

**BROEN-LAB
UNIFLEX™
FLEXIBLE PIPES &
HOSES**



BROEN-LAB UNIFLEX™ FLEXIBLE PIPES AND HOSES

BROEN-LAB UNIFLEX™ FLEXIBLE PIPES AND HOSES



**LAB
FITTINGS**

BROEN-LAB

TABLE OF CONTENTS

Content	Page
Table of Contents	2
BROEN-LAB UniFlex™ Hoses - Product Overview	3
BROEN-LAB UniFlex™ Hoses - Selection Guide	4
93V - BROEN-LAB UniFlex™ SPX Hoses for Water	5
93P - BROEN-LAB UniFlex™ PEX Hoses for Water	6
93D - BROEN-LAB UniFlex™ SPX Hoses for Special Water	7
93Z - BROEN-LAB UniFlex™ Flexible Stainless Steel Pipes for Special Water	8
93K - BROEN-LAB UniFlex™ LLDPE Hoses for Special Water	9
93F - BROEN-LAB UniFlex™ PVDF Hoses for Special Water	10
93Y - BROEN-LAB UniFlex™ Flexible Stainless Steel Pipes for Burning Gases	11
93G - BROEN-LAB UniFlex™ Rubber Hoses for Burning Gases	12
93T - BROEN-LAB UniFlex™ Hoses for Non-burning 2.0 Gases/Vacuum	13
93B - BROEN-LAB UniFlex™ PEX Hoses for Non-burning 2.0 Gases/Vacuum	14
93Q - BROEN-LAB UniFlex™ Flexible Stainless Steel Pipes for Oxygen and High Purity Gases up to 5.015	
93S - BROEN-LAB UniFlex™ Flexible Stainless Steel Pipes for High Purity Gases up to 6.0	16
Installation of Hoses	17
BROEN-LAB Products	19

BROEN-LAB UNIFLEX™ HOSES - PRODUCT OVERVIEW

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!

Hose material	SPX (braided)	PEX	LLDPE	PVDF	Rubber (Nitrile), polyester reinforced	Stainless Steel	Stainless Steel (braided)
Medium							
Potable / non-potable / coolant water*	93V	93P					
Special water sorts*	93D		93K	93F		93Z	
Burning gases					93G	93Y	
Non-burning 2.0 gases/ Vacuum	93T	93B					
Non-burning 4.0 gases/ Oxygen						93Q	
High purity 5.0 gases						93Q	
High purity 6.0 gases							93S

* Remember to use insulation material for coolant water in order to avoid water condensation!

INSULATION MATERIAL FOR BROEN-LAB UNIFLEX™ HOSES
FOR COOLANT WATER



SPECIFICATIONS

Item No: 95F0015

Standard length: 2m

Hose material: Highly flexible, closed-cell insulation, FEF (Flexible Elastometric Foam)

Inside diameter: 12mm

Outside diameter: 38mm

The insulating material needs to be secured with a cable strip (BROEN-LAB item no. 96M0208) on both ends in order to avoid any warm air to have access to the surface of the hose.

BROEN-LAB UNIFLEX™ FLEXIBLE PIPES AND HOSES



**BROEN-LAB UNIFLEX™ HOSES / STAINLESS STEEL FLEXIBLE PIPES
SELECTION GUIDE**

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.

