

NOMINAL SIZE 15MM (½")

		Diameter of Flange	Hole Diameter		Flange Thickness Code			Bolt Circle Diameter	Number of Bolts	Bolt Diameter	Bolt Length _x
					Code 01, 02, 04*	Code 11, 12, 13, 21**	Code 05				
BS EN 1092 - Formerly BS 3274	PN6	80	11		12	12	12	55	4	M10	40
	PN10	95	14		14	14	14	65	4	M12	45
	PN16	95	14		14	14	14	65	4	M12	45
	PN25	95	14		14	16	16	65	4	M12	50
	PN40	95	14		14	16	16	65	4	M12	50

		Diameter of Flange	Diameter of Raised Face		Height of Raised Face	Thickness of Flange	Hole Diameter	Bolt Circle Diameter	Number of Bolts	Bolt Diameter	Bolt Length _x
ANSI	Class 125/150	3½ (89)	1¾ (35)		⅛ (2)	⅞ (11)	⅝ (16)	2⅝ (60)	4	M12	50
	Class 300	3¾ (95)	1¾ (35)		⅛ (2)	⅞ (14)	⅝ (16)	2⅝ (67)	4	M12	55
	Class 600	3¾ (95)	1¾ (35)		¼ (6)	⅞ (14)	⅝ (16)	2⅝ (67)	4	M12	75 _x
	Class 900	4¾ (121)	1¾ (35)		¼ (6)	⅞ (22)	⅞ (22)	3¼ (83)	4	M20	110 _x
	Class 1500	4¾ (121)	1¾ (35)		¼ (6)	⅞ (22)	⅞ (22)	3¼ (83)	4	M20	110 _x
BS 10	Table D	3¾ (95)	-		-	⅝ (10)	⅞ (14)	2⅝ (67)	4	M12	40
	Table E	3¾ (95)	-		-	⅝ (10)	⅞ (14)	2⅝ (67)	4	M12	40
	Table F	3¾ (95)	-		-	⅝ (10)	⅞ (14)	2⅝ (67)	4	M12	40
	Table H	4½ (114)	2¼ (57)		⅛ (2)	½ (13)	1⅛ (17)	3¼ (83)	4	M16	50
	Table J	4½ (114)	2¼ (57)		⅛ (2)	⅝ (16)	1⅛ (17)	3¼ (83)	4	M16	55
	Table K	4½ (114)	2½ (64)		⅛ (2)	¾ (19)	1⅛ (17)	3¼ (83)	4	M16	65
	Table R	4½ (114)	2½ (64)		⅛ (2)	¾ (19)	1⅛ (17)	3¼ (83)	4	M16	65
	Table S	5 (127)	2½ (64)		⅛ (2)	⅞ (22)	⅞ (22)	3½ (89)	4	M20	70
	Table T	5½ (140)	2½ (64)		⅛ (2)	1 (25)	⅞ (22)	4 (102)	4	M20	75

* Flange code 104 not available in pressure rating PN16

** Flange code 113 not available in pressure ratings PN10 and PN25

+ Bolt lengths shown are for joining loose forged-steel flanges and include an allowance for gaskets etc. When mating loose flanges to integral flanges, check the length of bolt required

x Ensure the bolt specification is suitable for the duty. Studs may be required in lieu of bolts for the higher pressure/temperature applications

NOMINAL SIZE 20MM (¾")

		Diameter of Flange	Hole Diameter			Flange Thickness Code			Bolt Circle Diameter	Number of Bolts	Bolt Diameter	Bolt Length _x
						Code 01, 02, 04*	Code 11, 12, 13, 21**	Code 05				
BS EN 1092 - Formerly BS 3274	PN6	90	11			14	14	14	65	4	M10	45
	PN10	105	14			16	16	16	75	4	M12	50
	PN16	105	14			16	16	16	75	4	M12	50
	PN25	105	14			18	18	18	75	4	M12	55
	PN40	105	14			18	18	18	75	4	M12	55

		Diameter of Flange	Diameter of Raised Face			Height of Raised Face	Thickness of Flange	Hole Diameter	Bolt Circle Diameter	Number of Bolts	Bolt Diameter	Bolt Length _x
ANSI	Class 125/150	3⅞ (98)	1⅞ (43)			⅞ (2)	½ (14)	⅝ (16)	2¾ (70)	4	M12	55
	Class 300	4⅞ (117)	1⅞ (43)			⅞ (2)	⅝ (16)	¾ (19)	3¼ (83)	4	M16	65
	Class 600	4⅞ (117)	1⅞ (43)			¼ (4)	⅝ (16)	¾ (19)	3¼ (83)	4	M16	90 _x
	Class 900	5½ (130)	1⅞ (43)			¼ (4)	1 (25)	⅞ (22)	3½ (89)	4	M20	110 _x
	Class 1500	5½ (130)	1⅞ (43)			¼ (4)	1 (25)	⅞ (22)	3½ (89)	4	M20	110 _x
BS 10	Table D	4 (102)	-			-	⅝ (10)	⅞ (14)	2⅝ (67)	4	M12	40
	Table E	4 (102)	-			-	⅝ (10)	⅞ (14)	2⅝ (67)	4	M12	40
	Table F	4 (102)	-			-	⅝ (10)	⅞ (14)	2⅝ (67)	4	M12	40
	Table H	4½ (114)	2¼ (57)			⅞ (2)	½ (13)	1⅞ (17)	3¼ (83)	4	M16	50
	Table J	4½ (114)	2¼ (57)			⅞ (2)	⅝ (16)	1⅞ (17)	3¼ (83)	4	M16	55
	Table K	4½ (114)	2½ (64)			⅞ (2)	¾ (19)	1⅞ (17)	3¼ (83)	4	M16	65
	Table R	4½ (114)	2½ (64)			⅞ (2)	¾ (19)	1⅞ (17)	3¼ (83)	4	M16	65
	Table S	5 (127)	2½ (64)			⅞ (2)	⅞ (22)	⅞ (22)	3½ (89)	4	M20	70
	Table T	5½ (140)	2½ (64)			⅞ (2)	1 (25)	⅞ (22)	4 (102)	4	M20	75

