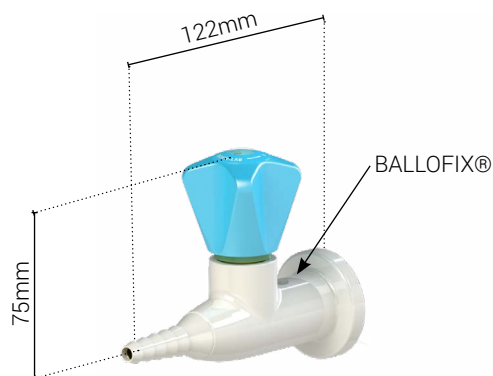
The fitting is delivered with an integrated BALLOFIX® ball valve.  
 Handle: Metal, BROEN-LAB POLYCOAT powder coated with media indication according to EN13792  
 Hose nozzle: Metal, fixed (can be unscrewed with Allen key, thread: male G3/8") or quick release coupling (hexagon coded)

#### Non-burning 2.0 Gases

Headwork: Needle  
 Opening/closing function:  
 3 x 360°  
 Max. working pressure:  
 16 bar / 232 psi

#### Vacuum / High Flow

Headwork: High flow  
 Opening/closing function:  
 1.5 x 360°  
 Working pressure:  
 -1 bar to 16 bar /  
 -14.5 psi to 232 psi



Allowable test pressure after installation:  
 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

For standard configuration please refer to the item numbers below.

Other options:

- different media
- removable hose nozzle with union nut
- micro flow headwork (for 2.0 non-burning gases)
- high flow headwork (for 2.0 non-burning gases)
- alternative hose inlet connection / without a hose
- other inlet options (type, length)

### Configuration options

**2.0 Gases:** Choose outlet connection and media type:

	1-way valve
Fixed nozzle	2532 164 10 <b>XX</b> - <b>YY</b>
Quick release nozzle	2532 185 10 <b>XX</b> - <b>YY</b>

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



**Vacuum:** Choose outlet connection:

	1-way valve
Fixed nozzle	2532 165 1028 - <b>YY</b>
Quick release nozzle	2532 193 1028 - <b>YY</b>



Replace **YY** with the inlet type you need on page 23

## FITTINGS WITH PRESSURE REGULATOR

### Specifications

Fittings with pressure regulator may only be used for the following non-burning 2.0 (99% pure) gases:  
Compressed Air (CA), Nitrogen (N<sub>2</sub>), Carbon Dioxide (CO<sub>2</sub>) and Argon (Ar).

Not recommended for He.  
May NOT be used for Oxygen!

Handle on valves: Metal, BROEN-LAB POLYCOAT powder coated with media indication according to EN13792  
Handle on regulator: Polypropylene

Max. working pressure: 10 bar / 145 psi

Allowable test pressure after installation:  
1.5 x max working pressure without function of the valve

#### Shut-off valve

Headwork: High flow  
Opening/closing function:  
1.5 x 360°

#### Needle valve

Headwork: High flow  
Opening/closing function:  
3 x 360°

### Materials with media contact

Metals: Brass, zinc

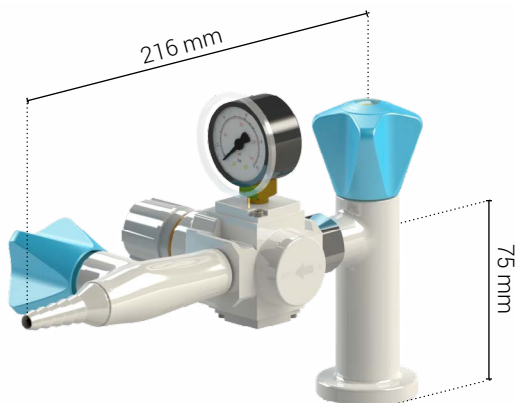
Plastics: PVDF, POM

Sealings:

