

# Cylinder Connections

CGA DISS, CGA and DIN Series



**FITOK**

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## Features

- ⦿ 100% visual inspection of critical surfaces
- ⦿ Diverse materials and configurations available
- ⦿ Silver-plated nut threads to reduce installation torque
- ⦿ Every fitting stamped with size, material and heat code
- ⦿ Cleaned and packaged for Oxygen and Ultra High Purity Service available
- ⦿ Customized solutions available

## Materials

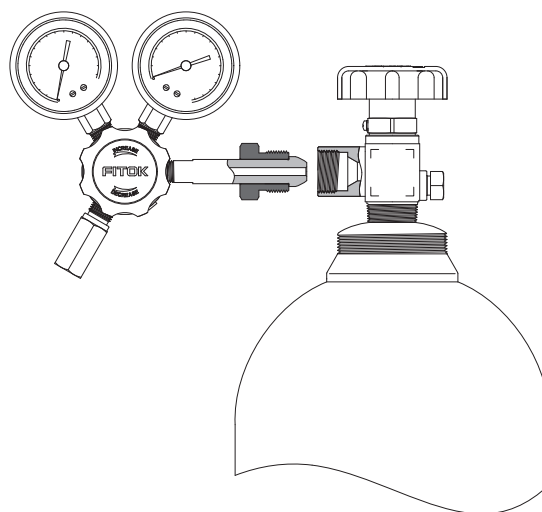
Series	Component	Material	Designator
CGA DISS	Nipples	316L SS	6L
	Nuts	304 SS	S4
	Gaskets	Nickel 200	NI
		PCTFE	K
		Aluminum	AL
	Plugs	316L SS	6L
	Adapters	316L SS	6L
Caps	316L SS	6L	
CGA DIN	Nipples	316L SS	6L
	Nuts	304 SS	S4
	Gaskets	PTFE	T
		PCTFE	K
	Plugs, Caps	316L SS	6L
Adapters	316L SS	6L	

### Notes:

1. Nickel gasket heat treated; surface hardness < HV 100
2. 316L SS in compliance with SEMI F20

## Ordering information

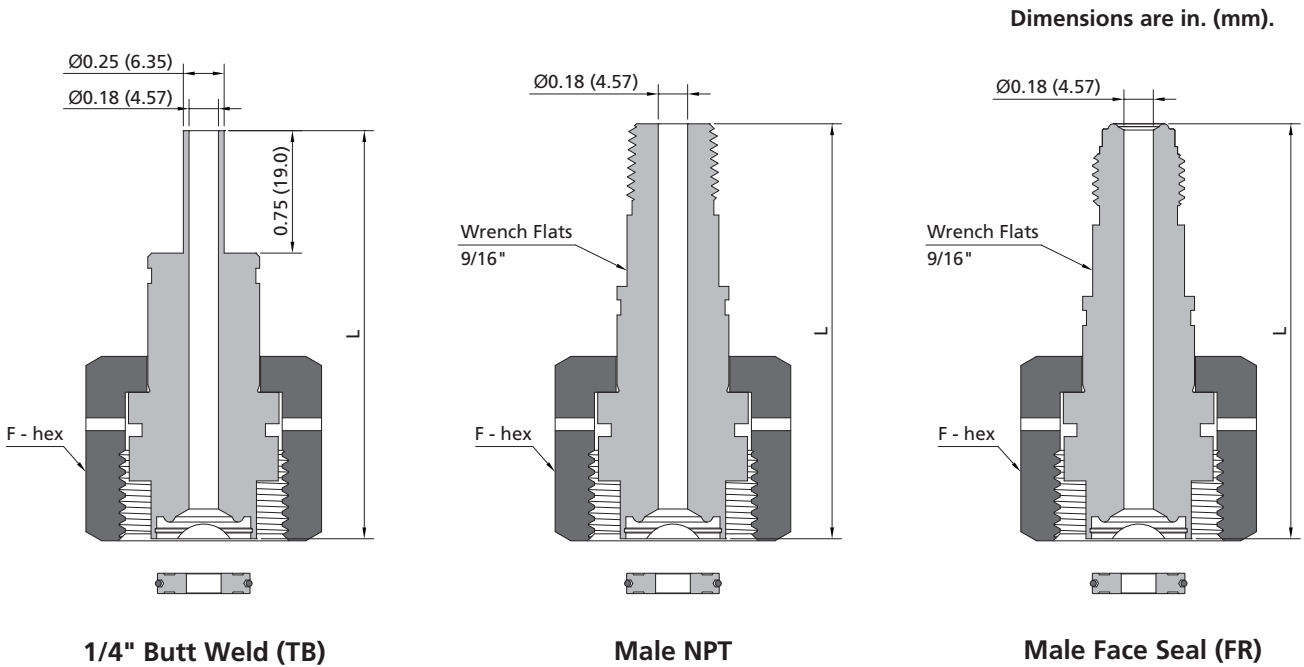
- ⦿ Add material designator as a prefix to the basic ordering number to get the complete ordering number.  
Example: 6L-C634-L-FR4
- ⦿ CGA, DIN series  
PTFE is standard material for gasket. If PCTFE is required, please add a suffix of "-k" to the ordering number.  
Example: 6L-C350-NS4-K
- ⦿ CGA DISS series  
Nickel is standard material for gasket. If PCTFE is required, please add a suffix of "-k" to the ordering number.  
Example: 6L-C632-FR4-K



# CGA DISS Series

- ⦿ Non-rotating design
- ⦿ Nipple with TB or FR fitting electropolished, the internal surface roughness finished to an average of Ra 9 µin. (0.23 µm)
- ⦿ Cleaned for Ultra High Purity Service; packaged in a Class 100 clean room
- ⦿ Test with helium (maximum allowable leak rate: 1 x 10<sup>-9</sup> mbar·l/s)

