

GENERAL INFORMATION

NORMAG flange couplings are available to connect glass structural components as well as to connect glass structural components to apparatus or pipes made of different materials. The flange couplings and the appropriate sealing gaskets are

- available for both the PF and KF systems for all nominal diameter levels up to DN 600 and also optionally for coated piping
- made with securities in accordance with the approved operating conditions in chapter 10, although any necessary insulation of piping should be considered
- in conformity with Technical Instructions on Air Quality Control (TA-Luft) as a “high-quality coupling system” across all levels of nominal diameter both for the KF and PF systems
- combined with corrosion-proof and easy-to-assemble PTFE sealing gaskets
- very reliable and low-maintenance, in particular due to the corrosion-proof gasket design as well as due to the use of compression springs
- allows systems to be installed which are situated in a corrosive atmosphere provided a suitable coupling is selected
- suitable for non-explosive and potentially explosive areas with regard to the requirements in chapter 10
- possible combinations of standard flange couplings and pipe frames or column support flanges in pallet
- For details on this refer to chapter 9 “pallets”
- can be delivered as a special solution for GMP-conform and cleanroom standard use

Typical backing flanges and inserts which are key components of flange couplings are displayed in the following two images.



The entire selection of standard deliverable components is described on the following pages and an overview is presented in the following figure. In addition, we will be happy to offer special designs on top of the product selection on request.

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Gaskets:

- O-ring gaskets glass-glass, type CGR...P
- O-ring gaskets glass-glass, type CGR...K
- Flexible gaskets for alignment, glass-glass, type CGH...P
- Universal transition gasket glass-KF-PF, type CGE...
- Universal transition gasket glass-enamel/SS, type CGC...
- Universal transition gasket glass-PTFE/SS, flech mit Stahlkern, type CGS...
- Flat gaskets, glass KF plan - SS, type CGF...
- Gaskets for repeated opening and closing, CGP...



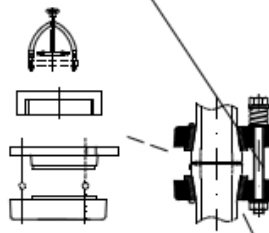
Bolting accessories kit:

- Compression spring, type CPS...
- Reducing washer, type CRS...
- Splash guard, type CSP...



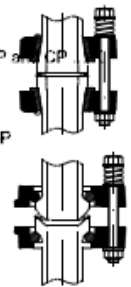
Special connections:

- Clip caps, type CHC...
- Screw caps, type CHT...
- quick release coupling, type CHQ...
- Special connections for fixtures (see "apparatus components", chap. 7)



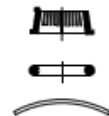
Connections glass-glass, complete:

- connection with plastic backing flange, type CP...P and CP...K
- connection with cast backing flanges, type CC...
- connection with stainless-steel flanges, type CS...P
- connection with Silumin-flanges, type CA...K



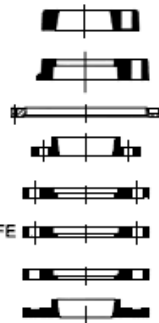
Inserts:

- Plastic, type CIP...P
- Plastic, type CIP...K
- Rubber, type CIG / CIK...



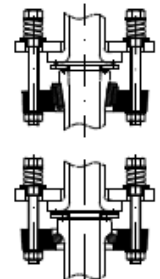
Backing flanges:

- Plastic backing flange, type CFP...P
- Plastic backing flange, type CFP...K
- Cast coupling, type CFC...
- Stainless steel, type CFS...
- Silumin, type CFA...K
- connection flange coupling EN1092-1, CFFE
- connection flange coupling ANSI, CFFA...
- Unbored connection flange, CFU...



Connection flange coupling:

- glass-glass, type CAPG...P and CAPG...K
- glass- EN1092-1, type CAPE...P
- glass- ANSI, type CASA...P and CASA...K
- glass- special (unbored), type CASU...P and CASU...K
- Bellows from glass to glass, EN 1092-1 or ANSI (see "Adapter", chap. 2)



Detailed facts and information on the flat safety flange and general information with regard to couplings can be found in chapter 10 “technical information”.

We recommend lubricating the stainless steel coupling bolts to avoid abrasion.

Sealing gaskets are not included in the delivery of a flange coupling and can be selected separately according to the options presented.

Couplings can be delivered as whole couplings consisting of two flange rings and two inserts in the material of your choice as well as stainless steel bolts, nuts, washers and compression springs. Additionally, the individual parts of a coupling can be ordered as well as accessories, such as splash guards, special solutions like quick releases and finally adaptor couplings to enable glass piping to be connected to other flange systems and materials.

FLANGE COUPLINGS WITH GLASS CONNECTION

Flange couplings for forming joints between two glass structural components are available with flanges made of plastic, coated aluminium, stainless steel or silumin. Aside from the flange rings, the couplings include inserts made of plastic as well as stainless steel bolts, washers, compression springs and nuts.

The standard coupling design with plastic backing flanges is used up to a nominal diameter of 300. The advantages of having plastic couplings are the relatively low weight, the good chemical stability and the specific suitability for use in potentially explosive areas.

Important options for flange couplings are couplings with special lengths (option “L...”), for example for incorporating spacers.

Flange couplings are generally suitable for product-side operating temperatures of 200 °C and the operating pressures displayed in chapter 10. Please also observe that for plastic flange rings the product-side operating temperature must be limited to 150 °C in the insulated state.

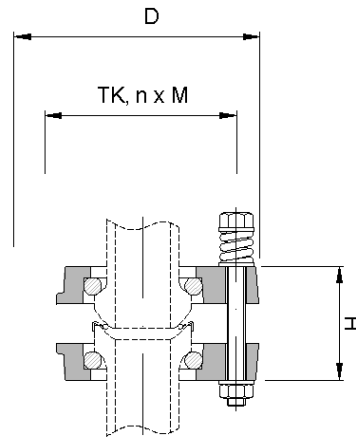


Plastic clamp coupling for KF system up to DN of 300

For nominal diameters of 400 to 600 the standard couplings made of coated aluminium are used. These were also constructed using appropriately light materials and in an effort to save space.

PLASTIC BACKING FLANGE COUPLINGS GLASS-GLASS FROM DN 15 TO DN 300

Type CP ...-K couplings with plastic backing flanges contain plastic inserts, as well as stainless steel bolts, washers, compression springs and nuts, in addition to the plastic backing flanges. The assembly of the backing flange couplings is displayed in the following figure. The backing flange couplings can be used for coated and uncoated KF glass structural components.



Type CP...-K flange coupling for glass-glass and glass-EN1092 connection, plastic grooved flange (KF)

We will be happy to deliver optional extras such as couplings with special bolt lengths. For this you need to add the optional extra digits to the item number as given at the end of the chapter.

