

Metal Hoses and Expansion joints for Gas Applications

WITZENMANN
managing flexibility



3356er1/02/09/2,5



SAFE

HIGHLY FLEXIBLE

DIFFUSION-TIGHT

AUTHORISED

WITZENMANN - NUMBER ONE IN EUROPE

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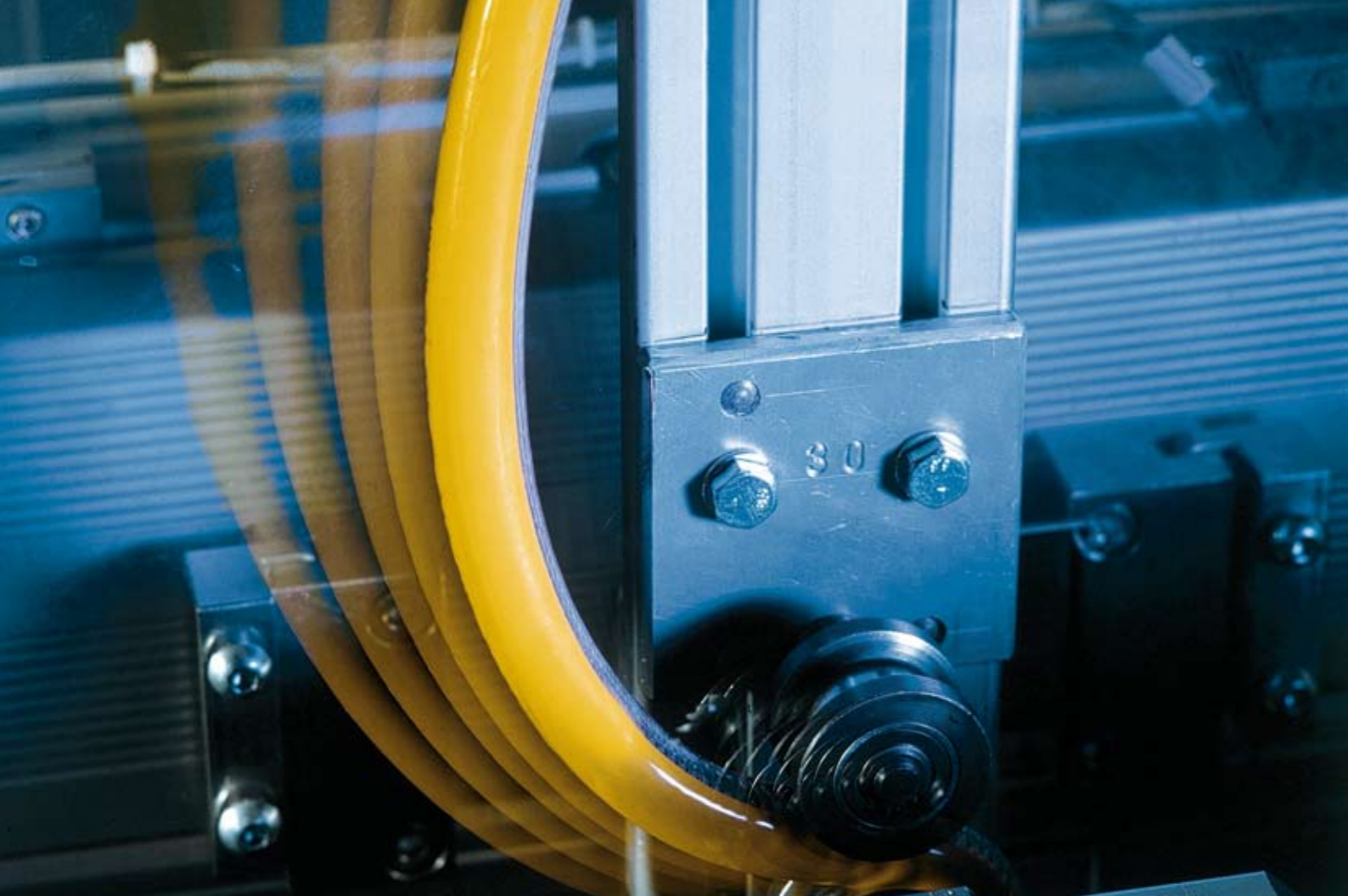
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WITZENMANN – SAFETY FOR GAS APPLICATIONS



Approvals

 Germany	 Czech Republic
 Austria	 Hungary
 Switzerland	 Bosnia-Herzegovina
 Denmark	 Slovakia
  Poland	 Russia
 France	 Belgium
 Spain	 Italy
 Italy	 Europe

As the European market leader with the world's broadest product range of flexible metal elements, Witzmann possesses decades of know-how in the development and manufacture of products for gas applications. As a development partner we have already introduced countless innovative product solutions into this market segment. Millions of our metal hoses and expansion joints for gas applications are used throughout Europe; they have proven themselves based on their problem-free and safe operation.

Safety and quality

In order to meet these requirements, we have an extensive testing facility with various test devices which correspond with the relevant German and international standards. Witzmann gas hoses for connecting to household gas devices are absolutely resistant to aging and, in contrast to rub-

ber hoses, do not have to be replaced on a regular basis. Our success in implementing these quality standards is evidenced by the certifications our products have received from the most important national and international testing institutes. And ultimately also by the satisfaction of our customers, who helped us become the European market leader not just in the gas sector.

Advantages through highest quality

- Flexible and gas-tight
- Fully resistant to corrosion and ageing
- Materials: Stainless steel, ex. 1.4541 (AISI 321), 1.4404 (AISI 316 L) or 1.4571 (AISI 316Ti)



Production series
GA 7



The European Norm DIN EN 14800 replaces the different country norms within Europe and represent a uniformly high safety standard for all gas hoses which are connected to gas-operated household devices.

The principle of absolutely safe gas distribution was the top priority during the conceptualisation process - safety throughout the service life, even under demanding application conditions. The result was a metal hose which is highly suited to practical applications, along with easy handling by the end customer - the Hydragas production series® GA 7xx.

Three-layer assembly

A highly flexible and pressure-tight stainless steel corrugated hose ensures safe gas distribution. Braiding made of stainless steel is responsible for absorbing mechanical loads. In addition, an easy-to-clean PVC cover protects against dirt and aggressive household cleaners.



