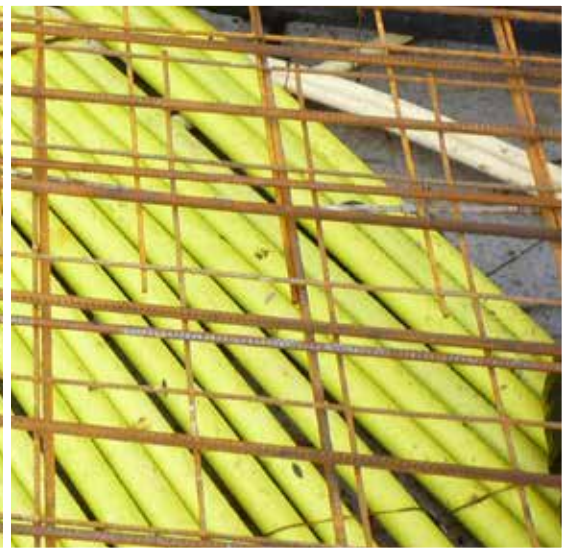




**PIPES AND FITTINGS**

**GAS**



## Henco GAS pipes

The yellow HENCO multilayer pipe PE-Xc/Al/PE-Xc, together with the yellow PE protective sleeve can be used for gas applications.

The HENCO system for gas is only permitted in countries where a gas quality mark has been granted. Always consult the applicable regulations for gas piping systems which apply in the country.

The HENCO synthetic gas system carries the KIWA-GASTEC gas quality mark 39581/01 and is intended for domestic gas installations and for transporting gas according to NPR-3378-5 and NPR-3378-6 of December 2012 and the amendments 3378-5/A1 and 3378-6/A1.

In addition, the HENCO gas system with BRASS press fittings has been certified by DVGW (certificate DG-8505CO0266).

The HENCO gas system also has the Italian certificate UNI/TS11344 and the Australian certificate WaterMark AMI 74694.

Synthetic gas pipes do need to be protected against corrosion in humid areas. This is in contrast to metal gas piping which must be protected against corrosion. Using synthetic piping gives significant savings during purchase and installation.

Henco also produces UV-resistant multilayer pipes for gas applications, in white or black colour.



Yellow



White UV-resistant pipe



Black UV-resistant pipe



Pipe with protection hose



Straight lengths

# Henco GAS pipes - Composition

## System

The HENCO gas system comprises the HENCO PE-Xc/AL/PE-Xc multilayer pipes for gas which can be provided with or without protective sleeves and the HENCO PVDF Press or BRASS Press fittings for gas.

## Colour indication

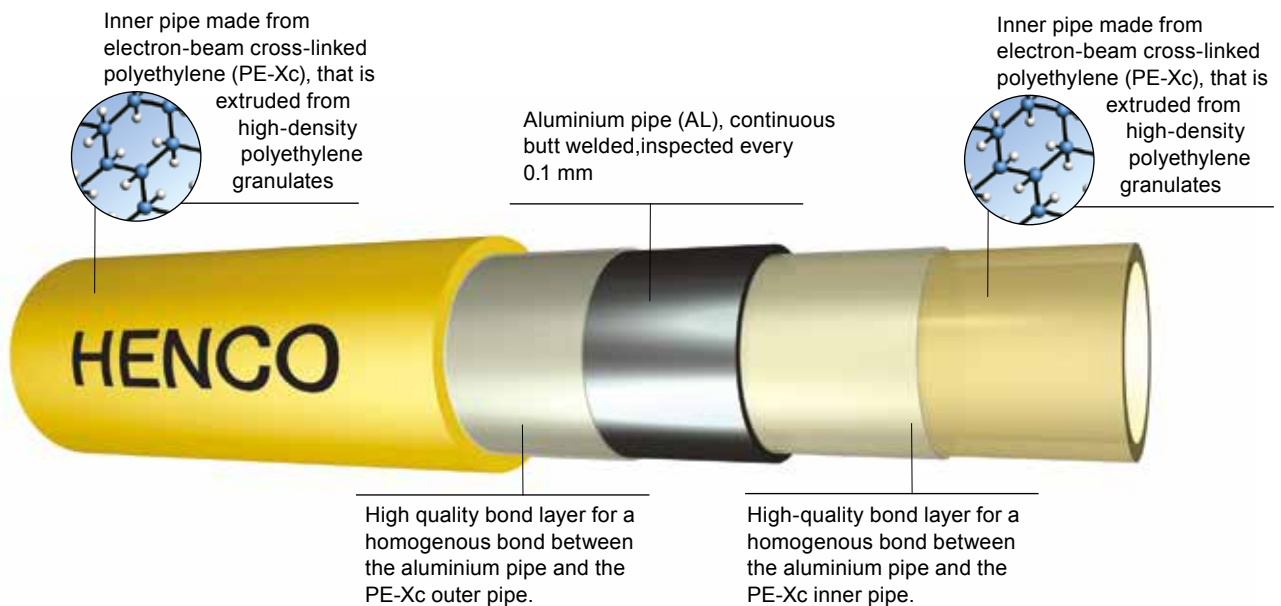
The pipes and protective sleeves have a yellow colour and are printed with the HENCO brand name and the certificate numbers. The sleeves of the PVDF press and BRASS press fittings are required to have a yellow marking.

## Solely for use with gas installations

The yellow pipe (protection hose) and the specially marked gas fittings can only be used in gas installations. The gas fittings are provided with special O-ring seals (HNBR) that have been specially designed for gas and do not work in water installations. Therefore regular water fittings cannot be used in gas installations and conversely, gas fittings cannot be used with water!

## Protection hoses

Protection hoses have been adopted and are obligatory in certain circumstances. Protective sleeves give extra protection to pipes carrying gas when building works are being carried out. HENCO recommends that you always use a protective sleeve as it provides additional mechanical protection. The pipe sleeves are made from polyethylene and can also be supplied separately.



# Henco GAS pipes - technical profile

## Technical profile Henco GAS standard multilayer pipe

Dimension (mm)	16x2	20x2	26x3	32x3	40x3,5
Outer diameter(mm)	16	20	26	32	40
Inner diameter (mm)	12	16	20	26	33
Wall thickness (mm)	2	2	3	3	3,5
DN	10	15	20	25	
Weight (kg/m)	0,125	0,147	0,285	0,390	0,528
Flow (l/m)	0,113	0,201	0,314	0,531	0,855
Application class	B2 - DIN 4102-1				
Coefficient of linear expansion (mm/mK)	0,025				
Coefficient of thermal conductivity (W/mk)	0,43				
Surface roughness of inner pipe (µm)	7				
Min. bending radius, manual/external spiral spring	80	100	130		
Min. bending radius, manual/internal spiral spring	48	68	78		
Temperature range	-20°C till +60°C				

## Technical profile Henco GAS protection hose

Dimension (mm)	16x2	20x2	26x3	32x3
Outer diameter(mm)	26	30	36	45
Inner diameter (mm)	21	25	31	39
Material	HDPE			
Specifications	'Henco Gastec QA', yellow colour			

## Protection hose

HENCO recommends that you always use a protective sleeve as it provides additional mechanical protection.

The HENCO pipe sleeve meets the following requirements:

- ▶ Synthetic
- ▶ Internal & external diameter
- ▶ Gas tight

## Mechanical damage

We recommend that you do not expose piping in gas installations to the risk of mechanical damage and/or external mechanical stresses.

## Earthing

Synthetic piping should not be earthed using a metal barrier coating.

## Disconnection from the gas supply

You should be able to disconnect installations from the gas supply as follows:

- ▶ After each point of entry in a home that does not have its own stopcock.
- ▶ After the point of entry to every physical building if the gas supply serves several separate buildings.
- ▶ Outside a heating room
- ▶ Immediately after the point of entry to a practical room or laboratory
- ▶ Immediately before a gas pressure regulator and metering equipment.
- ▶ Where gas appliances are located ( in the case of decorative devices this can also be inside the meter cupboard)



## Type of gas

HENCO gas pipes and press fittings are suitable for:

- ▶ Natural gas
- ▶ Propane
- ▶ Butane

For more information, we refer to NEN 1078.



## Pressure test

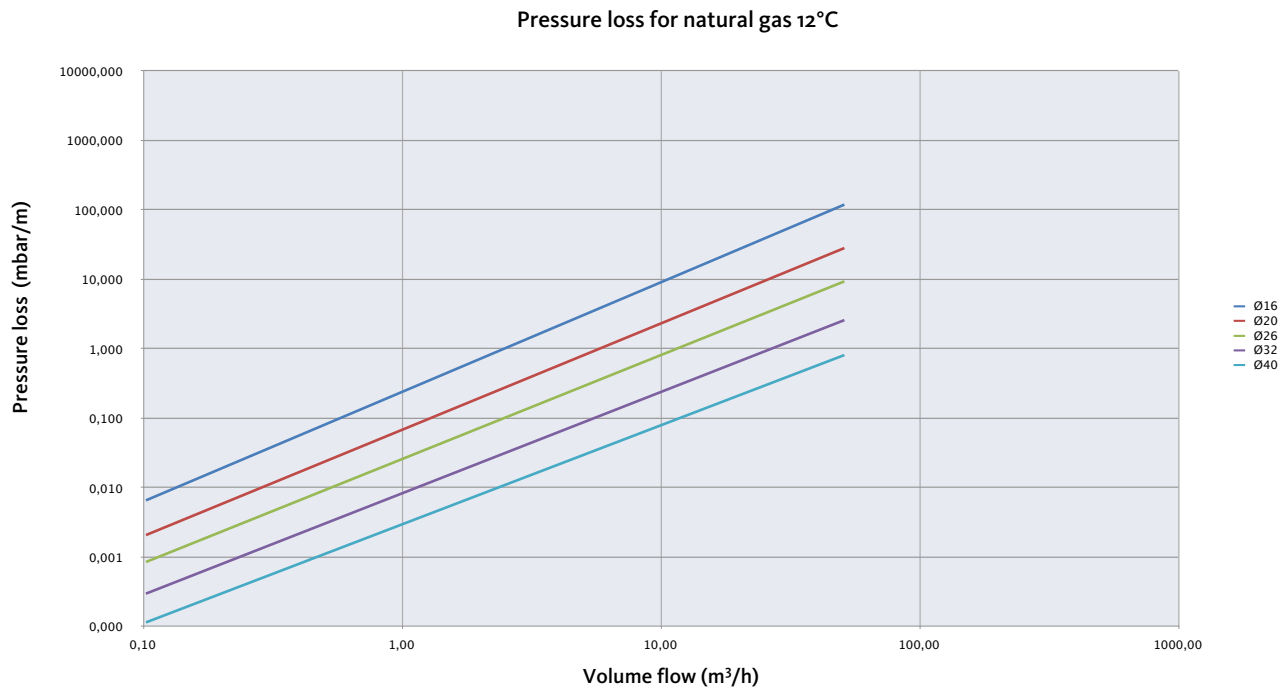
The piping is first thoroughly tested using a blast of air at a pressure of 1 bar (1000 mbar). The pressure should then be reduced to a test pressure that is 100 mb above the working pressure. The piping is considered to be gas-tight when there is no visible drop in pressure over a period of 5 minutes.

A U-tube manometer or digital manometer is used to measure the pressure drop.

Note: these guidelines are only a small part of the actual standard. For further details about these guidelines, please consult NPR 3378-5 and NPR 3378-6.

## Pressure loss diagram and pressure loss table for gas pipes

Just like water, gas also loses energy due to frictional forces against the wall of the pipe. You can make correct pipe calculations by using the pressure loss diagrams for gas. Under the NEN 1078 standard, piping systems should be planned so that the pressure loss is not greater than the difference between the working pressure and the minimum required supply pressure that is set by the manufacturer of the appliance. This means for a household gas installation that the total pressure loss from the outlet of the gas meter to the appliance may be 250 Pa 12 (2.5 mbar).



*Henco provided all the gas pipes and fittings for Palm Jumeirah (Dubai)*

## Henco GAS fittings - PVDF Press

The PVDF press fittings for gas differ in only one significant technical aspect compared to press fittings for sanitary and heating applications. The fittings have a special O-ring that is made from the HNBR and is resistant to gas. To make this difference visible, every pressure sleeve has a yellow marking. The fittings for gas should never be used for sanitary applications or heating applications. Similarly, fittings for gas should only be used in combination with the yellow HENCO multilayer pipe for gas.