Hose Factors*	SPX 93V, 93D, 93T	PEX 93P, 93B	LLDPE / PVDF 93K, 93F	Rubber 93G	SS 93Z, 93Y, 93Q	SS (Braided) 93S
Inner hose material with media contact	SPX	PEX	- LLDPE (93K) - PVDF (93F)	Nitrile (NBR)	Corrugated Stainless Steel AISI 316	Corrugated Stainless Steel AISI 316
Outer hose material / braiding	Stainless Steel AISI 304	None	None	EPDM (polyester reinforced)	None	Stainless Steel AISI 304
Sealing material	EPDM (93V, 93D) FKM (93T)	- EPDM (93P) - FKM (93B)	None	Nitrile (NBR)	EPDM (93Z) Nitrile (NBR) (93Y) FKM (93Q)	None
Inside diameter	8.2mm	6.4mm	7mm	6.3mm	8.5mm	8.2mm
Outside diameter	12mm	10mm	10mm	12.9mm	12mm	12.2mm
Max. working pressure	10 bar (water) 16 bar (gases)	10 bar	10 bar by 23°C 6 bar by 65°C	10 bar	21 bar (93Z, 93Q) 16 bar,DVGW (93Y)	21 bar
Max. working temperature	90°C	70°C	65°C	50°C	50°C	50°C***
Min. bending radius (inner)	40mm	50mm	90mm	40mm	15mm (single bend) 130 mm (dynamic bend)	32mm (single bend)
UV resistance	++	+	+	+	+++	+++
Range of connections	+++	+	+	+++	++	+

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

For more information please refer to individual pages in this catalogue or contact your BROEN-LAB representative.

** 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!

*** For applications requiring higher temperatures please contact your BROEN-LAB representative.



INLET CONNECTIONS

93 V XX XX XXXX

3/8"NPT Swivel Connection (Code 61)



Male G3/8" fixed connection (Code 32)



Male G1/2" fixed connection (Code 31)



Male G3/4" fixed connection (Code 33)



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



Female G3/8" 90° union nut connection (Code 46)



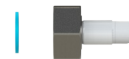
Female G1/2" union nut connection (Code 40)



Female G1/2" 90° union nut connection (Code 45)



Female G3/4" union nut connection (Code 42)



OD3/8" connection compression fittings (Code 09)



OD10mm connection for compression fittings (Code 10)



OD12mm connection for compression fittings (Code 12)



OD1/2" mm connection for compression fittings (Code 13)



OD15mm connection for compression fittings (Code 15)



OD15mm connection for press fittings (Code 65)



Straight BROEN-LAB UniFlex™ connection with EPDM O-ring (Code 20)



45° BROEN-LAB UniFlex™ connection with EPDM O-ring (Code 25)



90° BROEN-LAB UniFlex™ connection with EPDM O-ring (Code 30)



OUTLET CONNECTIONS

93 V XX XX XXXX

Straight BROEN-LAB UniFlex™ connection with EPDM O-ring (Code 20)



45° BROEN-LAB UniFlex™ connection with EPDM O-ring (Code 25)



90° BROEN-LAB UniFlex™ connection with EPDM O-ring (Code 30)



M10x1mm short connection with EPDM O-ring (Code 51)



PLEASE NOTE:

M10 connections can only be used to mixer and multimedia fittings

*All O-rings are lubricated with silicone based lubricant

HOSE

93 V XX XX XXXX

SPX 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 = 500mm

0700 = 700mm

1000 = 1000mm

1200 = 1200mm

1500 = 1500mm

2000 = 2000mm

2500 = 2500mm

3000 = 3000mm

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

SPECIFICATIONS

Inner hose material: SPX (soft PEX)

Braiding: Stainless steel with one green stripe

Materials with media contact: SPX, brass, EPDM and silicone based lubricant

Sealing: EPDM, Aramid fiber/NBR

Inside diameter: 8.2mm

Outside diameter: 12mm

Max. working pressure: 10 bar

Max. working temperature: 90°C

Bending radius (inner): ≥ 40mm

Min. length with connections: 160mm

EXAMPLE OF HOSE CONFIGURATION

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



93V12201200

* Other lengths are available on request



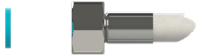
INLET CONNECTIONS

93 P XX XX XXXX

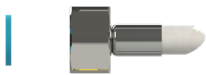
OD10mm hose connection (Code 00)



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



Female G1/2" union nut connection (Code 40)



Straight BROEN-LAB UniFlex™ connection with EPDM O-ring (Code 20)



OUTLET CONNECTIONS

93 P XX XX XXXX

M10x1mm short connection with EPDM O-ring (Code 51)



Straight BROEN-LAB UniFlex™ connection with EPDM O-ring (Code 20)