Design

- Interior: Highly flexible stainless steel corrugated hose
 - Exterior: Stainless steel braiding to protect against mechanical damages and inadmissible tensile load
- The design of the braiding ensures that the gas hose features a high degree of flexibility. The minimum admissible bending radius is only 40 mm

- The outer PVC cover reliably protects the metallic interior of the hose in real-life conditions. The transparent area of the PVC material reveals the metal hose. The PVC cover is pressed against the end fittings and is slip-resistant due to stainless steel end sleeves and moisture-tight.

Fittings and models

The end fittings on the hose which are provided fit with all conventional stove and gas fittings.

Advantages at a glance

- Use as household gas hose to connect gas appliances, e.g. gas stoves, gas-operated patio barbecues and patio heaters, etc.
- CE-approved as per DIN EN 14800
- Uniform standardisation across Europe
- Graded lengths: NL 500/750/1000/1250/1500/2000 mm
- For special applications outside, lengths up to NL 6000 mm are possible
- Clear traceability through identification on end sleeves
- Highest degree of flexibility makes for simple handling for end user
- Can be placed in tightest bending radii

Install and forget about it, safety in gas technology

Italian model



GA 755
DIN EN 14800



GA 757
DIN EN 14800

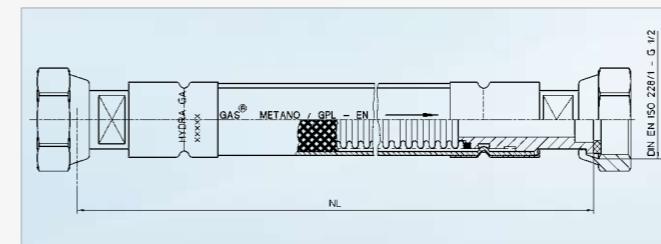


The Italian models of the European gas hose features a yellow PVC protective hose with two transparent strips. Similar to all Europe series gas hoses, it corresponds with DIN EN 14800. There are two available models, Type GA 755 (G 1/2" x G 1/2") and Type GA 757 (R 1/2" x G 1/2").

Type GA 755

End fittings on both sides

Flat sealing collar connection with union nut G 1/2" made of stainless steel as per ISO 228/1 (SW 24), high-quality Viton flat seal, suitable for gas.



Approvals



Special feature

PVC protective hose, yellow, with transparent strips.

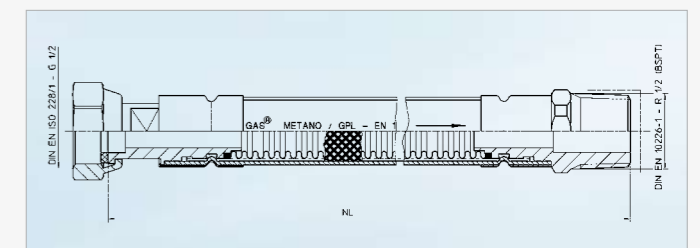
Type GA 757

End fittings on one side

Flat sealing collar connection with union nut G 1/2" made of stainless steel as per ISO 228/1 (SW 24), high-quality Viton flat seal, suitable for gas.

End fittings on other side

Stainless steel hexagonal nipple R 1/2" as per ISO 10226-1 (ISO 7/1)



Approvals



Special feature

PVC protective hose, yellow, with transparent strips.



GA 755

DIN EN 14800
NF D36-121
NF D36-123



GA 775

DIN EN 14800
NF D36-125



GA 721

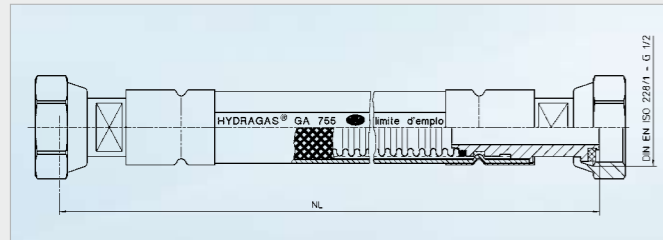
DIN EN 14800



Hydragas gas hoses of production series GA 755/GA 775 are approved acc. to the French standards (Norme Française „NF“) for natural gas/gas natural and Propane -/Butane gas (LPG). They already comply with the European standard DIN EN 14800.

Type GA 755

as per NF D36-121 for natural gas (GN) for use in household applications and as per NF D36-123 for natural gas (GN) for industrial application, max. admissible operating pressure 2 bar



End fittings on both sides

Flat sealing collar connection on both sides with union nut G 1/2" as per ISO 228/1 (SW 24), loss-proof Viton flat sealing approved for natural gas (GN).

Approvals



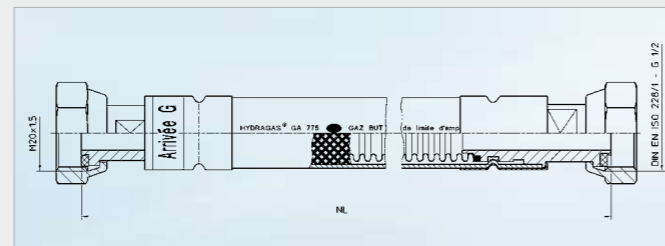
Special feature

PVC protective hose, silver-coloured, with transparent strip,

Special design for Belgian market available.

Type GA 775

as per NF D36-125 for Propane/Butane gas (LPG) for household use



End fitting on one side

Flat sealing collar connection with black union nut, metric thread M 20 x 1.5 (AF 23), loss-proof flat Viton sealing approved for Propane/Butane gas (LPG).

End fittings on other side

Flat sealing collar connection on both sides with union nut G 1/2" as per ISO 228/1 (SW 24), loss-proof Viton flat sealing approved for natural gas (GN).

Approvals



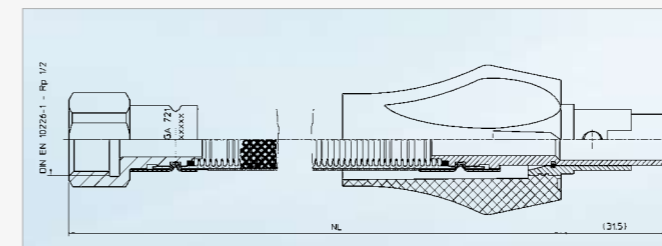
Special feature

PVC protective hose, orange, with transparent strips.