## KIWA - GASTEC QA

The HENCO system for gas is only permitted in countries where a gas quality mark has been granted.

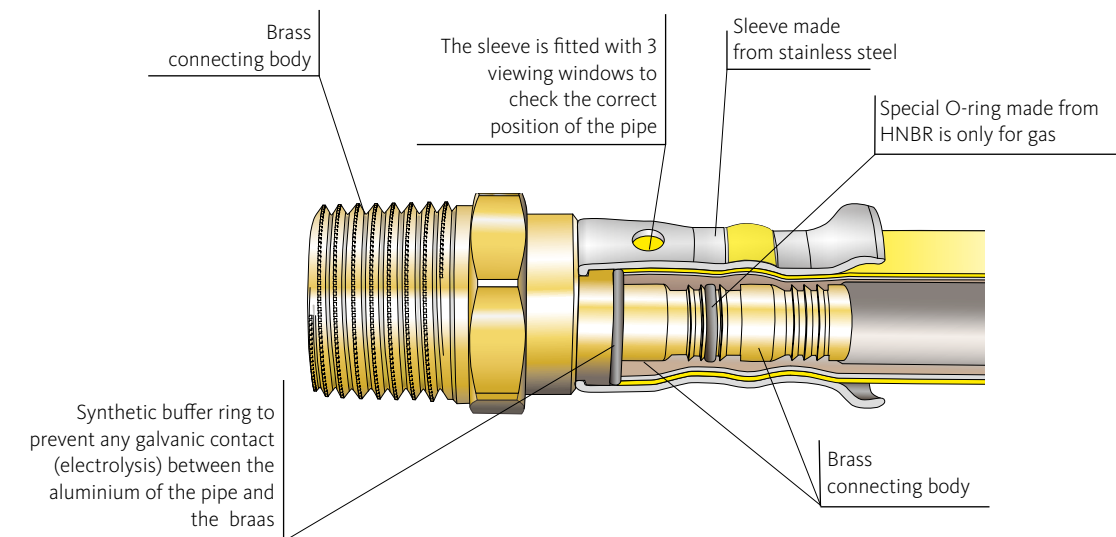
Consult the regulations gas piping systems which apply in the country. The HENCO synthetic gas system carries the KIWA-GASTEC gas quality mark 39581/01 and is intended for domestic gas installations and for transporting gas according to NPR-3378-5 and NPR-3378-6 of December 2012 and the amendments 3378-5/A1 and 3378-6/A1.



## Henco GAS fittings - BRASS press

The BRASS press fittings for gas only differ in one important technical aspect from the BRASS fittings for sanitary and heating applications. The fittings are provided with a special O-ring. This O-ring is made from HNBR and is resistant to gas. To make this easier to see, the fittings have a yellow marking on each pressure sleeve. Fittings for gas should never be used for sanitary applications or heating.

Conversely, fittings for gas should only be used in combination with the yellow HENCO multilayer pipe for gas.



## DVGW - UNI/TS - WaterMark

The HENCO system for gas is only permitted in countries where a gas quality mark has been granted. Consult the regulations gas piping systems which apply in the country. The HENCO multilayer gas system with BRASS press fittings carries the German DVGW gas quality mark DVGW-TRGI200, the Italian UNI/TS 11344 and the Australian WaterMark 74694.





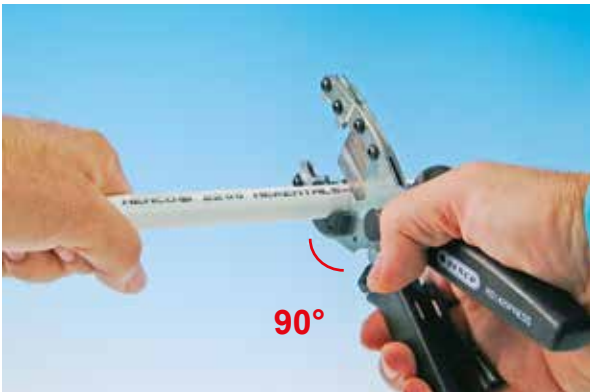
# Making a press connection

## Step by step



Remove the packaging

Use the HENCO SAFECUT for this.



## Cutting

Always cut the pipe at an angle of 90° (squarely). Use HENCO tools, a guillotine cutter or pipe cutter for this.

The guillotine cutter is provided with a shoulder to assist installation of the pipe under 90°.

Do not cut the pipe on a bended section. We recommend that you shorten pipes with larger diameters using a cutter.

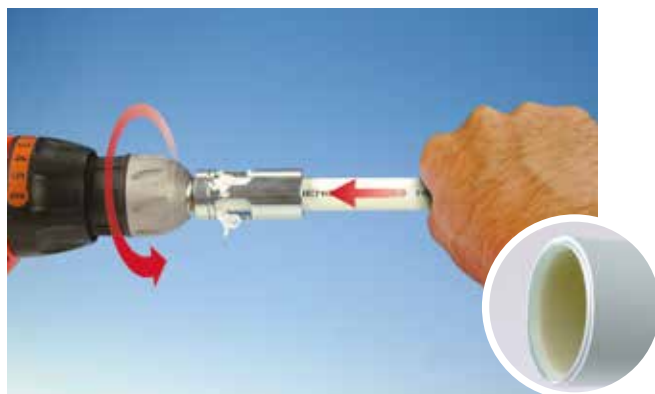


## Calibration

After the pipe has been cut squarely cut, it needs to be calibrated.

This should be done using the HENCO kalispeed.

1. Place the pipe straight in the kalispeed and whilst turning, press until the stop is reached.
2. Turn the kalispeed until you see the bevels on the pipe and have evenly chamfered the inner and outer edges of the pipe.
3. Remove the kalispeed, and dispose of swarth from the pipe and kalispeed.



If the pipe is correctly calibrated (centered, chamfered, levelled off), the chamfering will be clearly visible around the inner and outer edges of the pipe.



### Position pipe

Slide the calibrated pipe all the way into the press fitting so the colour of the pipe is visible through the inspection windows.



### Pressing

Open the jaws and ensure that the shoulder of the fitting is positioned in the groove of the jaws. Close the positioned jaws and start pressing. The pressing machine needs to complete a full movement.

The positioned jaws should completely seal up the sleeve after pressing.

You should not press the same sleeve more than once.



Open the jaws after pressing and check whether the pipe is fully inserted so the colour of the pipe is visible through the inspection windows.



### Guarantee

When a connection is pressed incorrectly, for example due to a wrong positioning of the fitting in the jaw or the use of a press jaw with a wrong profile, the entire connection has to be removed and replaced. Fittings should not, on any account, be pressed twice with different press jaws. When removing an entire connection both fitting and pressed part of the pipe should be removed.



This also applies when the pipe detaches from a fitting for whatever reason.

All Henco press fittings have fixed mounted sleeves. The user should never remove the sleeve from the fitting. If this is the case, Henco reserves the right to refuse warranty.

It is not allowed to install a fitting and / or tube with other tools than mentioned in this technical manual.



*Henco gas pipe black UV protected*

## Pressing without applying stresses

It is very important not to apply stresses to the pipe during pressing. Pipes with fittings should also be kept free of stresses any further assembly.

Once a fitting has been mounted to one end of the pipe using a press connection, no further stresses should be exerted on the fitting through the pipe. If further bending is required, you should fully support the pipe, not the fitting, with your hand.

When press and compression connections are used, the compression connection should be made first.

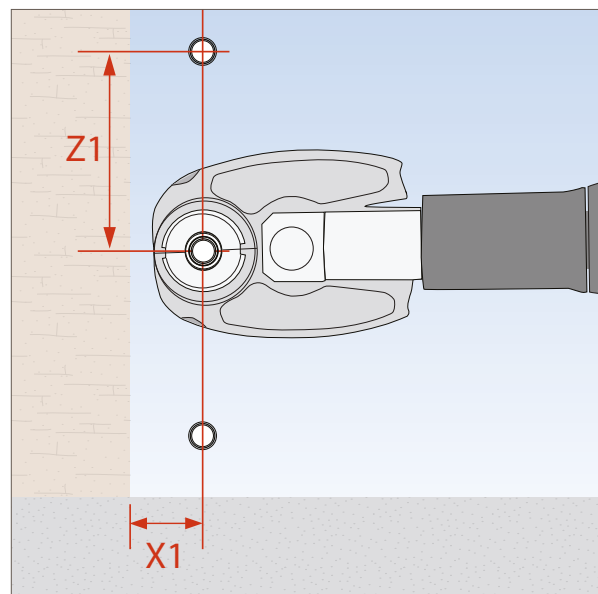
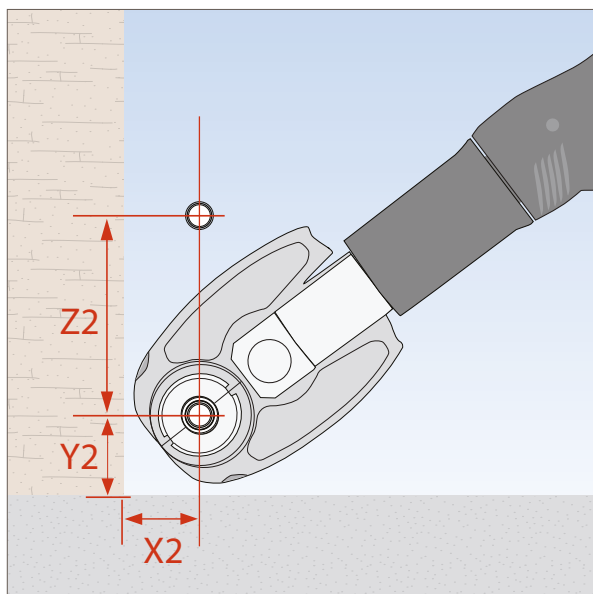


## Required assembly space for the pressing jaw

Required assembly space for HENCO pressing jaws (Type BE and BE-MINI\*)

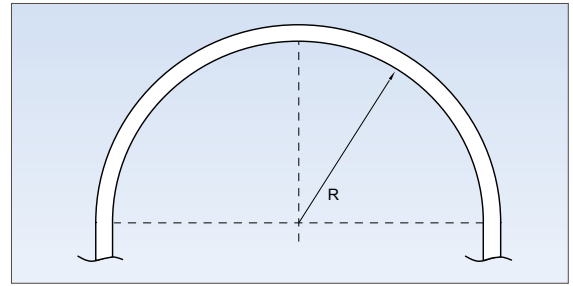
	14X2	16x2	18X2	20X2	26X3	32X3	40X3.5	50X4.0	63X4.5
X1	30	30	30	30	35	35	50	55	90
Z1	65	65	65	65	70	75	110	115	120
X2	40	40	40	40	50	50	70	75	95
Y2	40	40	40	40	50	50	70	75	95
Z2	90	90	90	90	100	110	135	135	140

\* BE-MINI to Ø 32



# Bending HENCO pipes

You should not use heat to bend HENCO pipes. For pipes with diameters larger than  $\varnothing 26$ , press fittings should be used. The pipes can be bent manually but it is better to use an internal or external spiral spring for this. To form bends with the shortest possible radius, we recommend the use of HENCO bending tools. When bending pipes, the following bending radii should be respected.



Pipe	Minimum bending radius manual/ external spiral spring (mm)		Minimum bending radius internal spiral spring (mm)		Bending radius at BM16, BM 20 and BM 26	
	HENCO Standard	HENCO RIXc	HENCO Standard	HENCO RIXc	HENCO	HENCO RIXc
12 x 2	R 60 (5xDu)	-	R 30 (3xDu)	-	-	-
14 x 2	R 70 (5xDu)	-	R 42 (3xDu)	-	-	-
16 x 2	R 80 (5xDu)	R 80 (5xDu)	R 48 (3xDu)	R 48 (3xDu)	R 32 (2xDu)	R 32 (2xDu)
18 x 2	R 90 (5xDu)	R 90 (5xDu)	R 54 (3xDu)	R 54 (3xDu)	-	-
20 x 2	R 100 (5xDu)	R 100 (5xDu)	R 60 (3xDu)	R 60 (3xDu)	R 60 (3xDu)	-
26 x 3	R 130 (5xDu)	R 130 (5xDu)	R 78 (3xDu)	R 78 (3xDu)	R 78 (3xDu)	R 78 (3xDu)
32 X3	R 160 (5xDu)	-	-	-	-	-

## Bending with a bending tool



Bending with an external bending spring

Bending with an internal bending spring

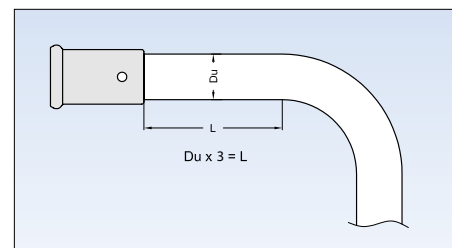
Manual bending



Bending tool

You should position the start of the bend (L) at a distance of at least 3x the outer diameter of the fitting.