* Flange code 104 not available in pressure rating PN16

** Flange code 113 not available in pressure ratings PN10 and PN25

+ Bolt lengths shown are for joining loose forged-steel flanges and include an allowance for gaskets etc. When mating loose flanges to integral flanges, check the length of bolt required

x Ensure the bolt specification is suitable for the duty. Studs may be required in lieu of bolts for the higher pressure/temperature applications

NOMINAL SIZE 25MM (1")

		Diameter of Flange	Hole Diameter		Flange Thickness Code			Bolt Circle Diameter	Number of Bolts	Bolt Diameter	Bolt Length _s
					Code 01, 02, 04*	Code 11, 12, 13, 21**	Code 05				
BS EN 1092 - Formerly BS 3274	PN6	100	11		14	14	14	75	4	M10	45
	PN10	115	14		16	16	16	85	4	M12	50
	PN16	115	14		16	16	16	85	4	M12	50
	PN25	115	14		16	18	18	85	4	M12	55
	PN40	115	14		16	18	18	85	4	M12	55

		Diameter of Flange	Diameter of Raised Face		Height of Raised Face	Thickness of Flange	Hole Diameter	Bolt Circle Diameter	Number of Bolts	Bolt Diameter	Bolt Length _s
ANSI	Class 125/150	4¼ (114)	2 (51)		⅛ (2)	⅝ (14)	⅝ (16)	3⅞ (79)	4	M12	55
	Class 300	4⅞ (124)	2 (51)		⅛ (2)	1⅞ (17)	¾ (19)	3½ (89)	4	M16	65
	Class 600	4⅞ (124)	2 (51)		¼ (6)	1⅞ (17)	¾ (19)	3½ (89)	4	M16	90 _x
	Class 900	5⅞ (149)	2 (51)		¼ (6)	1⅞ (29)	1 (25)	4 (102)	4	M20	125 _x
	Class 1500	5⅞ (149)	2 (51)		¼ (6)	1⅞ (29)	1 (25)	4 (102)	4	M20	125 _x
BS 10	Table D	4½ (114)	-		-	⅝ (10)	⅞ (14)	3¼ (83)	4	M12	40
	Table E	4½ (114)	-		-	⅝ (10)	⅞ (14)	3¼ (83)	4	M12	40
	Table F	4¾ (121)	-		-	⅝ (10)	1⅞ (17)	3⅞ (87)	4	M16	45
	Table H	4¾ (121)	2½ (64)		⅞ (2)	⅞ (14)	1⅞ (17)	3⅞ (87)	4	M16	50
	Table J	4¾ (121)	2½ (64)		⅞ (2)	¾ (19)	1⅞ (17)	3⅞ (87)	4	M16	65
	Table K	5 (127)	3 (76)		⅞ (2)	⅞ (22)	1⅞ (17)	3¾ (95)	4	M16	70
	Table R	5 (127)	3 (76)		⅞ (2)	⅞ (22)	1⅞ (17)	3¾ (95)	4	M16	70
	Table S	5½ (140)	3 (76)		⅞ (2)	1 (25)	⅞ (22)	4 (102)	4	M20	75
	Table T	5¾ (146)	3 (76)		⅞ (2)	1⅞ (29)	⅞ (22)	4¼ (108)	4	M20	90

* Flange code 104 not available in pressure rating PN16

** Flange code 113 not available in pressure ratings PN10 and PN25

+ Bolt lengths shown are for joining loose forged-steel flanges and include an allowance for gaskets etc. When mating loose flanges to integral flanges, check the length of bolt required

x Ensure the bolt specification is suitable for the duty. Studs may be required in lieu of bolts for the higher pressure/temperature applications

NOMINAL SIZE 32MM (1¼")

		Diameter of Flange	Hole Diameter		Flange Thickness Code			Bolt Circle Diameter	Number of Bolts	Bolt Diameter	Bolt Length _x
					Code 01, 02, 04*	Code 11, 12, 13, 21**	Code 05				
BS EN 1092 - Formerly BS 3274	PN6	120	14		16	14	14	90	4	M12	45
	PN10	140	18		18	14	14	100	4	M16	55
	PN16	140	18		18	16	16	100	4	M16	55
	PN25	140	18		18	18	18	100	4	M16	60
	PN40	140	18		18	18	18	100	4	M16	60

		Diameter of Flange	Diameter of Raised Face		Height of Raised Face	Thickness of Flange	Hole Diameter	Bolt Circle Diameter	Number of Bolts	Bolt Diameter	Bolt Length _x
ANSI	Class 125/150	4⅝ (117)	2½ (64)		⅜ (2)	⅝ (16)	⅝ (16)	3½ (89)	4	M12	55
	Class 300	5¼ (133)	2½ (64)		⅜ (2)	¾ (19)	¾ (19)	3⅞ (98)	4	M16	70
	Class 600	5¼ (133)	2½ (64)		¼ (6)	1⅜ (21)	¾ (19)	3⅞ (98)	4	M16	100 _x
	Class 900	6¼ (159)	2½ (64)		¼ (6)	1⅞ (29)	1 (25)	4⅝ (111)	4	M20	125 _x
	Class 1500	6¼ (159)	2½ (64)		¼ (6)	1⅞ (29)	1 (25)	4⅝ (111)	4	M20	125 _x
BS 10	Table D	4¾ (121)	-		-	½ (13)	⅞ (14)	3⅞ (87)	4	M12	40
	Table E	4¾ (121)	-		-	½ (13)	⅞ (14)	3⅞ (87)	4	M12	40
	Table F	5¼ (133)	-		-	½ (13)	1⅜ (17)	3⅞ (98)	4	M16	50
	Table H	5¼ (133)	3 (76)		⅜ (2)	1⅜ (17)	1⅜ (17)	3⅞ (98)	4	M16	55
	Table J	5¼ (133)	3 (76)		⅜ (2)	¾ (19)	1⅜ (17)	3⅞ (98)	4	M16	65
	Table K	5¼ (133)	3 (76)		⅜ (2)	⅞ (22)	1⅜ (17)	3⅞ (98)	4	M16	70
	Table R	5¼ (133)	3 (76)		⅜ (2)	⅞ (22)	1⅜ (17)	3⅞ (98)	4	M16	70
	Table S	5¾ (146)	3¼ (83)		⅜ (2)	1⅞ (29)	⅞ (22)	4¼ (108)	4	M20	90
	Table T	6¼ (159)	3¼ (83)		⅜ (2)	1¼ (32)	1 (25)	4¾ (121)	4	M20	100