The German model of the European gas hose is enclosed with a transparent PVC hose. Due to its high flexibility, installation is very simple and uncomplicated. This new production series is compatible with the proven gas valves as per DIN 3383. Connection to the gas valves as per DIN 3383 is carried out as usual, i.e. by turning the switch handle at the hose.

Type GA 721

Safety gas hose with highly flexible design as per DIN EN 14800 for connection to gas valves as per DIN 3383.



End fitting on one side

Standard plug with plastic handle for gas valves as per DIN 3383

End fitting on other side

Hexagon socket with internal thread Rp 1/2" as per DIN EN 10226-1 (ISO 7/1), SW 24

Approvals



Special feature

transparent PVC protective hose

GAS HOSES AS PER EUROPEAN NORM – HIGHLY FLEXIBLE
for gas valves as per DVGW VP 635-1

HYDRA



GA 783/784

DIN EN 14800
DVGW VP 618-2



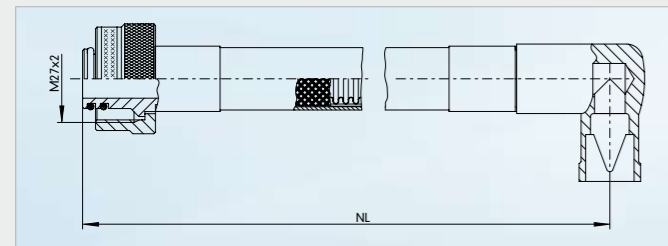
The Hydragas gas hoses GA 783 / 784 are used to flexibly and safely connect household gas appliances, such as gas stoves, patio radiant heaters, patio barbecues, to the new generation of safety gas valves as per DVGW VP 635-1.

Mounting

The connection can be carried out by the end consumer: on the side of the appliance, this takes place by simply screwing it on manually using a knurled nut. The hose is simply plugged in the gas valves. The connection can be made and released as often as needed. Due to the right-angle plug, the hose only requires little space on the side of the wall, so that it is possible to place and install the hose in an aesthetically pleasing manner in living areas.

Type GA 784

Hydragas safety gas hose as per
DIN EN 14800/DVGW VP 618-2

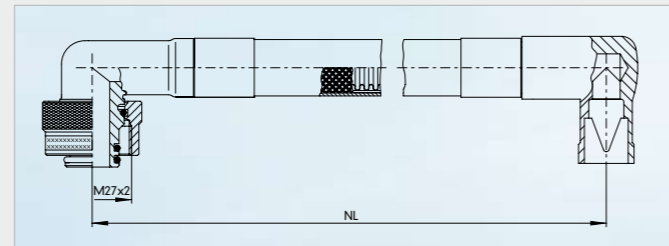


End fittings

Plug-in nipple connection with knurled nut M 27 x 2 as per DVGW VP 618-2, made of brass, gloss nickel-plated, straight design and revolving right-angle plug for gas valves as per DVGW VP 635-1 made of brass, chromed.

Type GA 783

End fitting on device side
as angled, not straight, design



Adapter on device side

for threaded fitting R 1/2" available on request.
ID No. 406173

Approvals



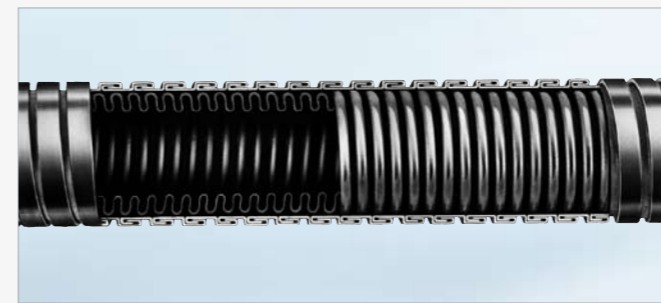
Special lengths available up to NL 6000 for use in outside installations.



GAS HOSES WITH BENDING RADIUS LIMIT

Production
series
GA 6

DVGW
DIN 3383



Hydragas gas hoses of production series GA 6xx are designed in two layers. To this end, an interior, absolutely gas-tight stainless steel corrugated hose is enclosed by a sturdy outside fitting agraff protective hose which is also made of stainless steel. The outer agraff protective hose acts as the bending radius limit. The maximum bending radius is 100 mm. This prevents the critical overbending of the gas-conducting interior hose. Hoses of the production series GA 6 are based on DIN 3383. They are authorised for gases pursuant to DVGW Worksheet G 260/1.

Design

- Interior pressure-tight stainless steel corrugated hose made of stainless steel.
- Exterior: Agraff hose made of stainless steel 1.4301 (AISI 304) with folded, interlocked profile as protection against mechanical damages, dirt and unauthorised tensile load, as well as bending radius limit (minimum 100 mm).

Fittings and models

The end fittings on the hose which are provided fit with all conventional stove and gas fittings.

Advantages at a glance

- Approval for outdoor installation is indicated with the letter "F" (=outdoor installations) on the hexagon socket
- DVGW approved
- For use as household gas hose with gas stoves, patio barbecues or patio heaters
- Clear traceability through identification on end sleeves
- Sturdy construction

Supplied lengths

The production series GA 6 is available in nominal lengths 500, 750 (800), 1000, 1250, 1500, 2000. Special designs, e.g. with additional, outer PVC protective hose or special lengths for industrial applications are available on request.