Never use cracked pipes!



# Henco GAS certificates

## KIWA - Certificate



Number	88311/02	Replaces	88311/01
Issued	06-03-2017	Scope	KE 198
Contract number	Q10/003	Page	1-6

### Product Certificate

## Multilayer pipe system

Based on pre-certification tests as well as periodic inspections by Kiwa Nederland B.V., the products referred to in this certificate and marked with the GASTEC QA mark, supplied by

## Henco Industries N.V.

may, on delivery, be relied upon to comply with the GASTEC QA Approval Requirements 198, for "Multilayer pipe systems for indoor gas installations with a maximum operating pressure up to and including 5 bar", dated May 2007 + A1: 2010".

Bouke Meekma  
Kiwa

This certificate is issued by Kiwa Nederland B.V. in conjunction with the KIWA regulations for Product Certification.

This certificate consists of 6 pages.  
Publication of the certificate is allowed.

Kiwa Nederland B.V.  
Wilmsdorf 50  
P.O. Box 137  
7300 AC APELDOORN  
The Netherlands  
Tel +31- 55 639 33 55  
Fax +31- 55 639 36 78  
www.kiwa.nl



Company  
Henco Industries N.V.  
Toekomstlaan 27  
2200 Herentals  
Belgium  
[www.henco.be](http://www.henco.be)

T +3214285660  
F +3214218712



Installation guidelines see page 35-40

# Henco GAS certificates

## DVGW - Certificate



**CERT**

### DVGW-Baumusterprüfzertifikat DVGW type examination certificate

**DG-8505CO0266**

Registriernummer  
registration number

<b>Anwendungsbereich</b> <i>field of application</i>	Produkte der Gasversorgung <i>products of gas supply</i>
<b>Zertifikatinhaber</b> <i>owner of certificate</i>	Henco Industries N.V. Toekomstlaan 27, B-2200 Herentals
<b>Vertreiber</b> <i>distributor</i>	Henco Industries N.V. Toekomstlaan 27, B-2200 Herentals
<b>Produktart</b> <i>product category</i>	Installationssysteme und Systemverbinder: Gasinstallationssystem (8505)
<b>Produktbezeichnung</b> <i>product description</i>	Gasinstallationssystem bestehend aus Verbundrohr (PE-Xc/Al/PE-Xc) und Pressverbindern aus Metall, Typ M-MV
<b>Modell</b> <i>model</i>	Henco-Gas
<b>Prüfberichte</b> <i>test reports</i>	Kontrollprüfung Labor: 156 293e Ü2015 vom 07.06.2016 (GWI)
<b>Prüfgrundlagen</b> <i>test basis</i>	DVGW VP 625 (01.05.2005) DVGW VP 632 (01.05.2005)

1204-04-419

**Ablaufdatum / AZ**  
*date of expiry / file no.* 30.08.2019 / 16-0786-GNV

01.03.2017 Rie A-1/2

Datum, Bearbeiter, Blatt, Leiter der Zertifizierungsstelle  
*date, issued by, sheet, head of certification body*

DVGW CERT GmbH ist von der DAkkS nach DIN EN ISO/IEC 17065:2013 akkreditierte Stelle für die Zertifizierung von Produkten der Energie- und Wasserversorgung.

DVGW CERT GmbH is an accredited body by DAkkS according to DIN EN ISO/IEC 17065:2013 for certification of products for energy and water supply industry.



Deutsche  
Akkreditierungsstelle  
D-ZE-16028-01-05

DVGW CERT GmbH  
Zertifizierungsstelle

Josef-Wilmer-Str. 1-3  
53123 Bonn

Tel. +49 228 91 88 - 888  
Fax +49 228 91 88 - 993

www.dvgw-cert.com  
info@dvgw-cert.com

# Henco GAS certificates

## UNI/TS - Certificate



Numero K064877/02

Sostituisce K064877/01

Emesso 22.04.2014

Prima emissione 07.10.2011

Rapporto 110501497

Contratto K10-07

### CERTIFICATO DI PRODOTTO KIWA-UNI PRODUCT CERTIFICATE KIWA-UNI

Kiwa Italia dichiara che i prodotti  
*Kiwa Italia hereby declare that the products*

**Sistemi di tubazioni multistrato metallo plastiche e raccordi per installazione interna per il trasporto del gas**  
*Metal-plastic multilayer piping systems and fittings for indoor installation for the conveyance of gaseous fuels*

Marchio del sistema/System Trade mark: **HENCO GAS**  
composto da/made of:  
Tubo multistrato/Multilayer Pipe: **Henco Standard**  
Raccordi/Fittings: **Henco Press Brass**

Model	Nominal dm and wall thickness	Layers Material	Type	Fittings
<b>Henco Gas</b>	Dn 16x2,0 Al 0,4	PE-Xc/Al/PE-Xc	MOP 0,5 GAS	Brass press fittings
	Dn 20x2,0 Al 0,4	PE-Xc/Al/PE-Xc	MOP 0,5 GAS	Brass press fittings
	Dn 26x3,0 Al 0,5	PE-Xc/Al/PE-Xc	MOP 0,5 GAS	Brass press fittings
	Dn 32x3,0 Al 0,7	PE-Xc/Al/PE-Xc	MOP 0,5 GAS	Brass press fittings

Sistema Prodotto da/System Produced by: **Henco Industries N.V.**  
Herentals, Belgium

In base ai test di tipo nonché alle ispezioni periodiche condotte da Kiwa possono essere ritenuti conformi ai requisiti del Documento Tecnico Ki - 0410 basato sulla normativa UNI 11344:2014 e quindi marcati Kiwa-UNI  
*Based upon type tests and on Kiwa's periodic factory inspections, the products can be considered to be in compliance with the requirement of Technical Document Ki - 0410, based on the standard UNI 11344:2014 and consequentially marked Kiwa-UNI*

Il presente certificato viene rilasciato in accordo al Regolamento Kiwa Italia per la Certificazione di prodotto ed è composto da 1 pagina.  
*This certificate is issued in accordance with the Kiwa Italia regulations for Product Certification and consists of 1 pages*

Kiwa Italia  
  
Ing. Emanuele Ferrari  
Product Certification Director.



**Kiwa Italia S.p.a.**  
Sede Legale:  
Via C. Goldoni, 1  
20129 Milano  
Sede Amministrativa e operativa:  
Via Treviso, 32/34  
31020 San Vendemiano (TV)  
[www.1kiwa.com](http://www.1kiwa.com)



Membro degli Accordi di Mutuo Riconoscimento EA, IAF e ILAC  
Signatory of EA, IAF and ILAC Mutual Recognition Agreements



# Henco GAS certificates

WaterMark - Certificate



## CERTIFICATE OF CONFORMITY



*ApprovalMark International* hereby grants

### HENCO INDUSTRIES NV

Toekomstlaan 27,  
2200 Herentals,  
Belgium

Evaluated to:

**AS 4176.8 - 2010 Multilayer pipes for pressure application. Part 8: Multilayer pipe systems for consumer gas installations with maximum operating pressure up to and including 5 bar (500 kPa) specifications for systems (ISO 17484-1:2006, MOD)**

The ISO Type 5 licensee shall comply with all the terms and conditions as stipulated by the governance of the operating rules of ISO Type 5 scheme, and shall comply with standard requirement at all times including when standard is amended. The ISO Type 5 license only covers the product which is identified in the product schedule.

Certificate No. AMI 74694

Issued: 9th January 2017

Expires: 9th January 2018

**John PRASAD**  
Certification Manager



Registered by: ApprovalMark International Pty Ltd (ABN 88 143 258 874) Unit 20, 33 Holbeche Road, Airdell Park NSW 2146 Australia. The assessment was carried with appropriate skill and assessment by ApprovalMark International Pty Ltd; however it will only accept its responsibility for proven negligence. The certificate remains the property of ApprovalMark International Pty Ltd.

ApprovalMark

# GAS pipes

## Type: COIL



### Henco multilayer pipe (Coil)

Article number	m / Pallet	Type
50-160212-GAS	50 m / 1500 m	16x2
50-200216-GAS	50 m / 1000 m	20x2
50-260320-GAS	50 m / 800 m	26x3
50-320326-GAS	50 m / 650 m	32x3

## Type: COIL - WHITE UV



### Henco multilayer pipe (Coil) - white UV protected

Article number	m / Pallet	Type
100-R200216-GAS-UV	100 m / 1500 m	20x2

## Type: COIL - BLACK UV



### Henco multilayer pipe (Coil) - black UV protected

Article number	m / Pallet	Type
100-160212-BLACK-GAS	100 m / 2200 m	16x2

## Type: STRAIGHT LENGTH



### Henco multilayer pipe (Straight length)

Article number	Cylinder	Type
05-160212-GAS	125 m	16x2
05-200216-GAS	90 m	20x2
05-260320-GAS	50 m	26x3
05-320326-GAS	35 m	32x3
05-403533-GAS	45 m	40x3,5

## Type: GAS PIPE IN PIPE



### With colour coded conduit (Coil)

Article number	m / Pallet	Type
25-016GASMG	25 m / 500 m	16x2
50-016GASMG	50 m / 500 m	16x2
25-020GASMG	25 m / 500 m	16 x 2
50-020GASMG	50 m / 800 m	20x2
50-026GASMG	50 m / 500 m	26x3
25-032GASMG	25 m / 300 m	32x3

# GAS fittings - PVDF Press

## Type: 1PKG



### Elbow 90°

Article number	Bag / Box	Type
1PKG-1616	10 pc. / 120 pc.	16x16
1PKG-2020	10 pc. / 80 pc.	20x20
1PKG-2626	5 pc. / 50 pc.	26x26
1PKG-3232	5 pc. / 30 pc.	32x32
1PKG-4040	5 pc. / 20 pc.	40x40

## Type: 2PKG



### Backplate elbow female

Article number	Bag / Box	Type
2PKG-1603	10 pc. / 50 pc.	16x3/8" (56 mm)
2PKG-1604BP *	10 pc. / 50 pc.	16x1/2" (56 mm)
2PKG-2004BP *	10 pc. / 50 pc.	20x1/2" (56 mm)
2PKG-2005	5 pc. / 30 pc.	20x3/4" (56 mm)
2PKG-2605	5 pc. / 30 pc.	26x3/4" (56 mm)

\* With black plug BP04 1/2"

## Type: 2PKG-K



### Backplate elbow female, short model

Article number	Bag / Box	Type
2PKG-1604KBP *	10 pc. / 50 pc.	16x1/2" (40 mm)

\* With black plug BP04 1/2"

## Type: 3PKG



### Double backplate elbow female, short model

Article number	Bag / Box	Type
3PKG-160416BP *	10 pc. / 30 pc.	16x1/2"x16 (40 mm)
3PKG-200420BP *	10 pc. / 30 pc.	20x1/2"x20 (40 mm)

\* With black plug BP04 1/2"

## Type: 5PKG



### Bent 90° male adapter

Article number	Bag / Box	Type	Subgroup
5PKG-1604	10 pc. / 60 pc.	16x1/2"	
5PKG-2004	10 pc. / 60 pc.	20x1/2"	
5PKG-2005	10 pc. / 50 pc.	20x3/4"	
5PKG-2605	10 pc. / 40 pc.	26x3/4"	
5PKG-3206	5 pc. / 20 pc.	32x1"	
5PKG-4007	5 pc. / 15 pc.	40x5/4"	