*All O-rings are lubricated with silicone based lubricant

HOSE

93 P XX XX XXXX

PEX hose



Marking for water with Part no. and Media indication

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 = ≤400mm (- 0, +10mm)
L = 401mm to 1000mm (- 0, + 20mm)
L = >1000mm (- 0, + 30mm)

BROEN-LAB UNIFLEX™ FLEXIBLE PIPES AND HOSES

SPECIFICATIONS

Inner hose material: PEX

Braiding: None

Materials with media contact:

PEX, brass, EPDM with silicone based lubricant

Sealing: EPDM, Aramid fiber/NBR

Inside diameter: 6.4mm

Outside diameter: 10mm

Max. working pressure: 10bar

Max. working temperature: 70°C

Bending radius (inner): ≥ 50mm

Min. length with connections: 160mm

EXAMPLE OF HOSE CONFIGURATION

1200mm hose with OD10mm inlet connection and straight UniFlex™ outlet connection



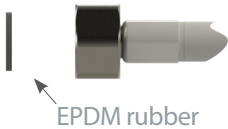
93P00201200

* Other lengths are available on request



INLET CONNECTIONS
93 D XX XX XXXX

Female G1/2" union nut connection
(Code 50)



Straight BROEN-LAB UniFlex™ connection
with EPDM O-ring (Code 20)



OUTLET CONNECTIONS
93 D XX XX XXXX

Female G1/2" union nut connection
(Code 50)



Straight BROEN-LAB UniFlex™ connection
with EPDM O-ring (Code 20)



*All O-rings are lubricated with
silicone based lubricant

HOSE
93 D XX XX XXXX

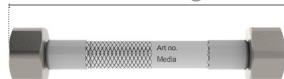
SPX hose with braiding
in Stainless Steel



Marking for special water with
Part no. and Media indication

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 = ≤400mm (- 0, +10mm)
L = 401mm to 1000mm (- 0, + 20mm)
L = >1000mm (- 0, + 30mm)

BROEN-LAB UNIFLEX™ FLEXIBLE PIPES AND HOSES

SPECIFICATIONS

- Inner hose material: SPX (soft PEX)
- Braiding: Stainless steel with one green stripe
- Materials with media contact: SPX, Stainless Steel AISI 316, EPDM
- Inside diameter: 8.2mm
- Outside diameter: 12mm
- Max. working pressure: 10 bar
- Max. working temperature: 90°C
- Bending radius (inner): ≥ 40mm
- Min. length with connections: 160mm

EXAMPLE OF HOSE
CONFIGURATION

1200mm hose with 1/2" union inlet
connection and 1/2" union outlet
connection



93D50501200

* Other lengths are available on request



93Z - BROEN-LAB UNIFLEX™ FLEXIBLE STAINLESS STEEL PIPES
FOR SPECIAL WATER

INLET CONNECTIONS

93 Z XX XX XXXX

OD10mm connection for compression fittings
(Code 10)



OD12mm connection for compression fittings
(Code 12)



OD15mm connection for compression fittings
(Code 15)



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



Straight BROEN-LAB UniFlex™ connection
with EPDM 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)

Aramide fibre/NBR gasket



Female G1/2" union nut connection (Code 40)

Aramide fibre/NBR gasket



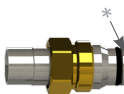
90° BROEN-LAB Uniflex connection with
EPDM O-ring (Code 30)



OUTLET CONNECTIONS

93 Z XX XX XXXX

Straight BROEN-LAB UniFlex™ connection
with EPDM O-ring (Code 20)



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



HOSE

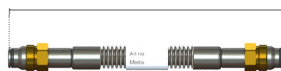
93 Z XX XX XXXX

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 ≤ 400mm (- 0, +10mm)

L = 401mm to 1000mm (- 0, + 20mm)

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

SPECIFICATIONS

Inner hose material:

Stainless Steel 1.4404 similar to AISI 316L

Braiding: None

Materials with media contact:

Stainless Steel 1.4404, EPDM, Aramide fi-
bre/NBR gasket

Inside diameter: 8.5 mm

Outside diameter: 12 mm

Max. working pressure: 21 bar

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



93Z12201200

* Other lengths are available on request

** In accordance with ISO 10380

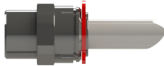


INLET CONNECTIONS
93 K XX XX XXXX

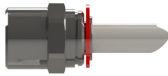
OD10mm pipe connection
incl. support bushing (Code 00)



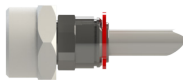
Male G3/8" fixed connection (code 32)



Male G1/2" fixed connection (Code 31)



Male G3/4" fixed connection (Code 33)



OUTLET CONNECTIONS
93 K XX XX XXXX

OD10mm pipe connection
incl. support bushing (Code 00)



HOSE
93 K XX XX XXXX

LLDPE hose



Marking for special water with
Part no. and Media indication

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 ≤ 400mm (- 0, +10mm)
L = 401mm to 1000mm (- 0, + 20mm)
L > 1000mm (- 0, + 30mm)

BROEN-LAB UNIFLEX™ FLEXIBLE PIPES AND HOSES

SPECIFICATIONS

- Hose material: LLDPE
- Braiding: None
- Materials with media contact: LLDPE, PSU, EPDM
- Inside diameter: 7mm
- Outside diameter: 10mm
- Max. working pressure: 10 bar by 23°C
6 bar by 65°C
- Max. working temperature: 65°C
- Bending radius (inner): ≥ 90mm
- Min. length with connections: 150mm

EXAMPLE OF HOSE CONFIGURATION

1200mm hose with G3/8" fixed inlet connection and OD10mm pipe outlet connection



93K32001200

* Other lengths are available on request



INLET CONNECTIONS

93 F XX XX XXXX

OD10mm pipe connection
incl. support bushing
(code 00)



ISO 7/1-R3/8" fixed connection
(code 32)



ISO 7/1-R1/2" fixed connection
(code 31)



OUTLET CONNECTIONS

93 F XX XX XXXX

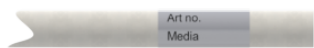
OD10mm pipe connection
incl. support bushing
(code 00)



HOSE

93 F XX XX XXXX

PVDF hose



Marking for special water with
Part no. and Media indication

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 ≤ 400mm (- 0, +10mm)

L = 401mm to 1000mm (- 0, + 20mm)

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

SPECIFICATIONS

Hose material: PVDF

Braiding: None

Materials with media contact:

PVDF, PSU

Inside diameter: 7mm

Outside diameter: 10mm

Max. working pressure:

10 bar by 23°C

6 bar by 65°C

Max. working temperature: 65°C

Bending radius (inner): ≥ 90mm

Min. length with connections: 150mm

EXAMPLE OF HOSE CONFIGURATION

1200mm hose with G3/8" fixed
inlet connection and OD10mm
pipe outlet connection



93F32001200

* Other lengths are available on request



93Y - BROEN-LAB UNIFLEX™ FLEXIBLE STAINLESS STEEL PIPES
FOR BURNING GASES

INLET CONNECTIONS

93 Y XX XX XXXX

OD10mm connection for compression fittings
(Code 10)



OD12mm connection for compression fittings
(Code 12)



OD15mm connection for compression fittings
(Code 15)



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



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



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



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



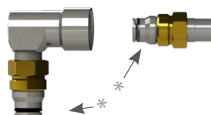
Female G3/8" union nut connection
(Code 41)



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



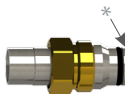
90° BROEN-LAB Uniflex connection with
NBR O-ring (Code 30)



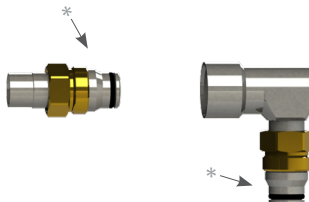
OUTLET CONNECTIONS

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

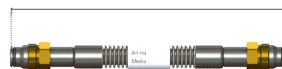
93 Y XX XX XXXX

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 = ≤400mm (-0, +10mm)
L = 401mm to 1000mm (-0, +20mm)
L = >1000mm (-0, +30mm)