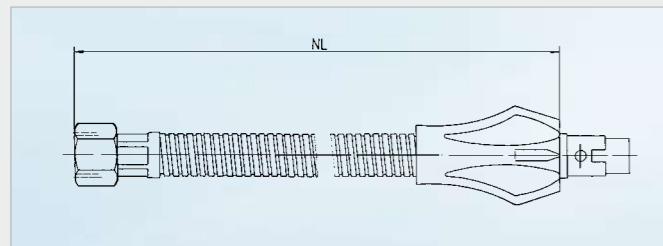


GA 621



GA 631

Type GA 621
Safety gas hose as per DIN 3383, design M
for connection to gas valves as per DIN 3383



End fitting on one side
Standard plug with plastic handle with straight design for
gas valves acc. to DIN 3383

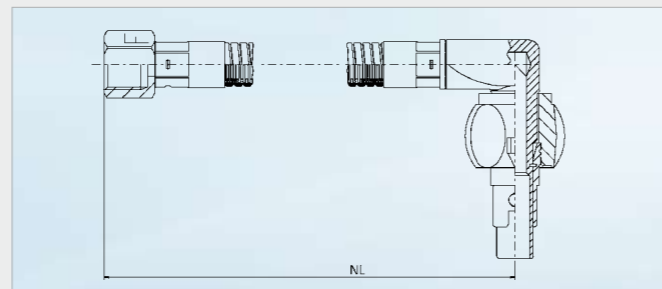
End fitting on other side
Hexagon socket with internal thread Rp 1/2" as per
DIN EN 10226-1 (ISO 7/1), SW 24

Type GA 621 is suitable for higher thermal loads.
(HTB- resistant).

Approvals



Type GA 631
with right-angle plug for in-wall gas valves as per DIN 3383



End fitting on one side
Standard plug with plastic handle with right-angle design
for gas valves as per DIN 3383

End fitting on other side
Hexagon socket with internal thread Rp 1/2" as per
DIN EN 10226-1 (ISO 7/1), SW 24

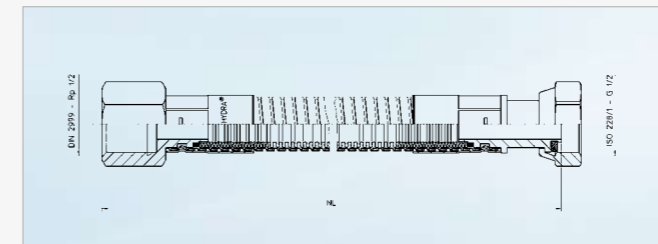
Type GA 631 is suitable for higher thermal loads .
(HTB- resistant).

Approvals



GA 651/
657/655

Type GA 651
Gas hose as per DIN 3383,
design M for connection to gas valves
with 1/2" connecting threads



End fitting on one side
Flat sealing collar connection with union nut
G 1/2" made of brass, gloss nickel-plated, as per ISO 228/1
(SW 24), loss-proof flat seal, suitable for gas

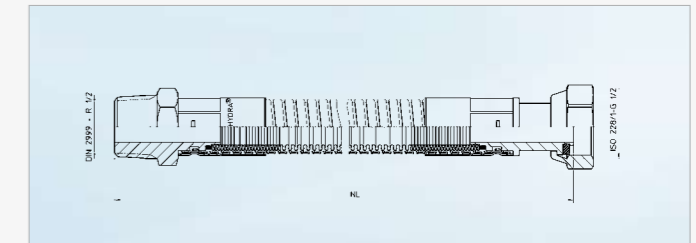
End fitting on other side
Hexagon socket with interior thread Rp 1/2"
as per DIN EN 10226-1 (ISO 7/1), SW 24

Approvals



Alternative end fittings

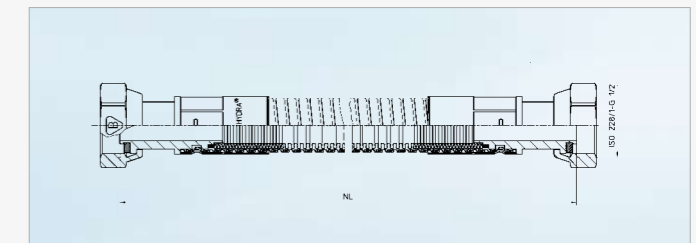
Type GA 657
With outside thread R 1/2" as per DIN EN 10226-1 (ISO 7/1)
available



Approvals



Type GA 655
Flat sealing collar connections with union nuts G 1/2" made of
brass, gloss nickel-plated as per ISO 228/1 (SW 24)



Approvals





HX 311

The HYDRA gas hose HX 311 is the safety hose for simple applications. With its single-layer design it offers the required basic level of safety with simultaneous economic efficiency. Ideal for uncomplicated use as household gas hose.

Hydragas HX 311

- Tested to German DIN 3384 / VP 616 standards
- DIN-GOST certification for domestic gas applications
- Operating pressure max. 500 mbar

Design

Hydragas HX 311 consists of a metal hose made of austenitic stainless steel 1.4404 (AISI 316L). This stainless steel material, which is very corrosion-proof, and the flexibility of the applied corrugated hose offer a high safety standard.

End fittings

- Union nuts made of brass, as per DIN ISO 228/1, high-quality flat sealing for gas use included
- Optionally with double nipple made of brass, exterior thread as per DIN EN 10226-1 (ISO 7/1), available

Approvals



Nominal diameter

- DN 12 with end fittings G 1/2" (ISO 228/1) / R 1/2" (DIN EN 10226-1 / ISO 7/1) made of brass, nickel-plated
- DN 16 with end fittings G 3/4" (ISO 228/1) / R 3/4" (DIN EN 10226-1 / ISO 7/1) made of brass
- DN 20 with end fittings G 1SDSq (ISO 228/1) / R 1SDSq (DIN EN 10226-1 / ISO 7/1) made of brass

Nominal lengths

- NL 500 / 600 / 700 / 800 / 1000 / 1200 / 1500 / 2000
- Other lengths available on request

Scope of supply

- 1 No. Hydragas HX 311 gas hose for domestic applications
- 2 gaskets for gas applications
- 1 installation instructions, attached to gas hose
- All packed in a single plastic bag

Optional

- 1 double nipple made of brass, exterior thread as per DIN EN 10226-1, included without packaging

Nominal diameter	Thread end fittings	Minimum bending radius	Recommended torque for mounting	Max. admissible torque for mounting
DN 12	G 1/2" / R 1/2"	140 mm	25 Nm	40 Nm
DN 16	G 3/4" / R 3/4"	160 mm	35 Nm	55 Nm
DN 20	G 1" / R 1"	170 mm	45 Nm	70 Nm



GA 2

Type GA 25050/25060

HYDRA gas hose based on Italian standard UNI-CIG 9891/1998, corresponding with UNI-CIG 7129 and UNI-CIG 7131

Design

- Interior: corrugated stainless steel hose,
- Exterior: yellow polyolefin covering as heat protection up to 120 °C and protection against mechanical damages and aggressive household cleaners.