# GAS fittings - PVDF Press

## Type: 6PKG



### Bent 90° female adapter

Article number	Bag / Box	Type
6PKG-1604BP *	10 pc. / 60 pc.	16x1/2"
6PKG-2004BP *	10 pc. / 60 pc.	20x1/2"
6PKG-2005	10 pc. / 50 pc.	20x3/4"
6PKG-2605	10 pc. / 50 pc.	26x3/4"
6PKG-3206	5 pc. / 20 pc.	32x1"
6PKG-4007	5 pc. / 15 pc.	40x5/4"

\* With black plug BP04 1/2"

## Type: 9PKG



### T-piece

Article number	Bag / Box	Type
9PKG-161616	10 pc. / 60 pc.	16x16x16
9PKG-202020	10 pc. / 50 pc.	20x20x20
9PKG-262626	5 pc. / 30 pc.	26x26x26
9PKG-323232	5 pc. / 15 pc.	32x32x32
9PKG-404040	5 pc. / 10 pc.	40x40x40

## Type: 10PKG



### T-reduced centre

Article number	Bag / Box	Type
10PKG-201620	10 pc. / 50 pc.	20x16x20
10PKG-261626	5 pc. / 30 pc.	26x16x26
10PKG-262026	5 pc. / 30 pc.	26x20x26
10PKG-321632	5 pc. / 25 pc.	32x16x32
10PKG-321832	5 pc. / 25 pc.	32x18x32
10PKG-322032	5 pc. / 25 pc.	32x20x32
10PKG-322632	5 pc. / 20 pc.	32x26x32
10PKG-401640	5 pc. / 15 pc.	40x16x40
10PKG-402040	5 pc. / 15 pc.	40x20x40
10PKG-402640	5 pc. / 15 pc.	40x26x40
10PKG-403240	5 pc. / 10 pc.	40x32x40

# GAS fittings - PVDF Press

## Type: 11PKG



### T-branch and line reduced

Article number	Bag / Box	Type
11PKG-201616	10 pc. / 50 pc.	20x16x16
11PKG-202016	10 pc. / 50 pc.	20x20x16
11PKG-261620	5 pc. / 30 pc.	26x16x20
11PKG-262016	5 pc. / 30 pc.	26x20x16
11PKG-262020	5 pc. / 30 pc.	26x20x20
11PKG-262616	5 pc. / 30 pc.	26x26x16
11PKG-262620	5 pc. / 30 pc.	26x26x20
11PKG-322026	5 pc. / 20 pc.	32x20x26
11PKG-322626	5 pc. / 20 pc.	32x26x26
11PKG-402032	5 pc. / 15 pc.	40x20x32
11PKG-402632	5 pc. / 15 pc.	40x26x32
11PKG-403232	5 pc. / 10 pc.	40x32x32
11PKG-404026	5 pc. / 10 pc.	40x40x26
11PKG-404032	5 pc. / 10 pc.	40x40x32

## Type: 12PKG



### T-enlarged branch

Article number	Bag / Box	Type
12PKG-162016	10 pc. / 50 pc.	16x20x16
12PKG-202620	5 pc. / 30 pc.	20x26x20
12PKG-263226	5 pc. / 20 pc.	26x32x26
12PKG-324032	5 pc. / 15 pc.	32x40x32

## Type: 13PKG



### T-female branch

Article number	Bag / Box	Type
13PKG-160416BP *	10 pc. / 50 pc.	16X1/2"x16
13PKG-200420BP *	10 pc. / 50 pc.	20x1/2"x20
13PKG-200520	10 pc. / 30 pc.	20x3/4"x20
13PKG-260420BP *	5 pc. / 30 pc.	26x1/2"x20
13PKG-260426BP *	5 pc. / 30 pc.	26x1/2"x26
13PKG-260526	5 pc. / 30 pc.	26x3/4"x26
13PKG-320532	5 pc. / 15 pc.	32x3/4"x32
13PKG-320632	5 pc. / 10 pc.	32x1"x32
13PKG-320732	5 pc. / 10 pc.	32x5/4"x32
13PKG-400640	5 pc. / 10 pc.	40x1"x40
13PKG-400740	5 pc. / 10 pc.	40x5/4"x40

\* With black plug BP04 1/2"

# GAS fittings - PVDF Press

## Type: 14PKG



### T-male branch

Article number	Bag / Box	Type
14PKG-160416	10 pc. / 50 pc.	16x1/2"x16
14PKG-200420	10 pc. / 40 pc.	20x1/2"x20
14PKG-200520	10 pc. / 30 pc.	20x3/4"x20
14PKG-260426	5 pc. / 30 pc.	26x1/2"x26
14PKG-260526	5 pc. / 25 pc.	26x3/4"x26
14PKG-260626	5 pc. / 20 pc.	26x1"x26
14PKG-320532	5 pc. / 15 pc.	32x3/4"x32
14PKG-400740	5 pc. / 10 pc.	40x5/4"x40

## Type: 15PKG



### Straight coupling

Article number	Bag / Box	Type
15PKG-1616	10 pc. / 150 pc.	16x16
15PKG-2020	10 pc. / 80 pc.	20x20
15PKG-2626	5 pc. / 50 pc.	26x26
15PKG-3232	5 pc. / 30 pc.	32x32
15PKG-4040	5 pc. / 25 pc.	40x40

## Type: 16PKG



### Reducing coupling

Article number	Bag / Box	Type
16PKG-2016	10 pc. / 100 pc.	20x16
16PKG-2616	5 pc. / 60 pc.	26x16
16PKG-2620	5 pc. / 50 pc.	26x20
16PKG-3216	5 pc. / 50 pc.	32x16
16PKG-3220	5 pc. / 40 pc.	32x20
16PKG-3226	5 pc. / 40 pc.	32x26
16PKG-4026	5 pc. / 30 pc.	40x26
16PKG-4032	5 pc. / 25 pc.	40x32

## Type: 17PKG



### Straight male adapter

Article number	Bag / Box	Type
17PKG-1604	10 pc. / 80 pc.	16x1/2"
17PKG-2004	10 pc. / 80 pc.	20x1/2"
17PKG-2005	10 pc. / 50 pc.	20x3/4"
17PKG-2605	10 pc. / 50 pc.	26x3/4"
17PKG-2606	10 pc. / 40 pc.	26x1"
17PKG-3206	10 pc. / 40 pc.	32x1"
17PKG-3207	5 pc. / 25 pc.	32x5/4"
17PKG-4006	5 pc. / 25 pc.	40x1"
17PKG-4007	5 pc. / 25 pc.	40x5/4"

# GAS fittings - PVDF Press

## Type: 18PKG



### Straight female adapter

Article number	Bag / Box	Type
18PKG-1604	10 pc. / 80 pc.	16x1/2"
18PKG-2004	10 pc. / 80 pc.	20x1/2"
18PKG-2005	10 pc. / 50 pc.	20x3/4"
18PKG-2605	10 pc. / 50 pc.	26x3/4"
18PKG-2606	10 pc. / 40 pc.	26x1"
18PKG-3206	10 pc. / 40 pc.	32x1"
18PKG-3207	5 pc. / 25 pc.	32x5/4"
18PKG-4006	5 pc. / 25 pc.	40x1"
18PKG-4007	5 pc. / 25 pc.	40x5/4"

## Type: 27PKG



### 45° bend

Article number	Bag / Box	Type
27PKG-4040	5 pc. / 25 pc.	40x40

# GAS fittings - BRASS Press

## Type: 1PG



### Elbow 90°

Article number	Bag / Box	Type
1PG-1616	10 pc. / 150 pc.	16x16
1PG-2020	10 pc. / 80 pc.	20x20
1PG-2626	5 pc. / 50 pc.	26x26
1PG-3232	5 pc. / 30 pc.	32x32

## Type: 2PG



### Backplate elbow female

Article number	Bag / Box	Type
2PG-1604	10 pc. / 50 pc.	16x1/2" (52 mm)
2PG-2004	10 pc. / 50 pc.	20x1/2" (52 mm)
2PG-2005	10 pc. / 50 pc.	20x3/4" (52 mm)
2PG-2605	5 pc. / 50 pc.	26x3/4" (52 mm)

## Type: 2PG-K



### Backplate elbow, short model

Article number	Bag / Box	Type
2PG-1604K	10 pc. / 50 pc.	16x1/2" (35 mm)

## Type: 3PG



### Double backplate elbow female

Article number	Bag / Box	Type
3PG-160416	10 pc. / 40 pc.	16x1/2"x16 (52 mm)
3PG-200420	10 pc. / 40 pc.	20x1/2"x20 (52 mm)

## Type: 5PG



### Elbow 90° male adapter

Article number	Bag / Box	Type
5PG-1604	10 pc. / 150 pc.	16x1/2"
5PG-2004	10 pc. / 100 pc.	20x1/2"
5PG-2005	10 pc. / 80 pc.	20x3/4"
5PG-2605	10 pc. / 60 pc.	26x3/4"
5PG-3206	8 pc. / 25 pc.	32x1"



# GAS fittings - BRASS Press

## Type: 6PG



### Elbow 90° female adapter

Article number	Bag / Box	Type
6PG-1604	10 pc. / 120 pc.	16x1/2"
6PG-2004	10 pc. / 120 pc.	20x1/2"
6PG-2005	10 pc. / 50 pc.	20x3/4"
6PG-2605	5 pc. / 50 pc.	26x3/4"
6PG-3206	5 pc. / 30 pc.	32x1"

## Type: 9PG



### T-piece

Article number	Bag / Box	Type
9PG-161616	10 pc. / 60 pc.	16x16x16
9PG-202020	10 pc. / 50 pc.	20x20x20
9PG-262626	5 pc. / 30 pc.	26x26x26
9PG-323232	1 pc. / 20 pc.	32x32x32

## Type: 10PG



### T-reduced centre

Article number	Bag / Box	Type
10PG-201620	10 pc. / 50 pc.	20x16x20
10PG-261626	5 pc. / 30 pc.	26x16x26
10PG-262026	5 pc. / 30 pc.	26x20x26
10PG-321632	5 pc. / 20 pc.	32x16x32
10PG-322032	5 pc. / 20 pc.	32x20x32
10PG-322632	5 pc. / 20 pc.	32x26x32

## Type: 11PG



### T-branch and line reduced

Article number	Bag / Box	Type
11PG-201616	10 pc. / 50 pc.	20x16x16
11PG-202016	10 pc. / 50 pc.	20x20x16
11PG-261620	5 pc. / 30 pc.	26x16x20
11PG-262020	5 pc. / 30 pc.	26x20x20
11PG-262616	5 pc. / 30 pc.	26x26x16
11PG-322626	5 pc. / 20 pc.	32x26x26

# GAS fittings - BRASS Press

## Type: 12PG



### T-enlarged branch

Article number	Bag / Box	Type
12PG-162016	10 pc. / 60 pc.	16x20x16
12PG-202620	5 pc. / 30 pc.	20x26x20
12PG-263226	5 pc. / 20 pc.	26x32x26

## Type: 13PG



### T-female centre

Article number	Bag / Box	Type
13PG-160416	10 pc. / 60 pc.	16x1/2"x16
13PG-200420	10 pc. / 50 pc.	20x1/2"x20
13PG-200520	10 pc. / 30 pc.	20x3/4"x20
13PG-260426	5 pc. / 30 pc.	26x1/2"x26
13PG-260526	5 pc. / 30 pc.	26x3/4"x26
13PG-320632	5 pc. / 20 pc.	32x1"x32

## Type: 15PG



### Straight coupling

Article number	Bag / Box	Type
15PG-1616	10 pc. / 200 pc.	16x16
15PG-2020	10 pc. / 140 pc.	20x20
15PG-2626	5 pc. / 80 pc.	26x26
15PG-3232	5 pc. / 50 pc.	32x32

## Type: 16PG



### Reducing coupling

Article number	Bag / Box	Type
16PG-2016	10 pc. / 150 pc.	20x16
16PG-2616	5 pc. / 100 pc.	26x16
16PG-2620	5 pc. / 80 pc.	26x20
16PG-3216	5 pc. / 60 pc.	32x16
16PG-3220	5 pc. / 60 pc.	32x20
16PG-3226	5 pc. / 60 pc.	32x26

