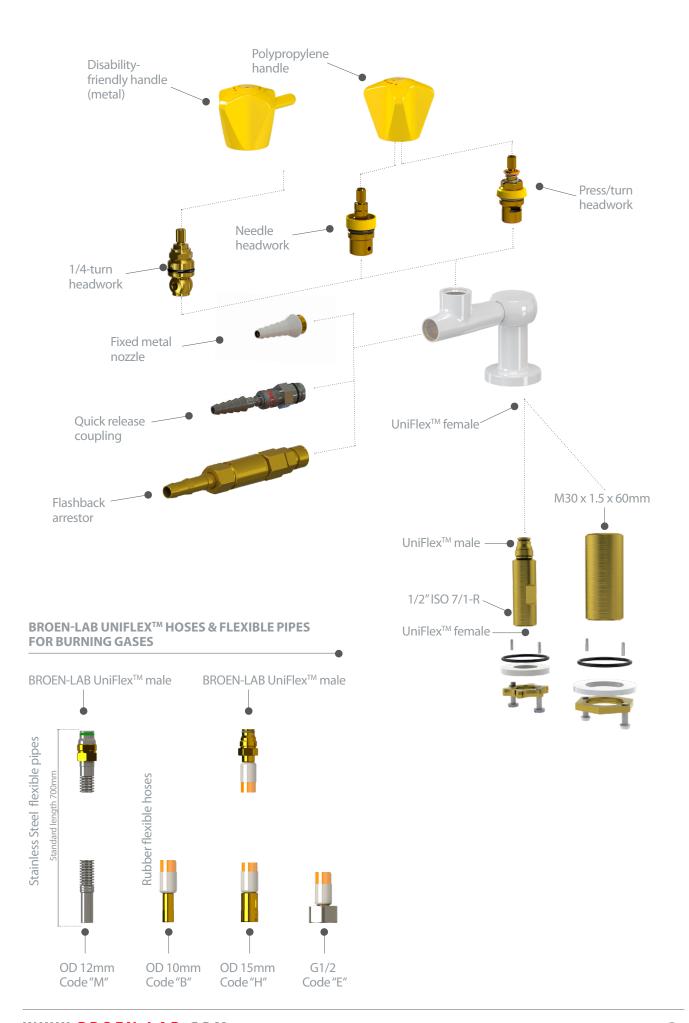


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THIS IS BROEN-LAB UNIFLEX™

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 UniFlexTM fittings for burning gases 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 POLY-COAT 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 having media indication according to EN13792. Ceramic press/turn safety headwork prevents unintentional opening of the valve.

All BROEN-LAB UniFlex™ fittings for burning gases are delivered with a fixed metal nozzle or a quick release coupling for easy and immediate connection and safe disconnection.

THIS IS BROEN-LAB UNIFLEX™

BROEN-LAB UniFlexTM is a unique and patented connection, which allows customers to choose from various connection methods, such as hoses, Cu, PEX of 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).

BROEN-LAB UNIFLEX™ INTERNATIONAL APPROVALS

BROEN-LAB UniFlex™ fittings for burning gases and flexible connections for hoses and Cu-pipes are approved by leading gas institutes in UK, Germany, Holland and Denmark.

More approvals are pending.

Please refer to page 19 for ordering information.



WHAT IS BURNING GAS?

Burning or flammable gases are gases that burn or explode in presence of air or oxygen.

BROEN-LAB UniFlex[™] fittings for burning gases can be used for natural gas (G), liquefied petroleum gas (LPG) as well as low pressure bottle gases such as:

- propane
- butane
- methane
- acetylene
- hydrogen

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

- laboratory and instrumentation
- chemical and petrochemical industry
- semiconductor industry
- welding, etc.

Please always refer to local regulations when installing the products for burning gases!

OUR HEADWORKS

BROEN-LAB UniFlexTM fittings for burning gases can be delivered with 3 different types of headworks depending on the requirements set by applications with regards to safety and/or regulation of media flow.