End fittings

Welded stainless steel end fittings

Approvals



Nominal diameter

DN 15/20/25

Fittings

1/2", 3/4", 1"

Nominal lengths

- 90/130 mm
- 130/200 mm
- 230/400 mm
- 290/520 mm

Special properties

The corrugated hose is vacuum heat-treated so that the gas hose can be extended to approximately double its length.

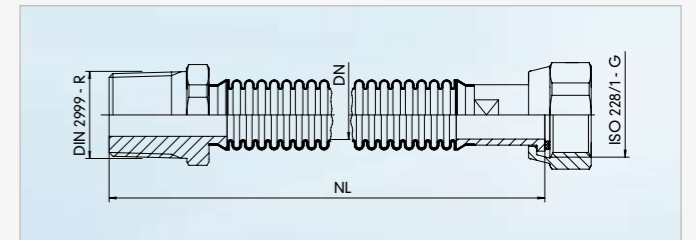
Type GA 25060

End fitting on one side

Hexagon threaded nipple with Whitworth pipe thread as per DIN EN 10226-1 (ISO 7/1) (external thread "R")

End fitting on other side

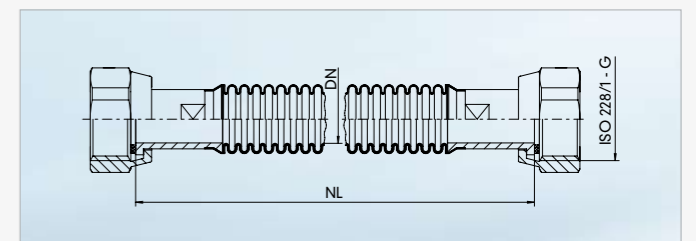
flat sealing collar connections and union nuts with Whitworth pipe thread as per DIN 228/1 (internal thread "G")



Type GA 25050

End fittings on both sides

flat sealing collar connections and union nuts with Whitworth pipe thread as per DIN 228/1 (internal thread "G")



Gas meter
connection
hosesGas house
connections,
underground
installationProduction
series LA, RS**Example of use – gas meter connection**

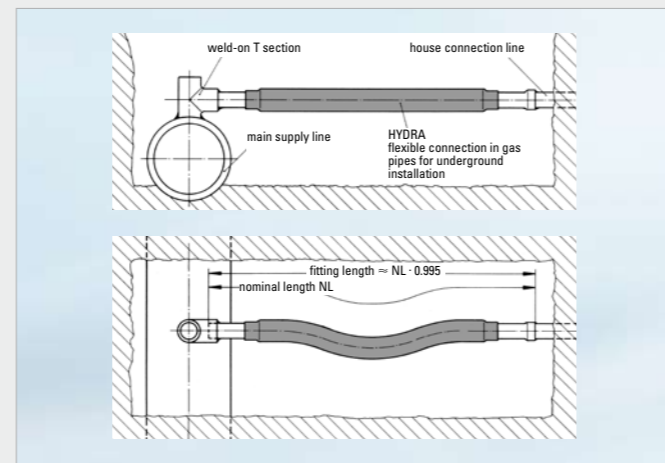
Hydragas meter connecting hoses allow easy and safe connection of gas meters without laborious installation works by soldering or welding technology or by means of threaded fittings. Particularly under narrow installation conditions, e.g. in plastic boxes which are common in many European countries, huge cost benefits are achieved in comparison to conventional assemblies. Due to the flexibility of the Hydra-gas meter connecting hose, required bends can be realized without additional angular fittings or pipe sections to be bent in advance in narrow places. Hydragas meter connecting hoses are mainly used in nominal diameters DN 20 or DN 25, partly with yellow plastic covering.

Application example gas house connection

Plastic gas lines for house connections may be installed up to the building. The material transition from plastic to steel, for example, may be protected against outer impacts by means of stainless steel corrugated hoses. In case the medium-carrying plastic line is damaged, gas is prevented from being able to enter the cellar room or to get underneath the foundations.

Example of use - underground installation

House supply lines and connections to the house's inner lines are particularly critical points in gas supply networks. In areas prone to later subsidence damages or earthquakes and flooding, or in areas with heavy-load traffic, there might occur non-calculable plate movement. Due to this, gas pipes installed underground are inadmissibly subjected to bending. In extreme cases, this might lead to the gas line breaking. This movement is compensated for by installing flexible HYDRA stainless steel gas hoses, thus essentially increasing the safety of the gas pipe network.



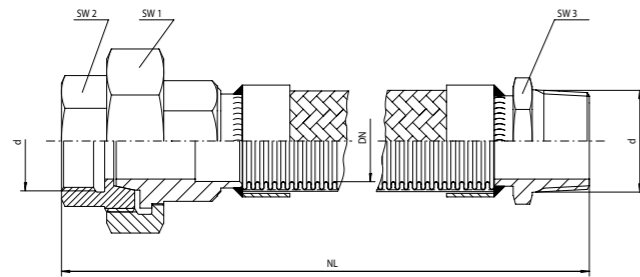
Apart from an extensive range of standard versions, which can be supplied ex stock (types LA230, LA201, LA241), HYDRA metal hoses can be freely assembled with different kind of fittings in any length.

The Witzemann product range consists of a wide spectrum of metal hoses from DN 6 to DN 150, which are approved by DVGW acc. to DIN 3384 for gas applications up to a nominal pressure of 16 bar. Depending on the application and operation, the hose models are available with and without braiding.

Long service life, simple installation and absolute safety are the main features of HYDRA stainless steel pressure hoses for gas applications.

Versatile and accuracy in fitting

A huge number of different fittings ensures a wide field of applications for HYDRA pressure hoses in the gas area. Depending on the relevant operating conditions, the connections are either soldered or welded to the hose.