## Cylinder Connections (Including Nipples, Nuts and Gaskets)



CGA Number	End Connection	Assembly Basic Ordering Number	Nipple Basic Ordering Number	Nut Basic Ordering Number	Gasket Basic Ordering Number	Dimensions, in. (mm)	
						L	F
632	1/4" TB	-C632-TB4	-C632-L-TB4	-C630-N	-C630-GT	2.5 (63.5)	1 1/4 (31.8)
	1/4" FR	-C632-FR4	-C632-L-FR4			3 (76.2)	1 1/4 (31.8)
	1/4" NPT	-C632-NS4	-C632-L-NS4			3 (76.2)	1 1/4 (31.8)
634	1/4" TB	-C634-TB4	-C634-L-TB4	-C630-N	-C630-GT	2.5 (63.5)	1 1/4 (31.8)
	1/4" FR	-C634-FR4	-C634-L-FR4			3 (76.2)	1 1/4 (31.8)
	1/4" NPT	-C634-NS4	-C634-L-NS4			3 (76.2)	1 1/4 (31.8)
636	1/4" TB	-C636-TB4	-C636-L-TB4	-C630-N	-C630-GT	2.5 (63.5)	1 1/4 (31.8)
	1/4" FR	-C636-FR4	-C636-L-FR4			3 (76.2)	1 1/4 (31.8)
	1/4" NPT	-C636-NS4	-C636-L-NS4			3 (76.2)	1 1/4 (31.8)
638	1/4" TB	-C638-TB4	-C638-L-TB4	-C630-N	-C630-GT	2.5 (63.5)	1 1/4 (31.8)
	1/4" FR	-C638-FR4	-C638-L-FR4			3 (76.2)	1 1/4 (31.8)
	1/4" NPT	-C638-NS4	-C638-L-NS4			3 (76.2)	1 1/4 (31.8)

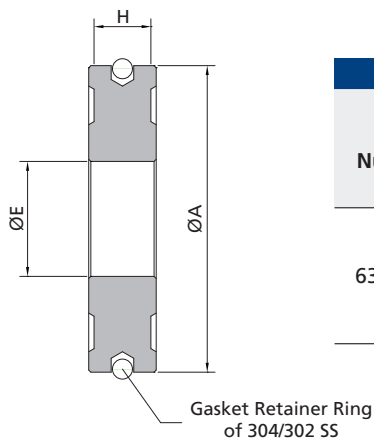
CGA Number	End Connection	Assembly Basic Ordering Number	Nipple Basic Ordering Number	Nut Basic Ordering Number	Gasket Basic Ordering Number	Dimensions, in. (mm)	
						L	F
640	1/4" TB	-C640-TB4	-C640-L-TB4	-C630-N	-C630-GT	2.5 (63.5)	1 1/4 (31.8)
	1/4" FR	-C640-FR4	-C640-L-FR4			3 (76.2)	1 1/4 (31.8)
	1/4" NPT	-C640-NS4	-C640-L-NS4			3 (76.2)	1 1/4 (31.8)
642	1/4" TB	-C642-TB4	-C642-L-TB4	-C630-N	-C630-GT	2.5 (63.5)	1 1/4 (31.8)
	1/4" FR	-C642-FR4	-C642-L-FR4			3 (76.2)	1 1/4 (31.8)
	1/4" NPT	-C642-NS4	-C642-L-NS4			3 (76.2)	1 1/4 (31.8)
712	1/4" TB	-C712-TB4	-C712-L-TB4	-C710-N	-C630-GT	2.5 (63.5)	1 3/8 (34.9)
	1/4" FR	-C712-FR4	-C712-L-FR4			3 (76.2)	1 3/8 (34.9)
	1/4" NPT	-C712-NS4	-C712-L-NS4			3 (76.2)	1 3/8 (34.9)
714	1/4" TB	-C714-TB4	-C714-L-TB4	-C710-N	-C630-GT	2.5 (63.5)	1 3/8 (34.9)
	1/4" FR	-C714-FR4	-C714-L-FR4			3 (76.2)	1 3/8 (34.9)
	1/4" NPT	-C714-NS4	-C714-L-NS4			3 (76.2)	1 3/8 (34.9)
716	1/4" TB	-C716-TB4	-C716-L-TB4	-C710-N	-C630-GT	2.5 (63.5)	1 3/8 (34.9)
	1/4" FR	-C716-FR4	-C716-L-FR4			3 (76.2)	1 3/8 (34.9)
	1/4" NPT	-C716-NS4	-C716-L-NS4			3 (76.2)	1 3/8 (34.9)
718	1/4" TB	-C718-TB4	-C718-L-TB4	-C710-N	-C630-GT	2.5 (63.5)	1 3/8 (34.9)
	1/4" FR	-C718-FR4	-C718-L-FR4			3 (76.2)	1 3/8 (34.9)
	1/4" NPT	-C718-NS4	-C718-L-NS4			3 (76.2)	1 3/8 (34.9)
720	1/4" TB	-C720-TB4	-C720-L-TB4	-C710-N	-C630-GT	2.5 (63.5)	1 3/8 (34.9)
	1/4" FR	-C720-FR4	-C720-L-FR4			3 (76.2)	1 3/8 (34.9)
	1/4" NPT	-C720-NS4	-C720-L-NS4			3 (76.2)	1 3/8 (34.9)
722	1/4" TB	-C722-TB4	-C722-L-TB4	-C710-N	-C630-GT	2.5 (63.5)	1 3/8 (34.9)
	1/4" FR	-C722-FR4	-C722-L-FR4			3 (76.2)	1 3/8 (34.9)
	1/4" NPT	-C722-NS4	-C722-L-NS4			3 (76.2)	1 3/8 (34.9)
724	1/4" TB	-C724-TB4	-C724-L-TB4	-C710-N	-C630-GT	2.5 (63.5)	1 3/8 (34.9)
	1/4" FR	-C724-FR4	-C724-L-FR4			3 (76.2)	1 3/8 (34.9)
	1/4" NPT	-C724-NS4	-C724-L-NS4			3 (76.2)	1 3/8 (34.9)
726	1/4" TB	-C726-TB4	-C726-L-TB4	-C710-N	-C630-GT	2.5 (63.5)	1 3/8 (34.9)
	1/4" FR	-C726-FR4	-C726-L-FR4			3 (76.2)	1 3/8 (34.9)
	1/4" NPT	-C726-NS4	-C726-L-NS4			3 (76.2)	1 3/8 (34.9)
728	1/4" TB	-C728-TB4	-C728-L-TB4	-C710-N	-C630-GT	2.5 (63.5)	1 3/8 (34.9)
	1/4" FR	-C728-FR4	-C728-L-FR4			3 (76.2)	1 3/8 (34.9)
	1/4" NPT	-C728-NS4	-C728-L-NS4			3 (76.2)	1 3/8 (34.9)

**Note:**

Nickel is standard material for gasket. If PCTFE is required, please add a suffix of "-k" to the ordering number.