As standard all BROEN-LAB UniFlexTM fittings for burning gases are delivered with a ceramic press/turn safety headwork with 90° opening/closing function, which prevents unintentional opening of the valve.

If there is a need for fine regulation of media flow then it is possible to get a fitting with a needle headwork that has 3x360° opening/closing function.

If there is a need for disability friendly and safe operation that we recommend use of 1/4-turn headwork.

For more information about BROEN-LAB headworks and technical details please refer to page 17 in this catalogue.

FLASHBACK ARRESTOR

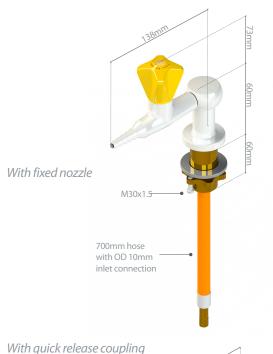
Flashback arrestor ensures reliable protection against dangerous gas backflow and flashback. It is recommended to use a flashback arrestor for burning gases, such as Acetylene, Town gas, Methane, LPG, etc.

Please always refer to local regulations when installing the products for burning gases.

Please contact your BROEN-LAB sales representative for ordering information.

HOSES & FLEXIBLE PIPES

BROEN-LAB UniFlex[™] fittings for burning gases can be delivered either with stainless steel flexible pipes or rubber hoses depending on the type of application and customer requirements. For more information about hoses please refer to pages 14-16 in this catalogue.



with quick release coupling



Model: with fixed nozzle

SPECIFICATIONS

Handle: Polypropylene with media indication according to

EN13792

Hose nozzle: Metal, fixed
Headwork: Ceramic, press/turn
Opening/closing function: 90°
Max. working pressure: 7 bar / 102 psi
Allowable test pressure after installation:

10 bar without function of the valve

MATERIALS WITH MEDIA CONTACT

Metals: Brass, NBR (rubber hose)

Sealing: Nitrile (NBR)

Lubricant: Mineral oil based **Ceramics:** Al₂O₃ 96%

ORDERING INFORMATION

For standard configuration please refer to the item numbers below.

Other options:

- different media
- flashback arrestor
- needle or 1/4-turn headwork
- disability-friendly handle (for needle and 1/4-turn headworks only)
- alternative hose type and inlet connection
- other inlet options (type, length)
- national approvals





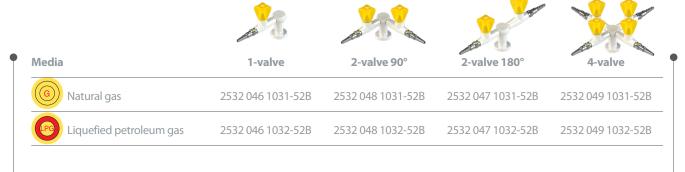




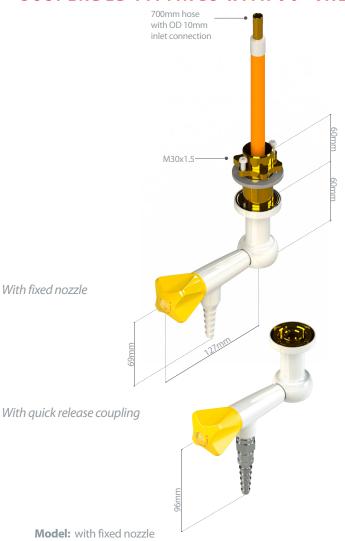
Media	1-valve	2-valve 90°	2-valve 180°	4-valve
(a) Natural gas	2532 006 1031-52B	2532 019 1031-52B	2532 012 1031-52B	2532 045 1031-52B
Liquefied petroleum gas	2532 006 1032-52B	2532 019 1032-52B	2532 012 1032-52B	2532 045 1032-52B

Fittings are delivered with a 700mm rubber hose with OD10mm inlet conneciton. For other options please refer to page 19 or contact your local BROEN-LAB representative.