* Flange code 104 not available in pressure rating PN16

** Flange code 113 not available in pressure ratings PN10 and PN25

+ Bolt lengths shown are for joining loose forged-steel flanges and include an allowance for gaskets etc. When mating loose flanges to integral flanges, check the length of bolt required

x Ensure the bolt specification is suitable for the duty. Studs may be required in lieu of bolts for the higher pressure/temperature applications

NOMINAL SIZE 40MM (1½")

		Diameter of Flange	Hole Diameter		Flange Thickness Code			Bolt Circle Diameter	Number of Bolts	Bolt Diameter	Bolt Length _x
					Code 01, 02, 04*	Code 11, 12, 13, 21**	Code 05				
BS EN 1092 - Formerly BS 3274	PN6	130	14		16	14	14	100	4	M12	45
	PN10	150	18		18	16	16	110	4	M16	55
	PN16	150	18		18	16	16	110	4	M16	55
	PN25	150	18		18	18	18	110	4	M16	60
	PN40	150	18		18	18	18	110	4	M16	60

		Diameter of Flange	Diameter of Raised Face		Height of Raised Face	Thickness of Flange	Hole Diameter	Bolt Circle Diameter	Number of Bolts	Bolt Diameter	Bolt Length _x
ANSI	Class 125/150	5 (127)	2⅞ (73)		⅜ (2)	⅝ (14)	⅝ (16)	3⅞ (98)	4	M12	65
	Class 300	6⅞ (156)	2⅞ (73)		⅜ (2)	1⅜ (121)	⅞ (22)	4½ (114)	4	M20	75
	Class 600	6⅞ (156)	2⅞ (73)		¼ (6)	⅞ (22)	⅞ (22)	4½ (114)	4	M20	100 _x
	Class 900	7 (178)	2⅞ (73)		¼ (6)	1¼ (32)	1⅞ (29)	4⅞ (124)	4	M24	140 _x
	Class 1500	7 (178)	2⅞ (73)		¼ (6)	1¼ (32)	1⅞ (29)	4⅞ (124)	4	M24	140 _x
BS 10	Table D	5¼ (133)	-		-	½ (13)	⅝ (14)	3⅞ (98)	4	M12	40
	Table E	5¼ (133)	-		-	½ (13)	⅝ (14)	3⅞ (98)	4	M12	40
	Table F	5¼ (133)	-		-	½ (13)	1⅜ (17)	4⅞ (105)	4	M16	50
	Table H	5½ (140)	3¼ (83)		1⅞ (2)	1⅜ (17)	1⅜ (17)	4⅞ (105)	4	M16	55
	Table J	5½ (140)	3¼ (83)		1⅞ (2)	⅞ (22)	1⅜ (17)	4⅞ (105)	4	M16	70
	Table K	6 (152)	3½ (89)		1⅞ (2)	1 (25)	⅞ (22)	4½ (114)	4	M20	75
	Table R	6 (152)	3½ (89)		1⅞ (2)	1 (25)	⅞ (22)	4½ (114)	4	M20	75
	Table S	6¼ (159)	3½ (89)		1⅞ (2)	1⅞ (29)	⅞ (22)	4⅞ (121)	4	M20	90
	Table T	6¾ (171)	3½ (89)		1⅞ (2)	1⅞ (35)	⅞ (22)	5¼ (133)	4	M20	100

* Flange code 104 not available in pressure rating PN16

** Flange code 113 not available in pressure ratings PN10 and PN25

+ Bolt lengths shown are for joining loose forged-steel flanges and include an allowance for gaskets etc. When mating loose flanges to integral flanges, check the length of bolt required

x Ensure the bolt specification is suitable for the duty. Studs may be required in lieu of bolts for the higher pressure/temperature applications

NOMINAL SIZE 50MM (2")

		Diameter of Flange	Hole Diameter		Flange Thickness Code			Bolt Circle Diameter	Number of Bolts	Bolt Diameter	Bolt Length _x
					Code 01, 02, 04*	Code 11, 12, 13, 21**	Code 05				
BS EN 1092 - Formerly BS 3274	PN6	140	14		16	14	14	110	4	M12	45
	PN10	165	18		20	18	18	125	4	M16	60
	PN16	165	18		20	18	18	125	4	M16	60
	PN25	165	18		20	20	20	125	4	M16	65
	PN40	165	18		20	20	20	125	4	M16	65