SPECIFICATIONS

Inner hose material:

Stainless Steel 1.4404 similar to AISI 316L

Braiding: None

Materials with media contact:

Stainless Steel 1.4404, NBR (Nitrile) lubri-
cated 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



93Y12201200

* Other lengths are available on request

** In accordance with ISO 10380

BROEN-LAB UNIFLEX™ FLEXIBLE PIPES AND HOSES



INLET CONNECTIONS

93 G XX XX XXXX

Male G3/8" fixed connection (Code 32)



Male G1/2" fixed connection (Code 31)



Female G1/2" union nut connection (Code 40)



NBR rubber

OD10mm connection for compression fittings (Code 10)



OD12mm connection for compression fittings (Code 12)



OD15mm connection for compression fittings (Code 15)



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



45° BROEN-LAB UniFlex™ connection with NBR O-ring (Code 25)



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



OUTLET CONNECTIONS

93 G XX XX XXXX

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



45° BROEN-LAB UniFlex™ connection with NBR O-ring (Code 25)



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



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

HOSE

93 G XX XX XXXX

Rubber hose (polyester reinforced)



Marking for burning gases 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 = 500mm
0700 = 700mm
1000 = 1000mm
1200 = 1200mm
1500 = 1500mm
2000 = 2000mm
2500 = 2500mm
3000 = 3000mm

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

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

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

EXAMPLE OF HOSE CONFIGURATION

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



93G12201200



INLET CONNECTIONS
93 T XX XX XXXX

3/8" NPT Swivel connection (Code 61)

Male G1/4" fixed connection (Code 36)

Male G3/8" fixed connection (Code 32)

Male G1/2" fixed connection (Code 31)

3/8" NPT fixed connection (Code 34)

3/8" NPT Swivel connection (Code 35)

90° G3/8" Union nut connection (Code 46)

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

Female G1/2" union nut connection (Code 40)

G1/2" 90° union nut connection (Code 45)

OD10mm connection for compression fittings (Code 10)

OD12mm connection for compression fittings (Code 12)

OD1/2" connection for compression fittings (Code 13)

OD15mm connection for compression fittings (Code 15)

OD15mm connection for press fittings (Code 65)

Straight BROEN-LAB UniFlex™ connection with FKM O-ring (Code 20)

45° BROEN-LAB UniFlex™ connection with FKM O-ring (Code 25)

90° BROEN-LAB UniFlex™ connection with FKM O-ring (Code 30)

OUTLET CONNECTIONS
93 T XX XX XXXX

Straight BROEN-LAB UniFlex™ connection with FKM O-ring (Code 20)

45° BROEN-LAB UniFlex™ connection with FKM O-ring (Code 25)

90° BROEN-LAB UniFlex™ connection with FKM O-ring (Code 30)

*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: 8.2mm
Outside diameter: 12mm
Max. working pressure: 16 bar
Max. working temperature: 90°C
Bending radius (inner): ≥ 40mm
Min. length with connections: 160mm

HOSE
93 T XX XX XXXX

SPX hose with braiding in stainless steel

Marking for technical gases 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	=	500mm
0700	=	700mm
1000	=	1000mm
1200	=	1200mm
1500	=	1500mm
2000	=	2000mm
2500	=	2500mm
3000	=	3000mm

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

EXAMPLE OF HOSE CONFIGURATION

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



* Other lengths are available on request



**93B - BROEN-LAB UNIFLEX™ PEX HOSES FOR
NON-BURNING 2.0 GASES/VACUUM**

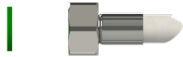
INLET CONNECTIONS

93 B **XX** XX XXXX

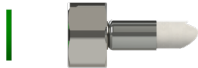
OD10mm hose connection (Code **00**)



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



Female G1/2" union nut connection (Code **40**)



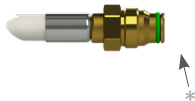
Straight BROEN-LAB UniFlex™ connection with FKM O-ring (Code **20**)