Model: with quick release coupling



SUSPENDED FITTINGS WITH 90° VALVES



SPECIFICATIONS

Handle: Polypropylene with media indication according to

EN13792

Hose nozzle: Metal, fixed Headwork: Ceramic, press/turn Opening/closing function: 90°

Max. working pressure: 7 bar / 102 psi Allowable test pressure after installation:

10 bar without function of the valve

MATERIALS WITH MEDIA CONTACT

Metals: Brass, NBR (rubber hose)

Sealing: Nitrile (NBR)

Lubricant: Mineral oil based

Ceramics: Al₂O₃ 96%

ORDERING INFORMATION

For standard configuration please refer to the item numbers below.

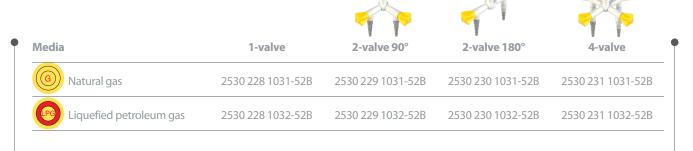
Other options:

- different media
- flashback arrestor
- needle or 1/4-turn headwork
- alternative hose type and inlet connection
- other inlet options (type, length)
- national approvals

		Title of the second		
Media	1-valve	2-valve 90°	2-valve 180°	4-valve
(a) Natural gas	2530 076 1031-52B	2530 061 1031-52B	2530 071 1031-52B	2530 227 1031-52B
Liquefied petroleum gas	2530 076 1032-52B	2530 061 1032-52B	2530 071 1032-52B	2530 227 1032-52B

Fittings are delivered with a 700mm rubber hose with OD10mm inlet conneciton. For other options please refer to page 19 or contact your local BROEN-LAB representative.

Model: with quick release coupling



SUSPENDED FITTINGS WITH 45° VALVES



SPECIFICATIONS

Handle: Polypropylene with media indication according to

EN13792

Hose nozzle: Metal, fixed **Headwork:** Ceramic, press/turn **Opening/closing function:** 90°

Max. working pressure: 7 bar / 102 psi Allowable test pressure after installation:

10 bar without function of the valve

MATERIALS WITH MEDIA CONTACT

Metals: Brass, NBR (rubber hose)

Sealing: Nitrile (NBR) **Lubricant:** Mineral oil based **Ceramics:** Al₂O₃ 96%

ORDERING INFORMATION

For standard configuration please refer to the item numbers below.

Other options:

- different media
- flashback arrestor
- needle or 1/4-turn headwork
- alternative hose type and inlet connection
- other inlet options (type, length)
- national approvals

Media	1-valve	2-valve 90°	2-valve 180°	4-valve
Natural gas	2530 220 1031-52B	2530 221 1031-52B	2530 168 1031-52B	2530 222 1031-52B
Liquefied petroleum gas	2530 220 1032-52B	2530 221 1032-52B	2530 168 1032-52B	2530 222 1032-52B

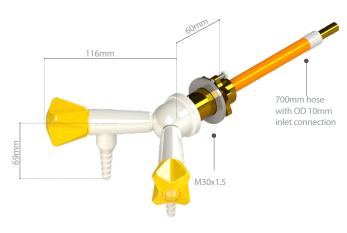
Fittings are delivered with a 700mm rubber hose with OD10mm inlet conneciton. For other options please refer to page 19 or contact your local BROEN-LAB representative.