		Diameter of Flange	Diameter of Raised Face		Height of Raised Face	Thickness of Flange	Hole Diameter	Bolt Circle Diameter	Number of Bolts	Bolt Diameter	Bolt Length _x
ANSI	Class 125/150	6 (152)	3 $\frac{3}{8}$ (92)		$\frac{1}{16}$ (2)	$\frac{3}{4}$ (19)	$\frac{3}{4}$ (19)	4 $\frac{3}{4}$ (121)	4	M16	70
	Class 300	6 $\frac{1}{2}$ (165)	3 $\frac{3}{8}$ (92)		$\frac{1}{16}$ (2)	$\frac{7}{8}$ (22)	$\frac{3}{4}$ (19)	5 (127)	4	M16	75
	Class 600	6 $\frac{1}{2}$ (165)	3 $\frac{3}{8}$ (92)		$\frac{1}{4}$ (6)	1 (25)	$\frac{3}{4}$ (19)	5 (127)	4	M16	110 _x
	Class 900	8 $\frac{1}{2}$ (216)	3 $\frac{3}{8}$ (92)		$\frac{1}{4}$ (6)	1 $\frac{1}{2}$ (38)	1 (25)	6 $\frac{1}{2}$ (165)	4	M20	150 _x
	Class 1500	8 $\frac{1}{2}$ (216)	3 $\frac{3}{8}$ (92)		$\frac{1}{4}$ (6)	1 $\frac{1}{2}$ (38)	1 (25)	6 $\frac{1}{2}$ (165)	4	M20	150 _x
BS 10	Table D	6 (152)	-		-	$\frac{9}{16}$ (14)	$\frac{11}{16}$ (17)	4 $\frac{1}{2}$ (114)	4	M16	50
	Table E	6 (152)	-		-	$\frac{9}{16}$ (14)	$\frac{11}{16}$ (17)	4 $\frac{1}{2}$ (114)	4	M16	50
	Table F	6 $\frac{1}{2}$ (165)	-		-	$\frac{5}{8}$ (16)	$\frac{11}{16}$ (17)	5 (127)	4	M16	55
	Table H	6 $\frac{1}{2}$ (165)	4 (102)		$\frac{1}{16}$ (2)	$\frac{3}{4}$ (19)	$\frac{11}{16}$ (17)	5 (127)	4	M16	65
	Table J	6 $\frac{1}{2}$ (165)	4 (102)		$\frac{1}{16}$ (2)	1 (25)	$\frac{7}{8}$ (22)	5 (127)	4	M20	75
	Table K	6 $\frac{1}{2}$ (165)	4 (102)		$\frac{1}{16}$ (2)	1 (25)	$\frac{11}{16}$ (17)	5 (127)	8	M16	75
	Table R	6 $\frac{1}{2}$ (165)	4 (102)		$\frac{1}{16}$ (2)	1 (25)	$\frac{11}{16}$ (17)	5 (127)	8	M16	75
	Table S	6 $\frac{3}{4}$ (171)	3 $\frac{1}{2}$ (189)		$\frac{1}{16}$ (2)	1 $\frac{1}{4}$ (32)	$\frac{7}{8}$ (22)	5 $\frac{1}{4}$ (133)	8	M20	90
	Table T	7 $\frac{1}{4}$ (184)	4 (102)		$\frac{1}{16}$ (2)	1 $\frac{1}{8}$ (35)	$\frac{7}{8}$ (22)	5 $\frac{3}{4}$ (146)	8	M20	90

* Flange code 104 not available in pressure rating PN16

** Flange code 113 not available in pressure ratings PN10 and PN25

+ Bolt lengths shown are for joining loose forged-steel flanges and include an allowance for gaskets etc. When mating loose flanges to integral flanges, check the length of bolt required

x Ensure the bolt specification is suitable for the duty. Studs may be required in lieu of bolts for the higher pressure/temperature applications

NOMINAL SIZE 65MM (2½")

		Diameter of Flange	Hole Diameter			Flange Thickness Code			Bolt Circle Diameter	Number of Bolts	Bolt Diameter	Bolt Length _s
						Code 01, 02, 04*	Code 11, 12, 13, 21**	Code 05				
BS EN 1092 - Formerly BS 3274	PN6	160	14			16	14	14	130	4	M12	45
	PN10	185	18			20	18	18	145	4	M16	60
	PN16	185	18			20	18	18	145	4	M16	60
	PN25	185	18			22	22	22	145	8	M16	70
	PN40	185	18			22	22	22	145	8	M16	70

		Diameter of Flange	Diameter of Raised Face			Height of Raised Face	Thickness of Flange	Hole Diameter	Bolt Circle Diameter	Number of Bolts	Bolt Diameter	Bolt Length _s
ANSI	Class 125/150	7 (178)	4½ (105)			⅛ (2)	⅞ (22)	¾ (19)	5½ (140)	4	M16	75
	Class 300	7½ (191)	4½ (105)			⅛ (2)	1 (25)	⅞ (22)	5⅞ (149)	8	M20	90
	Class 600	7½ (191)	4½ (105)			¼ (6)	1⅞ (29)	⅞ (22)	5⅞ (149)	8	M20	120 _x
	Class 900	9⅞ (244)	4½ (105)			¼ (6)	1⅞ (41)	1⅞ (29)	7½ (191)	8	M24	165 _x
	Class 1500	9⅞ (244)	4½ (105)			¼ (6)	1⅞ (41)	1⅞ (29)	7½ (191)	8	M24	165 _x
BS 10	Table D	6½ (165)	-			-	⅞ (14)	1⅞ (17)	5 (127)	4	M16	50
	Table E	6½ (165)	-			-	⅞ (14)	1⅞ (17)	5 (127)	4	M16	50
	Table F	7¼ (184)	-			-	⅞ (16)	1⅞ (17)	5⅞ (146)	8	M16	55
	Table H	7¼ (184)	4½ (144)			⅛ (2)	¾ (19)	1⅞ (17)	5⅞ (146)	8	M16	65
	Table J	7¼ (184)	4½ (144)			⅛ (2)	1 (25)	⅞ (22)	5⅞ (146)	8	M20	75
	Table K	7¼ (184)	4½ (144)			⅛ (2)	1⅞ (29)	⅞ (22)	5⅞ (146)	8	M20	90
	Table R	7¼ (184)	4½ (144)			⅛ (2)	1⅞ (29)	⅞ (22)	5⅞ (146)	8	M20	90
	Table S	7¼ (184)	4 (102)			⅛ (2)	1¼ (32)	⅞ (22)	5⅞ (146)	8	M20	100
	Table T	8 (203)	4½ (144)			⅛ (2)	1⅞ (41)	1 (25)	6½ (165)	8	M20	110

* Flange code 104 not available in pressure rating PN16

** Flange code 113 not available in pressure ratings PN10 and PN25

+ Bolt lengths shown are for joining loose forged-steel flanges and include an allowance for gaskets etc. When mating loose flanges to integral flanges, check the length of bolt required

x Ensure the bolt specification is suitable for the duty. Studs may be required in lieu of bolts for the higher pressure/temperature applications

NOMINAL SIZE 80MM (3")

		Diameter of Flange	Hole Diameter		Flange Thickness Code			Bolt Circle Diameter	Number of Bolts	Bolt Diameter	Bolt Length _x
					Code 01, 02, 04*	Code 11, 12, 13, 21**	Code 05				
BS EN 1092 - Formerly BS 3274	PN6	190	18		18	16	16	150	4	M16	55
	PN10	200	18		20	20	20	160	8	M16	560
	PN16	200	18		20	20	20	160	8	M16	60
	PN25	200	18		24	24	24	160	8	M16	70
	PN40	200	18		24	24	24	160	8	M16	70