# GAS fittings - BRASS Press

## Type: 17PG



### Straight male adapter

Article number	Bag / Box	Type
17PG-1604	10 pc. / 150 pc.	16x1/2"
17PG-2004	10 pc. / 150 pc.	20x1/2"
17PG-2005	10 pc. / 150 pc.	20x3/4"
17PG-2605	5 pc. / 80 pc.	26x3/4"
17PG-2606	5 pc. / 80 pc.	26x1"
17PG-3206	5 pc. / 50 pc.	32x1"

## Type: 18PG



### Straight female adapter

Article number	Bag / Box	Type
18PG-1604	10 pc. / 150 pc.	16x1/2"
18PG-2004	10 pc. / 100 pc.	20x1/2"
18PG-2005	10 pc. / 100 pc.	20x3/4"
18PG-2605	5 pc. / 80 pc.	26x3/4"
18PG-2606	5 pc. / 70 pc.	26x1"
18PG-3206	5 pc. / 50 pc.	32x1"

## Type: 26PG-Z



### Press-fit adapter to copper compression

Article number	Bag / Box	Type
26PG-16Z04	10 pc. / 150 pc.	16x1/2"
26PG-16Z05	10 pc. / 80 pc.	16x3/4"
26PG-20Z05	10 pc. / 70 pc.	20x3/4"
26PG-26Z06	5 pc. / 40 pc.	26x1"
26PG-32Z07	5 pc. / 40 pc.	32x5/4"

## Type: 30PG



### Press-fit adapter to copper compression

Article number	Bag / Box	Type
30PG-1615S	10 pc. / 120 pc.	16x15 Cu
30PG-2022S	10 pc. / 100 pc.	20x22 Cu
30PG-2622S	10 pc. / 80 pc.	26x22 Cu

## Type: 36PG



### Press-fit adapter to copper press

Article number	Bag / Box	Type
36PG-1615S	10 pc. / 120 pc.	16x15 Cu
36PG-2015P	10 pc. / 120 pc.	20x15 Cu
36PG-2022S	10 pc. / 100 pc.	20x22 Cu
36PG-2615P	10 pc. / 80 pc.	26x15 Cu
36PG-2622S	10 pc. / 80 pc.	26x22 Cu

# Tools

## Type: BI



### Internal bending spring

Article number	pc / Box	Type
BI-1612	1 pc. / 100 pc.	16x2 L=50 cm
BI-1612L	1 pc. / 50 pc.	16x2 L=100 cm
BI-2016	1 pc. / 75 pc.	20x2 L=50 cm
BI-2016L	1 pc. / 25 pc.	20x2 L=100 cm
BI-2620	1 pc. / 25 pc.	26x3 L=100 cm

## Type: BA



### External bending spring

Article number	pc / Box	Type
BA-1288	1 pc. / 50 pc.	12x1,88 L=50 cm
BA-1612	1 pc. / 50 pc.	16x2 L=50 cm
BA-2016	1 pc. / 50 pc.	20x2 L=50 cm

## Type: BM



### Bending tool

Article number	Packing	Type
BM-16	1 pc.	for Ø16
BM-20	1 pc.	for Ø20
BM-26	1 pc.	for Ø26

## Type: RSPRESS



### Guillotine cutter

Article number	Packing	Type
RS1420PRESS	1 pc.	14 till 20 mm
RS2640PRESS	1 pc.	26 till 40 mm

## Type: RSEM-PERS



### Replacement blade for art. RS1420PRESS and RS2640PRESS

Article number	Packing	Type
RSEM1420-PERS	1 pc.	14 till 20 mm
RSEM2640-PERS	1 pc.	26 till 40 mm

# Tools

## Type: KS-M



**Kalispeed, metal, for KS-K and electric drills (max. 500 rpm, clockwise only)**

Article number	Packing	Type
KS12M	1 pc.	for Ø12
KS14M	1 pc.	for Ø14
KS16M	1 pc.	for Ø16
KS18M	1 pc.	for Ø18
KS20M	1 pc.	for Ø20
KS26M	1 pc.	for Ø26
KS32M	1 pc.	for Ø32
KS40M	1 pc.	for Ø40

## Type: KS-K



**Clickhandle for KS (Kalispeed)**

Article number	Packing	Type
KS-K	1 pc.	up to Ø26 mm

## Type: KS-MSET1



**Set with KS-K and KS-M for Ø16, 20 and 26**

Article number	Packing	Type
KS-MSET1	1 pc.	MSET1

## Type: KS-MSET2



**Set with KS-K and KS-M for Ø14, 16, 18, 20, 26, 32 and 40**

Article number	Packing	Type
KS-MSET2	1 pc.	MSET2

# Tools

## Type: PRESSCHECK



### Tool to control the accuracy of a pressing

Article number	Packing	Type
PRESSCHECK1432	1 pc.	Ø14-32

## Type: BE



### Jaws

Article number	Packing	Type
BE16	1 pc.	BE 16x2
BE20	1 pc.	BE 20x2
BE26	1 pc.	BE 26x3
BE32	1 pc.	BE 32x3
BE40	1 pc.	BE 40x3,5

*Press tool compatibility: see technical manual*

## Type: BE-UNI



### Jaw mounting unit for M-BA00 and M-BHY, to be used with BE-H jaws

Article number	Packing	Type
BE-UNI	1 pc.	BE-UNI

*Press tool compatibility: see technical manual*

## Type: BE-H



### Inserts for BE-UNI, BE-MINI, M-BH

Article number	Packing	Type
BE16H	1 Set (2 pc.)	BE 16X2 H
BE20H	1 Set (2 pc.)	BE 20X2 H
BE26H	1 Set (2 pc.)	BE 26X3 H
BE32H	1 Set (2 pc.)	BE 32X3 H

## Type: BE-UNISSET1



### Set with jaw mounting unit and BE-H inserts Ø16, 20 and 26

Article number	Packing	Type
BE-UNISSET1	1 pc.	UNISSET1

*Press tool compatibility: see technical manual*

# Tools

## Type: BE-UNISET2



Set with jaw mounting unit and BE-H inserts Ø16, 20, 26, and 32

Article number	Packing	Type
BE-UNISET2	1 pc.	UNISET2

*Press tool compatibility: see technical manual*

## Type: TOOLBOX16202632



Box with KS16 20 26 32 M, BE-UNI, BE16 20 26 32 H, BI-1612, BI-2016, BA-1612, BA-2016, RS1420PRESS, SAFECUT

Article number	Packing	Type
TOOLBOX16202632	1 pc.	TOOLBOX16202632

## Type: M-BA03



Kit: battery press machine including battery + charge unit + case, linear drive 32 to 40 kN

Article number	Packing	Type
M-BA03	1 pc.	BA03

## Type: M-BAT03



Battery for M-BA003

Article number	Packing	Type
M-BAT03	1 pc.	BAT03

# Tools

## Type: M-LAD03



### Charge-unit for M-BA03

Article number	Packing	Type
M-LAD03	1 pc.	LAD03

## Type: M-TRANS03



### Mains Adapter for M-BA03

Article number	Packing	Type
M-TRANS03	1 pc.	TRANS03

## Type: M-BHY162026



### Kit: 230 volt hydraulic press machine with 16, 20, 26 jaws + metal case (110 volt also available), linear drive 32 to 40 kN

Article number	Packing	Type
M-BHY162026	1 pc.	Ø14-63

## Type: M-BHY



### Kit: 230 volt hydraulic press machine + metal case (110 volt also available), linear drive 32 to 40 kN

Article number	Packing	Type
M-BHY	1 pc.	Ø14-63



# Tools

## Type: M-BMINI2



Kit: compact rechargeable battery press machine with press monitoring + case + charge unit + battery 18V / 1,5 Ah Li-ion, jaw and interchangeable dies Ø16, 20, 26 (type BE-H), linear drive ca. 15 kN

Article number	Packing	Type
M-BMINI2	1 pc.	Ø14-32, 18V / 1,5 Ah Li-ion

## Type: M-BMINI2-S



Kit: compact rechargeable battery press machine with press monitoring + case + charge unit + battery 18V / 1,5 Ah Li-ion, linear drive ca. 15 kN

Article number	Packing	Type
M-BMINI2-S	1 pc.	Ø14-32, 18V / 1,5 Ah Li-ion

## Type: M-BATMINI2



Battery 18V / 1,5 Ah Li-ion for M-BMINI2

Article number	Packing	Type
M-BATMINI2	1 pc.	18V / 1,5 Ah Li-ion

## Type: M-LADMINI2



Charge-unit for M-BMINI2(-S)

Article number	Packing	Type
M-LADMINI2	1 pc.	for M-BATMINI2

# Tools

## Type: M-TRANSMINI2



### Mains Adapter for M-BMINI2(S)

Article number	Packing	Type
M-TRANSMINI2	1 pc.	18V / 230V

## Type: BE-MINI



### Jaw mounting unit for press machine M-BMINI(2)(-S) / M-HP32 and to be used with BE-H jaws

Article number	Packing	Type
BE-MINI	1 pc.	BE-MINI

## Type: BE..-MINI



### Jaw for press machine M-BMINI(2)(-S) and M-HP32

Article number	Packing	Type
BE16MINI	1 pc.	Ø16
BE20MINI	1 pc.	Ø20
BE26MINI	1 pc.	Ø26
BE32MINI	1 pc.	Ø32

## Type: BE..-MMINI



### M-profile jaw (copper) for press machine M-BMINI(2)(-S) and M-HP32

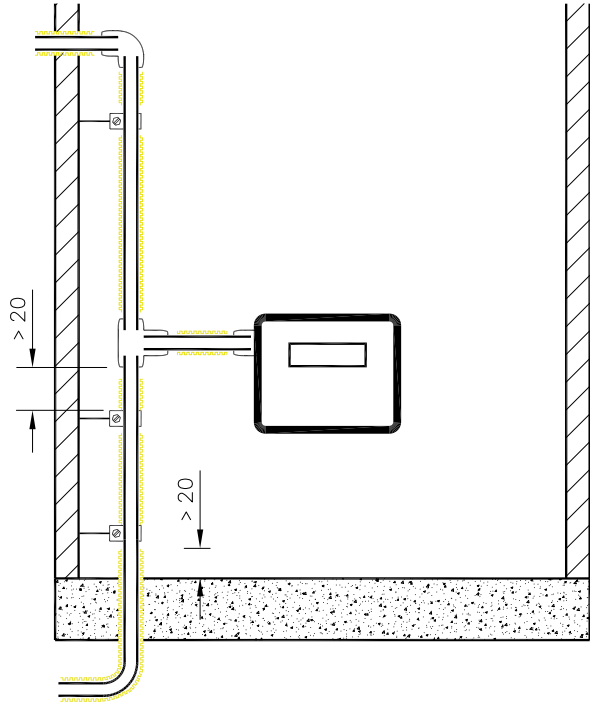
Article number	Packing	Type
BE15MMINI	1 pc.	Ø15Cu M-Profile
BE22MMINI	1 pc.	Ø22Cu M-Profile

# Installation guidelines

## KIWA - Installation guidelines

### Gaspipe in space with gas meter (NPR3378-6, 4.2.3.2)

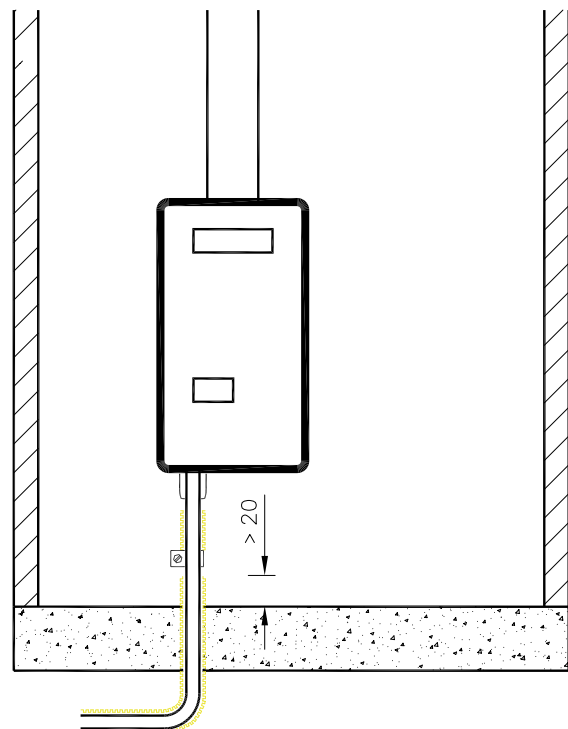
- ▶ Pipe needs to be protected with a flexible pipe sleeve
- ▶ Brackets needs to be mounted on the pipe
- ▶ Fittings do not require protection by means of a pipe sleeve



### Gaspipe in space with burner (NPR3378-6, 4.2.3.2)

This also applies for kitchens with a gas oven and gas device with build-on piping system.