Stock hose
LA 230



HYDRA Type RS 331 L12

made of stainless steel with simple stainless steel wire braiding on one side, conical sealing, threaded connection with internal thread on other side and hexagonal nipple with external thread

Design

Corrugated hose, medium corrugations, with simple braiding

Approval



Material

- Hose: stainless steel 1.4571 or 1.4404
- Braiding: Stainless steel 1.4301
- End sleeve: Stainless steel 1.4301
- Threaded fittings: malleable cast iron/steel, brazed or welded

Operating temperature

up to 200 °C

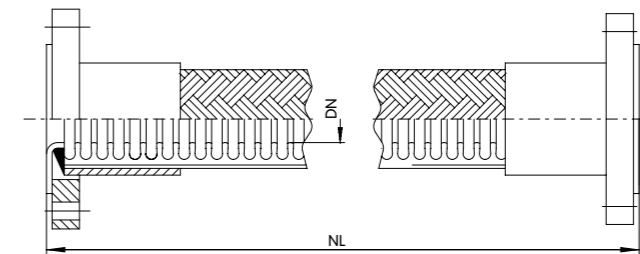
CE labelling

as of DN 32 as per DGRL 97/23/EG cat.I, module A

Delivery

at short notice. Other nominal lengths available on request.

Nominal diameter	Thread size as per DIN EN 10226-1 threaded connection/nipple	SW1 (AF1)	SW2 (AF2)	SW3 (AF3)	operating pressure P _{admissible} as per DIN 3384 for gas bar	Nominal length NL mm	ID No.
DN	Inch	mm	mm	mm			
8	Rp/R 1/4	28	19	19	4	500	012669
						1000	012671
10	Rp/R 3/8	32	22	22	4	500	012673
						1000	012675
						1500	009508
						300	012676
12	Rp/R 1/2	39	26	28	4	500	012677
						800	071463
						1000	012679
						1500	009507
						300	012680
20	Rp/R 3/4	48	31	32	4	500	012681
						800	071464
						1000	012683
						1500	009509
						300	012684
25	Rp/R 1	55	38	42	4	500	012685
						800	071465
						1000	012687
						1500	009511
						300	012688
32	Rp/R 1 1/4	67	48	50	1	500	012688
						1000	012690
						1500	009512
						500	009498
40	Rp/R 1 1/2	74	53	55	1	800	071467
						1000	009500
						1500	009513
						500	009501
50	Rp/R 2	90	65	70	1	800	071468
						1000	009505
						1500	009514
						500	009501



Stock hose
LA 201



HYDRA Type RS 331 L12

made of stainless steel with single stainless steel braiding loose flange connection on both sides

Design

Annular corrugated hose, medium corrugations standard corrugations

Approval



Material

- Hose: stainless steel 1.4571 or 1.4404
- Braiding: Stainless steel 1.4301
- End sleeve: Stainless steel 1.4301
- Welding rim: Stainless steel 1.4541, welded version
- Loose flange: steel, grade 37-2, galvanised

Operating temperature

up to 300 °C

CE labelling

> 32 DN to Pressure Equipment Directive 97/23/EEC - cat. I, mod. A

Delivery

at short notice. Other nominal lengths available on request.

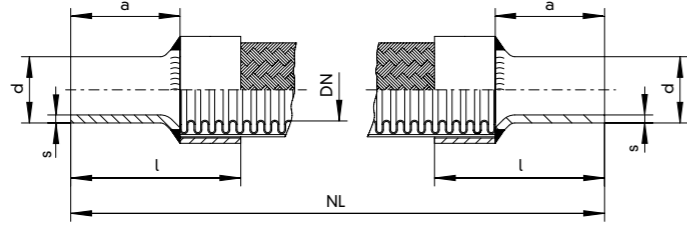
* These hoses can be installed as 90° bends for vibrations.

Nominal width	flange size	operating pressure P _{adm.} as per DIN 3384 for gas bar	nominal length NL mm	ID No.
DN	DIN EN 1092-1	bar		
16	PN 10/16	16	500	012603
			1000	012604
20	PN 10/16	16	500	012609
			1000	012611
			1500	012612
			2000	012613
25	PN 10/16	16	300	012614
			500*	012616
			1000	012618
			1500	012619
			2000	012620
			500	012623
32	PN 10/16	16	600*	012624
			1000	012627
			300	012630
			500	012632
40	PN 10/16	16	700*	012634
			1000	012636
			1500	012637
			300	012639
50	PN 10/16	16	500	012641
			800*	012644
			1000	012645
			1500	012647
65	PN 10/16	16	500	012650
			850*	012652
			1000	012653
			1500	012655
80	PN 10/16	16	500	012657
			1000*	012659
100	PN 10/16	16	500	012663
			1000	012664
			1100*	012665
			1500	012666
			500	012663

STAINLESS STEEL PRESSURE HOSES

Stock program

HYDRA



Stock hose
LA 241



HYDRA Type RS 331 L12

made of stainless steel with single stainless steel braiding precision high-grade steel pipe connections on both ends

Design

Corrugated hose, medium corrugations, with single braiding

Approvals



Material

- Hose: stainless steel 1.4571 or 1.4404;
- Braiding: Stainless steel 1.4301
- End sleeve: Stainless steel 1.4301
- Stainless steel pipe: High-precision steel 1.4541, welded version

Operating temperature

up to 550 °C

Delivery

ex stock (subject to prior sale).
Other nominal lengths available on request.

Nominal diameter DIN 3239 T.1	Weld ends sizes				operating pressure $P_{adm.}$ as per DIN 3384 for gas bar	nominal length NL mm	ID Nr.
	DN	d mm	s mm	a mm			
8	10	1.5	30	40	16	300	079959
						500	079960
						1000	079961
10	12	1.5	30	40	16	300	079962
						500	079963
						1000	079964
12	15	2	32	44	16	300	079965
						500	079966
						1000	079967
16	18	1.5	32	46	16	1000	079969
20	22	2	36	52	16	500	078970
						1000	079971
25	28	2	40	58	16	500	079972
						1000	079973

CORRUGATED HOSES FOR ASSEMBLY



DVGW

Assembly
program

Below are the most common hose types for custom-made assembly. Design and corrugation are key factors in the characterisation of hose properties:

	Geometric size	Description
Design	wall thickness	medium / heavy
Corrugations	length of corrugation	tight / medium / wide

In this vein, please note that the pressure tightness increases with wall thickness, but also with the length of the corrugation. In contrast, flexibility decreases as corrugation length and wall thickness increase.