		Diameter of Flange	Diameter of Raised Face		Height of Raised Face	Thickness of Flange	Hole Diameter	Bolt Circle Diameter	Number of Bolts	Bolt Diameter	Bolt Length _x
ANSI	Class 125/150	7½ (191)	5 (127)		⅛ (2)	⅝ (24)	¾ (19)	6 (152)	4	M16	75
	Class 300	8¼ (210)	5 (127)		⅛ (2)	1⅞ (29)	7⁄8 (22)	6⅝ (168)	8	M20	90
	Class 600	8¼ (210)	5 (127)		¼ (6)	1¼ (32)	7⁄8 (22)	6⅝ (168)	8	M20	125 _x
	Class 900	9½ (241)	5 (127)		¼ (6)	1½ (38)	1 (25)	7½ (192)	8	M20	150 _x
	Class 1500	10½ (267)	5 (127)		¼ (6)	17⁄8 (48)	1¼ (32)	8 (203)	8	M20	180 _x
BS 10	Table D	7½ (184)	-		-	9⁄16 (14)	5¾ (146)	11⁄16 (17)	4	M16	50
	Table E	7½ (184)	-		-	9⁄16 (14)	5¾ (146)	11⁄16 (17)	4	M16	50
	Table F	8 (203)	-		-	⅝ (16)	6½ (165)	11⁄16 (17)	8	M16	55
	Table H	8 (203)	5 (127)		⅛ (2)	7⁄8 (22)	6½ (165)	11⁄16 (17)	8	M16	65
	Table J	8 (203)	5 (127)		⅛ (2)	1¼ (32)	6½ (165)	7⁄8 (22)	8	M20	75
	Table K	8 (203)	5 (127)		⅛ (2)	1¼ (32)	6½ (165)	7⁄8 (22)	8	M20	90
	Table R	8 (203)	5 (127)		⅛ (2)	1¼ (32)	6½ (165)	7⁄8 (22)	8	M20	90
	Table S	8 (203)	4½ (114)		⅛ (2)	1⅞ (35)	6½ (165)	1 (25)	8	M20	100
	Table T	9¼ (235)	5 (127)		⅛ (2)	17⁄8 (48)	7½ (191)	1⅞ (29)	8	M20	110

* Flange code 104 not available in pressure rating PN16

** Flange code 113 not available in pressure ratings PN10 and PN25

+ Bolt lengths shown are for joining loose forged-steel flanges and include an allowance for gaskets etc. When mating loose flanges to integral flanges, check the length of bolt required

x Ensure the bolt specification is suitable for the duty. Studs may be required in lieu of bolts for the higher pressure/temperature applications

NOMINAL SIZE 100MM (4")

		Diameter of Flange	Hole Diameter		Flange Thickness Code			Bolt Circle Diameter	Number of Bolts	Bolt Diameter	Bolt Length _x
					Code 01, 02, 04*	Code 11, 12, 13, 21**	Code 05				
BS EN 1092 - Formerly BS 3274	PN6	210	18		18	16	16	170	4	M16	55
	PN10	220	18		20	20	20	180	8	M16	65
	PN16	220	18		22	20	20	180	8	M16	65
	PN25	235	22		26	24	24	190	8	M20	75
	PN40	235	22		26	24	24	190	8	M20	80

		Diameter of Flange	Diameter of Raised Face		Height of Raised Face	Thickness of Flange	Hole Diameter	Bolt Circle Diameter	Number of Bolts	Bolt Diameter	Bolt Length _x
ANSI	Class 125/150	9 (229)	6 $\frac{1}{16}$ (157)		$\frac{1}{16}$ (2)	$\frac{1}{16}$ (24)	$\frac{3}{4}$ (19)	7 $\frac{1}{2}$ (192)	8	M16	75
	Class 300	20 (254)	6 $\frac{1}{16}$ (157)		$\frac{1}{16}$ (2)	1 $\frac{1}{4}$ (32)	$\frac{7}{8}$ (22)	7 $\frac{7}{8}$ (200)	8	M20	100
	Class 600	10 $\frac{3}{4}$ (273)	6 $\frac{1}{16}$ (157)		$\frac{1}{4}$ (6)	1 $\frac{1}{2}$ (38)	1 (25)	8 $\frac{1}{2}$ (216)	8	M20	150 _x
	Class 900	11 $\frac{1}{2}$ (292)	6 $\frac{1}{16}$ (157)		$\frac{1}{4}$ (6)	1 $\frac{3}{4}$ (44)	1 $\frac{1}{4}$ (32)	9 $\frac{1}{4}$ (235)	8	M24	175 _x
	Class 1500	12 $\frac{1}{4}$ (311)	6 $\frac{1}{16}$ (157)		$\frac{1}{4}$ (6)	2 $\frac{1}{8}$ (54)	1 $\frac{3}{8}$ (35)	9 $\frac{1}{2}$ (241)	8	M24	200 _x
BS 10	Table D	8 $\frac{1}{2}$ (216)	-		-	$\frac{1}{16}$ (17)	$\frac{1}{16}$ (17)	7 (178)	4	M16	55
	Table E	8 $\frac{1}{2}$ (216)	-		-	$\frac{1}{16}$ (17)	$\frac{1}{16}$ (17)	7 (178)	8	M16	55
	Table F	9 (229)	-		-	$\frac{3}{4}$ (19)	$\frac{1}{16}$ (17)	7 $\frac{1}{2}$ (191)	8	M16	65
	Table H	9 (229)	6 (152)		$\frac{1}{16}$ (2)	1 (25)	$\frac{1}{16}$ (17)	7 $\frac{1}{2}$ (191)	8	M16	75
	Table J	9 (229)	6 (152)		$\frac{1}{16}$ (2)	1 $\frac{3}{8}$ (35)	$\frac{7}{8}$ (22)	7 $\frac{1}{2}$ (191)	8	M20	100
	Table K	9 $\frac{1}{2}$ (241)	6 (152)		$\frac{1}{16}$ (2)	1 $\frac{3}{8}$ (35)	1 (25)	7 $\frac{3}{4}$ (197)	8	M20	100
	Table R	9 $\frac{1}{2}$ (241)	6 (152)		$\frac{1}{16}$ (2)	1 $\frac{3}{8}$ (35)	1 (25)	7 $\frac{3}{4}$ (197)	8	M20	100
	Table S	9 $\frac{3}{4}$ (248)	6 $\frac{1}{4}$ (159)		$\frac{1}{16}$ (2)	1 $\frac{5}{8}$ (41)	1 $\frac{1}{8}$ (29)	8 (203)	8	M24	110
	Table T	11 $\frac{1}{2}$ (286)	6 $\frac{1}{4}$ (159)		$\frac{1}{16}$ (2)	2 $\frac{1}{4}$ (57)	1 $\frac{1}{4}$ (32)	9 $\frac{1}{4}$ (235)	8	M30	175