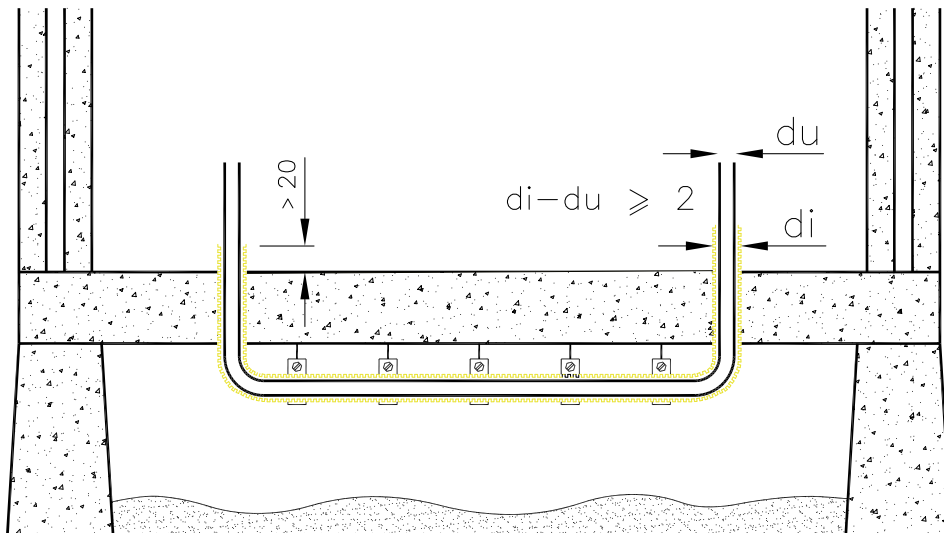
- ▶ Pipe needs to be protected with a flexible pipe sleeve
- ▶ Brackets needs to be mounted on the pipe
- ▶ Fittings do not require protection by means of a pipe sleeve



## KIWA - Installation guidelines

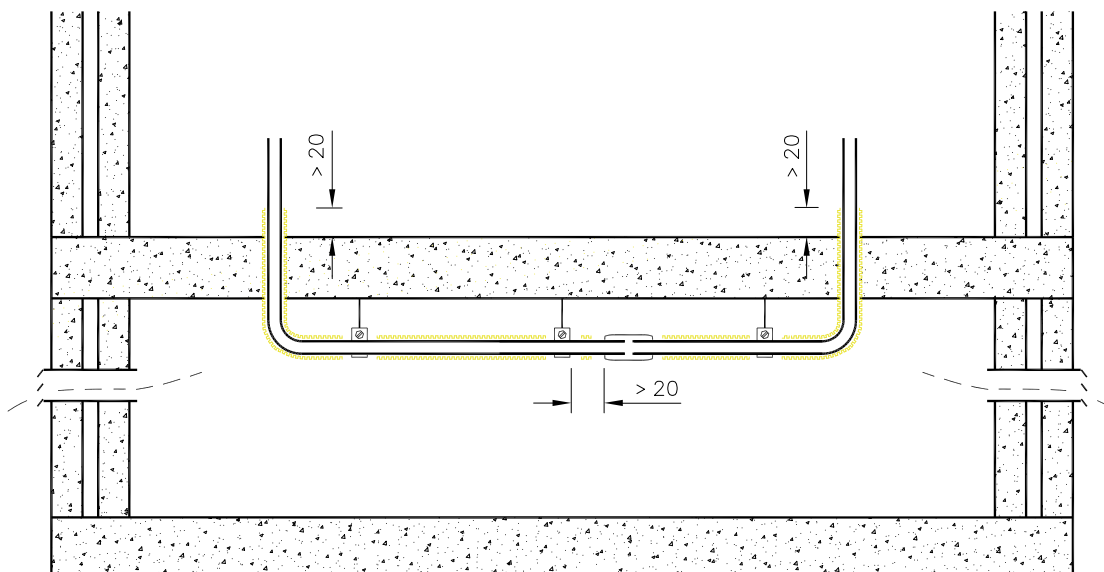
### Gas pipes in humid environment, such as a crawl space (NPR3378-6, 4.2.2.3)

- ▶ Multilayer pipes are allowed, provided that they are installed in an uninterrupted pipe sleeve
- ▶ Use of fittings for additional connections is not allowed
- ▶ Both ends of the pipe sleeve must protrude at least 20 mm above the finished floor



### Gas pipes in crawl space with watertight damp-proofing on the bottom (NPR 3378-6, 4.2.2.2)

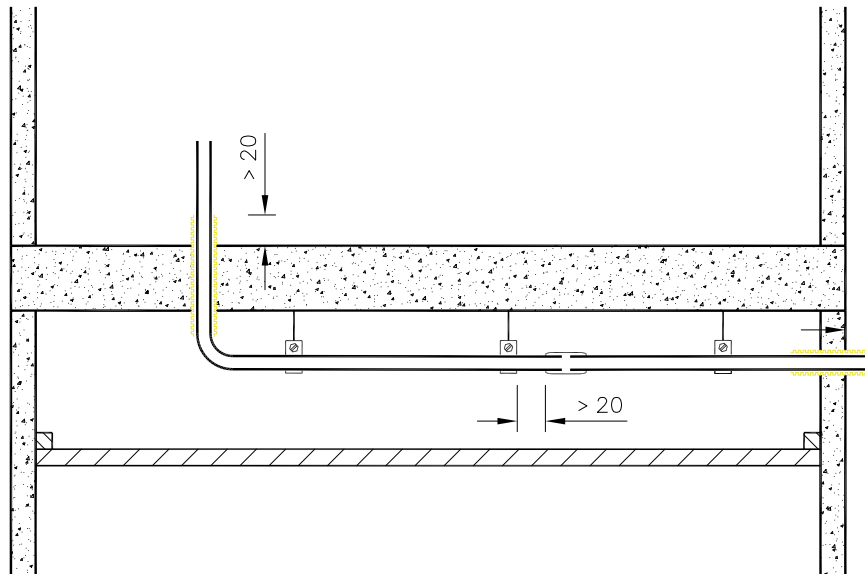
- ▶ Pipe needs to be protected with a flexible pipe sleeve
- ▶ Brackets needs to be mounted on the pipe
- ▶ Fittings do not require protection by means of a pipe sleeve



## KIWA - Installation guidelines

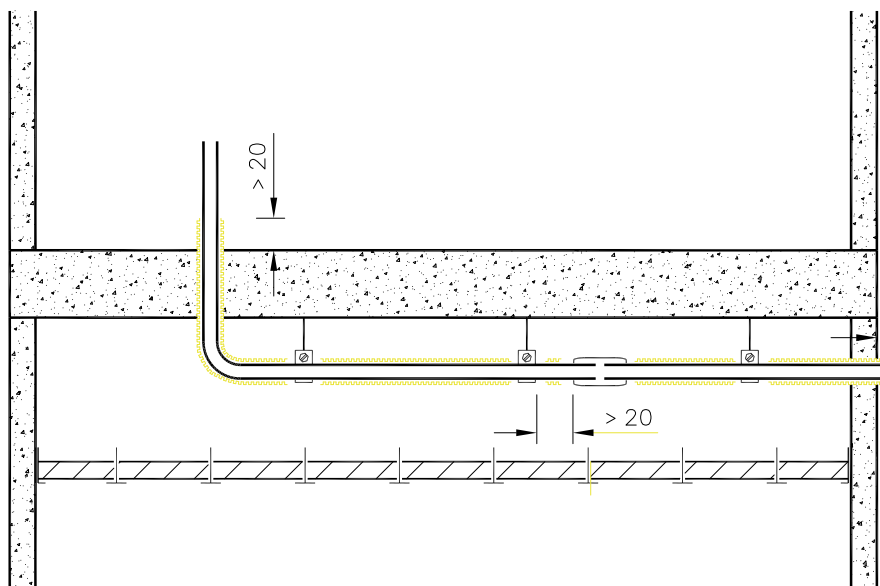
### Gas pipes in dry, non-corrosive spaces (NPR3378-6, 4.3.2.3)

- ▶ The use of pipe sleeves in these cases is not obligatory
- ▶ The pipe trajectory must be chosen in such a manner that any risk of damage e.g. by drilling or nailing is avoided



### Gas pipes above a lowered removable ceiling (NPR 3378-6, 4.2.4)

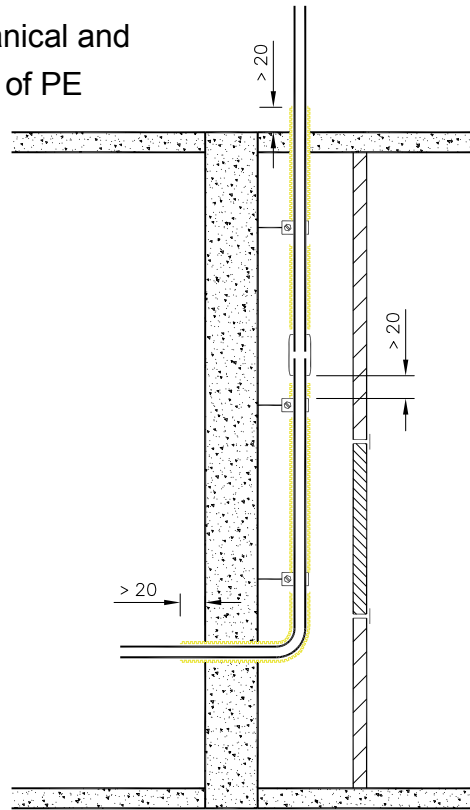
- ▶ Pipe needs to be protected with a flexible pipe sleeve
- ▶ Brackets needs to be mounted on the pipe
- ▶ Fittings do not require protection by means of a pipe sleeve



## KIWA - Installation guidelines

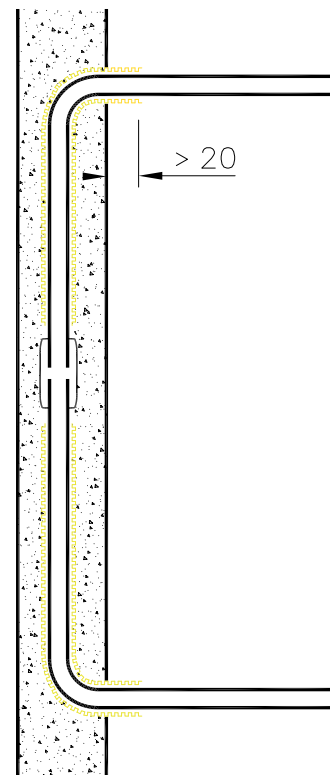
### Gas pipes in pipe shafts (NPR3378-6, 4.2.3.4)

- ▶ Multilayer pipe needs to be protected against mechanical and heat loads by means of a flexible pipe sleeve made of PE
- ▶ Fittings do not require protection by means of a pipe sleeve



### Gas pipes plastered in wall (NPR 3378-6, 4.3.3)

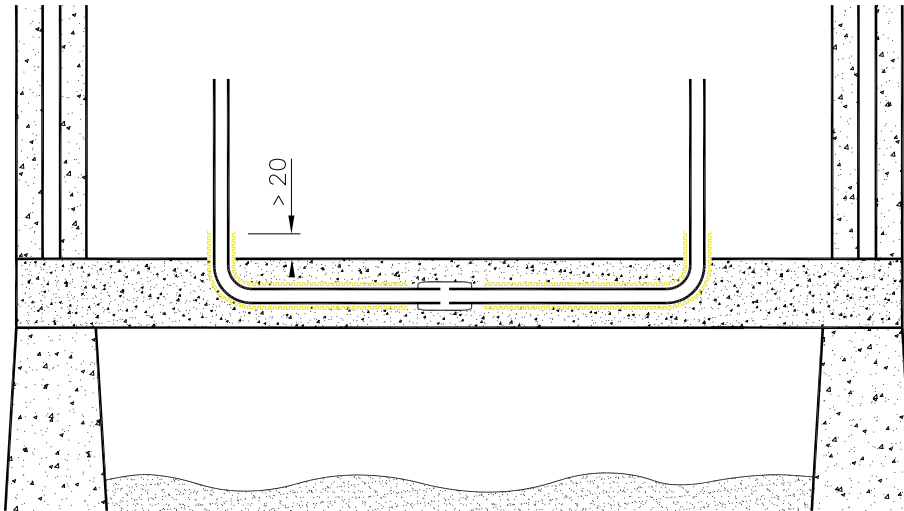
- ▶ Use of fittings is allowed
- ▶ Use of protection sleeve where the pipe protrudes from the floors and walls
- ▶ Use of protection sleeve is recommended, not obligatory