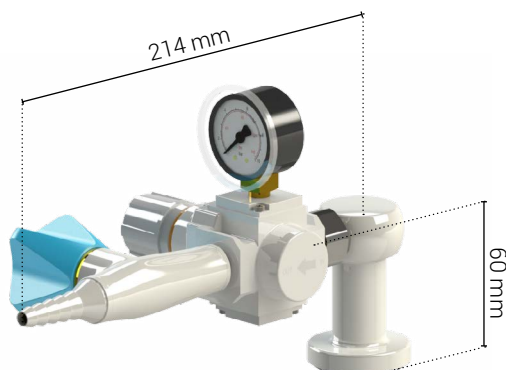
- FKM (lubricated with perfluoropolyether based lubricant)

- NBR (lubricated with mineral oil based lubricant)

### Shut-off valve, regulator and needle valve



### Regulator and needle valve



### Configuration options

**2.0 Gases:** Choose outlet connection, and media type:

Shut-off valve, regulator and needle valve	2512 011 10XX - YY
Regulator and needle valve	2512 007 10XX - YY

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



**21** • Compressed air



**23** • Nitrogen



**24** • Carbon dioxide



**25** • Argon

Replace **YY** with the inlet type you need on page 23



## BROEN-LAB UNIFLEX™ HOSES FOR NON-BURNING 2.0 GASES AND VACUUM

BROEN-LAB UniFlex™ flexible hoses



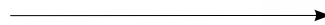
BROEN-LAB LAB offers BROEN-LAB UniFlex™ hoses as an easy way to make the installation in the laboratory where safety and efficiency are required. BROEN-LAB UniFlex™ hoses are the ideal solution where there is a higher requirement for flexibility. Installation with flexible hoses saves you time and labor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

BROEN-LAB UniFlex™ hoses for non-burning 2.0 gases and vacuum are manufactured of soft cross-linked polyethylene (SPX). From the outside the hose is secured by 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	SPX
<b>Factors*</b>	<b>93T</b>
<b>Inner hose material with media contact</b>	SPX
<b>Outer hose material / braiding</b>	Stainless Steel AISI 304
<b>Sealing material</b>	FKM
<b>Inside diameter</b>	8.2 mm
<b>Outside diameter</b>	12 mm
<b>Max. working pressure</b>	16 bar
<b>Max. working temperature</b>	90°C
<b>Min. bending radius (inner)</b>	40 mm
<b>Leakage rate</b>	-
<b>UV resistance</b>	++
<b>Range of connections</b>	+++

# 93T - BROEN-LAB UNIFLEX™ HOSES FOR NON-BURNING 2.0 GASES/VACUUM

## INLET CONNECTIONS 93 T XX XX XXXX

61	3/8" NPT swivel connection	
36	Male G1/4" fixed connection	
32	Male G3/8" fixed connection	
31	Male G1/2" fixed connection	
34	3/8" NPT fixed connection	
35	3/8" NPT Swivel connection	
46	90° female G3/8" Union nut connection	
41	Female G3/8" union nut connection	
40	Female G1/2" union nut connection	
45	90° female G1/2" union nut connection	
09	OD3/8" connection for compression fittings	
10	OD10 mm connection for compression fittings	
12	OD12 mm connection for compression fittings	
13	OD1/2" connection for compression fittings	
15	OD15 mm connection for compression fittings	
65	OD15 mm connection for press fittings	
20	Straight BROEN-LAB UniFlex™ connection with FKM O-ring	
25	45° BROEN-LAB UniFlex™ connection with FKM O-ring	
30	90° BROEN-LAB UniFlex™ connection with FKM O-ring	

## OUTLET CONNECTIONS 93 T XX XX XXXX

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

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

### SPECIFICATIONS

Inner hose material: SPX (soft pex)  
 Braiding: Stainless Steel with one green stripe  
 Materials with media contact: PEX, brass, FKM and perfluoropolyether based lubricant  
 Inside diameter: 8.2 mm  
 Outside diameter: 12 mm  
 Max. working pressure: 16 bar  
 Max. working temperature: 90°C  
 Bending radius (inner): ≥ 40 mm  
 Min. length with connections: 160 mm

## LENGTH 93 T XX XX XXXX

SPX hose with braiding in Stainless Steel

Marking for technical gas 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



**93T12201200**

## TECHNICAL INFORMATION

### NEEDLE HEADWORK

#### Specifications

BROEN-LAB UniFlex™ fittings for non-burning 2.0 gases are as a standard delivered with needle headwork for fine regulation of media flow.