* Flange code 104 not available in pressure rating PN16

** Flange code 113 not available in pressure ratings PN10 and PN25

+ Bolt lengths shown are for joining loose forged-steel flanges and include an allowance for gaskets etc. When mating loose flanges to integral flanges, check the length of bolt required

x Ensure the bolt specification is suitable for the duty. Studs may be required in lieu of bolts for the higher pressure/temperature applications

NOMINAL SIZE 125MM (5")

		Diameter of Flange	Hole Diameter			Flange Thickness Code			Bolt Circle Diameter	Number of Bolts	Bolt Diameter	Bolt Length _x
						Code 01, 02, 04*	Code 11, 12, 13, 21**	Code 05				
BS EN 1092 - Formerly BS 3274	PN6	1450	18			20	18	18	200	8	M16	60
	PN10	150	18			22	22	22	210	8	M16	70
	PN16	150	18			22	22	22	210	8	M16	70
	PN25	170	26			28	26	26	220	8	M24	80
	PN40	170	26			28	26	26	220	8	M24	80

		Diameter of Flange	Diameter of Raised Face			Height of Raised Face	Thickness of Flange	Hole Diameter	Bolt Circle Diameter	Number of Bolts	Bolt Diameter	Bolt Length _x
ANSI	Class 125/150	10 (254)	7 $\frac{7}{8}$ (186)			$\frac{1}{16}$ (2)	$\frac{1}{16}$ (24)	$\frac{7}{8}$ (22)	8 $\frac{1}{2}$ (216)	8	M20	90
	Class 300	11 (279)	7 $\frac{7}{8}$ (186)			$\frac{1}{16}$ (2)	1 $\frac{3}{8}$ (35)	$\frac{7}{8}$ (22)	9 $\frac{1}{4}$ (235)	8	M20	110
	Class 600	13 (330)	7 $\frac{7}{8}$ (186)			$\frac{1}{4}$ (6)	1 $\frac{3}{4}$ (44)	1 $\frac{1}{2}$ (29)	10 $\frac{1}{2}$ (267)	8	M24	165 _x
	Class 900	13 $\frac{3}{4}$ (349)	7 $\frac{7}{8}$ (186)			$\frac{1}{4}$ (6)	2 (51)	1 $\frac{3}{8}$ (35)	11 (279)	8	M30	200 _x
	Class 1500	14 $\frac{3}{4}$	7 $\frac{7}{8}$ (186)			$\frac{1}{4}$ (6)	2 $\frac{7}{8}$ (73)	1 $\frac{3}{8}$ (41)	11 $\frac{1}{2}$ (292)	8	M36	250 _x
BS 10	Table D	10 (254)	-			-	$\frac{1}{16}$ (17)	$\frac{1}{16}$ (17)	8 $\frac{1}{4}$ (210)	8	M16	55
	Table E	10 (254)	-			-	$\frac{1}{16}$ (17)	$\frac{1}{16}$ (17)	8 $\frac{1}{4}$ (210)	8	M16	55
	Table F	11 (279)	-			-	$\frac{7}{8}$ (22)	$\frac{7}{8}$ (22)	9 $\frac{1}{4}$ (235)	8	M20	75
	Table H	11 (279)	7 (178)			$\frac{1}{16}$ (2)	1 $\frac{1}{2}$ (29)	$\frac{7}{8}$ (22)	9 $\frac{1}{4}$ (235)	8	M20	90
	Table J	11 (279)	7 (178)			$\frac{1}{16}$ (2)	1 $\frac{1}{2}$ (38)	1 (25)	9 $\frac{1}{4}$ (235)	8	M20	110
	Table K	11 (279)	7 (178)			$\frac{1}{16}$ (2)	1 $\frac{5}{8}$ (41)	1 (25)	9 $\frac{1}{4}$ (235)	12	M20	110
	Table R	11 (279)	7 (178)			$\frac{1}{16}$ (2)	1 $\frac{5}{8}$ (41)	1 (25)	9 $\frac{1}{4}$ (235)	12	M20	110
	Table S	11 $\frac{1}{4}$ (286)	7 $\frac{1}{2}$ (191)			$\frac{1}{16}$ (2)	1 $\frac{3}{4}$ (44)	1 (25)	9 $\frac{1}{4}$ (235)	12	M20	125
	Table T	12 $\frac{3}{4}$ (324)	8 $\frac{1}{4}$ (210)			$\frac{1}{16}$ (2)	2 $\frac{5}{8}$ (67)	1 $\frac{1}{4}$ (32)	10 $\frac{3}{4}$ (273)	12	M30	180

* Flange code 104 not available in pressure rating PN16

** Flange code 113 not available in pressure ratings PN10 and PN25

+ Bolt lengths shown are for joining loose forged-steel flanges and include an allowance for gaskets etc. When mating loose flanges to integral flanges, check the length of bolt required

x Ensure the bolt specification is suitable for the duty. Studs may be required in lieu of bolts for the higher pressure/temperature applications

NOMINAL SIZE 150MM (6")

		Diameter of Flange	Hole Diameter		Flange Thickness Code			Bolt Circle Diameter	Number of Bolts	Bolt Diameter	Bolt Length _x
					Code 01, 02, 04*	Code 11, 12, 13, 21**	Code 05				
BS EN 1092 - Formerly BS 3274	PN6	265	18		20	18	18	225	8	M16	60
	PN10	285	22		24	22	22	240	8	M20	70
	PN16	285	22		24	22	22	240	8	M20	70
	PN25	300	26		30	28	28	250	8	M24	90
	PN40	300	26		30	28	28	250	8	M24	90