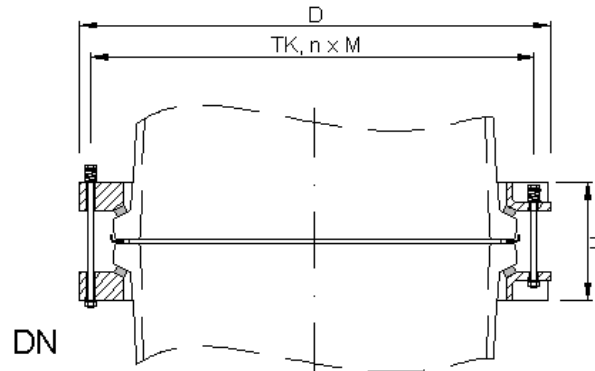
Product name:	Item number	Examples
Plastic flange coupling, glass-glass, KF system	CP DN -K	CP 025-K
Plastic flange coupling, KF system, 30 mm additional length	CP DN -K-L...	CP 025-K-L0030

DN	D [mm]	H [mm]	TK [mm]	n x M x Length	KF order no.
15	Ø70	44	Ø50	3 x M6 x 65	CP 015-K
25	Ø105	51	Ø85	4 x M8 x 85	CP 025-K
40	Ø132	65	Ø110	4 x M8 x 105	CP 040-K
50	Ø147	69	Ø125	4 x M8 x 110	CP 050-K
80	Ø184	92	Ø160	8 x M8 x 130	CP 080-K
100	Ø204	93	Ø180	8 x M8 x 140	CP 100-K
150	Ø266	98	Ø240	8 x M8 x 140	CP 150-K
200	Ø321	102	Ø295	8 x M8 x 150	CP 200
300	Ø428	103	Ø400	12 x M8 x 150	CP 300

CAST COUPLINGS GLASS-GLASS FROM DN 400 TO DN 600

Couplings made of coated cast clamp rings are used for larger nominal diameters as a standard. The couplings are delivered with conductive and substantially chemically resistant coated aluminum cast backing flanges (DN 400 to DN 600), attached stainless steel wire braided fibre glass inserts as well as stainless steel bolts, washers, nuts and compression springs. They can also be used for coated and encapsulated glass structural components. Backing flanges for nominal diameters of 400 and above are divided and can therefore be used in column sections or pipes.

The assembly of the backing flange couplings is displayed in the following figure.



Type CC... flange coupling,
for glass-glass connection, aluminium
cast, PF and KF systems

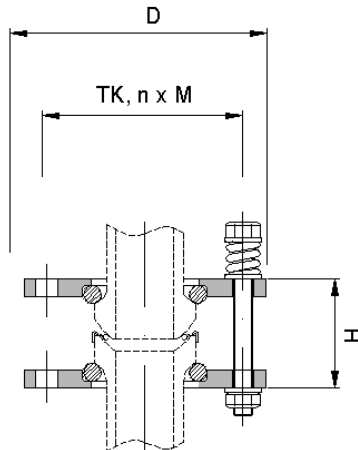
We gladly deliver optional extras such as couplings with special bolt lengths. For this you need to add the optional extra digits to the item number as given at the end of the chapter.

Product name:	Item number	Examples
Aluminium cast coupling, glass-glass	CC DN	CC 400
Aluminium cast coupling, glass-glass, 30 mm additional length	CC DN-L...	CC 400-L0030

DN	D [mm]	H [mm]	TK [mm]	n x M	KF order no.
400	Ø525	130	Ø495	16 x M8	CC 400
450	Ø615	140	Ø585	16 x M8	CC 450
600	Ø755	170	Ø710	20 x M12	CC 600

STAINLESS STEEL CLAMP RING COUPLINGS GLASS-GLASS FROM DN 15 TO DN 600

The standard design for type CS ...-K stainless steel couplings for the KF system contains stainless steel flange rings, bolts, washers, nuts and compression springs. The inserts are made out of special plastic for nominal diameters up to 300 and out of fibre-glass for nominal diameters of DN 400 and over. The backing flange couplings can be used for coated and uncoated KF glass structural components.



Type CS...-K flange coupling,
for glass-glass connection, stainless steel
grooved flange (KF)

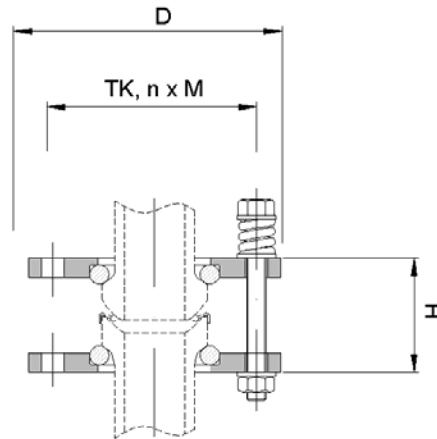
We will be happy to deliver optional extras such as couplings with special bolt lengths. For this you need to add the optional extra digits to the item number as given at the end of the chapter.

Product name:	Item number	Examples
Stainless steel flange coupling, glass-glass, KF system	CS DN -K	CS 025-K
Stainless steel flange coupling, KF system, 30 mm additional length	CS DN -K-L...	CS 025-K-L0030

DN	D [mm]	H [mm]	TK [mm]	n x M x Length	KF order no.
15	Ø70	44	Ø50	3 x M6 x 55	CS 015-K
25	Ø105	51	Ø85	4 x M8 x 65	CS 025-K
40	Ø132	65	Ø110	4 x M8 x 80	CS 040-K
50	Ø147	69	Ø125	4 x M8 x 80	CS 050-K
80	Ø184	92	Ø160	8 x M8 x 110	CS 080-K
100	Ø204	93	Ø180	8 x M8 x 110	CS 100-K
150	Ø266	98	Ø240	8 x M8 x 120	CS 150-K
200	Ø321	102	Ø295	8 x M8 x 120	CS 200
300	Ø428	103	Ø400	12 x M8 x 120	CS 300
400	Ø515	103	Ø495	16 x M8 x 120	CS 400
450	Ø615	102	Ø585	16 x M8 x 120	CS 450
600	Ø755	103	Ø710	20 x M12 x 120	CS 600

SILIUM CLAMP RING COUPLING GLASS-GLASS FROM DN 15 TO DN 300

The standard design for type CA ...-K silium couplings for the KF system contains silium flange rings, as well as stainless steel bolts, washers, nuts and compression springs. The inserts are made out of special plastic for nominal diameters up to 100 and out of silium with a soft insert for nominal diameters of DN 150 and over. The backing flange couplings can be used for coated and uncoated KF glass structural components.



Type CA...-K flange coupling,
for glass-glass connection, silium
grooved flange (KF)

We will be happy to deliver optional extras such as couplings with special bolt lengths. For this you need to add the optional extra digits to the item number as given at the end of the chapter.

Product name:

Silium flange coupling, glass-glass, KF system

Silium flange coupling, KF system, 30 mm additional length

Silium flange coupling, stainless steel spiral insert and base

Item number

CA DN -K

CA DN -K-L...

CA DN -K-O3

Examples

CA 025-K

CA 025-K-L0030

CA 025-K-O3

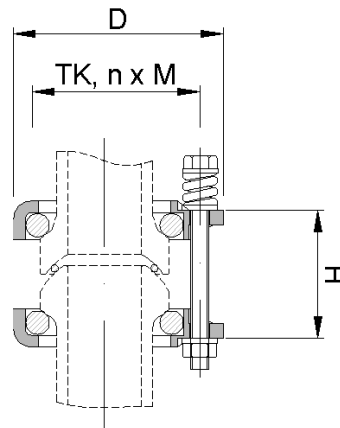
DN	D [mm]	H [mm]	TK [mm]	n x M x Length	KF order no.
15	Ø70	44	Ø50	3 x M6 x 55	CA 015-K
25	Ø92	51	Ø75	3 x M8 x 65	CA 025-K
40	Ø118	65	Ø100	3 x M8 x 80	CA 040-K
50	Ø131	69	Ø110	3 x M8 x 80	CA 050-K
80	Ø172	92	Ø150	6 x M8 x 110	CA 080-K
100	Ø192	93	Ø170	6 x M8 x 110	CA 100-K
150	Ø247	100	Ø225	8 x M8 x 120	CA 150-K
200	Ø307	103	Ø280	8 x M8 x 120	CA 200
300	Ø428	107	Ø395	12 x M8 x 120	CA 300

COMPACT CLAMP RING COUPLING GLASS-GLASS FROM DN 15 TO DN 100

Compact backing flanges have a far smaller outside diameter than plastic or stainless steel standard backing flanges. This makes the compact backing flanges particularly suitable when space is restricted, for example when trying to design hoods with the greatest possible number of connectors.

The standard design for type CAK...-K compact backing flange couplings contain aluminium flange rings and plastic inserts, whereas bolts, washers, nuts and compression springs are made of stainless steel.

