

Split flanges connections with UNC stud bolts or bolts

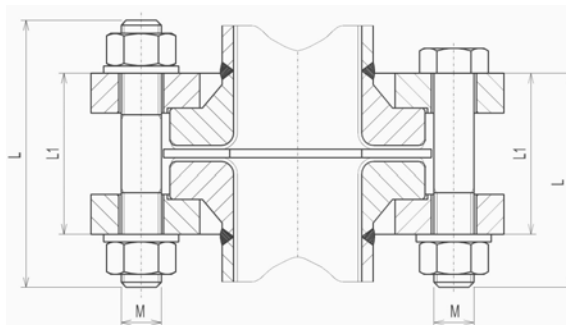
The bolt torques as stated below are based on results both forms tests and from actual application. We emphasize that the values are given as recommendation and hold for mounting at ambient temperature while using greased bolts with flat washers and turning faces of nuts. Bolts shall be tightened cross-wise with ever increasing torques.

Table 1

Connections ANSI B16.5 150PSI				Connections ANSI B16.5 300PSI			
NPS	Bolts M	Qty	Bolt torques N-m / ft.lbs	Bolts M	Qty	Bolt torques N-m / ft.lbs	NPS
1"	1/2"	4	20 – 25 / 15 - 19	5/8"	4	25 – 30 / 19 - 22	1"
1 1/4"	1/2"	4	25 – 30 / 19 - 22	5/8"	4	25 – 30 / 19 - 22	1 1/4"
1 1/2"	1/2"	4	25 – 30 / 19 - 22	3/4"	4	30 – 35 / 19 - 26	1 1/2"
2"	5/8"	4	45 – 50 / 33 - 37	5/8"	8	50 – 55 / 37 - 41	2"
3"	5/8"	4	55 – 60 / 41 - 44	3/4"	8	60 – 65 / 44 - 48	3"
4"	5/8"	8	55 – 60 / 41 - 44	3/4"	8	60 – 65 / 44 - 48	4"
6"	3/4"	8	75 – 85 / 55 - 63	3/4"	12	85 – 95 / 63 - 70	6"
8"	3/4"	8	75 – 85 / 55 - 63	7/8"	12	85 – 95 / 63 - 70	8"
10"	7/8"	12	80 – 90 / 59 - 66	1"	16	90 – 100 / 66 - 74	10"
12"	7/8"	12	80 – 90 / 59 - 66	1 1/8"	16	90 – 100 / 66 - 74	12"
14"	1"	12	80 – 95 / 59 - 70	1 1/8"	20	100 – 105 / 74 - 78	14"
16"	1"	16	80 – 95 / 59 - 70	1 1/4"	20	100 – 105 / 74 - 78	16"
18"	1 1/8"	16	80 – 95 / 59 - 70	1 1/4"	24	100 – 105 / 74 - 78	18"
20"	1 1/8"	20	80 – 95 / 59 - 70	1 1/4"	24	100 – 105 / 74 - 78	20"

Note: These values are indicative. Based on experience for particular services torquering and re-torquering has to be adjusted.

From 1" to 12" connections you can also apply the torque values shown in our current document "Installation Instructions-Facts for Fitters" as maximum value.



Gasket types

The bolt torques shall be appropriate for the type of gaskets applied. A selection of suitable gasket types is given in table 2. A summary of recommended bolt torques for all listed type of gaskets is given in table 1.

After the first pressure test, each piping system shall be heated to operating temperature and cooled down to ambient temperature. All the flange connections are now re-torqued to required torque in cold condition.

Generally flat face gaskets are used in glass lined piping system. The types listed below have good resistance to acids and alkalis. The types are mentioned as examples and the application is recommend.

Table 2

Type	Composition	Thickness	Operating range
1	<ul style="list-style-type: none"> • PTFE-envelope gasket • with/without corrugated ring • and aramid insert 	Up to DN 250 7 / 5mm	-25°C / + 160°C
2	<ul style="list-style-type: none"> • PTFE-envelope gasket • with/without corrugated ring and graphite insert 	From DN 300 10 / 8mm	- 50° C /+ 230° C
3	<ul style="list-style-type: none"> • Modified PTFE 	3.2 to 6.3mm	- 50° C / + 200° C
4	<ul style="list-style-type: none"> • 100% expanded PTFE (ex. GORE-GR or Style 800) 	6 to 9 mm	- 50° C / + 200° C