Opening/closing function: 3 x 360° turn

Media: Non-burning 2.0 (99% clean) gases

Max. working pressure: 16 bar / 232 psi

Test pressure: 1.5 x working pressure

#### Materials with media contact

Metals: Brass

Plastics: PVDF

Sealing: FKM

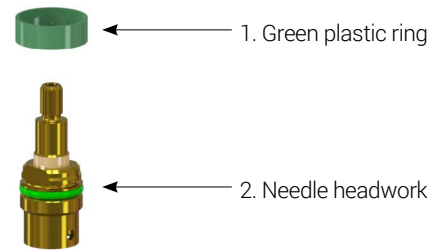
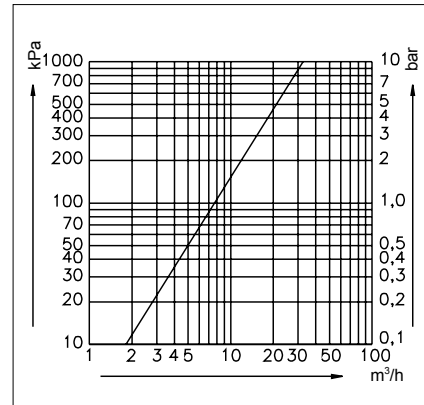
Lubricant: Perfluoropolyether based

#### Ordering information

1. Green plastic ring • No. 0255 035-5168

2. Needle headwork • No. 0255 7300

#### Flow Chart



## TECHNICAL INFORMATION

### HIGH FLOW HEADWORK

#### Specifications

BROEN-LAB UniFlex™ fittings for vacuum are as a standard delivered with a high flow headwork. This headwork ensures high flow of media and can also be used for other non-burning 2.0 gases.

Opening/closing function: 1.5 x 360° turn

Media: Vacuum and non-burning 2.0 (99% clean) gases

Working pressure: -1 to 16 bar / -14.5 to 232 psi

Test pressure: 1.5 x working pressure

#### Materials with media contact

Metals: Brass

Plastics: PVDF

Sealing: FKM

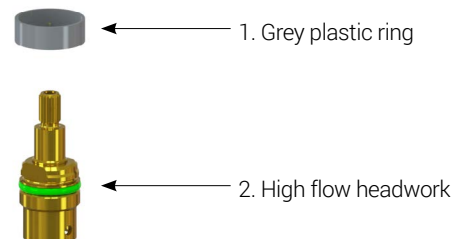
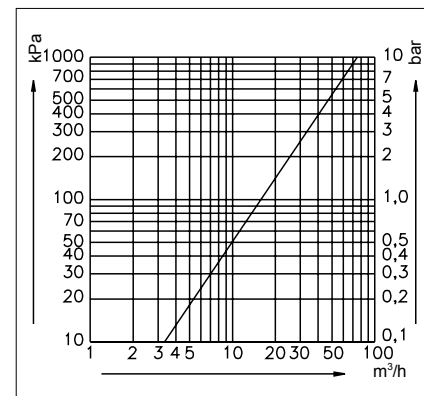
Lubricant: Perfluoropolyether based

#### Ordering information

1. Grey plastic ring • No. 0255 035-2696

2. High flow headwork • No. 0255 6300

#### Flow Chart



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## TECHNICAL INFORMATION

### MICRO FLOW HEADWORK

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#### 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.

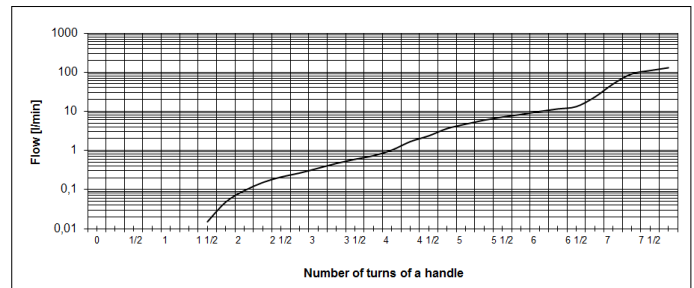
Opening/closing function: 7.5 x 360° turn