Design

annular corrugated solid metal hose, made with a butt-welded pipe, without or with braiding

Designs

- RS ...S00 without braiding
- RS ...S12 with single stainless steel braiding

Type testing

The hose is tested according to DIN EN ISO 10380

Material hose

- non-rusting austenitic steel as per DIN EN 10088-2
- Standard: material no. 1.4404 similar to AISI 316 L
- Standard: material no. 1.4541 similar to AISI 321 L
- Other materials: e.g. material no. 1.4571 similar to AISI 316Ti on request

Material braiding

- non-rusting austenitic steel
- Material no. 1.4301 similar to AISI 304
- Material no. 1.4571 similar to AISI 316Ti on request

Temperature range

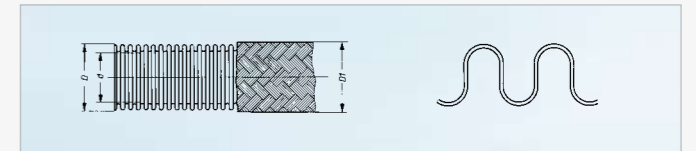
-270 °C up to max. 600 °C (only for hose)

Types

Type RS 331 (to DN 100)

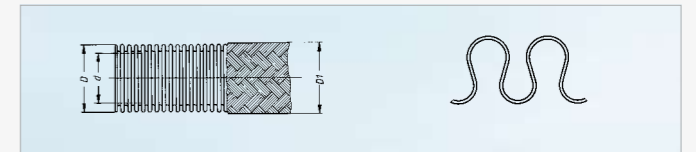
Type RS 330 (to DN 125)

medium version, standard corrugations



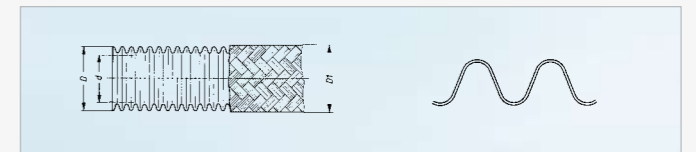
Type RS 321

medium version, tight corrugations / highly flexible



Type RS 341

medium version, wide corrugations




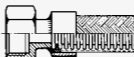

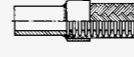
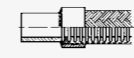
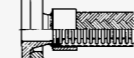

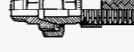


Gas hoses made of non-rusting steel as per DIN 3384 with DIN-DVGW approval

RS 331 / RS 330 standard corrugations				RS 321 tight corrugations/highly flexible				RS 341 wide corrugations			
DN	Typ	Type of joint		DN	Type	Type of joint		DN	Type	Type of joint	
		welded	brazed			welded	brazed			welded	brazed
-		PN	PN	-		PN	PN	-		PN	PN
6	RS 331L00	16	4	6	RS 321L00	16	4	6	RS 331L00	16	4
	RS 331L12	16	4		RS 321L12	16	4		RS 331L12	16	4
8	RS 331L00	16	4	8	RS 321L00	10	4	8	RS 341L00	16	4
	RS 331L12	16	4		RS 321L12	16	4		RS 331L12	16	4
10	RS 331L00	10	4	10	RS 321L00	4	4	10	RS 341L00	10	4
	RS 331L12	16	4		RS 321L12	16	4		RS 331L12	16	4
12	RS 331L00	10	4	12	RS 321L00	4	4	12	RS 341L00	4	4
	RS 331L12	16	4		RS 321L12	16	4		RS 331L12	16	4
16	RS 331L00	4	4	16	RS 321L00	4	4	16	RS 341L00	4	4
	RS 331L12	16	4		RS 321L12	16	4		RS 331L12	16	4
20	RS 331L00	4	4	20	RS 321L00	1	1	20	RS 341L00	1	1
	RS 331L12	16	4		RS 321L12	16	4		RS 331L12	16	4
25	RS 331L00	4	4	25	RS 321L00	1	1	25	RS 341L00	1	1
	RS 331L12	16	4		RS 321L12	16	4		RS 331L12	16	4
32	RS 331L00	1	1	32	RS 321L00	1	1	32	RS 341L00	1	1
	RS 331L12	16 (4)*	1		RS 321L12	16 (4)*	1		RS 331L12	16 (4)*	1
40	RS 331L00	1	1	40	RS 321L00	1	1	40	RS 341L00	1	1
	RS 331L12	16 (4)*	1		RS 321L12	16 (4)*	1		RS 331L12	16 (4)*	1
50	RS 331L00	1	1	50	RS 321L00	1	1	50	RS 341L00	1	1
	RS 331L12	16 (4)*	1		RS 321L12	16 (4)*	1		RS 331L12	16 (4)*	1
65	RS 331L00	1	-	65	RS 321L12	16 (1)*	-	65	RS 341L12	16 (1)*	-
	RS 331L12	16 (1)*	-		RS 321L12	16 (1)*	-		RS 341L12	16 (1)*	-
80	RS 331L00	1	-	80	RS 321L12	16 (1)*	-	80	RS 341L12	16 (1)*	-
	RS 331L12	16 (1)*	-		RS 321L12	16 (1)*	-		RS 341L12	16 (1)*	-
100	RS 331L00	1	-	100	RS 321L12	16 (1)*	-	100	RS 341L12	16 (1)*	-
	RS 331L12	16 (1)*	-		RS 321L12	16 (1)*	-		RS 341L12	16 (1)*	-
125	RS 330L00	1	-								
	RS 330L12	16	-								
150	RS 330L00	1	-								
	RS 330L12	10	-								
150	RS 330L42	16	-								
	RS 330L52	16	-								

* Information provided in parentheses is applicable for connection-sealing threads.