Example: 6L-C638-TB4-K

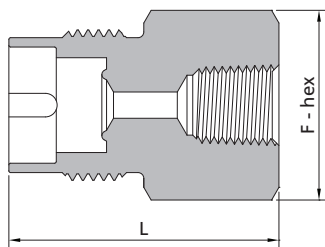
## Gaskets



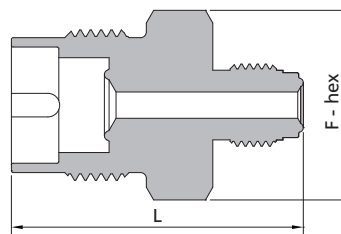
CGA Number	Gasket Ordering Number	Material	Dimensions					
			A		E		H	
			in.	mm	in.	mm	in.	mm
632~728	NI-C630-GT	Nickel 200	0.56	14.3	0.21	5.4	0.105	2.7
	K-C630-GT	PCTFE	0.56	14.3	0.21	5.4	0.125	3.2
	AL-C630-GT	Aluminum	0.56	14.3	0.21	5.4	0.105	2.7

## Outlet Adaptors

Female NPT



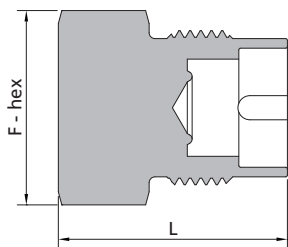
Male Face Seal (FR)



CGA Number	Basic Ordering Number	Dimensions, in. (mm)	
		L	F
632	-C632-A-FNS4	1.85 (47.0)	1 1/8 (28.6)
634	-C634-A-FNS4	1.85 (47.0)	1 1/8 (28.6)
636	-C636-A-FNS4	1.85 (47.0)	1 1/8 (28.6)
638	-C638-A-FNS4	1.85 (47.0)	1 1/8 (28.6)
640	-C640-A-FNS4	1.85 (47.0)	1 1/8 (28.6)
642	-C642-A-FNS4	1.85 (47.0)	1 1/8 (28.6)
712	-C712-A-FNS4	1.85 (47.0)	1 1/4 (31.8)
714	-C714-A-FNS4	1.85 (47.0)	1 1/4 (31.8)
716	-C716-A-FNS4	1.85 (47.0)	1 1/4 (31.8)
718	-C718-A-FNS4	1.85 (47.0)	1 1/4 (31.8)
720	-C720-A-FNS4	1.85 (47.0)	1 1/4 (31.8)
722	-C722-A-FNS4	1.85 (47.0)	1 1/4 (31.8)
724	-C724-A-FNS4	1.85 (47.0)	1 1/4 (31.8)
726	-C726-A-FNS4	1.85 (47.0)	1 1/4 (31.8)
728	-C728-A-FNS4	1.85 (47.0)	1 1/4 (31.8)

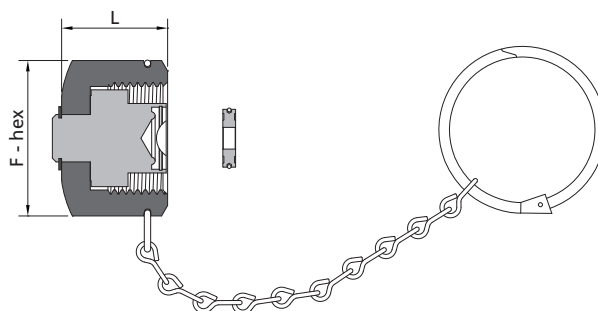
CGA Number	Basic Ordering Number	Dimensions, in. (mm)	
		L	F
632	-C632-A-FR4	2.0 (50.8)	1 1/8 (28.6)
634	-C634-A-FR4	2.0 (50.8)	1 1/8 (28.6)
636	-C636-A-FR4	2.0 (50.8)	1 1/8 (28.6)
638	-C638-A-FR4	2.0 (50.8)	1 1/8 (28.6)
640	-C640-A-FR4	2.0 (50.8)	1 1/8 (28.6)
642	-C642-A-FR4	2.0 (50.8)	1 1/8 (28.6)
712	-C712-A-FR4	2.0 (50.8)	1 1/4 (31.8)
714	-C714-A-FR4	2.0 (50.8)	1 1/4 (31.8)
716	-C716-A-FR4	2.0 (50.8)	1 1/4 (31.8)
718	-C718-A-FR4	2.0 (50.8)	1 1/4 (31.8)
720	-C720-A-FR4	2.0 (50.8)	1 1/4 (31.8)
722	-C722-A-FR4	2.0 (50.8)	1 1/4 (31.8)
724	-C724-A-FR4	2.0 (50.8)	1 1/4 (31.8)
726	-C726-A-FR4	2.0 (50.8)	1 1/4 (31.8)
728	-C728-A-FR4	2.0 (50.8)	1 1/4 (31.8)

## Blank Plugs



CGA Number	Basic Ordering Number	Dimensions, in. (mm)	
		L	F
632	-C632-BP	1.53 (38.9)	1 1/8 (28.6)
634	-C634-BP	1.53 (38.9)	1 1/8 (28.6)
636	-C636-BP	1.53 (38.9)	1 1/8 (28.6)
638	-C638-BP	1.53 (38.9)	1 1/8 (28.6)
640	-C640-BP	1.53 (38.9)	1 1/8 (28.6)
642	-C642-BP	1.53 (38.9)	1 1/8 (28.6)
712	-C712-BP	1.53 (38.9)	1 1/4 (31.8)
714	-C714-BP	1.53 (38.9)	1 1/4 (31.8)
716	-C716-BP	1.53 (38.9)	1 1/4 (31.8)
718	-C718-BP	1.53 (38.9)	1 1/4 (31.8)
720	-C720-BP	1.53 (38.9)	1 1/4 (31.8)
722	-C722-BP	1.53 (38.9)	1 1/4 (31.8)
724	-C724-BP	1.53 (38.9)	1 1/4 (31.8)
726	-C726-BP	1.53 (38.9)	1 1/4 (31.8)
728	-C728-BP	1.53 (38.9)	1 1/4 (31.8)