OUTLET CONNECTIONS

93 B XX **XX** XXXX

Straight BROEN-LAB UniFlex™ connection with FKM O-ring (Code **20**)



*All O-rings are lubricated with perfluoropolyether based lubricant

HOSE

93 B XX XX **XXXX**

PEX hose



Marking for Technical gases with Part no. and Media indication

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 = ≤400mm (- 0, +10mm)
L = 401mm to 1000mm (- 0, + 20mm)
L = >1000mm (- 0, + 30mm)

BROEN-LAB UNIFLEX™ FLEXIBLE PIPES AND HOSES

SPECIFICATIONS

Inner hose material: PEX

Braiding: None

Materials with media contact:

PEX, brass

Sealing material: FKM with perfluoropolyether based lubricant

Inside diameter: 6.4mm

Outside diameter: 10mm

Max. working pressure: 10bar

Max. working temperature: 70°C

Bending radius (inner): ≥ 50mm

Min. length with connections: 160mm

EXAMPLE OF HOSE CONFIGURATION

1200mm hose with OD10mm inlet connection and straight UniFlex™ outlet connection



93B00201200

* Other lengths are available on request



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

INLET CONNECTIONS

93 Q XX XX XXXX

OD10mm connection for compression fittings
(Code 10)



OD12mm connection for compression fittings
(Code 12)



OD15mm connection for compression fittings
(Code 15)



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



Straight BROEN-LAB UniFlex™
connection with FKM O-ring (Code 20)



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



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



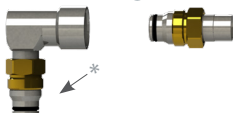
Female 3/8" union nut connection (Code 41)



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



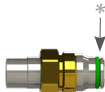
90° BROEN-LAB Uniflex connection
with FKM O-ring (Code 30)



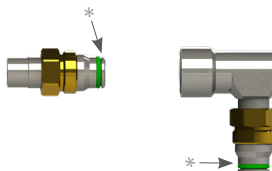
OUTLET CONNECTIONS

93 Q XX XX XXXX

Straight BROEN-LAB UniFlex™
connection with FKM O-ring (Code 20)



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



*All O-rings are lubricated with
perfluoropolyether based lubricant

HOSE

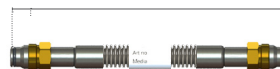
93 Q XX XX XXXX

Flexible SS pipe



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 ≤ 400mm (-0, +10mm)

L = 401mm to 1000mm (-0, +20mm)

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

SPECIFICATIONS

Inner hose material:

Stainless Steel 1.4404 similar to AISI 316L

Braiding: None

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

Inside diameter: 8.5mm

Outside diameter: 12mm

Max. working pressure: 21bar

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: <1x10⁻⁷ mbar l/s (He)

EXAMPLE OF HOSE CONFIGURATION

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



93Q12201200

* Other lengths are available on request

** In accordance with ISO 10380

BROEN-LAB UNIFLEX™ FLEXIBLE PIPES AND HOSES



93S - BROEN-LAB UNIFLEX™ FLEXIBLE STAINLESS STEEL PIPES
FOR HIGH PURITY GASES UP TO 6.0

INLET CONNECTIONS

93 S XX XX XXXX

OD10mm connection (Code 80)



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



OUTLET CONNECTIONS

93 S XX XX XXXX

OD10mm connection (Code 80)



HOSE

93 S XX XX XXXX

Flexible SS pipe with braiding
in stainless steel



Marking for clean gases with
Part no. and Media indication

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 = ≤400mm (- 0, +10mm)

L = 401mm to 1000mm (- 0, + 20mm)

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

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: Stainless Steel 1.4301 similar to AISI 304

Hose connections: Stainless Steel 1.4404 and 1.4541
(acc. to EN 10216-5 CFA D4/T4 (DIN 17458 D4/T4))

Leak rate: < 10⁻⁹ mbar x l/s [He]

Surface roughness of the raw material: Ra max - 1.5 µm, Ra - 0.12 µm

Inside diameter: 8.3 mm

Outside diameter: 13.7 mm

Max. working pressure: 21 bar

Max. working temperature: 50°C

Bending radius (inner): ≥ 32 mm

Min. length with connections: 350mm

Packaging: individually packed in sealed bags

*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.