Model: with quick release coupling

25 1031-52B 2530 226 1031-52B
25 1032-52B 2530 226 1032-52B



With fixed nozzle



With quick release coupling



SPECIFICATIONS

Handle: Polypropylene with media indication according to EN13792

Hose nozzle: Metal, fixed
Headwork: Ceramic, press/turn
Opening/closing function: 90°
Max. working pressure: 7 bar / 102 psi
Allowable test pressure after installation:
10 bar without function of the valve

MATERIALS WITH MEDIA CONTACT

Metals: Brass, NBR (rubber hose)

Sealing: Nitrile (NBR) **Lubricant:** Mineral oil based **Ceramics:** Al,O, 96%

ORDERING INFORMATION

For standard configuration please refer to the item numbers below.

Other options:

- different media
- flashback arrestor
- needle or 1/4-turn headwork
- disability-friendly handle (for needle and 1/4-turn headworks only)
- alternative hose type and inlet connection
- other inlet options (type, length)
- national approvals

Models



DOUBLE WALL FITTINGS WITH STRAIGHT VALVES

With fixed nozzle



With quick release coupling



SPECIFICATIONS

Handle: Polypropylene with media indication according to

EN13792

Hose nozzle: Metal, fixed Headwork: Ceramic, press/turn Opening/closing function: 90°

Max. working pressure: 7 bar / 102 psi Allowable test pressure after installation:

10 bar without function of the valve

MATERIALS WITH MEDIA CONTACT

Metals: Brass, NBR (rubber hose)

Sealing: Nitrile (NBR) **Lubricant:** Mineral oil based **Ceramics:** Al₂O₃ 96%

ORDERING INFORMATION

For standard configuration please refer to the item numbers below.

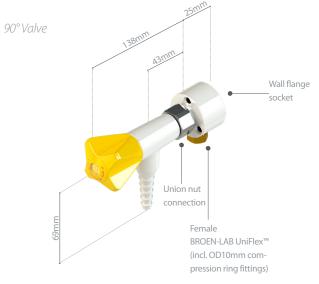
Other options:

- different media
- flashback arrestor
- needle or 1/4-turn headwork
- alternative hose type and inlet connection
- other inlet options (type, length)
- national approvals

Models



WALL MOUNTED FITTINGS FOR EXPOSED PIPING





SPECIFICATIONS

Handle: Polypropylene with media indication according to

EN13792

Hose nozzle: Metal, fixed Headwork: Ceramic, press/turn Opening/closing function: 90°

Max. working pressure: 7 bar / 102 psi **Allowable test pressure after installation:**

10 bar without function of the valve

MATERIALS WITH MEDIA CONTACT

Metals: Brass

Sealing: Nitrile (NBR)

Lubricant: Mineral oil based **Ceramics:** Al₂O₂ 96%

ORDERING INFORMATION

For standard configuration please refer to the item numbers below.

Other options:

- different media
- flashback arrestor
- needle or 1/4-turn headwork
- disability-friendly handle (for needle and 1/4-turn headworks only)
- other inlet options (compression ring fittings, flexible SS pipe / rubber hose)
- wall flange socket for built-in installation
- national approvals





2520 247 4024 T
2530 217 1031-T
2530 217 1032-T

Delivered with wall flange socket and compression ring fitting for OD10mm Cu-pipe For other options please refer to pages 19 or contact your local BROEN-LAB representative.

Models: straight valve

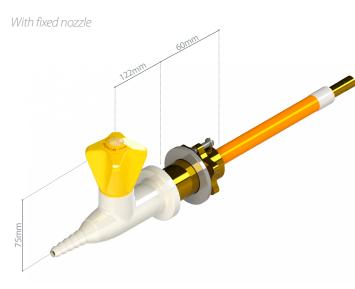
Models: 90° valve



Media	with fixed nozzle	with quick release coupling	
Natural gas	2532 125 1031-T	2532 126 1031-T	
Liquefied petroleum gas	2532 125 1032-T	2532 126 1032-T	

Delivered with wall flange socket and compression ring fitting for OD10mm Cu-pipe For other options please refer to pages 19 or contact your local BROEN-LAB representative.