The approved operating pressure is limited to vacuum and atmospheric operation, which deviates from the values in chapter 10.



Type CAK...-K compact flange coupling,
for glass-glass connection, die-cast metal clamp ring
grooved flange (KF)

We will be happy to deliver optional extras such as couplings with special bolt lengths. For this you need to add the optional extra digits to the item number as given at the end of the chapter.

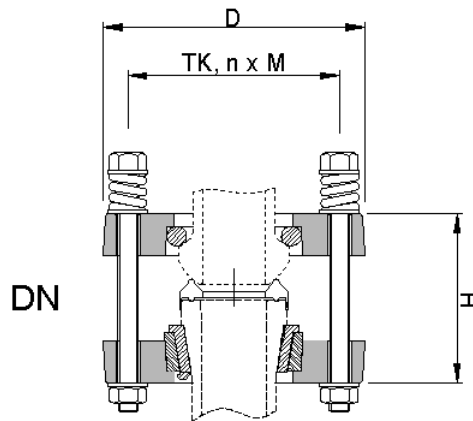
Product name:	Item number	Examples
Compact flange coupling, glass-glass, KF system	CAK DN -K	CAK 025-K
Compact flange coupling, KF system, 30 mm additional length	CAK DN -K-L...	CAK 025-K-L0030

DN	D [mm]	H [mm]	TK [mm]	n x M x Length	KF order no.
15	Ø66	37	Ø50	3 x M6 x 65	CAK 015-K
25	Ø81	44	Ø65	4 x M6 x 70	CAK 025-K
40	Ø101	47	Ø85	4 x M6 x 75	CAK 040-K
50	Ø116	57	Ø100	4 x M6 x 90	CAK 050-K
80	Ø160	70	Ø140	6 x M6 x 100	CAK 080-K
100	Ø184	75	Ø160	6 x M6 x 105	CAK 100-K

PLASTIC CLAMP RING COUPLINGS GLASS-GLASS PF TO KF FROM DN 15 TO DN 150

To form a joint between the PF and KF systems we are offering a type CP ...-PF transition coupling. The universal type CGE ...transition gasket is normally used to form the joint between the two flange systems, and can be used independently of the KF type flange.

The assembly of the backing flange couplings is displayed in the following figure.



Type CP ...-PF transition coupling
for glass-glass flange,
flat safety flange (PF) to grooved flange (KF)

We will be happy to deliver optional extras such as couplings with special bolt lengths. For this you need to add the optional extra digits to the item number as given at the end of the chapter.

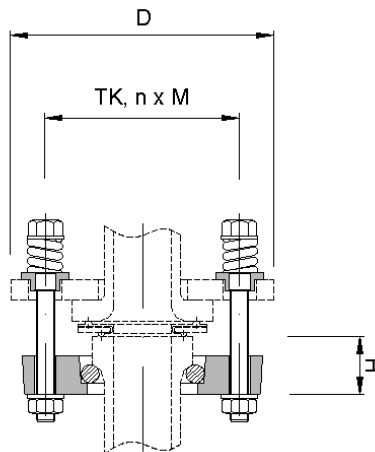
Product name:	Item number	Examples
Plastic flange coupling, glass-glass, PF to KF system	CP DN - PF	CP 025-PF
Plastic flange coupling, KF/PF system, 30 mm additional length	CP DN - PF-L...	CP 025-PF-L0030

DN	D [mm]	H [mm]	TK [mm]	n x M x Length	Order no.
15	Ø70	54	Ø50	3 x M6 x 65	CP 015-PF
25	Ø105	71	Ø70	4 x M8 x 85	CP 025-PF
40	Ø132	68	Ø110	4 x M8 x 90	CP 040-PF
50	Ø147	87	Ø125	4 x M8 x 100	CP 050-PF
80	Ø184	102	Ø160	8 x M8 x 120	CP 080-PF
100	Ø210	126	Ø180	8 x M8 x 155	CP 100-PF
150	Ø260	129	Ø240	8 x M8 x 160	CP 150-PF

CONNECTION FLANGE COUPLING GLASS-GLASS AND GLASS-EN1092-1 FROM DN 15 TO DN 150

Plastic flanges can generally be used to connect branches of glass piping to flanges in accordance with EN 1092-1, for example for measuring techniques or connecting pipelines. The delivery of a relevant adaptor coupling includes a plastic flange and flange-specific insert for the glass side as well as stainless steel bolts, nuts, flat washers, compression springs and reducing sleeves for connecting to the EN-flange. This ensures that the M8 bolts normally used in glass piping can form a joint with the larger EN flange bore diameter.

The transition gasket for the EN flange is not included in the delivery. In this chapter you will find a selection of sealing gaskets that correspond significantly to the form of the EN flange. The assembly of the adaptor couplings is displayed in the following figure.



Type CAPG...-K adaptor coupling for glass-glass and glass-EN flange, plastic flange, grooved flange (KF)

The bolt length needed will differ according to the type of EN connection flange. To adjust for varying lengths of bolt please enter the variation from the bolt length entered as option L... next to the bolt length entered.

In addition, stainless steel flanges can be delivered instead of plastic flanges by selecting option “CASE...”

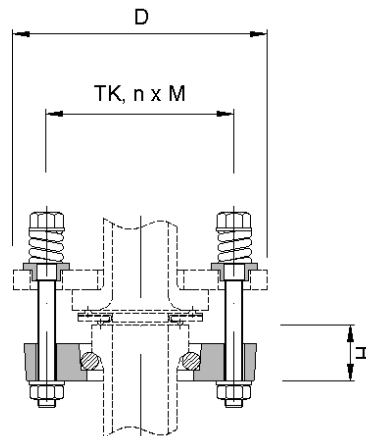
Product name:	Item number	Examples
Plastic flange coupling, glass-EN, KF system CAPG DN-K	CAPE 025-K	
Plastic flange coupling, KF system, 30 mm additional length	CAPG DN-K-L...	CAPE 025-K-L0030
Stainless steel flange coupling, KF system	CASG DN-K	CASE 025-K

DN	D [mm]	H [mm]	TK [mm]	n x M x Length	KF order no.
25	Ø105	28	Ø85	4 x M8 x 85	CAPG 025-K
40	Ø130	36	Ø110	4 x M8 x 105	CAPG 040-K
50	Ø145	37	Ø125	4 x M8 x 110	CAPG 050-K
80	Ø180	51	Ø160	8 x M8 x 130	CAPG 080-K
100	Ø210	50	Ø180	8 x M8 x 140	CAPG 100-K
150	Ø260	52	Ø240	8 x M8 x 140	CAPG 150-K

CONNECTION FLANGE COUPLING GLASS - ANSI FROM DN 15 TO DN 150

Stainless steel flanges can generally be used to connect branches of glass piping to flanges in accordance with ANSI 150, for example for measuring techniques or connecting pipelines. The delivery of a relevant adaptor coupling includes a stainless steel flange, flange-specific insert and transition insert for the glass side and – for forming a joint with the ANSI flange – stainless steel bolts, nuts, flat washers, compression springs and reducing sleeves. This ensures that the M8 bolts normally used in glass piping can form a joint with the larger ANSI flange bore diameter.

The transition gasket for the ANSI flange is not included in the delivery. In this chapter you will find a selection of sealing gaskets that correspond significantly to the form of the EN flange. The assembly of the adaptor couplings is displayed in the following figure.



Type CASA...-K adaptor coupling for glass-ANSI, stainless steel flange, grooved flange (KF)

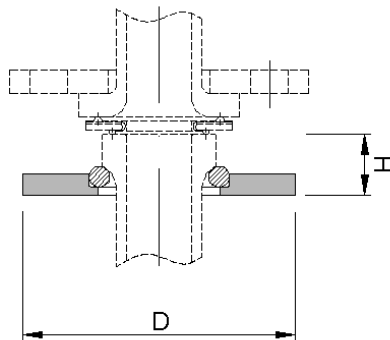
The bolt length needed will differ according to the type of ANSI connection flange. To adjust for varying lengths of bolt please enter the variation from the bolt length entered as option L... next to the bolt length entered.