EXAMPLE OF HOSE
CONFIGURATION

1200mm hose with male 1/4"NPT
inlet connection and OD 10mm
pipe outlet connection



93S70801200

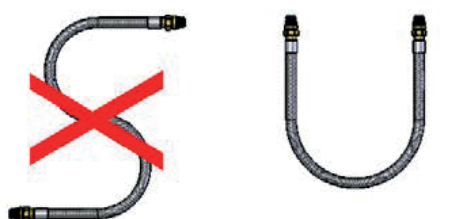
* Other lengths are available on request



UK: The hose/flexible pipe must have a soft bend
 DK: Slangen/fleksibelt rør skal have en blød bue
 D: Der Schlauch/die flexible Verbindungsleitung muss eine weiche Kurve haben



UK: The hose/flexible pipe may not be stretched completely
 DK: Slangen/fleksibelt rør må ikke strækkes helt ud
 D: Der Schlauch/flexible Rohr darf nicht ganz ausgestreckt werden



UK: The hose/flexible pipe may not get a s-shaped bend
 DK: Slangen/fleksibelt rør må ikke få et s-formet bøj
 D: Der Schlauch/flexible Rohr darf nicht wie ein S gebogen werden



UK: Avoid turning of the hose/flexible pipe
 DK: Undgå at vride slangen/fleksibelt rør
 D: Vermeiden Sie den Schlauch/flexible Rohr zu verdrehen

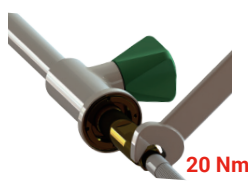
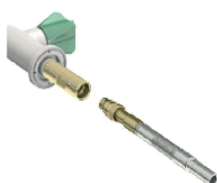


UK: Select counter fittings in such way that the hose line is prevented from bucking (insert angular parts, elbows etc.)
 DK: Vælg fittings der sørger for at slangens linje ikke bukkes (indsæt vinkel dele, albueled m.m.)
 D: Die Anschlüsse sind so zu wählen, das ein Abknicken der Schlauchleitung verhindert wird, gegebenen Falls sind Winkel oder Knieverbindungen für die Montage zu wählen.

UK: Make sure there is enough room to move the hose; avoid collision during operation (Related to 93Z, 93Y, 93Q and 93S)
 DK: Vær sikker på at det er nok plads til at bevæge slangen, undgå kollision under brug (gælder 93Z, 93Y, 93Q og 93S)
 D: Stellen Sie sicher, das genügend Platz vorhanden ist, so das sich der Schlauch im Betrieb eventuell bewegen kann, Der Schlauch sollte nicht an Wänden oder anderen Gegenständen anliegen (Bezogen auf 93Z, 93Y, 93Q und 93S)

UK: Mount hose line preferably at one level; avoid torsional stress in case of movement.
 DK: Monter helst slangelinjen på ét niveau; undgå torsionsstress i tilfælde af bevægelse.
 D: Der Schlauch sollte vorzugsweise auf gleichem Niveau montiert werden; Torsionsbelastungen bei Bewegungen sind zu vermeiden!

UK: The installer is responsible for complying with laws and standards
 DK: Installatøren er ansvarlig for at overholde gældende love og standarder
 D: Der Installateur is dafür verantwortlich, dass geltende Gesetze und normen eingehalten werden.



DK: Slangetilslutningen skal spændes som vist.

UK: Hose connection must be tightened as shown.

D: Schlauchverbindung müssen angezogen werden, wie gezeigt.



English

When mounting flexible connection hoses/pipes from BROEN-LAB a few basic rules must be followed to ensure a safe and durable connection.