## Valve Outlet Caps (Including Chains, Rings and Gaskets)



CGA Number	Basic Ordering Number	Dimensions, in. (mm)	
		L	F
632	-C632-CP	0.98 (24.9)	1 1/4 (31.8)
634	-C634-CP	0.98 (24.9)	1 1/4 (31.8)
636	-C636-CP	0.98 (24.9)	1 1/4 (31.8)
638	-C638-CP	0.98 (24.9)	1 1/4 (31.8)
640	-C640-CP	0.98 (24.9)	1 1/4 (31.8)
642	-C642-CP	0.98 (24.9)	1 1/4 (31.8)
712	-C712-CP	0.98 (24.9)	1 3/8 (34.9)
714	-C714-CP	0.98 (24.9)	1 3/8 (34.9)
716	-C716-CP	0.98 (24.9)	1 3/8 (34.9)
718	-C718-CP	0.98 (24.9)	1 3/8 (34.9)
720	-C720-CP	0.98 (24.9)	1 3/8 (34.9)
722	-C722-CP	0.98 (24.9)	1 3/8 (34.9)
724	-C724-CP	0.98 (24.9)	1 3/8 (34.9)
726	-C726-CP	0.98 (24.9)	1 3/8 (34.9)
728	-C728-CP	0.98 (24.9)	1 3/8 (34.9)

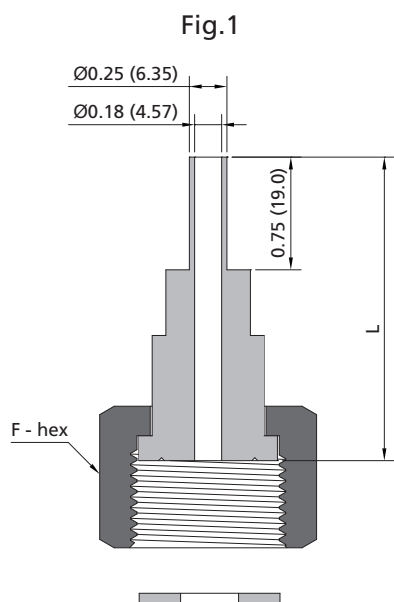
**Note:**  
 Nickel is standard material for gasket. If PCTFE is required, please add a suffix of "-k" to the ordering number.  
 Example: 6L-C632-CP-K

# CGA Series

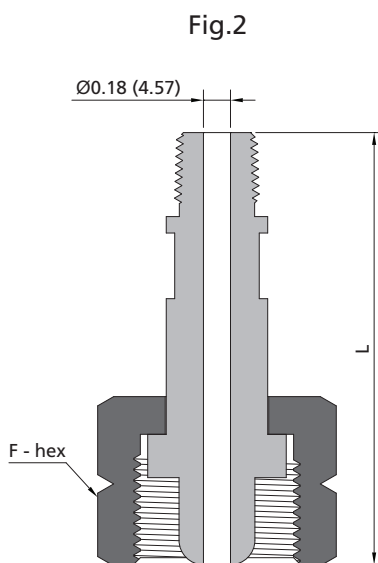
- ⦿ CGA V-1-2005 compliant
- ⦿ Nipple with TB or FR fitting electropolished, the internal surface roughness finished to an average of Ra 9 µin. (0.23 µm)
- ⦿ Test with helium (maximum allowable leak rate: 1 x 10<sup>-9</sup> mbar·l/s)

## Cylinder Connections (Including Nipples, Nuts and Gaskets)

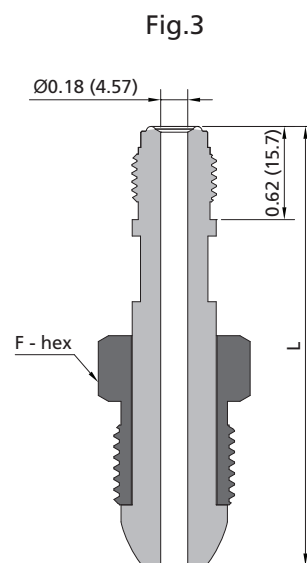
Dimensions are in. (mm).



1/4" Butt Weld (TB)



Male NPT



Male Face Seal (FR)

CGA Number	Ref. Fig.	End Connection	Assembly Basic Ordering Number	Nipple Basic Ordering Number	Nut Basic Ordering Number	Gasket Basic Ordering Number	Dimensions, in. (mm)	
							L	F
170	Fig.1	1/4" TB	-C170-TB4	-C170-L-TB4	-C170-N	-C170-GT	1.25 (31.8)	11/16 (17.5)
		1/8" NPT	-C170-NS2	-C170-L-NS2				
180	Fig.1	1/4" TB	-C180-TB4	-C180-L-TB4	-C180-N	-C180-GT	1.25 (31.8)	3/4 (19.1)
		1/8" NPT	-C180-NS2	-C180-L-NS2			1.75 (44.5)	
290	Fig.2	1/4" TB	-C290-TB4	-C290-L-TB4	-C290-N	—	2.63 (66.7)	1 (25.4)
		1/4" NPT	-C290-NS4	-C290-L-NS4			2.25 (57.2)	
296	Fig.3	1/4" TB	-C296-TB4	-C296-L-TB4	-C296-N	—	2.63 (66.7)	7/8 (22.3)
		1/4" NPT	-C296-NS4	-C296-L-NS4			3.5 (88.9)	
		1/4" FR	-C296-FR4	-C296-L-FR4			2.75 (69.9)	