SUSPENDED/WALL MOUNTED STRAIGHT FITTINGS WITH LEAD-IN



With quick release coupling



SPECIFICATIONS

Handle: Polypropylene with media indication according to EN13792

Hose nozzle: Metal, fixed **Headwork:** Ceramic, press/turn **Opening/closing function:** 90°

Max. working pressure: 7 bar / 102 psi Allowable test pressure after installation:

10 bar without function of the valve

MATERIALS WITH MEDIA CONTACT

Metals: Brass
Sealing: Nitrile (NBR)

Lubricant: Mineral oil based **Ceramics:** Al₂O₂ 96%

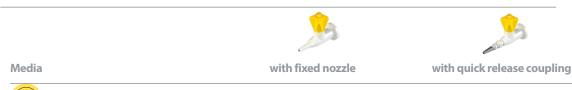
ORDERING INFORMATION

For standard configuration please refer to the item numbers below.

Other options:

- different media
- flashback arrestor
- needle or 1/4-turn headwork
- disability-friendly handle (for needle and 1/4-turn headworks only)
- other inlet options (compression ring fittings, flexible SS pipe)
- national approvals

Models:



G	Natural gas	2532 171 1031-52B	2532 203 1031-52B
(PG)	Liquefied petroleum gas	2532 171 1032-52B	2532 203 1032-52B

BROEN-LAB UNIFLEX™ HOSE / SS FLEXIBLE PIPE SELECTION GUIDE

BROEN-LAB offers BROEN-LAB UniFlex[™] hoses and flexible Stainless Steel pipes 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 time and labour - in other words - reduced installation costs.

Select the right product to ensure safe installation and long service life!

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.

Which hose/flexible pipe to select?

In the table below you find the summary of the factors that are necessary to consider when selecting a BROEN-LAB UniFlex™ flexible hoses/pipes for burning gases.

Hose Factors*	Rubber	Stainless Steel
Inner hose material with media contact	Nitrile (NBR)	Corrugated Stainless Steel AISI 316
Outer hose material / braiding	EPDM (polyesther reinforced)	None
Sealing material	Nitrile (NBR)	EPDM (93Z) Nitrile (NBR) (93Y) FKM (93Q)
Inside diameter	6.3mm	8.5mm
Outside diameter	12.9mm	12mm
Max. working presssure	10 bar	21 bar (93Z, 93Q) 16 bar,DVGW (93Y)
Max. working temperature	50°C	50°C
Min. bending radius (inner)	40mm	15mm (single bend) 130 mm (dynamic bend)
UV resistance	+	+++
Range of connections	+++	++

^{*} Values shown in the table are valid for rubber hoses and flexible Stainless Steel pipes only.

For further information and mounting instructions please refer to www.BROEN-LAB.com or contact your local BROEN-LAB representative.



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 = 500mm

0700 = 700 mm

1000 = 1000mm

1200 = 1200mm

1500 = 1500mm

2000 = 2000mm

2500 = 2500mm

3000 = 3000mm

Length tolerance of hoses: $L = \le 400 \text{mm} (-0, +10 \text{mm})$ L = 401mm to 1000mm (- 0, + 20mm)

L = > 1000 mm (-0, +30 mm)

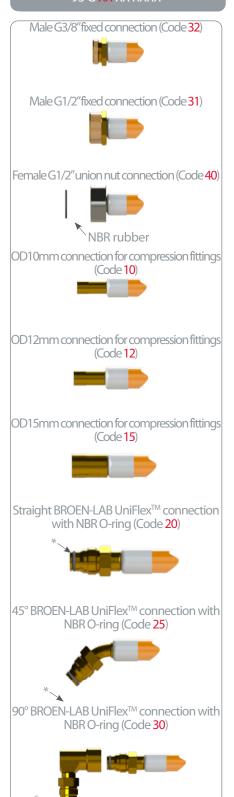
EXAMPLE OF HOSE CONFIGURATION

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



Min. length with connections: 160mm* Other lengths are available on request

INLET CONNECTIONS 93 G XX XX XXXX



OUTLET CONNECTIONS 93 G XX <mark>XX</mark> XXXX

93G - BROEN-LAB UNIFLEX™ RUBBER HOSES FOR BURNING GASES



*All O-rings are lubricated with mineral oil based lubricant

SPECIFICATIONS

Inner hose material: Nitrile (NBR) **Outer hose material: EPDM** Materials with media contact: brass, NBR