		Diameter of Flange	Diameter of Raised Face		Height of Raised Face	Thickness of Flange	Hole Diameter	Bolt Circle Diameter	Number of Bolts	Bolt Diameter	Bolt Length _x
ANSI	Class 125/150	11 (279)	8½ (216)		⅜ (2)	1 (25)	⅞ (22)	9½ (241)	8	M20	90
	Class 300	12½ (318)	8½ (216)		⅜ (2)	1⅞ (37)	⅞ (22)	10⅞ (270)	12	M20	110
	Class 600	14 (356)	8½ (216)		¼ (6)	1⅞ (48)	1⅞ (29)	11½ (292)	12	M24	165 _x
	Class 900	15 (381)	8½ (216)		¼ (6)	2⅜ (56)	1¼ (32)	12½ (318)	12	M30	180 _x
	Class 1500	15½ (394)	8½ (216)		¼ (6)	3¼ (83)	1½ (38)	12½ (318)	12	M36	250 _x
BS 10	Table D	11 (279)	-		-	1⅞ (17)	1⅞ (17)	9¼ (235)	8	M16	50
	Table E	11 (279)	-		-	1⅞ (17)	⅞ (22)	9¼ (235)	8	M20	65
	Table F	12 (305)	-		-	⅞ (22)	⅞ (22)	10¼ (360)	12	M20	75
	Table H	12 (305)	8¼ (210)		⅞ (2)	1⅞ (29)	⅞ (22)	10¼ (360)	12	M20	90
	Table J	12 (305)	8¼ (210)		⅞ (2)	1½ (38)	1 (25)	10¼ (360)	12	M20	110
	Table K	12 (305)	8¼ (210)		⅞ (2)	1⅞ (41)	1 (25)	10¼ (360)	12	M20	110
	Table R	12 (305)	8¼ (210)		⅞ (2)	1¾ (44)	1 (25)	10¼ (360)	12	M20	125
	Table S	12¾ (324)	8¼ (210)		⅞ (2)	2 (51)	1⅞ (29)	10¾ (273)	12	M24	140
	Table T	14¾ (375)	9 (229)		⅞ (2)	2⅞ (73)	1⅞ (35)	12½ (318)	12	M30	180

* Flange code 104 not available in pressure rating PN16

** Flange code 113 not available in pressure ratings PN10 and PN25

+ Bolt lengths shown are for joining loose forged-steel flanges and include an allowance for gaskets etc. When mating loose flanges to integral flanges, check the length of bolt required

x Ensure the bolt specification is suitable for the duty. Studs may be required in lieu of bolts for the higher pressure/temperature applications

NOMINAL SIZE 200MM (8")

		Diameter of Flange	Hole Diameter		Flange Thickness Code			Bolt Circle Diameter	Number of Bolts	Bolt Diameter	Bolt Length _x
					Code 01, 02, 04*	Code 11, 12, 13, 21**	Code 05				
BS EN 1092 - Formerly BS 3274	PN6	320	18		22	20	20	280	8	M16	60
	PN10	340	22		25	24	24	295	8	M20	75
	PN16	340	22		26	24	24	295	12	M20	75
	PN25	360	26		30	30	30	310	12	M24	90
	PN40	375	30		36	34	34	320	12	M24	100

		Diameter of Flange	Diameter of Raised Face		Height of Raised Face	Thickness of Flange	Hole Diameter	Bolt Circle Diameter	Number of Bolts	Bolt Diameter	Bolt Length _x
ANSI	Class 125/150	13½ (343)	10% (270)		⅛ (2)	1⅞ (29)	⅞ (22)	11¼ (298)	8	M20	90
	Class 300	15 (381)	10% (270)		⅛ (2)	1⅞ (41)	1 (25)	13 (330)	12	M20	120
	Class 600	16½ (419)	10% (270)		¼ (6)	2⅜ (56)	1¼ (32)	13¾ (349)	12	M30	180 _x
	Class 900	18½ (470)	10% (270)		¼ (6)	2½ (64)	1½ (38)	15½ (394)	12	M36	225 _x
	Class 1500	19 (483)	10% (270)		¼ (6)	3% (92)	1¾ (44)	15½ (394)	12	M42	275 _x
BS 10	Table D	13¼ (337)	-		-	¾ (19)	1⅞ (17)	11½ (292)	8	M16	55
	Table E	13¼ (337)	-		-	¾ (19)	⅞ (22)	11½ (292)	8	M20	65
	Table F	14½ (368)	-		-	1 (25)	⅞ (22)	12¼ (324)	12	M20	90
	Table H	14½ (368)	10¼ (260)		⅞ (2)	1¼ (32)	⅞ (22)	12¼ (324)	12	M20	90
	Table J	14½ (368)	10¼ (260)		⅞ (2)	1⅞ (41)	1 (25)	12¼ (324)	12	M20	110
	Table K	14½ (368)	10¼ (260)		⅞ (2)	1⅞ (48)	1⅞ (29)	12½ (318)	12	M24	125
	Table R	14½ (368)	10¼ (260)		⅞ (2)	2 (51)	1⅞ (29)	12¼ (324)	12	M24	150
	Table S	16¼ (413)	10¼ (260)		⅞ (2)	2½ (64)	1⅞ (35)	14 (356)	12	M30	180
	Table T	18% (476)	10¼ (260)		⅞ (2)	3½ (89)	1⅞ (41)	16 (406)	12	M36	225

* Flange code 104 not available in pressure rating PN16

** Flange code 113 not available in pressure ratings PN10 and PN25

+ Bolt lengths shown are for joining loose forged-steel flanges and include an allowance for gaskets etc. When mating loose flanges to integral flanges, check the length of bolt required

x Ensure the bolt specification is suitable for the duty. Studs may be required in lieu of bolts for the higher pressure/temperature applications

NOMINAL SIZE 250MM (10")