Product name:	Item number	Examples
Stainless steel flange coupling, glass-ANSI, KF system	CASA DN -K	CASA 025-K
Stainless steel flange coupling, KF system, 30 mm additional length	CASA DN -K-L...	CASA 025-K-L0030

DN	D [mm]	H [mm]	TK [mm]	n x M x Length	KF order no.
25	Ø105	24	Ø79	4 x M8 x 65	CASA 025-K
40	Ø130	31	Ø98	4 x M8 x 80	CASA 040-K
50	Ø145	33	Ø121	4 x M8 x 80	CASA 050-K
80	Ø180	44	Ø152	4 x M8 x 110	CASA 080-K
100	Ø210	43	Ø190	8 x M8 x 110	CASA 100-K
150	Ø260	47	Ø241	8 x M8 x 120	CASA 150-K

CONNECTION FLANGE COUPLING GLASS - UNDRILLED FLANGE DN 15 TO DN 150

Couplings with undrilled stainless steel flanges can generally be used to connect branches of glass piping to special flanges, for example for measuring techniques or connecting pipelines. The delivery includes a stainless steel flange and a flange-specific insert for the glass side. The complete set of bolt connections and the transition gasket for the special flange are not included in the delivery. You will find options for this in this chapter. The assembly of the adaptor couplings is displayed in the following figure.



Type CASU...-K adaptor coupling for glass-undrilled connection, stainless steel, grooved flange (KF)

The bolt length needed will differ according to the type of connection flange. When adjusting bolt lengths please bear in mind the glass-side flange height (H) entered.

Type CAAU...-K undrilled silium backing flanges are also available as an option for the KF system.

Product name:	Item number	Examples
Stainless steel flange connection, glass-undrilled, KF system	CASU DN -K	CASU 025-K
Silium flange connection, glass-undrilled, KF system	CAAU DN -K	CAAU 025-K

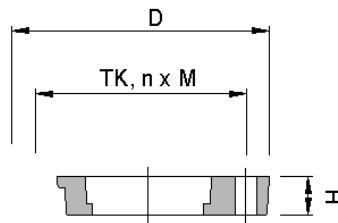
DN	D [mm]	H [mm]	KF order no.
25	Ø105	24	CASU 025-K
40	Ø130	31	CASU 040-K
50	Ø145	33	CASU 050-K
80	Ø180	44	CASU 080-K
100	Ø210	43	CASU 100-K
150	Ø260	47	CASU 150-K

BACKING FLANGES

backing flanges can be delivered as individual structural components for PF and KF systems with regard to the complete set of flange couplings in the various materials and nominal diameters described previously.

PLASTIC BACKING FLANGES FOR GLASS AND EN CONNECTION FROM DN 15 TO DN 300

Plastic backing flanges are also available for the KF system in line with the following figure, item no. CFP ...-K. For nominal diameters of 200 and 300 the flange system is uniform and is therefore labelled CFP ...without index.



Type CFP...K clamp ring and CFP...
for glass-glass connection, plastic, KF flange
up to DN 300

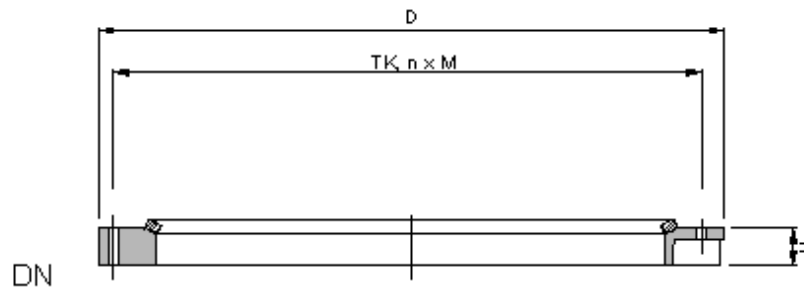
Product name:	Item number	Examples
Plastic flange, glass side, glass-glass and glass-EN	CFP DN -K	CFP 025-K

DN	D [mm]	H [mm]	TK [mm]	n x M	KF order no.
15	Ø70	44	Ø50	4 x Ø7	CFP 015-K
25	Ø105	51	Ø85	4 x Ø9	CFP 025-K
40	Ø132	65	Ø110	4 x Ø9	CFP 040-K
50	Ø147	69	Ø125	4 x Ø9	CFP 050-K
80	Ø184	92	Ø160	8 x Ø9	CFP 080-K
100	Ø204	93	Ø180	8 x Ø9	CFP 100-K
150	Ø266	98	Ø240	8 x Ø9	CFP 150-K
200	Ø321	102	Ø295	8 x Ø9	CFP 200
300	Ø428	103	Ø400	12 x Ø9	CFP 300

CAST BACKING FLANGES FOR GLASS AND EN CONNECTION FROM DN 400 TO DN 600

For larger nominal diameters backing flanges are manufactured from die cast metal with a largely acid-proof and conductive coating, type CFC. For DN 400 and over, the backing flanges consist of two halves which are connected together with detachable clamping pins and bolts. These backing flanges are delivered complete with an attached glass flange form made of fibre-glass which is also conductive.

The assembly of the backing flange couplings is displayed in the following figure.



Type CFC...clamp ring
for glass connection, die-cast metal.

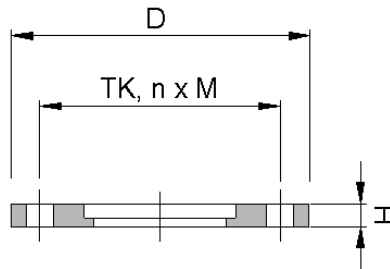
Product name:	Item number	Examples
Cast backing flange, glass-glass and glass-EN	CFC DN	CFC 400

DN	D [mm]	H [mm]	TK [mm]	n x M	Order no.
400	Ø525	130	Ø495	16 x Ø9	CFC 400
450	Ø615	140	Ø585	16 x Ø9	CFC 450
600	Ø755	170	Ø710	20 x Ø14	CFC 600

STAINLESS STEEL BACKING FLANGES FOR GLASS AND EN CONNECTION FROM DN 15 TO DN 600

Stainless steel backing flanges the KF system are delivered as single units for DN 15 to DN 300, and for nominal diameters over 400 in a two-part design. For nominal diameters from 15 to 300 an insert must be ordered separately, for nominal diameters of DN 400 and over, attached inserts made of fibre-glass are included in the delivery.

Earthing holes are provided in each of the flanges.



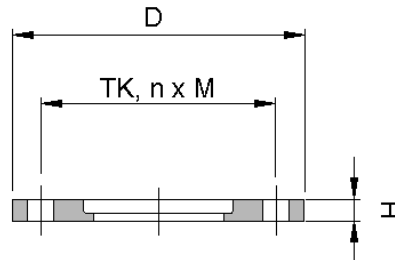
Type CFS...K and CFS... clamp ring, for glass-glass connection, stainless steel, grooved flange (KF) up to DN 600

Product name:	Item number	Examples
Stainless steel backing flange for glass and EN connection, KF system	CFS DN -K	CFS 025-K

DN	D [mm]	H [mm]	TK [mm]	n x M	KF order no.
15	Ø64	8	Ø50	3 x Ø7	CFS 015-K
25	Ø105	8	Ø85	4 x Ø9	CFS 025-K
40	Ø130	9	Ø110	4 x Ø9	CFS 040-K
50	Ø145	9	Ø125	4 x Ø9	CFS 050-K
80	Ø180	11	Ø160	8 x Ø9	CFS 080-K
100	Ø200	11	Ø180	8 x Ø9	CFS 100-K
150	Ø260	12	Ø240	8 x Ø9	CFS 150-K
200	Ø320	14	Ø295	8 x Ø9	CFS 200
300	Ø425	14	Ø400	12 x Ø9	CFS 300
400	Ø520	15	Ø495	16 x Ø9	CSF 400
450	Ø615	15	Ø585	16 x Ø9	CSF 450
600	Ø740	15	Ø710	20 x Ø14	CSF 600

SILUMIN BACKING FLANGES GLASS CONNECTION FROM DN 15 TO DN 300

Silumin backing flanges are available exclusively for the KF system, item no. CFA...K and have been proven to withstand tests during special applications in corrosive environments. For nominal diameters from 15 to 300 an insert must be ordered separately.



