



## Details of Stud Bolts and Machine Bolts for ASA Pipe Flanges

### Number and Diameter of Stud Bolts and Machine Bolts for Flange Joints - ASA B16.5 (Metric Unit)

Pressure Rating	Bolting	Flange Facing	Nominal Pipe Sizes																			
			DN15	DN20	DN25	DN32	DN40	DN50	DN65	DN80	-	DN100	DN125	DN150	DN200	DN250	DN300	DN350	DN400	DN450	DN500	DN600
			NPS 1/2"	NPS 3/4"	NPS 1"	NPS 1 1/4"	NPS 1 1/2"	NPS 2"	NPS 2 1/2"	NPS 3"	NPS 3 1/2"	NPS 4"	NPS 5"	NPS 6"	NPS 8"	NPS 10"	NPS 12"	NPS 14"	NPS 16"	NPS 18"	NPS 20"	NPS 24"
PN20 (20 bar)	Number		4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
	Diameter		M14	M14	M14	M14	M14	M18	M18	M18	M18	M18	M20	M20	M24	M24	M27	M27	M30	M30	M30	M33
	Length of Stud Bolts	2 mm. RF	60	65	65	70	70	80	90	90	90	90	90	90	100	110	115	120	130	135	150	160
	Stud Bolts	Ring Joint	-	-	80	80	95	95	100	105	105	105	105	110	115	120	130	135	150	150	160	170
	Machine Bolts	2 mm. RF	45	50	55	55	60	65	75	75	75	75	75	80	85	90	95	100	110	115	125	135
PN50 (50 bar)	Number		4	4	4	4	4	8	8	8	8	8	8	12	12	16	16	20	20	24	24	24
	Diameter		M14	M18	M18	M18	M20	M18	M20	M20	M20	M20	M20	M20	M24	M27	M30	M30	M33	M33	M33	M39
	Length of Stud Bolts	2 mm. RF	65	75	80	80	90	90	100	100	110	110	110	120	125	140	155	170	175	190	195	205
	Stud Bolts	Ring Joint	75	90	90	95	105	105	115	115	125	125	130	135	140	155	170	185	195	205	210	225
	Machine Bolts	2 mm. RF	55	60	65	65	75	75	85	85	90	95	95	100	105	110	130	145	150	160	170	180
PN68 (68 bar)	Number		4	4	4	4	4	8	8	8	8	8	8	12	12	16	16	20	20	24	24	24
	Diameter		M14	M18	M18	M18	M20	M18	M20	M20	M24	M24	M24	M24	M27	M30	M33	M33	M36	M36	M39	M45
	Length of Stud Bolts	7 mm. RF	80	90	90	100	105	105	120	125	140	140	140	145	150	170	190	205	210	220	230	270
	Stud Bolts	Ring Joint	75	90	90	100	105	110	125	130	140	140	140	150	155	175	195	205	210	225	230	280
	Machine Bolts	M & F T & G	70	80	85	90	100	100	115	120	130	130	140	145	165	185	195	205	215	220	240	265
PN100 (100 bar)	Number		4	4	4	4	4	8	8	8	8	8	8	12	12	16	20	20	20	20	24	24
	Diameter		M14	M18	M18	M18	M20	M18	M20	M20	M24	M24	M24	M27	M30	M33	M33	M36	M39	M42	M42	M48
	Length of Stud Bolts	7 mm. RF	80	90	90	100	105	105	120	125	140	140	140	145	150	170	190	205	210	220	230	270
	Stud Bolts	Ring Joint	75	90	90	100	105	110	125	130	140	140	150	165	175	195	220	225	235	255	275	305
	Machine Bolts	M & F T & G	70	80	85	90	100	100	115	120	130	140	160	165	185	210	215	230	245	265	280	320
PN150 (150 bar)	Number		4	4	4	4	4	8	8	8		8	8	12	12	16	20	20	20	20	20	20
	Diameter		M20	M20	M24	M24	M27	M24	M27	M24		M30	M33	M30	M36	M36	M36	M39	M42	M48	M52	M68
	Length of Stud Bolts	7 mm. RF	105	115	125	125	140	145	160	145		170	190	195	220	235	255	275	285	325	345	435
	Stud Bolts	Ring Joint	105	115	125	125	140	145	160	150		175	195	195	225	235	255	280	295	340	360	455
	Machine Bolts	M & F T & G	100	105	120	120	135	140	150	140		165	185	185	215	230	250	265	280	320	340	430
PN250 (250 bar)	Number		4	4	4	4	4	8	8	8		8	8	12	12	12	16	16	16	16	16	16
	Diameter		M20	M20	M24	M24	M27	M24	M27	M30		M33	M39	M36	M42	M48	M52	M56	M64	M72	M76	M90
	Length of Stud Bolts	7 mm. RF	105	115	125	125	140	145	160	180		195	250	260	290	335	375	405	445	495	540	615
	Stud Bolts	Ring Joint	105	115	125	125	140	145	160	180		200	250	265	300	345	390	425	470	515	565	645
	Machine Bolts	M & F T & G	100	105	120	120	135	140	150	170		190	240	255	285	330	370	400	440	485	525	610
PN420 (420 bar)	Number		4	4	4	4	4	8	8	8		8	8	8	12	12	12					
	Diameter		M20	M20	M24	M27	M30	M27	M30	M33		M39	M45	M52	M52	M64	M72					
	Length of Stud Bolts	7 mm. RF	125	125	140	150	170	175	195	220		255	300	345	380	485	540					
	Stud Bolts	Ring Joint	125	125	140	155	175	180	205	230		265	310	355	395	510	560					
	Machine Bolts	M & F T & G	115	120	130	145	165	170	190	215		245	295	335	375	480	530					