Media: Non-burning 2.0 (99% clean) gases

Max. working pressure: 16 bar / 232 psi

Test pressure: 1.5 x working pressure

#### Flow Chart



#### Materials with media contact

Metals: Brass

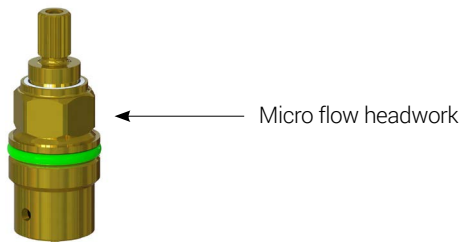
Plastics: PVDF

Sealing: FKM

Lubricant: Perfluoropolyether based

#### Ordering information

Micro flow headwork • No. 19154400



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## TECHNICAL INFORMATION

### 1/4-TURN HEADWORK

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#### Specifications

BROEN-LAB UniFlex™ fittings for non-burning 2.0 gases and vacuum can also be delivered with a 1/4-turn headwork (also recommended for disability friendly handle)

Opening/closing function: 90° turn

Media: Vacuum and non-burning 2.0 (99% clean) gases

Working pressure: -1 to 8 bar / -14.5 to 116 psi

Test pressure: 1.5 x working pressure

#### Materials with media contact

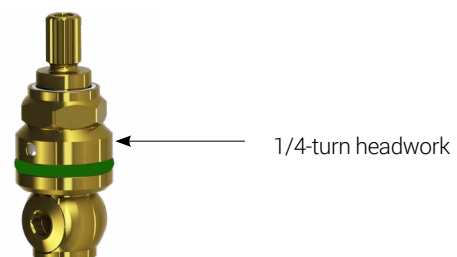
Metals: Brass

Sealing: FKM

Lubricant: Perfluoropolyether based