CGA Number	Ref. Fig.	End Connection	Assembly Basic Ordering Number	Nipple Basic Ordering Number	Nut Basic Ordering Number	Gasket Basic Ordering Number	Dimensions, in. (mm)	
							L	F
320	Fig.1	1/4" TB	-C320-TB4	-C320-L-TB4	-C320-N	-C320-GT	1.75 (44.5)	1 1/8 (28.6)
		1/4" NPT	-C320-NS4	-C320-L-NS4			2.5 (63.5)	
		1/4" FR	-C320-FR4	-C320-L-FR4			1.75 (44.5)	
326	Fig.2	1/4" TB	-C326-TB4	-C326-L-TB4	-C326-N	—	2.25 (57.2)	1 1/8 (28.6)
		1/4" NPT	-C326-NS4	-C326-L-NS4			3.0 (76.2)	
		1/4" FR	-C326-FR4	-C326-L-FR4			2.25 (57.2)	
330	Fig.1	1/4" TB	-C330-TB4	-C320-L-TB4	-C330-N	-C320-GT	1.75 (44.5)	1 1/8 (28.6)
		1/4" NPT	-C330-NS4	-C320-L-NS4			2.5 (63.5)	
		1/4" FR	-C330-FR4	-C320-L-FR4			1.75 (44.5)	
346	Fig.2	1/4" TB	-C346-TB4	-C346-L-TB4	-C346-N	—	2.31 (58.7)	1 1/8 (28.6)
		1/4" NPT	-C346-NS4	-C346-L-NS4			3.0 (76.2)	
		1/4" FR	-C346-FR4	-C346-L-FR4			2.25 (57.2)	
350	Fig.2	1/4" TB	-C350-TB4	-C350-L-TB4	-C350-N	—	2.31 (58.7)	1 1/8 (28.6)
		1/4" NPT	-C350-NS4	-C350-L-NS4			3.0 (76.2)	
		1/4" FR	-C350-FR4	-C350-L-FR4			2.25 (57.2)	
510	Fig.3	1/4" TB	-C510-TB4	-C510-L-TB4	-C510-N	—	2.63 (66.7)	1 1/8 (28.6)
		1/4" NPT	-C510-NS4	-C510-L-NS4			3.5 (88.9)	
		1/4" FR	-C510-FR4	-C510-L-FR4			2.75 (69.9)	
540 <sup>®</sup>	Fig.2	1/4" TB	-C540-TB4	-C540-L-TB4	-C540-N	—	2.25 (57.2)	1 1/8 (28.6)
		1/4" NPT	-C540-NS4	-C540-L-NS4			3.0 (76.2)	
		1/4" FR	-C540-FR4	-C540-L-FR4			2.25 (57.2)	
580	Fig.3	1/4" TB	-C580-TB4	-C510-L-TB4	-C580-N	—	2.63 (66.7)	1 1/8 (28.6)
		1/4" NPT	-C580-NS4	-C510-L-NS4			3.5 (88.9)	
		1/4" FR	-C580-FR4	-C510-L-FR4			2.75 (69.9)	
590	Fig.3	1/4" TB	-C590-TB4	-C510-L-TB4	-C590-N	—	2.63 (66.7)	1 1/8 (28.6)
		1/4" NPT	-C590-NS4	-C510-L-NS4			3.5 (88.9)	
		1/4" FR	-C590-FR4	-C510-L-FR4			2.75 (69.9)	

## 8 Cylinder Connections

CGA Number	Ref. Fig.	End Connection	Assembly Basic Ordering Number	Nipple Basic Ordering Number	Nut Basic Ordering Number	Gasket Basic Ordering Number	Dimensions, in. (mm)	
							L	F
660	Fig.1	1/4" TB	-C660-TB4	-C660-L-TB4	-C660-N	-C660-GT	2.19 (55.6)	1 1/4 (31.8)
		1/4" NPT	-C660-NS4	-C660-L-NS4			2.5 (63.5)	
		1/4" FR	-C660-FR4	-C660-L-FR4			1.88 (47.6)	
670	Fig.1	1/4" TB	-C670-TB4	-C660-L-TB4	-C670-N	-C660-GT	2.19 (55.6)	1 1/4 (31.8)
		1/4" NPT	-C670-NS4	-C660-L-NS4			2.5 (63.5)	
		1/4" FR	-C670-FR4	-C660-L-FR4			1.88 (47.6)	
678	Fig.1	1/4" TB	-C678-TB4	-C678-L-TB4	-C678-N	-C678-GT	2.5 (63.5)	1 1/4 (31.8)
		1/4" NPT	-C678-NS4	-C678-L-NS4			2.5 (63.5)	
		1/4" FR	-C678-FR4	-C678-L-FR4			2.0 (50.8)	
679	Fig.1	1/4" TB	-C679-TB4	-C679-L-TB4	-C679-N	-C679-GT	2.5 (63.5)	1 1/4 (31.8)
		1/4" NPT	-C679-NS4	-C679-L-NS4			3.0 (76.2)	
		1/4" FR	-C679-FR4	-C679-L-FR4			2.0 (50.8)	

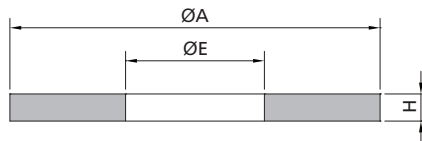
**Note:**

PTFE is standard material for gasket. If PCTFE is required, please add a suffix of "-k" to the ordering number.

Example: 6L-C170-FR4-K

① Cleaned and packaged for Oxygen Service.

## Gaskets

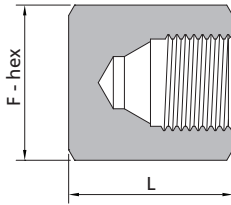


CGA Number	Gasket Basic Ordering Number	Dimensions					
		A		E		H	
		in.	mm	in.	mm	in.	mm
170	-C170-GT	0.43	11.0	0.19	4.8	0.10	2.5
180	-C180-GT	0.44	11.2	0.32	8.1	0.09	2.3
320, 330	-C320-GT	0.72	18.3	0.26	6.6	0.09	2.3
660, 670	-C660-GT	0.94	23.9	0.38	9.7	0.06	1.6
678	-C678-GT	0.61	15.5	0.30	7.6	0.06	1.6
679	-C679-GT	0.53	13.5	0.31	7.9	0.06	1.6

## Outlet Adaptors, Blank Caps and Plugs

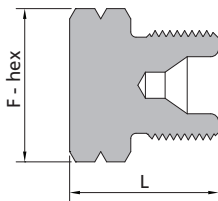
### Blank Caps

CGA 580



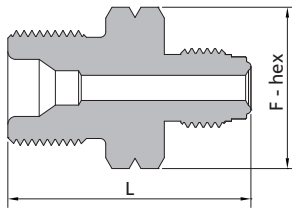
### Blank Plugs

CGA 350



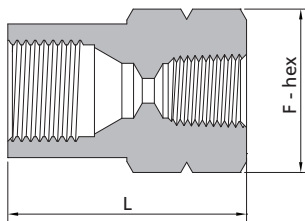
### Male Face Seal (FR)