Sealing material: Nitrile (NBR) with mineral oil based lubricant

Inside diameter: 6.3mm Outside diameter: 12.9mm

Max. working pressure: 10 bar Max. working temperature: 50°C

Bending radius (inner): ≥ 40mm

WWW.BROEN.COM -15-

BROEN UNIFLEXTM FITTINGS FOR BURNING GASES

INLET CONNECTIONS

93 Y XX XX XXXX

OD10mm connection for compression fittings (Code 10)

OD12mm connection for compression fittings (Code <mark>12</mark>)



OD15mm connection for compression fittings (Code 15)



OD3/8" connection for compression fittings (Code 09)



Straight BROEN-LAB UniFlexTM connection with NBR O-ring (Code 20)



3/8" NPT fixed male connection (Code 34)



1/4" NPT fixed male connection (Code 70)



Female G3/8" union nut connection (Code 41)



Female 1/2"union nut connection (Code 40)



90° BROEN-LAB Uniflex connection with NBR O-ring (Code 30)



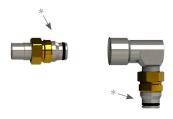
OUTLET CONNECTIONS

93 Y XX XX XXXX

Straight BROEN-LAB UniFlex[™] connection with NBR O-ring (Code **20**)



90° BROEN-LAB Uniflex connection with NBR O-ring (Code 30)



*All O-rings are lubricated with mineral oil based lubricant

HOSE 93 Y XX XX **XXXX**

Stainless Steel 1.4404



HOSE LENGTHS

Definition of length (L)



*Standard lengths of hoses (L):

0500 = 500mm

0700 = 700mm

1000 = 1000mm

1200 = 1200mm

1500 = 1500mm

2000 = 2000mm

2500 = 2500mm

3000 = 3000mm

Length tolerance of hoses: $L = \le 400 \text{mm} (-0, +10 \text{mm})$ L = 401 mm to 1000 mm (-0, +20 mm)

L = >1000 mm (-0, +30 mm)

SPECIFICATIONS

Inner hose material:

Stainless Steel 1.4404 similar to AISI 316L

Braiding: None

Materials with media contact:

Stainless Steel 1.4404, NBR (Nitrile) lubricated with mineral oil based lubricant

Inside diameter: 8.5 mm **Outside diameter:** 12 mm

Max. working pressure: 16 bar according to DVGW

Max. working temperature: 50°C Bending radius (inner):

≥ 15 mm (static)

≥ 130 mm (dynamic)

Min. length with connections: 500mm Max. movements (Bending radius 130mm): 10.000**

Leakage rate: <1x10⁻³ mbar l/s (He)

EXAMPLE OF HOSE CONFIGURATION

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



^{*} Other lengths are available on request

^{**} In accordance with ISO 10380

HEADWORKS

BROEN-LAB UniFlexTM fittings for burning gases can be delivered with 3 different types of headworks depending on the requirements set by applications with regards to safety and/or regulation of media flow.

PRESS/TURN HEADWORK

SPECIFICATIONS

BROEN-LAB UniFlex[™] fittings for burning gases are as a standard delivered with a safety press/turn headwork.