#### Ordering information

1/4-turn headwork • No. 19174100

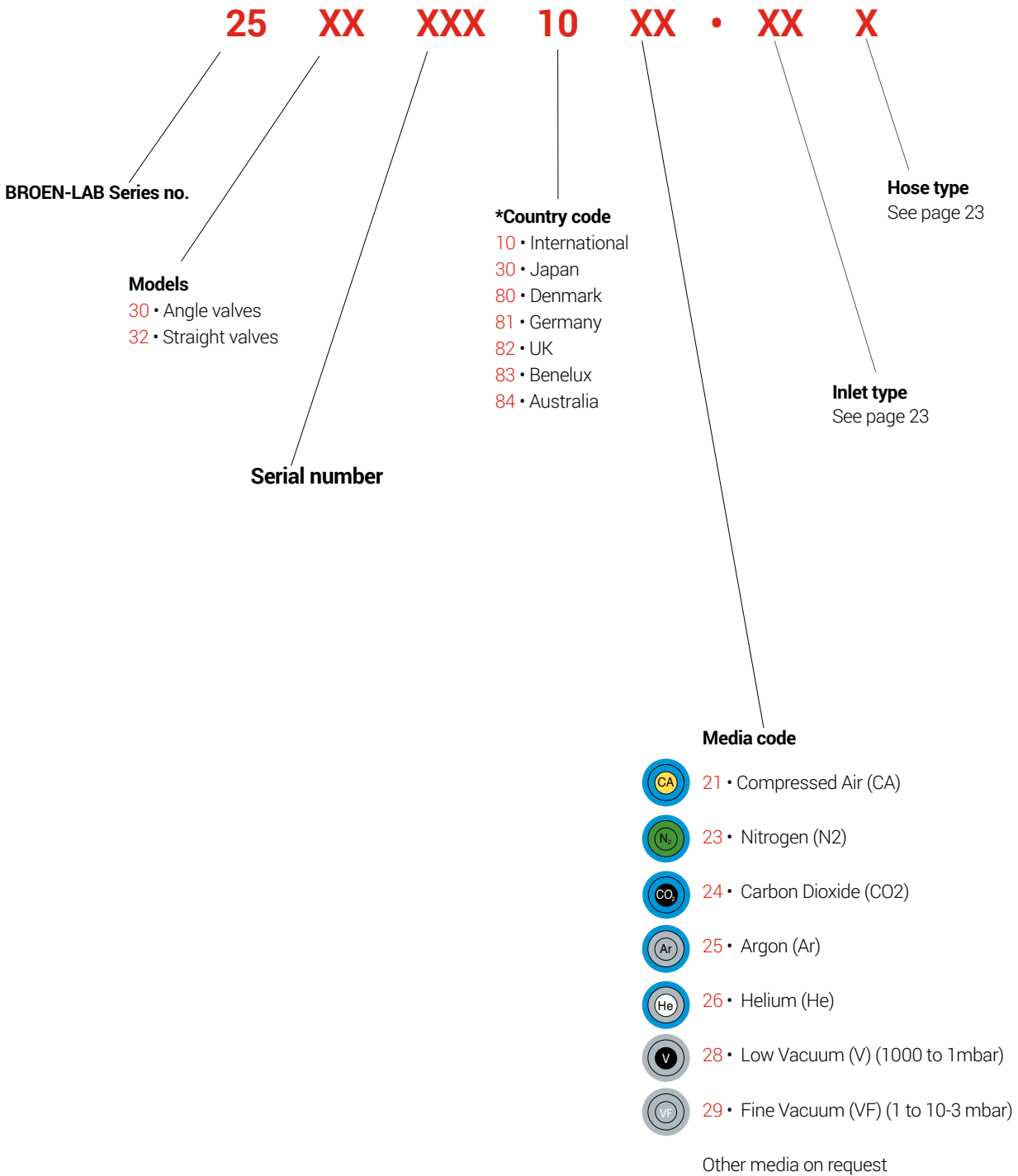


## ACCESSORIES

Illustration	Description	BROEN-LAB item no.
	Adaptor for removable nozzle 3/8 to G1/2"	2539 043 1021
	Removable metal nozzle G1/2"	2539 008 1021
	Fixed metal nozzle 3/8	2539 042 1021
	Quick release coupling (hexagon coded) Coupling unit Nozzle unit	96C0043 96C0042
	Mounting set for G1/2" connection Mounting set for M30x1.5 connection	19 141 000 19 190 000
	G1/2" inlet with female BROEN-LAB UniFlex™ connection (incl. o-ring)  L = 30mm L = 60mm L = 90mm	15 504 33T      Code -05 15 504 12T      Code -14 15 504 46T      Code -18
	Threaded inlet pipe M30x1.5  L = 30mm L = 60mm L = 90mm	19 190 03      Code -50 19 190 02      Code -52 19 190 04      Code -54
	Wall flange socket (WFS) (for exposed piping)	02 101 30G
	Wall flange socket (WFS) (for built-in installation)	02 101 31
	Cover flange for 02 101 310	14 923 04G
	Metal handle with media indication according to EN 13792	19 160 149 10XX 19 160 149 10XX  Replace XX/XX with the media on page 22