CGA 350



### Female NPT

CGA 350



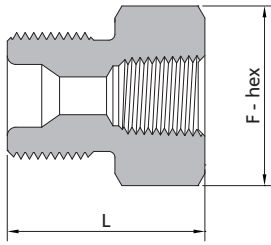
CGA Number	End Connection	Assembly Basic Ordering Number	Dimensions, in. (mm)	
			L	F
180	1/4" NPT (F)	-C180-A-FNS4	1.38 (35.0)	3/4 (19.1)
296	Blank Cap	-C296-BC	1.37 (34.8)	1 1/8 (28.6)
	1/4" NPT (F)	-C296-A-FNS4	2.0 (50.8)	
	1/4" FR	-C296-A-FR4	2.0 (50.8)	
320	Blank Plug	-C320-BP	1.12 (28.4)	1 (25.4)
	1/4" NPT (F)	-C320-A-FNS4	1.12 (28.4)	
	1/4" FR	-C320-A-FR4	1.74 (44.2)	
326	Blank Plug	-C326-BP	1.12 (28.4)	1 (25.4)
	1/4" NPT (F)	-C326-A-FNS4	1.31 (33.3)	
	1/4" FR	-C326-A-FR4	1.74 (44.2)	
330	Blank Plug	-C330-BP	1.12 (28.4)	1 (25.4)
	1/4" NPT (F)	-C330-A-FNS4	1.31 (33.3)	
	1/4" FR	-C330-A-FR4	1.74 (44.2)	
346	Blank Plug	-C346-BP	1.12 (28.4)	1 (25.4)
	1/4" NPT (F)	-C346-A-FNS4	1.31 (33.3)	
	1/4" FR	-C346-A-FR4	1.88 (47.8)	
350	Blank Plug	-C350-BP	1.12 (28.4)	1 (25.4)
	1/4" NPT (F)	-C350-A-FNS4	1.31 (33.3)	
	1/4" FR	-C350-A-FR4	1.88 (47.8)	
510	Blank Cap	-C510-BC	1.37 (34.8)	1 1/4 (31.8)
	1/4" NPT (F)	-C510-A-FNS4	2.0 (50.8)	
	1/4" FR	-C510-A-FR4	2.0 (50.8)	
540 <sup>①</sup>	Blank Plug	-C540-BP	1.12 (28.4)	1 (25.4)
	1/4" NPT (F)	-C540-A-FNS4	1.25 (31.8)	
	1/4" FR	-C540-A-FR4	1.87 (47.5)	
580	Blank Cap	-C580-BC	1.37 (34.8)	1 1/4 (31.8)
	1/4" NPT (F)	-C580-A-FNS4	2.0 (50.8)	
	1/4" FR	-C580-A-FR4	2.0 (50.8)	

① Cleaning and packaging for Oxygen Service.

## 10 Cylinder Connections

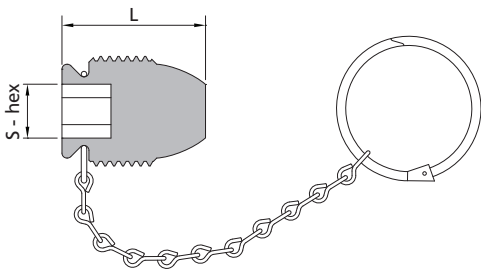
### Female NPT

CGA 350

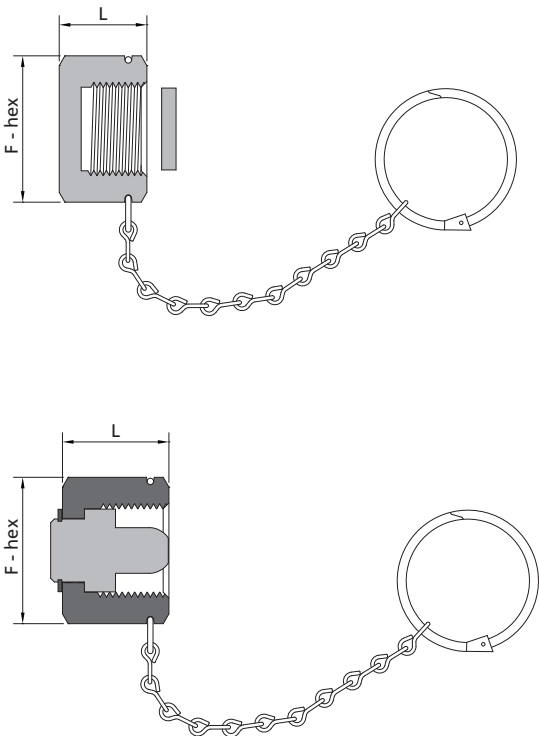


CGA Number	End Connection	Assembly Basic Ordering Number	Dimensions, in. (mm)	
			L	F
590	Blank Cap	-C590-BC	1.37 (34.8)	1 1/4 (31.8)
	1/4" NPT (F)	-C590-A-FNS4	2.0 (50.8)	
	1/4" FR	-C590-A-FR4	2.0 (50.8)	
660	Blank Plug	-C660-BP	0.88 (22.4)	1 1/8 (28.6)
	1/4" NPT (F)	-C660-A-FNS4	1.25 (31.8)	
	1/4" FR	-C660-A-FR4	1.5 (38.1)	
670	Blank Plug	-C670-BP	0.88 (22.4)	1 1/8 (28.6)
	1/4" NPT (F)	-C670-A-FNS4	1.25 (31.8)	
	1/4" FR	-C670-A-FR4	1.5 (38.1)	
678	Blank Plug	-C678-BP	1.0 (25.4)	1 1/8 (28.6)
	1/4" NPT (F)	-C678-A-FNS4	1.38 (35.1)	
	1/4" FR	-C678-A-FR4	1.5 (38.1)	
679	Blank Plug	-C679-BP	0.88 (22.4)	1 1/8 (28.6)
	1/4" NPT (F)	-C679-A-FNS4	1.25 (31.8)	
	1/4" FR	-C679-A-FR4	1.75 (44.5)	

## Cylinder Valve Outlet Plugs



CGA Number	Basic Ordering Number	Dimensions, in. (mm)	
		L	S
510	-C510-PG	1.0 (25.4)	3/8 (9.5)
580	-C580-PG	1.0 (25.4)	
590	-C590-PG	1.0 (25.4)	