Type CFA...K clamp ring,
for glass-glass connection, silumin,
grooved flange (KF) up to DN 300

Product name:

Silumin backing flange, glass, KF system

Item number

CFA DN -K

Examples

CFA 025-K

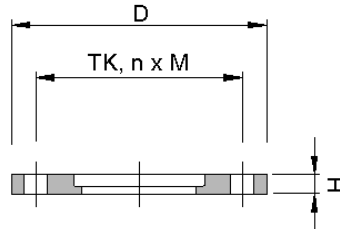
DN	D [mm]	H [mm]	TK [mm]	n x M	KF order no.
15	Ø70	12	Ø50	3 x Ø7	CFA 015-K
25	Ø92	14	Ø75	3 x Ø9	CFA 025-K
40	Ø118	18	Ø100	3 x Ø9	CFA 040-K
50	Ø131	18	Ø110	3 x Ø9	CFA 050-K
80	Ø172	24	Ø150	6 x Ø9	CFA 080-K
100	Ø192	24	Ø170	6 x Ø9	CFA 100-K
150	Ø247	24	Ø225	8 x Ø9	CFA 150-K
200	Ø307	26	Ø280	8 x Ø9	CFA 200
300	Ø428	26	Ø395	12 x Ø9	CFA 300

STAINLESS STEEL BACKING FLANGE FOR ANSI CONNECTION FROM DN 15 TO DN 150

Stainless steel backing flanges for connecting ANSI flanges are delivered as single units for DN 15 to DN 150.

The relevant insert must be ordered separately.

Earthing holes are provided in each of the flanges.



Type CFSA...-K clamp ring
for glass-ANSI connection, stainless steel flange,
grooved flange (KF)

Product name:

Stainless steel backing flange, glass-ANSI, KF system

Item number

CFSA DN -K

Examples

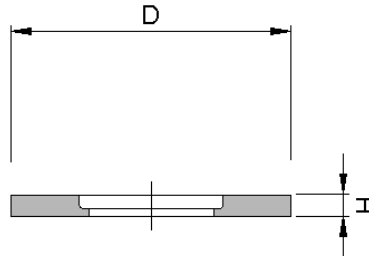
CFSA 025-K

DN	D [mm]	H [mm]	TK [mm]	n x M	KF order no.
25	Ø105	8	Ø79	4 x Ø9	CFSA 025-K
40	Ø130	9	Ø98	4 x Ø9	CFSA 040-K
50	Ø145	9	Ø121	4 x Ø9	CFSA 050-K
80	Ø180	11	Ø152	4 x Ø9	CFSA 080-K
100	Ø210	11	Ø190	8 x Ø9	CFSA 100-K
150	Ø260	11	Ø241	8 x Ø9	CFSA 150-K

UNDRILLED STAINLESS STEEL FLANGE RINGS FOR SPECIAL CONNECTIONS, DN 15 TO DN 150

Couplings with undrilled stainless steel or silium flanges can generally be used to connect branches of glass piping to special flanges, for example for measuring techniques or connecting pipelines. The relevant type CIP insert must be ordered separately.

Earthing holes are provided in each of the flanges.



Type CFSU...K and CFAU...-K clamp ring,
for glass-undrilled connection, stainless steel/silium flange,
grooved flange (KF)

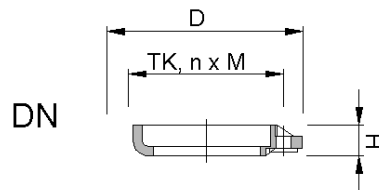
Product name:	Item number	Examples
Connection flange, stainless steel, undrilled, KF-system	CFSU DN -K	CFSU 025-K
Connection flange, silumin, undrilled, KF-system	CFAU DN -K	CFAU 025-K
Connection flange, silumin drilled to EN1092-1 PN 10	CFAE DN-K	CFAE 025-K

DN	D [mm]	H [mm]	TK [mm]	n x M x Length	KF order no.	
					Stainless steel	Silium
15	Ø70	8	-	-	CFSU 015-K	CFAU 015-K
25	Ø105	8	-	-	CFSU 025-K	CFAU 025-K
40	Ø130	9	-	-	CFSU 040-K	CFAU 040-K
50	Ø145	9	-	-	CFSU 050-K	CFAU 050-K
80	Ø180	11	-	-	CFSU 080-K	CFAU 080-K
100	Ø210	11	-	-	CFSU 100-K	CFAU 100-K
150	Ø260	12	-	-	CFSU 150-K	CFAU 150-K

DIE-CAST METAL COMPACT BACKING FLANGE FOR LIMITED CONSTRUCTION SPACE FROM DN 15 TO DN 100

Compact backing flanges have a far smaller outside diameter than plastic or stainless steel standard backing flanges. This makes the compact backing flanges particularly suitable when space is restricted, for example when trying to design hoods with the greatest possible number of connectors.

The approved operating pressure is limited to vacuum and atmospheric operation, which deviates from the values in chapter 10.



Type CFK... die-cast metal clamp ring
for grooved flange (KF)

Product name:

Compact backing flange, glass-glass, KF system

Item number

CFK DN -K

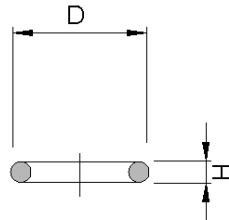
Examples

CFK 025-K

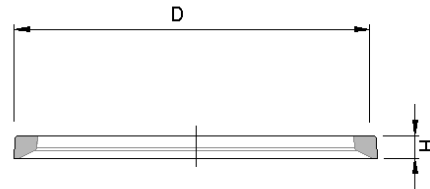
DN	D [mm]	H [mm]	TK [mm]	n x M	KF order no.
15	Ø66	37	Ø50	3 x Ø8	CFK 015-K
25	Ø81	44	Ø65	4 x Ø8	CFK 025-K
40	Ø101	47	Ø85	4 x Ø8	CFK 040-K
50	Ø116	57	Ø100	4 x Ø8	CFK 050-K
80	Ø160	70	Ø140	6 x Ø8	CFK 080-K
100	Ø184	75	Ø160	6 x M6 x 105	CAK 100-K

INSERTS FOR BACKING FLANGES

So-called inserts are used for connecting backing flanges to the glass flange in the PF and KF systems. For nominal diameters up to 150 in the PF system inserts are slit and for the nominal diameters up to 300 in the KF system they are two-part with a flexible coupling element. This means the inserts can be applied to glass piping in a simple assembly-friendly way and connected to the appropriate backing flange. The inserts are suitable backing flanges in all the various materials.



Type CIP ...-K insert
for grooved flange (KF)



Type CIP ... insert
for PF and grooved flange

Product name:

Insert, KF system

Stainless steel spiral insert

Base for stainless steel spiral insert

Item number

CIP DN -K

CIS DN -K

CISU DN -K

Examples

CIP 025-K

CIS 025-K

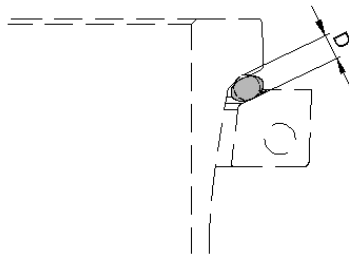
CISU 025-K

DN	D [mm]	H [mm]	KF order no.
15	Ø38	6.5	CIP 015-K
25	Ø54	8	CIP 025-K
40	Ø75	11	CIP 040-K
50	Ø89	11	CIP 050-K
80	Ø125	14	CIP 080-K
100	Ø147	14	CIP 100-K
150	Ø200	15	CIP 150-K
200	Ø254	18	CIP 200
300	Ø359	18	CIP 300

GLASS-FIBRE BASED TAPE INSERT FOR DN 400 - 600

Glass-fibre based conductive tape inserts are used as inserts for nominal diameters of DN 400 and over. The length of the tape insert is the right size for half a backing flange.