Gas hoses made of non-rusting steel as per DIN 3384 with DIN-DVGW approval

Con-secutive number	Connection types	Remarks	Fitting types Plant standard
1	 External thread as per DIN EN 10226-1	PN 16 to DN 25 max. PN 4 to DN 50 max. PN 1 over DN 50	MH02S MH12S MH22S MH52S
2	 Internal thread as per DIN EN 10226-1	PN 16 to DN 25 max. PN 4 to DN 50 max. PN 1 over DN 50	LA12S LA22S LA52S
3	 Fixed flange, sizes as per DIN EN 1092-1	Sheet thickness depending on nominal pressure as per Flange form	GB12E GB22E
4	 Weld end with ISO pipe measurements	Only with welded Connection between Hose and fitting	UA12S UA22S
5	 Pipe connections, sizes as per DIN EN ISO 8434-1	For solderless pipe screw couplings with cutting ring	UD12Q UD22Q
7	 Loose flange connection, Measurements as per DIN EN 1092-1	Sheet thickness depending on nominal pressure as per Flange form	AB12E AB22E AB82E CA82E
8	 Threaded fitting swivel with conical sealing, with internal thread as per DIN EN 10226-1	PN 16 to DN 25 max. PN 4 to DN 50 max. PN 1 over DN 50	QB02S QB12W QB22W QB52W
9	 Threaded fitting swivel with conical sealing, with external thread as per DIN EN 10226-1	PN 16 to DN 25 max. PN 4 to DN 50 max. PN 1 over DN 50	RF02S RF12W RF22W RF52W



Properties and fields of application

HYDRA expansion joints for gas applications ensure stress-free and safe pipe installation. They absorb system vibrations and movements and thus protect the piping network against damages. Axial expansion joints for gas applications reduce impact noise transmission via the piping and avoid vibration and oscillation transmission.

Sample applications

- Drying stoves, gas engines, gas control paths: The absorption of thermal expansion ensures the trouble-free operation of machinery
- Gas supply lines or gas burner supply lines (gas and air): Here, vibration is compensated, ensuring safe and lasting operation
- Reduction of force and torque transmission in the area of end fittings

Design and technical data

The expansion joint consists of a multilayer stainless steel bellows. Depending on the relevant case of operation, the bellows is available in the stainless steel materials 1.4571, 1.4541 or 1.4404. Assembled with the required connection fittings, the expansion joints are delivered ready to be installed. The stock program consists of axial expansion joints with common end fittings up to nominal diameter DN 100.

Quality

HYDRA expansion joints are approved by the DVGW as per DIN EN 30681 for use in the gas area. Millions of these expansion joints have proven their absolute safety and reliability in practice.

HYDRA expansion joints as per DIN EN 30681 with DVGW approval are available in the following nominal widths:

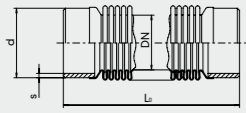
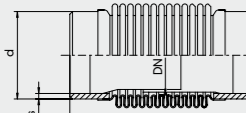
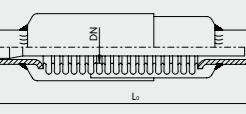
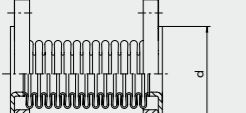
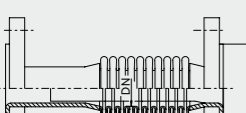
- Axial expansion joints: DN 15 to DN 500
- Universal expansion joints: DN 150 to DN 500
- Angular expansion joints: DN 50 to DN 500
- Lateral expansion joints: DN 50 to DN 500



Expansion joint type	Description	Nominal diam.	Operating pressure
Type AMB 	HYDRA axial expansion joint with flat sealing fittings made of zinc-plated steel casting, with internal thread as per DIN EN 10226-1	DN 15 (Rp 1/2") up to DN 50 (Rp 2")	up to DN 25 : PN 10 bar as of DN 32 : PN 4 bar
Type AGB 	HYDRA axial expansion joint with flat sealing fittings made of zinc-galvanised steel casting, with external thread as per DIN EN 10226-1	DN 15 (R 1/2") up to DN 50 (Rp 2")	up to DN 25 : PN 10 bar as of DN 32 : PN 4 bar
Type AMV ... 0 	HYDRA axial expansion joint on one side: stainless steel conical seal screw coupling, internal thread as per DIN EN 10226-1 on the other side: hexagonal stainless steel nipple with external thread as per DIN EN 10226-1	DN 15 (R 1/2") up to DN 50 (R 2")	PN 4 bar
Type AMV ... 2 	HYDRA axial expansion joint on one side: with conical sealing, fitting made of stainless steel, internal thread as per DIN EN 10226-1 on other side: hexagonal nipple made of stainless steel with external thread as per DIN EN 10226-1, inner catalyst pipe and outer protective pipe made of stainless steel	DN 15 (R/Rp 1/2") up to DN 50 (R/Rp 2")	PN 4 bar
Type AFF ... 2 	HYDRA axial expansion joint on both sides with fixed steel flanges, flange dimensions as per DIN EN 1092-1, inner catalyst pipe and outer protective pipe made of stainless steel	Stock versions DN 15 to DN 100	PN 6, PN 10, PN 16



DVGW

Expansion joint type	Description	Nominal diam.	Operating pressure
Type ARN ... 0 	HYDRA axial expansion joint, on both sides with weld-on ends St. 35.8 as per DIN EN 12627	Stock versions DN 15 to DN 100, larger nominal diameters with DVGW approval up to DN 500 on request	PN 6, PN 10, PN 16
Type ARN ... 1 	HYDRA axial expansion joint, on both sides with weld-on ends St. 35.8 as per DIN EN 12627, inner stainless steel catalyst pipe	Stock versions DN 15 to DN 100, larger nominal diameters with DVGW approval up to DN 500 on request	PN 6, PN 10, PN 16
Type ARF ... 2 	HYDRA axial expansion joint, on both sides with weld-on ends St. 35.8 as per DIN EN 12627, stainless steel inner catalyst pipe and outer protective pipe	Stock versions DN 15 to DN 100	PN 6, PN 10, PN 16
Type ALN/ABN ... 0 	HYDRA axial expansion joint, both sides with revolving loose flanges made of stainless steel, flange dimensions as per DIN EN 1092-1	Stock versions DN 15 to DN 100, larger nominal diameters with DVGW approval up to DN 500 on request	PN 6, PN 10, PN 16
Type ALN ... 1 	HYDRA axial expansion joint, on both sides with revolving loose flanges made of steel, flange dimensions as per DIN EN 1092-1, stainless steel inner catalyst pipe	Stock versions DN 32 to DN 100, larger nominal diameters up to DN 500 with DVGW approval on request	PN 6, PN 10, PN 16