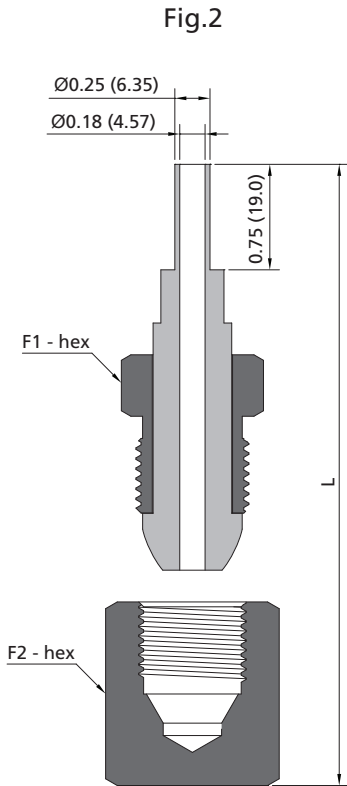
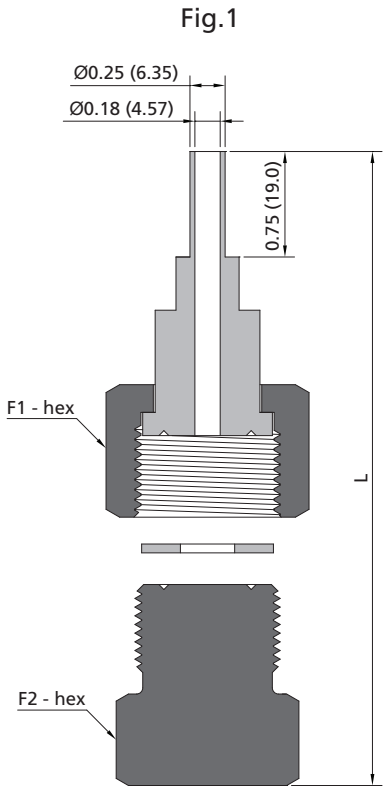
CGA Number	Basic Ordering Number	Dimensions, in. (mm)	
		L	F
320	-C320-CP	0.54 (13.7)	1 (25.4)
326	-C320-CP	0.54 (13.7)	
330	-C330-CP	0.54 (13.7)	
346	-C320-CP	0.54 (13.7)	
660	-C660-CP	0.54 (13.7)	1 1/4 (31.8)
670	-C670-CP	0.54 (13.7)	
678	-C670-CP	0.54 (13.7)	
679	-C670-CP	0.54 (13.7)	

- Notes:
1. PTFE is standard material for gasket. If PCTFE is required, please add a suffix of "-k" to the ordering number.  
Example: S4-C330-CP-K
  2. The caps listed above are only intended to keep valve outlets clean and protect its threads. They shouldn't be used to contain pressure if the valve leaks or is opened by mistake.

CGA Number	Basic Ordering Number	Dimensions, in. (mm)	
		L	F
350	-C350-CP	0.82 (20.8)	1 1/8 (28.6)

### Complete Pigtail Connections (Including Nipples, Nuts, Gaskets and Blank Plugs or Caps)

Dimensions are in. (mm).



## 12 Cylinder Connections

CGA Number	Ref. Fig.	Assembly Basic Ordering Number	Gasket Basic Ordering Number	Dimensions, in. (mm)			
				L	F1	F2	
296	Fig.2	-C296-TB4-A	—	3.03 (77.0)	7/8 (22.3)	1 1/8 (28.6)	
320	Fig.1	-C320-TB4-A	-C320-GT	2.96 (75.2)	1 1/8 (28.6)	1 (25.4)	
326	Fig.1	-C326-TB4-A	—	3.01 (76.5)			
330	Fig.1	-C330-TB4-A	-C320-GT	2.96 (75.2)			
346	Fig.1	-C346-TB4-A	—	2.97 (75.4)			
350	Fig.1	-C350-TB4-A	—	2.96 (75.2)			
510	Fig.2	-C510-TB4-A	—	3.03 (77.0)			1 1/4 (31.8)
540 <sup>①</sup>	Fig.1	-C540-TB4-A	—	2.96 (75.2)			1 (25.4)
580	Fig.2	-C580-TB4-A	—	3.03 (77.0)			1 1/4 (31.8)
590	Fig.2	-C590-TB4-A	—	3.03 (77.0)			
660	Fig.1	-C660-TB4-A	-C660-GT	2.96 (75.2)			1 1/4 (31.8)
670	Fig.1	-C670-TB4-A	-C660-GT	2.96 (75.2)			
678	Fig.1	-C678-TB4-A	-C678-GT	3.08 (78.2)			
679	Fig.1	-C679-TB4-A	-C679-GT	2.96 (75.2)			

**Note:**

PTFE is standard material for gasket. If PCTFE is required, please add a suffix of "-k" to the ordering number.

Example: 6L-C330-TB4-A-K

① Cleaned and packaged for Oxygen Service.

## Assembly Torque For CGA Cylinder Connections

CGA NO.	Recommended Torque		CGA NO.	Recommended Torque	
	ft-lb	N·m		ft-lb	N·m
170 <sup>①</sup>	10~15	14~20	510	35~50	47~68
180 <sup>①</sup>	10~15	14~20	540	40~60	54~81
290	30~45	41~61	580	40~60	54~81
296	35~50	47~68	590	40~60	54~81
320 <sup>①</sup>	20~30	27~41	660 <sup>①</sup>	30~45	41~61
326	25~35	34~47	670 <sup>①</sup>	30~45	41~61
330 <sup>①</sup>	20~30	27~41	678 <sup>①</sup>	25~35	34~47
346	35~50	47~68	679 <sup>①</sup>	25~35	34~47
350	35~50	47~68			
CGA DISS NO.	Recommended Torque		Gasket Material		
	ft-lb	N·m			
632-728	35~40	47~53.8	Nickel		
	12~15	16~20.1	PCTFE		

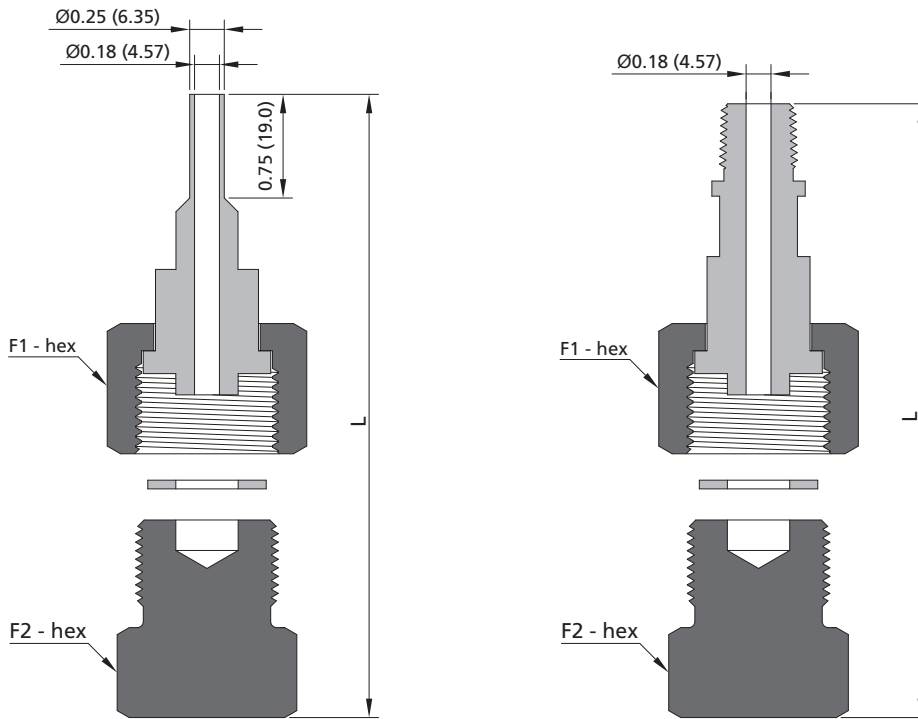
① Gasket for seal: PTFE or PCTFE.

