

## Flange Bolt Torques

The following charts indicate the approximate bolt torque required to seal flanged joints against internal pressure. The torques given are based on using a 3mm thick 70 IRHD rubber gasket.

The torque values are applicable for the type of gasket specified and bolts, nuts and washers should be free from damage, rust etc. The relationship between applied torques and the actual load imparted is not precisely predictable, therefore the values in the tables are, of necessity, an approximate guide.

The need to seal a flanged joint at a pressure greater than the flange rating is only for site hydrostatic test purposes. Flange joints should not be operated at pressures above the flange rating.

NP16 Flange Joints								
Dia		to seal at		to seal at		to seal at		to seal at
		10 bar		16 bar		20 bar		25 bar
Approximate Bolting Torque setting Nm								
80mm		70		70		75		75
100mm		75		80		80		80
150mm		115		120		125		135
200mm		110		115		120		130
250mm		155		165		175		180
300mm		165		180		190		210
350mm		160		175		185		200
400mm		200		220		235		270
450mm		195		215		230		260
500mm		240		270		295		345
600mm		305		365		425		505
700mm		350		465		540		635
800mm		470		630		735		870
900mm		475		645		760		900
1000mm		605		835		985		1175
1100mm		610		840		1005		1205
1200mm		810		1140		1360		1630
1400mm		915		1340		1555		1875

<b>NP25 Flange Joints</b>									
Dia		to seal at		to seal at		to seal at		to seal at	
		20 bar		25 bar		35 bar		40 bar	
Approximate Bolting Torque setting Nm									
80mm		80		85		85		90	
100mm		120		125		130		135	
150mm		180		185		195		230	
200mm		170		180		190		220	
250mm		230		250		275		335	
300mm		220		235		265		325	
350mm		290		330		375		460	
400mm		380		435		495		615	
450mm		355		410		470		580	
500mm		415		485		555		695	
600mm		595		700		800		1010	
700mm		675		795		915		1160	
800mm		965		1150		1330		1690	
900mm		990		1185		1375		1755	
1000mm		1355		1620		1885		2420	
1100mm		1380		1655		1930		2480	
1200mm		1610		1940		2265		2920	
1400mm		1980		2395		2805		3625	

<b>PE Stub flanges NP16 Torque settings</b>									
Dia o/d		SDR 17.6				SDR 11			
		min		max		min		max	
Approximate Bolting Torque setting Nm									
63						40		60	
90						50		70	
110		70		90		70		90	
125		70		90		70		90	
160		90		110		90		110	
180		90		110		90		110	
200		110		130		110		130	
225		110		130		110		130	
250		110		130		110		130	
280		110		130		110		130	
315		130		150		130		150	
355		130		150		130		150	
400		170		190		190		210	
450		200		220		220		240	
500		230		250		250		270	
630		300		320		330		350	

## Flange Joint Dimensions

All dimensions are mm

Dia	flange rating	flange dia	No of bolts	bolt hole dia	PCD	bolt dia
<b>80mm</b>	D/E	184	4	4	146	16
	PN10	200	8	18	160	16
	PN16	200	8	18	160	16
	PN25	200	8	18	160	M16
<b>100mm</b>	D	216	4	17	178	16
	E	216	8	17	178	16
	PN10	220	8	18	180	16
	PN16	220	8	18	180	M16
	PN25	235	8	22	190	M20
<b>150mm</b>	D	279	8	17	235	16
	E	279	8	22	235	19
	F	305	12	22	260	19
	PN10	285	8	22	240	M20
	PN16	285	8	22	240	M20
	PN25	300	8	26	250	M24

<b>200mm</b>	D	337	8	17	292	16
	E	337	8	22	292	19
	F	368	12	22	324	19
	PN10	340	8	22	295	M20
	PN16	340	12	22	295	M20
	PN25	360	12	26	310	M24
<b>250mm</b>	D	406	8	22	356	19
	E	406	12	22	356	19
	F	432	12	25	381	22
	PN10	395	12	22	350	M20
	PN16	405	12	26	355	M24
	PN25	425	12	30	370	M27
<b>300mm</b>	D	457	12	22	406	19
	E	457	12	25	406	22
	F	489	16	25	438	22
	PN10	445	12	22	400	M20
	PN16	460	12	26	410	M24
	PN25	485	16	30	430	M27
<b>350mm</b>	D/E	527	12	25	470	22
	F	552	16	29	495	25
	PN10	505	16	22	460	M20
	PN16	520	16	26	470	M24
	PN25	555	16	33	490	M30

<b>400mm</b>	D/E		578		12		25		521		22
	F		610		20		29		552		25
	PN10		565		16		26		515		M24
	PN16		580		16		30		525		M27
	PN25		620		16		36		550		M33
<b>450mm</b>	D		641		12		25		584		22
	E		641		16		25		584		22
	F		673		20		32		610		29
	PN10		615		20		26		565		M24
	PN16		640		20		30		585		M27
	PN25		670		20		36		600		M33
<b>500mm</b>	D/E		705		16		25		642		22
	F		737		24		32		673		29
	PN10		670		20		26		620		M24
	PN16		715		20		33		650		M30
	PN25		730		20		36		660		M33
<b>600mm</b>	D		825		16		29		756		25
	E		825		16		32		756		29
	F		851		24		35		781		32
	PN10		780		20		30		725		M27
	PN16		840		20		36		770		M33
	PN25		845		20		39		770		M36