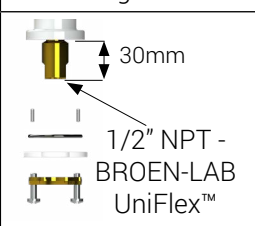
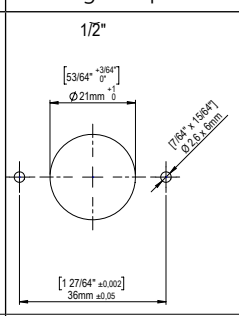
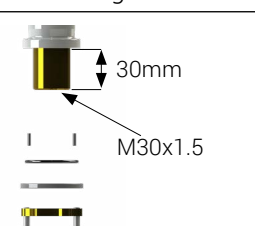
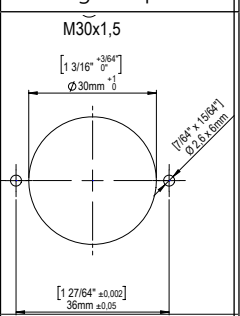
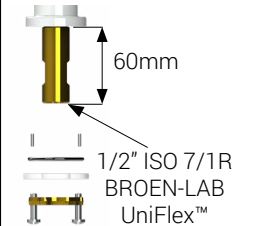
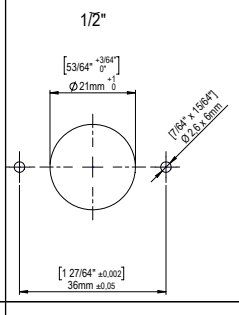
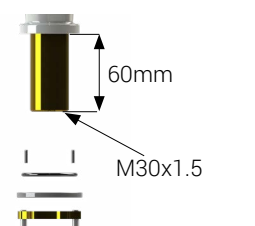
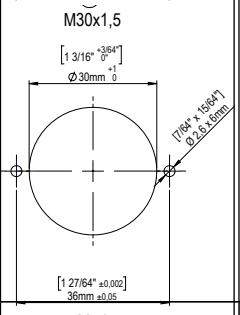
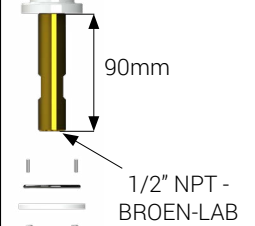
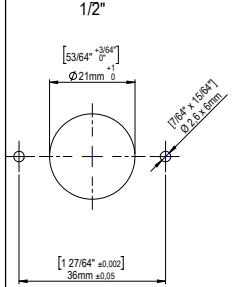
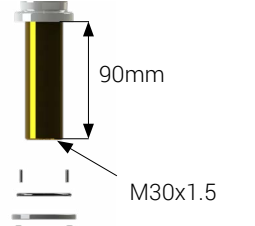
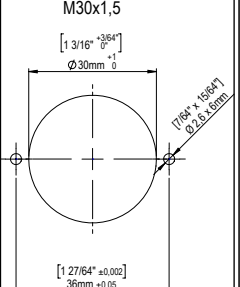
## ORDERING INFORMATION

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	 <p>30mm 1/2" NPT - BROEN-LAB UniFlex™</p>	 <p>1/2" [53/64<sup>+</sup> -3/64<sup>-</sup>] Ø21mm<sup>0</sup> [1 27/64<sup>+</sup> ±0.002] 36mm ±0.05 17/64<sup>+</sup> ±0.004<sup>+</sup> Ø 2.5 x 36mm</p>	-50	 <p>30mm M30x1.5</p>	 <p>M30x1,5 [1 3/16<sup>+</sup> -3/64<sup>-</sup>] Ø30mm<sup>0</sup> [1 27/64<sup>+</sup> ±0.002] 36mm ±0.05 17/64<sup>+</sup> ±0.004<sup>+</sup> Ø 2.5 x 36mm</p>
-14	 <p>60mm 1/2" ISO 7/1R BROEN-LAB UniFlex™</p>	 <p>1/2" [53/64<sup>+</sup> -3/64<sup>-</sup>] Ø21mm<sup>0</sup> [1 27/64<sup>+</sup> ±0.002] 36mm ±0.05 17/64<sup>+</sup> ±0.004<sup>+</sup> Ø 2.5 x 36mm</p>	-52	 <p>60mm M30x1.5</p>	 <p>M30x1,5 [1 3/16<sup>+</sup> -3/64<sup>-</sup>] Ø30mm<sup>0</sup> [1 27/64<sup>+</sup> ±0.002] 36mm ±0.05 17/64<sup>+</sup> ±0.004<sup>+</sup> Ø 2.5 x 36mm</p>
-18	 <p>90mm 1/2" NPT - BROEN-LAB UniFlex™</p>	 <p>1/2" [53/64<sup>+</sup> -3/64<sup>-</sup>] Ø21mm<sup>0</sup> [1 27/64<sup>+</sup> ±0.002] 36mm ±0.05 17/64<sup>+</sup> ±0.004<sup>+</sup> Ø 2.5 x 36mm</p>	-54	 <p>90mm M30x1.5</p>	 <p>M30x1,5 [1 3/16<sup>+</sup> -3/64<sup>-</sup>] Ø30mm<sup>0</sup> [1 27/64<sup>+</sup> ±0.002] 36mm ±0.05 17/64<sup>+</sup> ±0.004<sup>+</sup> Ø 2.5 x 36mm</p>



No pipe/hose  
No code

OD 10 mm  
Code "B"



CU-pipes  
Code "C"



G3/8" Union nut  
Code "D"



G 1/2" Union nut  
Code "E"



OD 15 mm  
Code "H"

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.

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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.