# DIN Series

- ⦿ DIN 477-1 compliant
- ⦿ Nipple with TB fitting electropolished, the internal surface roughness finished to an average of Ra 9 µin. (0.23 µm)
- ⦿ Test with helium (maximum allowable leak rate: 1 x 10<sup>-9</sup> mbar-l/s)

## Complete Pigtail Connections (Including Nipples, Nuts, Gaskets and Blank Plugs)

Dimensions are in. (mm).



1/4" Buttweld (TB)

Male NPT

DIN Number	Assembly Basic Ordering Number	Gasket Basic Ordering Number	Dimensions, in.(mm)		
			L	F1	F2
1	-DIN1-TB4-A	-DIN1-GT	2.96 (75.2)	1 1/4 (31.8)	1 1/4 (31.8)
	-DIN1-NS4-A		4.25 (108)		
5	-DIN5-TB4-A	-DIN5-GT	3.09 (78.5)		
	-DIN5-NS4-A		4.41 (112)		
6	-DIN6-TB4-A	-DIN1-GT	2.96 (75.2)		
	-DIN6-NS4-A		4.25 (108)		
8	-DIN8-TB4-A	-DIN5-GT	3.09 (78.5)		
	-DIN8-NS4-A		4.41 (112)		
11	-DIN11-TB4-A	-DIN11-GT	2.88 (73.2)	7/8 (22.3)	11/16 (17.5)
	-DIN11-NS4-A		4.14 (105.2)		
14	-DIN14-TB4-A		2.88 (73.2)	1 1/16 (27.0)	7/8 (22.3)
	-DIN14-NS4-A		4.15 (105.5)		

**Notes:**

1. Above components can be ordered separately.
2. PTFE is standard material for gasket. If PCTFE is required, please add a suffix of "-k" to the ordering number.  
Example: 6L-D1N1-TB4-A-K

# Gas Connection Assignment Table<sup>®</sup>

GAS	Formula	UHP CGA	CGA	DIN	JIS
Ammonia	NH <sub>3</sub>	720	705	DIN6	22-R
Argon	Ar	718	580	DIN6	22-R or 23-R
Arsenic Pentafluoride	AsF <sub>5</sub>	642	—	—	—
Arsine	AsH <sub>3</sub>	632	350	—	22-L
Boron Trichloride	BCl <sub>3</sub>	634	660	DIN8	—
Boron Trifluoride	BF <sub>3</sub>	642	330	DIN8	22-L
Carbon Dioxide	CO <sub>2</sub>	716	320	DIN6	—
Carbon Monoxide	CO	724	350	DIN5	22-L
Chlorine	Cl <sub>2</sub>	728	—	DIN8	26-R
Diborane	B <sub>2</sub> H <sub>6</sub>	632	350	—	22-L
Dichlorosilane	SiH <sub>2</sub> Cl <sub>2</sub>	636	678 <sup>①</sup>	DIN5	—
Diethylzinc	Zn(C <sub>2</sub> H <sub>5</sub> ) <sub>2</sub>	726	510 <sup>①</sup>	—	—
Diethyltelluride	(C <sub>2</sub> H <sub>5</sub> ) <sub>2</sub> Te	726	—	—	—
Dimethylzinc	(CH <sub>3</sub> ) <sub>2</sub> Zn	726	—	—	—
Disilane	Si <sub>2</sub> H <sub>6</sub>	632	—	—	—
Germane	GeH <sub>4</sub>	632	350 or 660	—	—
Halocarbon 11	CCl <sub>3</sub> F	716	660	—	—
Halocarbon 115	ClCF <sub>2</sub> CF <sub>3</sub>	716	660	DIN6	—
Halocarbon 12	CCl <sub>2</sub> F <sub>2</sub>	716	660	DIN6	—
Halocarbon 13	ClCF <sub>3</sub>	716	660	DIN6	—
Halocarbon 14	CF <sub>4</sub>	716	320 or 580	DIN6	—
Halocarbon 23	CHF <sub>3</sub>	716	660	DIN6	—
Halocarbon 116	F <sub>3</sub> CCF <sub>3</sub>	716	660	—	—
Helium	He	718	580	DIN6	22-R or 23-R
Hydrogen	H <sub>2</sub>	724	350	DIN1	22-L
Hydrogen Bromide	HBr	634	330	DIN8	26-R
Hydrogen Chloride	HCl	634	330	DIN8	26-R
Hydrogen Fluoride	HF	638	660 or 670	—	26-R
Hydrogen Sulfide	H <sub>2</sub> S	722	330	DIN5	—
Krypton	Kr	718	580	DIN6	22-R or 23-R
Neon	Ne	718	580	DIN6	22-R or 23-R
Nitrogen	N <sub>2</sub>	718	580	DIN10	22-R or 23-R
Nitrogen Trifluoride	NF <sub>3</sub>	640	330 or 670	DIN8	—
Nitrous Oxide	N <sub>2</sub> O	712	326	DIN8	—
Oxygen	O <sub>2</sub>	714	540	DIN9	22-R or 23-R
Perfluoropropane	CF <sub>2</sub> (CF <sub>3</sub> )	716	660	—	—
Phosphine	PH <sub>3</sub>	632	350 or 660	DIN1	—
Phosphorus Pentafluoride	PF <sub>5</sub>	642	330 or 660	—	—
Silane	SiH <sub>4</sub>	632	350	—	—
Silicon Tetrachloride	SiCl <sub>4</sub>	636	—	—	—
Silicon Tetrafluoride	SiF <sub>4</sub>	642	330	—	22-L
Sulphur Hexafluoride	SF <sub>6</sub>	716	590	DIN6	26-R
Trichlorosilane	SiHCl <sub>3</sub>	636	—	—	—
Triethylaluminum	(C <sub>2</sub> H <sub>5</sub> ) <sub>3</sub> Al	726	510 <sup>①</sup>	—	—
Tungsten Hexafluoride	WF <sub>6</sub>	638	670	DIN8	—
Xenon	Xe	718	580	DIN6	22-R

① Refer to CGA organization specification for pressure limits.

② Information in this table shall be used for reference only.



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