Keeping and transport

- Leave the connection hose/pipe in the original packing until installation
- Avoid clamping and breaking the flexible hose/pipe during transport

Before the mounting

- The hose/pipe must be mounted accessible for following inspection
- The scope of application of the connection hose/pipe must be according to the installation planned
- Use the correct tools. Use appropriate openend spanner. Do not use pipe wrench or similar

During mounting

- Install the flexible connection hose/pipe so that torsion, breaking and stretching of the hose is avoided
- Install the flexible connection hose/pipe, so that physical stress is avoided, e.g. wear and tear of the surface of the hose/pipe
- The hose/pipe may not be installed in strongly corrosive environments
- The hose/pipe must be mounted in a suitable suspension
- Avoid UV-light

After mounting

- Test the tightness of the hose/pipe before start using the product

Inspection

- The installation must be inspected according to local regulations, but min. once a year. Defects are to be replaced.
- Inspect for corrosion, exposures, deformities, crackings, cracks and other damage.

Deutsch

Bei Montage von flexiblen Verbindungsleitungen von BROEN-LAB gibt es einige einfache Grundregeln für eine sichere und haltbare Verbindung.

Aufbewahrung und Transport

- Die Verbindungsleitung muss bis zur Montage in der Originalverpackung aufbewahrt werden.
- Drücken und Knicken der Verbindungsleitung während des Transports muss vermieden werden.

Vor der Montage

- Für spätere Inspektionen muss die Verbindung leicht zugänglich montiert werden.
- Der Anwendungsbereich der Verbindungsleitung muss in Übereinstimmung mit der geplanten Installation sein.
- Verwenden Sie korrektes Werkzeug. Verwenden Sie passende Festschlüssel und KEINE Rohrzangen oder ähnliches.

Während der Montage

- Montieren Sie die flexible Verbindungsleitung so, dass Verdrehen, Knicken und Strecken des Leitung vermieden werden.
- Die Verbindungsleitung muss so montiert werden, dass physische Einwirkung, z.B. Verschleiß der Oberfläche, vermieden wird.
- Die Leitung darf in stark korrosiver Umgebung nicht montiert werden.
- Die Montage der Verbindungsleitung muss mit passenden Aufhängungen erfolgen.
- Vermeiden Sie UV-Licht.

Nach Installation

- Die montierte Verbindungsleitung muss vor Inbetriebnahme auf Dichtigkeit überprüft werden.

Inspektion

- Die Inspektion muss gemäß gelten den Regeln vor Ort vorgenommen werden, jedoch mindestens einmal jährlich. Defekte Teile sind auszutauschen.
- Überprüfen Sie, ob Korrosion, Ausbeulungen, Verformungen, Bruchstellen, Risse oder andere Schäden vorliegen.

Dansk

Ved montage af fleksible koblingsledninger fra BROEN-LAB A/S er der få enkle grundregler, som bør følges, herved opnås en sikker og langtidsholdbar tilslutning.

Opbevaring og transport

- Lad koblingsledningen blive i original emballage indtil ledningen skal monteres
- Undgå klemning og knækning af koblingsledningen under transport

Forud for montering

- Koblingsledningen skal være monteret lettilgængelig for efterfølgende tilsyn
- Koblingsledningens anvendelsesområde skal være i overensstemmelse med den påtænkte installation
- Brug korrekt værktøj. Anvend passende fastnøgler og ikke rørtænger eller lign.

Under montage

- Monter den fleksible koblingsledning så vridning, knækning og strækning af ledningen undgås
- Koblingsledningen skal være monteret sådan at fysisk påvirkning undgås f.eks. i form af slitage af ledningens overflade
- Koblingsledningen må ikke monteres i stærkt korrosive miljøer
- Slangen monteres i passende ophæng
- Undgå UV-lys påvirkning

Efter installation

- Tæthedsprøv den monterede koblingsledning inden den tages i brug

Inspektion

- Installationen skal inspiceres ifølge gældende lokale regler, dog min. en gang årligt. Evt. defekter udskiftes.
- Se efter korrosion, udposninger, deformiteter, knæk, revner og andre skader.

NOTES

Lined area for notes.

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.

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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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