When ordering a backing flange the tape inserts are already attached to the backing flange so that the tape inserts are only necessary for replacement purchases.



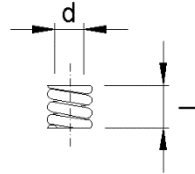
Type CIG tape insert
for grooved flange for DN 400 and over

DN	D [mm]	L (tape insert) [mm]	Order no.
400	Ø10	39	CIG 400
450	Ø10	61	CIG 450
600	Ø15	66	CIG 600

COMPRESSION SPRINGS AS BOLT CONNECTION ACCESSORY

Compression springs are used as bolt connection accessories in backing flange couplings for glass structural components. The compression springs reduce the risk of the bolt connection overstressing and maintain the bolt forces even during sealing gasket setting procedures. This ensures the coupling is tight.

The compression springs are manufactured from stainless steel.



Type CPS compression spring
for glass-flange bolt connections

The symbol “DN” in the table below refers to the nominal diameter of the coupling.

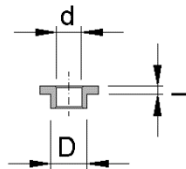
DN	d	L (taut)		Order no.
	[mm]	[mm]	[mm]	
15	Ø6,5	13,5	11	CPS 6.5
25 - 100	Ø8,5	20	14,5	CPS 8.5
150 - 450	Ø10,5	30	24,5	CPS 10.5
600	Ø13	39	31	CPS 13

REDUCING SLEEVES AS BOLT CONNECTION ACCESSORY

The M8 or M6 bolts normally used for glass flanges are recommended for connecting structural components made of borosilicate glass 3.3 with structural components made of other materials.

The counter flanges in accordance with EN 1092 and ANSI have larger nominal diameters so that CRS reducing sleeves should be used to centre the bolt. Standard reducing sleeves are designed in stainless steel.

Reducing sleeves with different measurements can also be delivered on request.



Type CRS...reducing sleeve,
for centering M6 or M8 bolts in
EN/ANSI flanges.

Reducing sleeves for flanges in accordance with EN 1092, PN 10

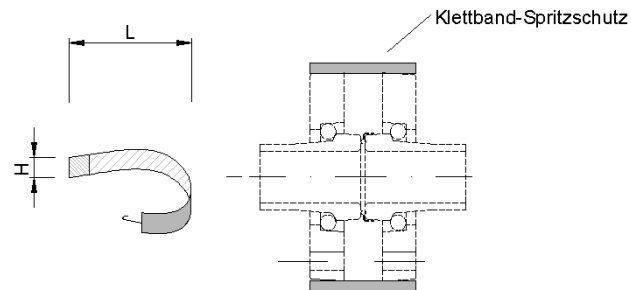
DN	D [mm]	d [mm]	L [mm]	Order no.
15	Ø13	Ø7	3	CRS 13-7
25	Ø13	Ø9	3	CRS 13-9
40 - 100	Ø17	Ø9	3	CRS 17-9
150 - 300	Ø21	Ø9	3	CRS 21-9

Reducing sleeves for flanges in accordance with ANSI, 150 psi

DN	D [mm]	d [mm]	L [mm]	Order no.
15	Ø15	Ø7	3	CRS 15-7
25-40	Ø15	Ø9	3	CRS 15-9
50 - 100	Ø18	Ø9	3	CRS 18-9
150 - 200	Ø21	Ø9	3	CRS 21-9
300	Ø24	Ø9	3	CRS 24-9

SPLASH GUARD FOR BACKING FLANGE COUPLINGS GLASS-GLASS

Special sleeves with a velcro fastener and protector as a splash guard are available in the case of possible leakages in glass flange couplings. The sleeve covers the entire open surface of the backing flange coupling.



Type CSP... splash guard
for glass flange clamp couplings.

DN	D [mm]	H [mm]	L [mm]	PF order no.
15	Ø23	44	Ø50	CSP 015-K
25	Ø34	51	Ø85	CSP 025-K
40	Ø51	65	Ø110	CSP 040-K
50	Ø63	69	Ø125	CSP 050-K
80	Ø96	92	Ø160	CSP 080-K
100	Ø116	93	Ø180	CSP 100-K
150	Ø169	98	Ø240	CSP 150-K

SEALING GASKETS

Sealing gaskets for glass flange couplings or connections between glass and other materials are manufactured from PTFE. Standard sealing gaskets are manufactured from white non-conductive PTFE.

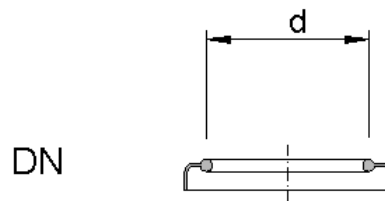
Further options are for FDA material certificates to be delivered with the sealing gaskets and for the sealing gaskets to be manufactured from conductive PTFE with an earthing clip or also from special materials.

The coupling systems with glass flanges and the PTFE sealing gaskets with O ring contours described in the following conform with the Technical Instructions on Air Quality Control (TA-Luft) and qualify as high-quality coupling systems.

RING SEALING GASKETS WITH COLLAR FOR GLASS-GLASS COUPLINGS

The ring sealing gasket is the standard sealing gasket for couplings between two glass flanges. The sealing O-ring is situated on a specially ground surface. The collar allows the sealing gasket to be centered on the glass flange.

Ring sealing gaskets can also be used to connect glass to other systems when the connection flange is flat and its contact surface fits geometrically.



Type CGR...-K ring sealing gasket for KF flange (KF)

Product name:

Ring sealing gasket, glass-glass

Ring sealing gasket, glass-glass, conductive PTFE

Ring sealing gasket, glass-glass, conductive PTFE with earthing

Item no.

CGR DN -K

CGR DN -K-M1

CGR DN -K-M2

Examples

CGR 025-K

CGR 025-K-M1

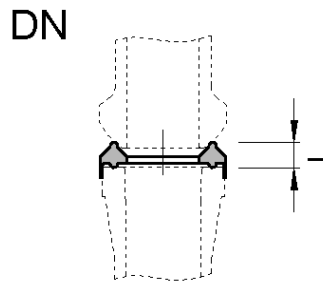
CGR 025-K-M2

DN	D [mm]	KF order no.
15	Ø23	CGR015-K
25	Ø34	CGR025-K
40	Ø51	CGR040-K
50	Ø63	CGR050-K
80	Ø96	CGR080-K
100	Ø116	CGR100-K
150	Ø169	CGR150-K
200	Ø220	CGR200-K
300	Ø321	CGR300-K
400	Ø435	CGR400
450	Ø492	CGR450
600	Ø646	CGR600

UNIVERSAL TRANSITION GASKET BETWEEN KF AND PF FLANGES

Type CGE transition gaskets can be used to connect PF glass flanges with KF flanges in spherical and pan designs. The sealing gasket should be centred over a collar at the outer edge of the glass pipe end.

There is also the option of ordering transition gaskets in a conductive PTFE design.



Universal CGE... transition gasket
between PF and all grooved flanges.

Product name:

Transition gasket, glass connection flange

Transition gasket, glass connection flange, conductive PTFE

Transition gasket, glass connection flange, conductive PTFE with earthing

Item no.