Opening/closing function: 90° turn

Media: Burning gases

Max. working pressure: 7 bar / 102 psi

Allowable test pressure after installation: 10 bar without function of the valve

MATERIALS WITH MEDIA CONTACT

Metals: Brass

Sealing: Nitrile (NBR) Lubricant: Mineral oil based Ceramics: Al₂O₂ 96%



NEEDLE HEADWORK

SPECIFICATIONS

BROEN-LAB UniFlex[™] fittings for burning gases can be also delivered with a needle headwork where fine regulation of flow is required.

Opening/closing function: 3 x 360° turn

Media: Burning gases

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

Metals: Brass

Sealing: Nitrile (NBR) Lubricant: Mineral oil based

1/4-TURN HEADWORK

SPECIFICATIONS

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

Opening/closing function: 90° turn

Media: Burning gases

Max. working pressure: 7 bar / 102 psi

Allowable test pressure after installation: 10 bar without function of the valve

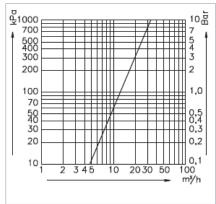
MATERIALS WITH MEDIA CONTACT

Metals: Brass

Sealing: Nitrile (NBR) **Lubricant:** Mineral oil based



FLOW CHART



FLOW CHART

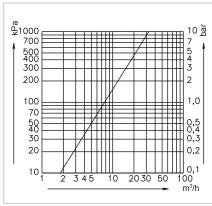
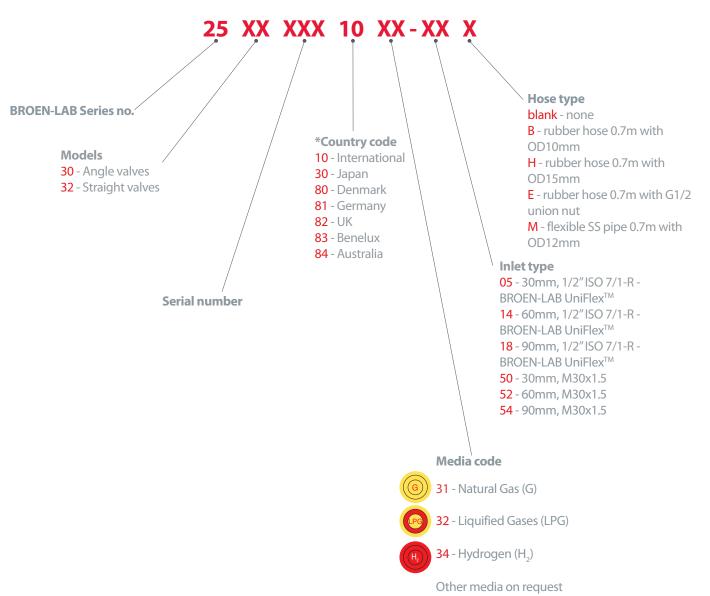




Illustration	Description	BROEN-LAB item No.
	Mounting set for G1/2 connection Mounting set for M30x1.5 connection	19 141 000 19 190 000
	Threaded inlet pipe M30x1,5 L=30mm L=60mm L=90mm	19 190 03 19 190 02 19 190 04
	Wall flange socket (for exposed piping)	02 101 30G
Recommended visible length 16mm Female BROE LAB UniFlex ^{TI}		02 101 31
Ø62.5mm	Cover flange for 02 101 31	1492304G
	Polypropylene handle with media indication according to EN 13792 (for press/turn headwork)	191501401031 (G) 191501401032 (LPG) 191501401034 (H ₂)
	Hose nozzle for quick release coupling	96C0030
	Cover flange for valves with male G3/8 inlet thread	97A0114-7035

ORDERING INFORMATION BROEN-LAB UNIFLEX™ FITTINGS

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



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.

^{*} For burning gases some national standards may apply, therefore contact your BROEN-LAB representative for more information.

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 offer solutions that ensure the functionality, compliance, hygiene, durability and safety are of the highest priority. For over 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 solutions

HEAD OFFICE

BROEN-LAB A/S

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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.

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