## KIWA - Installation guidelines

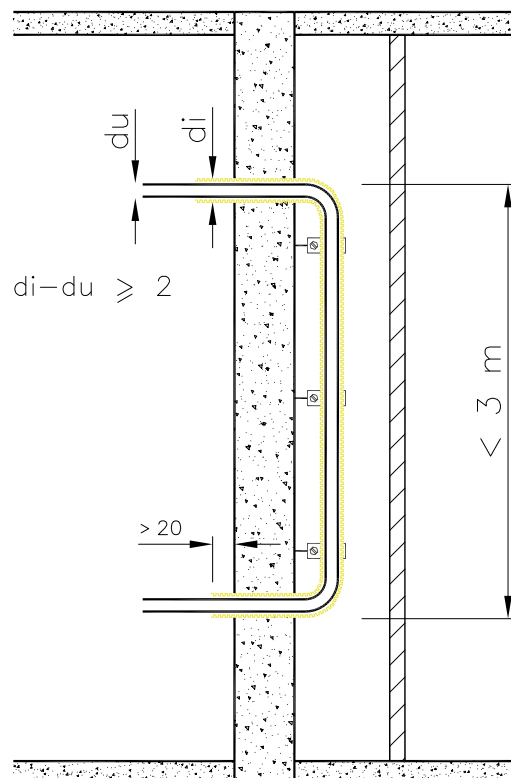
### Gas pipes embedded (NPR3378-6, 4.3.3)

- ▶ Fittings are allowed
- ▶ Use of protection sleeve where the pipe protrudes from the floors and walls
- ▶ Use of protection sleeve is recommended, not obligatory



### Gas pipes in humid, non-accessible shaft (NPR3378-6, 4.3.3.2)

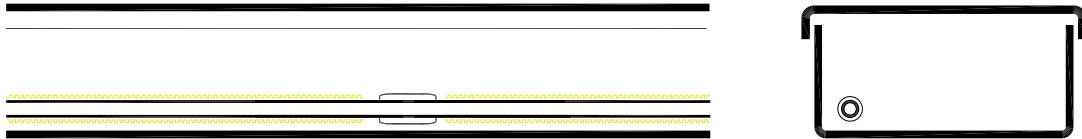
- ▶ Use of fittings for additional connections is not allowed
- ▶ Limit vertical length up to 3 meter



## KIWA - Installation guidelines

### Gas pipes in a closed pipe trench (NPR 3378-6, 4.3.4)

- ▶ Use of fittings is allowed
- ▶ Pipe needs to be protected with a flexible pipe sleeve
- ▶ Pipe trench needs to be covered and accessible





# DVGW - Installation guidelines

Henco Verbundrohrsystem nach Tafel 3 der TRGI 2008

Tab. 19.0 Auswahl des Gasströmungswächters mit TAE (GS-T K)

GS-T K	ein Gasgerät Q <sub>NB</sub> [kW]	mehrere Gasgeräte ΣQ <sub>NB</sub> [kW]
1,6	bis 11	bis 13
2,5	12 - 17	14 - 21
4	18 - 27	22 - 34
6	28 - 41	35 - 51
10	42 - 68	52 - 86
16	69 - 110	87 - 138

Tab. 19.1 Druckverlust Gasströmungswächter GS-T K Einzelzuleitung und Abzweigung

ΔP <sub>GS-T</sub>	GS1,6	2,5	4	6	10	16
Pa	Q <sub>NB</sub> [kW]					
10	6					
15	7	12	18	28	47	75
20	8	13	20	32	53	86
25	9	14	23	35	59	95
30	10	16	25	38	64	103
35	11	17	27	41	68	110

Tab. 19.2 Druckverlust Gasströmungswächter GS-T K Verbrauchs- und Verteilungsleitung

ΔP <sub>GS-T</sub>	GS1,6	2,5	4	6	10	16
Pa	Q <sub>NB</sub> [kW]					
15	8				58	116
20	9	14	23	35	67	138
25	10	16	26	39	82	
30	11	17	28	42	86	
35	12	19	30	46		
40	13	20	32	51		
45		21	34			

Tab. 20.1 Rohrdruckgefälle Henco Einzelzuleitung und Abzweigung

R	16	20	26	32	40
Pa/m	Q <sub>NB</sub> [kW]				
0.4			4	11	22
0.6			6	14	28
0.8		3	8	17	34
1.0		4	9	20	38
1.2		5	10	22	43
1.4		6	11	24	46
1.6			12	26	50
1.8		7	13	27	53
2.0			14	30	58
2.5	3	8	16	34	66
3.0	4	9	18	38	73
3.5		10	20	41	79
4.0	5	11	21	44	85
4.5		12	23	47	91
5	6	13	25	51	99
6		14	27	57	110
7	7	16	30	62	
8*		17	32	66	
9	8	18	34	71	
10	9	20	37	77	
12	10	22	41	85	
14	11	24	45	92	
16		26	48	99	
18	12	28	51	106	
20	13	29	54	110	

\* Grenze Erstausslegung

Tab. 20.2 Rohrdruckgefälle Henco Verbrauchs- und Verteilungsleitung

R	16	20	26	32	40
Pa/m	Q <sub>NB</sub> [kW]				
0.4			5	12	25
0.6		3	7	16	32
0.8		4	9	19	37
1.0		5	10	22	43
1.2		6	11	24	47
1.4			12	26	56
1.6		7	13	28	65
1.8			14	30	74
2.0		8	16	33	86
2.5		9	18	38	106
3.0		10	20	42	123
3.5		11	22	46	138
4**		12	24	51	
4.5	6	13	25	59	
5		15	27	69	
6	7	16	30	82	
7	8	18	33	95	
8*		19	36	107	
9	9	20	38	118	
10	10	22	41	138	
12	11	25	46		
14	12	27	53		
16	13	29	61		
18		31	69		
20	14	33	77		

\* Grenze Erstausslegung Verbrauchsleitung

\*\* Grenze Verteilungsleitung

Tab. 21 GS-Abgleich Henco

GS K	16	20	26	32	40
	Pa				
1,6	41				
2,5	88	23			
4	200	51	18		
6	406	103	36	10	
10		253	87	25	8
16			200	57	18

Tab. 23 Längenzuschlag für Formteile Henco

	16	20	26	32	40
l <sub>TA</sub> , l <sub>w</sub>	6	5	5	5	6
l <sub>TD</sub> , l <sub>0</sub> , l <sub>k</sub>	2,5	1,5	1,5	1,5	1,5