CGE DN -P

CGE DN -P-M1

CGE DN -P-M2

Examples

CGE 025-P

CGE 025-P-M1

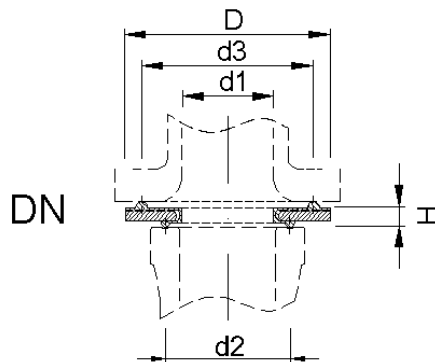
CGE 025-P-M2

DN	length [mm]	Item no.	Special transition coupling (For details see chapter. 3 »couplings«)
15	6	CGE 015	CP 015-PF-L0005
25	7	CGE 025	CP 025-PF-L0010
40	8	CGE 040	CP 040-PF-L0010
50	8	CGE 050	CP 050-PF-L0010
80	10	CGE 080	CP 080-PF-L0010

TRANSITION GASKET GLASS-ENAMEL

Type CGC transition gaskets are used for connecting glass to other materials, particularly when a slightly different inside diameter or extremely curved sealing surfaces, for example enamelled nozzles, need to be balanced out.

The transition gaskets are made of a stainless steel ring, a graphite insert which balances out slight unevenness and a PTFE covering on the product side with bead sealant. The KF flange must be designed as a flat flange.



Type CGC...-K transition gasket for glass-ANSI connection, grooved flange system (KF)

Transition gaskets are clamped and can be connected to flanges in accordance with EN 1092-1 (all nominal diameters) and ANSI 150 (apart from nominal diameters of 25). You will find the relevant adaptor coupling for glass flanges in this chapter.

Product name:

Transition gasket, glass connection flange

Transition gasket, glass connection flange, conductive PTFE

Item number

CGC DN -K

CGC DN -K-M2

Examples

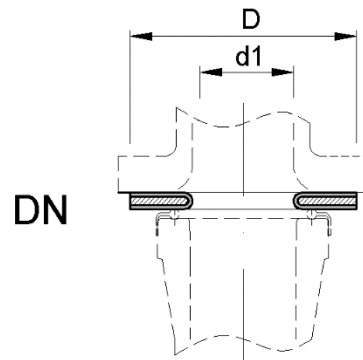
CGC 025-K

CGC 025-K-M2

DN	D [mm]	d1 [mm]	d2 [mm]	d3 [mm]	H [mm]	KF order no.
15	Ø45	Ø8.5	Ø23	Ø34	7.50	CGC 015/015
25	Ø68	Ø18.5	Ø34	Ø40	7.75	CGC 025/025
40	Ø78	Ø30.5	Ø48	Ø66	8	CGC 040/032
40	Ø88	Ø30.5	Ø48	Ø70	8	CGC 040/040
50	Ø102	Ø42	Ø60.5	Ø82	10	CGC 050/050
50	Ø122	Ø42	Ø60.5	Ø110	10	CGC 050/065
80	Ø122	Ø68	Ø96	Ø110	11	CGC 080/065-K
80	Ø138	Ø68	Ø96	Ø120	11	CGC 080/080-K
100	Ø138	Ø100	Ø116	Ø120	13.5	CGC 100/080-K
100	Ø158	Ø100	Ø116	Ø142	13.5	CGC 100/100-K
150	Ø212	Ø150	Ø172	Ø194	13.75	CGC 150/150
150	Ø268	Ø150	Ø172	Ø242	14.75	CGC 150/200
200	Ø268	Ø200	Ø220	Ø242	15	CGC 200/200
200	Ø320	Ø200	Ø220	Ø298	15	CGC 200/250
300	Ø370	Ø300	Ø321	Ø344	15	CGC 300/300
400	Ø490	Ø400	Ø445	Ø480	18.5	CGC 400/400
450	Ø544	Ø450	Ø492	Ø500	20.5	CGC 450/450
600	Ø700	Ø600	Ø646	Ø640	21.5	CGC 600/600

FLAT SEALING GASKETS WITH STEEL CORE

It is recommended to use an additional PTFE-coated steel core sealing gasket as well as the CGR ring sealing gasket to connect KF glass flanges to pipelines with a larger transition radius or slightly different diameters. The steel core sealing gasket enables the force to be transferred in relation to the slightly different positioning of the surface diameter of the sealing gasket and prevents the ring sealing gasket from pressing in when forming joints with plastic or plastic-lined pipelines. The steel core sealing gasket should be specifically selected for these applications instead of the CGC transition sealing gasket.



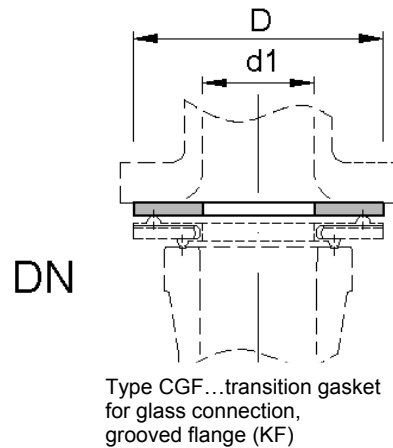
Type CGS...steel core sealing gasket
for glass connection,
grooved flange system (KF)

Product name:	Item number	Examples
Flat sealing gasket with steel core, glass connection flange	CGS DN	CGS 025

DN	D [mm]	d1 [mm]	Order no.
15	Ø23	Ø50	CGS 015
25	Ø34	Ø70	CGS 025
40	Ø48	Ø86	CGS 040
50	Ø61	Ø98	CGS 050
80	Ø88	Ø133	CGS 080
100	Ø121	Ø178	CGS 100
150	Ø172	Ø254	CGS 150
200	Ø220	Ø295	CGS 200
300	Ø321	Ø400	CGS 300

FLAT SEALING GASKETS

It is recommended to use an additional PTFE flat sealing gasket as well as the CGR ring sealing gasket or CGC transition gasket to connect glass flanges to plastic or PTFE-lined pipelines. The flat gasket is intended to prevent the ring gasket from pressing into the plastic or PTFE sealing surfaces.



Product name:

Flat gasket, glass connection flange

Item number

CGF DN

Examples

CGF 025

DN	D [mm]	d1 [mm]	Order no.
15	Ø23	Ø50	CGF 015
25	Ø34	Ø70	CGF 025
40	Ø48	Ø86	CGF 040
50	Ø61	Ø98	CGF 050
80	Ø88	Ø133	CGF 080
100	Ø121	Ø178	CGF 100
150	Ø172	Ø254	CGF 150
200	Ø220	Ø295	CGF 200
300	Ø321	Ø400	CGF 300

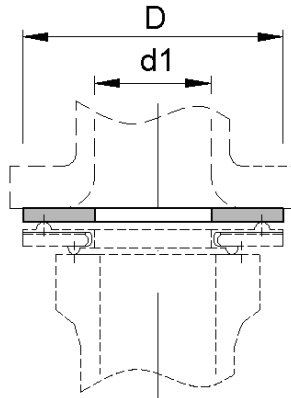
FLAT GASKET FOR REPEATED OPENING AND CLOSING

It is recommended to use the type CGP fitted flat gasket for specific applications requiring repeated opening and closing procedures, for example in filter apparatus.

The CGP gasket has a core made of elongated elastic PTFE.

In addition, the CGP gasket is well-suited to balancing out slight unevenness in the flanges.

The KF glass flange must be level for use with the flat sealing gasket.