# DVGW - Installation guidelines

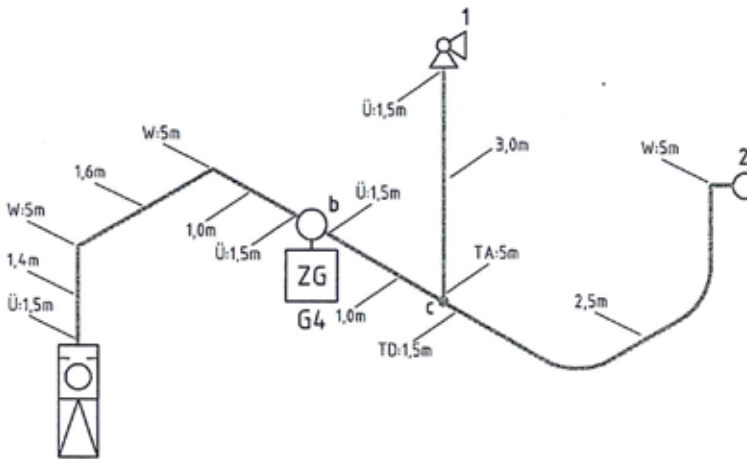


Abb. 1.0 Berechnungslängen = Rohrlänge + Zuschläge für Formteile nach Tab. 23

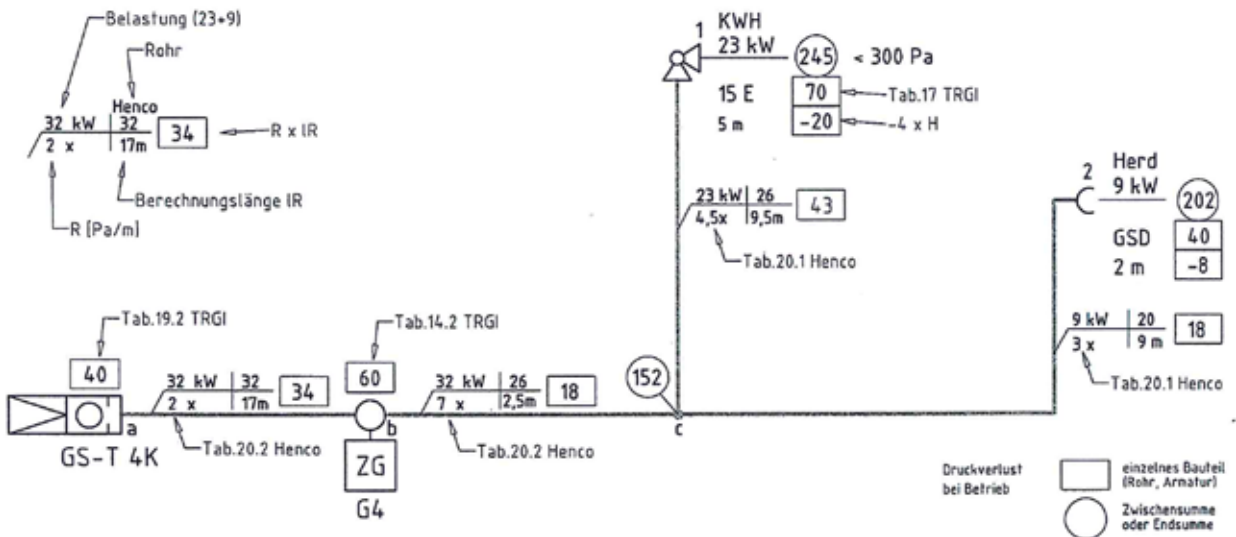


Abb. 1.1 Berechnung des Druckverlustes im Betrieb

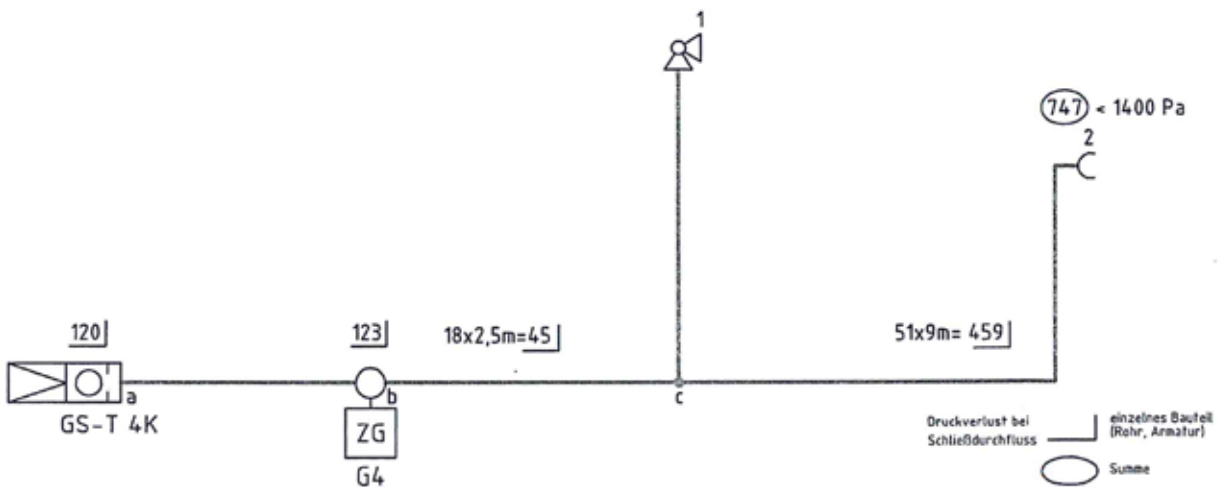
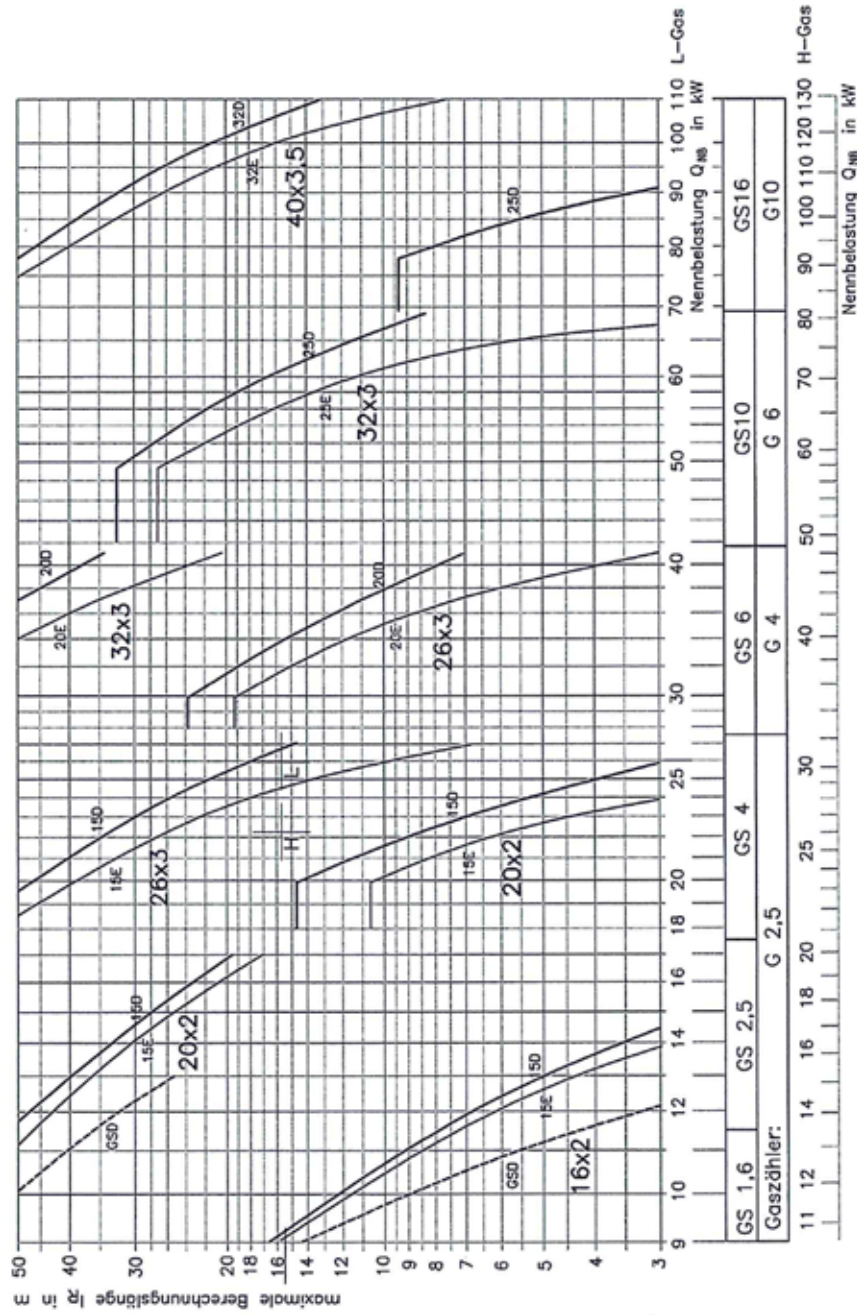


Abb. 1.2 GS-Abgleich

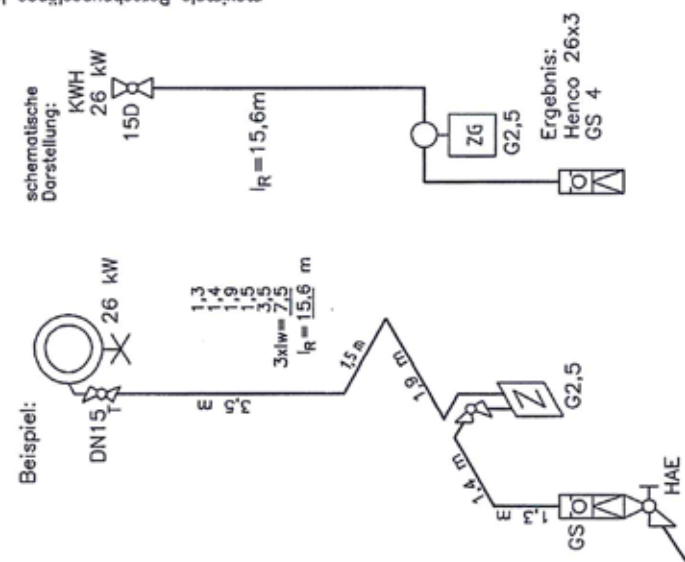


# DVGW - Installation guidelines

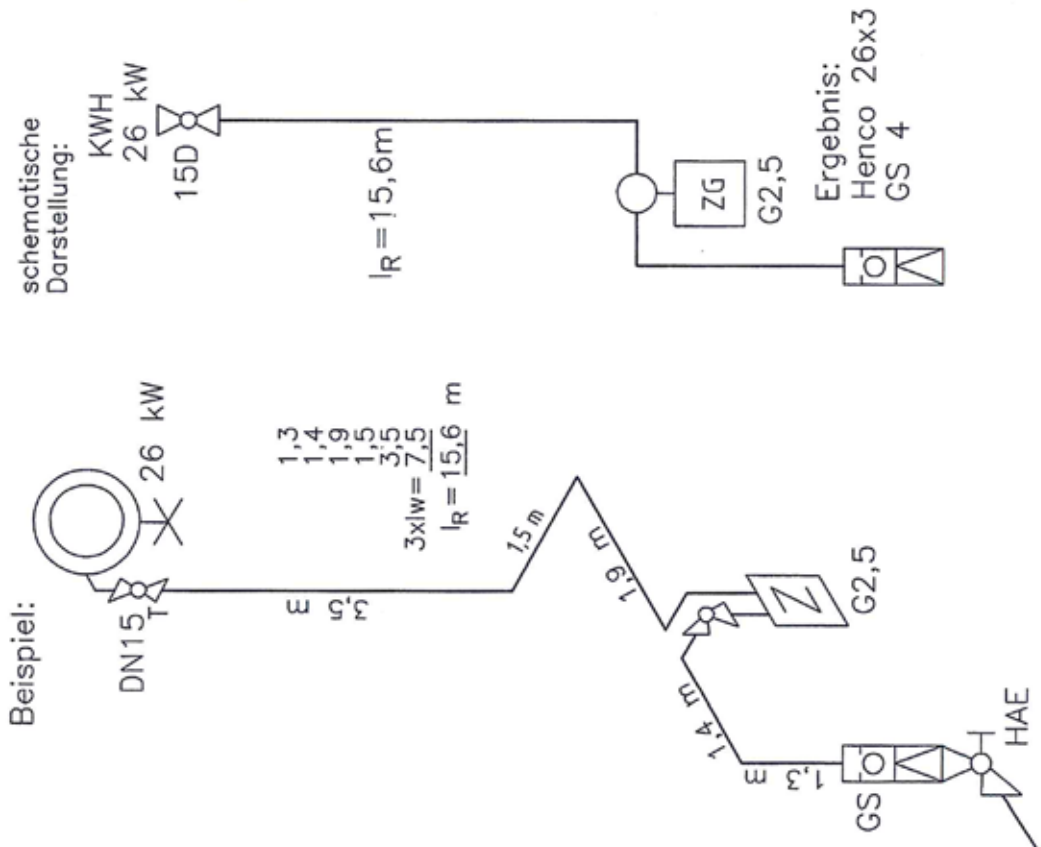
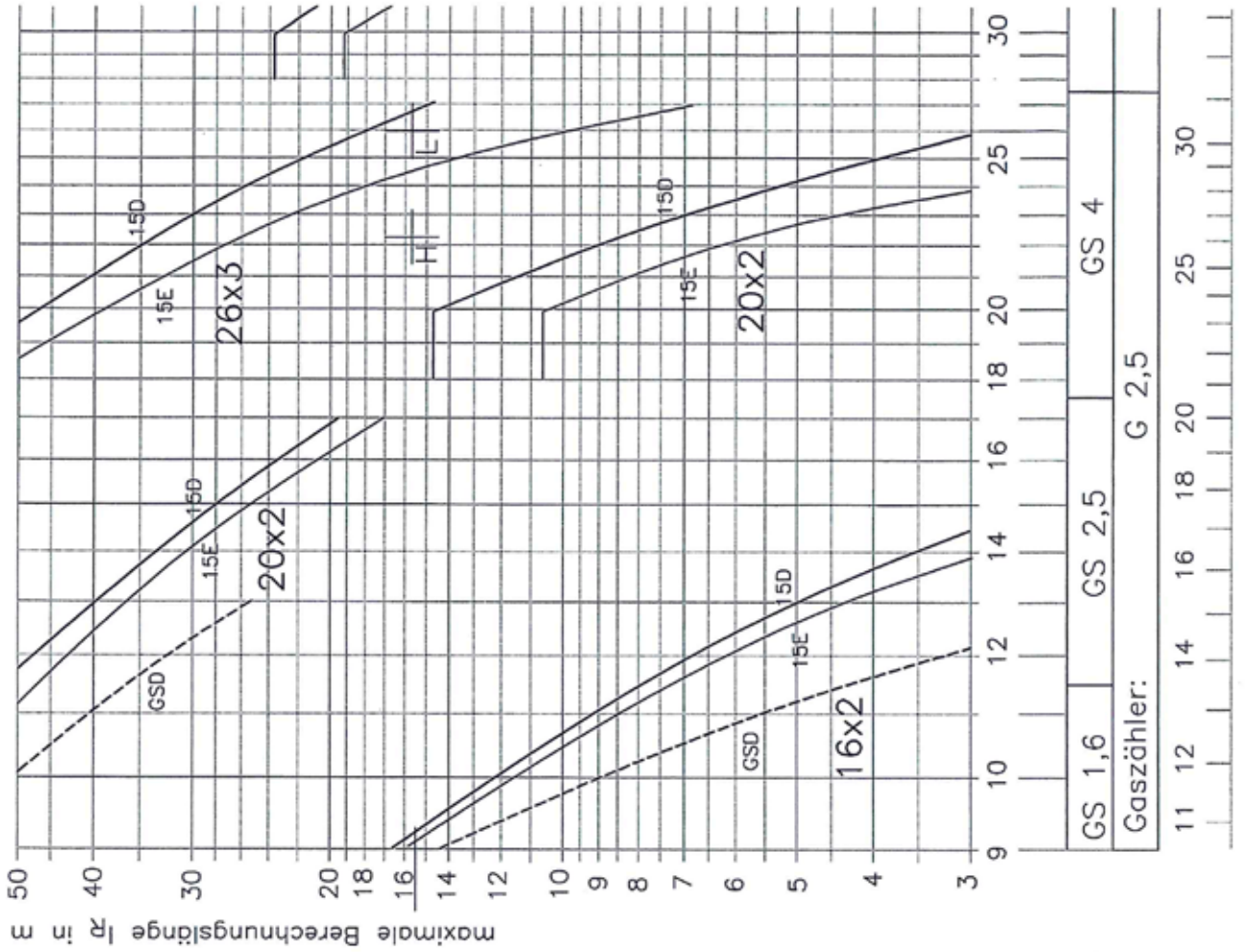


l<sub>R</sub> = l + n x l<sub>w</sub> n: Zahl der Winkel  
 Messingwinkel l<sub>w</sub> = 2,5 m  
 Kunststoffwinkel l<sub>w</sub> = 3,5 m

Diagr.1 Einzelzuleitung mit Henco-Verbundrohr



# DVGW - Installation guidelines





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