Type CGP... transition gasket
for glass connection in
grooved flange system (KF)

Product name:

Flat gasket, reusable, glass connection flange

Item number

CGP DN

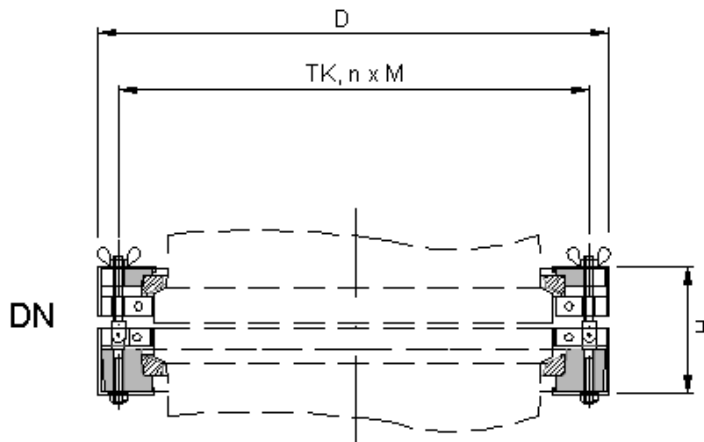
Examples

CGP 025

DN	D [mm]	d1 [mm]	Order no.
15	Ø23	Ø50	CGP015
25	Ø34	Ø70	CGP025
40	Ø48	Ø86	CGP040
50	Ø61	Ø98	CGP050
80	Ø88	Ø133	CGP080
100	Ø121	Ø178	CGP100
150	Ø172	Ø254	CGP150
200	Ø220	Ø295	CGP200
300	Ø321	Ø400	CGP300
400	Ø172	Ø254	CGP400
450	Ø220	Ø295	CGP450
600	Ø245	Ø310	CGP600

QUICK RELEASE COUPLINGS

Quick releases are provided for glass flange couplings that need to be opened regularly. The coupling is fitted with screw clips that can be removed by hand and is attached to a special stainless steel counter flange that enables the screws to be folded out to the side. The flanges can optionally be prevented from slipping out of their position by using clamping devices. The approved excess operating pressure of quick release couplings is between 1 and +0.5 barg.



Type CQC...K quick release coupling,
for regular opening of glass-glass couplings

Product name:

Quick release coupling, glass-glass

Item number

CQC DN-K

Examples

CQC 050-K

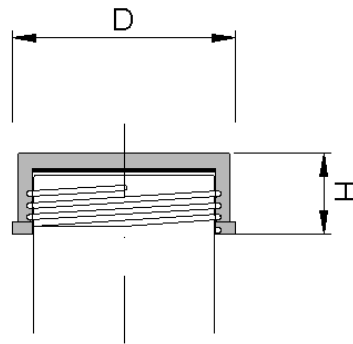
DN	D [mm]	H [mm]	TK [mm]	Order no.
40	Ø130	66	Ø105	CQC040-K
50	Ø145	73	Ø125	CQC050-K
80	Ø180	87	Ø160	CQC080-K
100	Ø200	98	Ø180	CQC100-K
150	Ø260	100	Ø240	CQC150-K
200	Ø220	102	Ø295	CQC200
300	Ø321	103	Ø400	CQC300

SCREW CAPS

Special easily opened type CQLT or CQLC caps can be used for nozzles that need to be opened regularly for filling.

Type CQLT caps are suitable for threaded connections and can be twisted open very quickly and easily. The CQLT caps are made of reinforced PP; on the product side the lids are made out of PTFE.

The approved excess operating pressure of clip caps is between -1 and +0.1 barg and the approved operating temperature is 150 °C.



Type CQLT... screw caps
for GL threaded connectors

Product name:

Threaded connector cap, glass

Item number

CQLT DN

Examples

CQLT 045

DN	D [mm]	H [mm]	Order no.
GL45	Ø55	30	CQLT 045
GL70	Ø80	30	CQLT 070
GL90	Ø100	30	CQLT 090

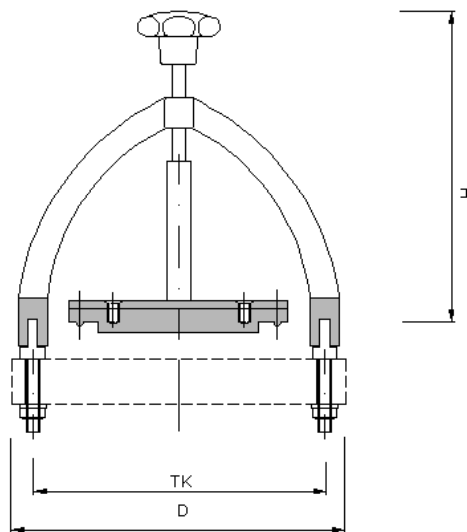
CLIP CAPS

Special easily opened type CQLT or CQLC caps can be used for nozzles that need to be opened regularly for filling.

Type CQLC caps have a swivelling clip and a central spindle. The cap can be easily put on or removed from the spindle. The cap is covered with a PTFE sheet on the product side. An O-ring encapsulated with FEP is fitted in the PTFE sheet to seal it. There is the option of ordering the O-ring separately.

All other components that are not on the product side are made of stainless steel.

The approved excess operating pressure of clip caps is between -1 and +0.5 barg and the approved operating temperature is 200 °C. The KF flange must be designed as a flat flange.



Product name:

Bracket closure, glass connection

Item number

CQLC DN-K

Examples

CQLC 080-K

DN	D [mm]	H [mm]	TK [mm]	n x M	KF order no.
50	Ø147	33	Ø125	4 x M8	CQLC050-K
80	Ø184	44	Ø160	8 x M8	CQLC080-K
100	Ø204	43	Ø180	8 x M8	CQLC100-K
150	Ø266	47	Ø240	8 x M8	CQLC150-K
200	Ø204	51	Ø295	8 x M8	CQLC200

COUPLING OPTIONS

For couplings the following options can be chosen in addition to the standard structural components. Each option chosen must be entered at the end of the item number. Several options can be chosen and should be entered as far as possible in alphabetical order. In the following table you will find examples of item numbering for additional options.

Product name:	Item no.	Examples
CGE transition gasket:	CGC DN	CGC 025
CGE transition gasket, conductive PTFE:	CGC DN-M2	CGC 025-M2
CGE transition gasket, conductive PTFE, FDA certificate:	CGC DN-M2-Z1	CGC 025-M2-Z1

The following options can be selected:

OPTION C – COATING / GLASS TYPE FOR GLASS STRUCTURAL COMPONENTS

The standard component is made of borosilicate glass 3.3 without coating

C1 = coating, non-conductive

C2 = coating, non-conductive, for high temperatures and chemical resistance

C3 = coating, conductive

C4 = amber glass

C5 = quartz glass

OPTION F – FLANGE TYPE

The standard component is made of borosilicate glass 3.3 with the flange type according to the article code

The following flange connectors can generally be selected for glass structural components

F1 = KF flanges, type KF../1

F2 = KF flanges, type KF../2

F3 = KF flanges, type KF../3

F4 = PF flanges, type PF

OPTION L – SPECIAL LENGTHS

The fittings can also be manufactured in special lengths in many cases. Please enter your preferred length according to the list of options and we will check if this is possible.

L □□□□ = special length of coupling L in mm, e.g. L0235 for 235 mm length

For bolt extensions in backing flange couplings the relevant extension in mm is entered, for example L0015 for 15 mm bolt extension in comparison to the standard bolt length.

OPTION M – MATERIAL / PTFE-DESIGN

The standard design is in white PTFE, non-conductive and with no material certificate.

M1 = PTFE conductive

M2 = PTFE conductive with earthing

M7 = white PP with fibre-glass (for inserts only)

OPTION O – SPECIAL OPTIONS

The following special options are offered for certain structural components.

O1 = rubber instead of plastic insert for couplings

O3 = stainless steel spiral insert and base

OPTION Z – CERTIFICATES

Standard deliveries do not come with certificates.

The following certificates can optionally be delivered with your order.

Z1 = FDA material certificate¹⁾

Z2 = material certificate 2.2

Z3 = Certificate for Technical Guidelines on Air Quality Control (TA-Luft)

1) FDA material certificates can be delivered for product-side structural components containing PTFE.