		Diameter of Flange	Hole Diameter			Flange Thickness Code			Bolt Circle Diameter	Number of Bolts	Bolt Diameter	Bolt Length _x
						Code 01, 02, 04*	Code 11, 12, 13, 21**	Code 05				
BS EN 1092 - Formerly BS 3274	PN6	375	18			24	22	22	335	12	M16	65
	PN10	395	22			26	26	26	350	12	M20	75
	PN16	405	26			29	26	26	355	12	M24	90
	PN25	425	30			35	32	32	370	12	M27	100
	PN40	450	33			42	38	38	385	12	M30	110

		Diameter of Flange	Diameter of Raised Face			Height of Raised Face	Thickness of Flange	Hole Diameter	Bolt Circle Diameter	Number of Bolts	Bolt Diameter	Bolt Length _x
ANSI	Class 125/150	16 (406)	12¼ (324)			⅛ (2)	1⅝ (30)	1 (25)	14¼ (362)	12	M20	100
	Class 300	17½ (445)	12¼ (324)			⅛ (2)	1⅝ (48)	1⅝ (29)	15¼ (387)	16	M24	150
	Class 600	20 (508)	12¼ (324)			¼ (6)	2½ (64)	1⅝ (35)	17 (432)	16	M30	215 _x
	Class 900	21½ (546)	12¼ (324)			¼ (6)	2¾ (70)	1½ (38)	18½ (470)	16	M36	250 _x
	Class 1500	23 (584)	12¼ (324)			¼ (6)	4¼ (108)	2 (51)	19 (483)	12	M48	325 _x
BS 10	Table D	16 (406)	-			-	¾ (19)	⅞ (22)	14 (356)	8	M20	60
	Table E	16 (406)	-			-	⅞ (22)	⅞ (22)	14 (356)	12	M20	75
	Table F	17 (432)	-			-	1⅝ (29)	1 (25)	15 (381)	12	M20	90
	Table H	17 (432)	12¼ (311)			⅛ (2)	1⅝ (35)	1 (25)	15 (381)	12	M20	100
	Table J	17 (432)	12¼ (311)			⅛ (2)	1⅝ (48)	1⅝ (29)	15 (381)	12	M24	125
	Table K	17 (432)	12¼ (311)			⅛ (2)	2 (51)	1⅝ (29)	15 (381)	16	M24	150
	Table R	17 (432)	12¼ (311)			⅛ (2)	2⅝ (60)	1⅝ (29)	15¼ (387)	16	M24	180
	Table S	19 (483)	13 (330)			⅛ (2)	3⅝ (79)	1⅝ (35)	16¾ (425)	16	M30	200
	Table T	22 (559)	14 (356)			⅛ (2)	4¼ (108)	1⅝ (41)	19¼ (489)	16	M36	300

* Flange code 104 not available in pressure rating PN16

** Flange code 113 not available in pressure ratings PN10 and PN25

+ Bolt lengths shown are for joining loose forged-steel flanges and include an allowance for gaskets etc. When mating loose flanges to integral flanges, check the length of bolt required

x Ensure the bolt specification is suitable for the duty. Studs may be required in lieu of bolts for the higher pressure/temperature applications

NOMINAL SIZE 300MM (12")

		Diameter of Flange	Hole Diameter		Flange Thickness Code			Bolt Circle Diameter	Number of Bolts	Bolt Diameter	Bolt Length _x
					Code 01, 02, 04*	Code 11, 12, 13, 21**	Code 05				
BS EN 1092 - Formerly BS 3274	PN6	440	22		24	22	22	395	12	M20	70
	PN10	445	22		26	26	26	400	12	M30	75
	PN16	460	26		32	28	28	410	12	M30	90
	PN25	485	30		38	34	34	430	16	M36	110
	PN40	515	33		48	42	42	450	16	M48	120

		Diameter of Flange	Diameter of Raised Face		Height of Raised Face	Thickness of Flange	Hole Diameter	Bolt Circle Diameter	Number of Bolts	Bolt Diameter	Bolt Length _x
ANSI	Class 125/150	19 (483)	15 (381)		1/16 (2)	1 1/4 (32)	1 (25)	17 (432)	12	M20	100
	Class 300	20 1/2 (521)	15 (381)		1/16 (2)	2 (51)	1 1/4 (32)	17 3/4 (451)	16	M30	150
	Class 600	22 (559)	15 (381)		1/4 (6)	2 5/8 (67)	1 5/8 (35)	19 1/4 (489)	20	M30	225 _x
	Class 900	24 (610)	15 (381)		1/4 (6)	3 1/2 (79)	1 1/2 (38)	21 (533)	20	M36	250 _x
	Class 1500	26 1/2 (673)	15 (381)		1/4 (6)	4 7/8 (124)	2 1/8 (54)	22 1/2 (571)	16	M48	375 _x
BS 10	Table D	18 (457)	-		-	7/8 (22)	7/8 (22)	16 (406)	12	M20	60
	Table E	18 (457)	-		-	1 (25)	1 (25)	16 (406)	12	M20	90
	Table F	19 1/4 (489)	-		-	1 1/4 (32)	1 (25)	17 1/4 (438)	16	M20	90
	Table H	19 1/4 (489)	14 1/4 (362)		1/16 (2)	1 5/8 (41)	1 (25)	17 1/4 (438)	16	M20	125
	Table J	19 1/4 (489)	14 1/4 (362)		1/16 (2)	2 (51)	1 1/8 (29)	17 1/4 (438)	16	M24	150
	Table K	19 1/4 (489)	14 1/4 (362)		1/16 (2)	2 1/4 (57)	1 1/4 (32)	17 (432)	16	M30	150
	Table R	20 (508)	14 1/4 (362)		1/16 (2)	2 3/4 (70)	1 1/4 (32)	18 (457)	16	M30	165
	Table S	22 3/4 (578)	15 (381)		1/16 (2)	3 3/8 (92)	1 5/8 (41)	20 (508)	16	M36	215
	Table T	22 3/4 (654)	16 1/4 (413)		1/16 (2)	4 3/4 (121)	1 7/8 (48)	22 1/2 (572)	16	M42	300

* Flange code 104 not available in pressure rating PN16

** Flange code 113 not available in pressure ratings PN10 and PN25

+ Bolt lengths shown are for joining loose forged-steel flanges and include an allowance for gaskets etc. When mating loose flanges to integral flanges, check the length of bolt required

x Ensure the bolt specification is suitable for the duty. Studs may be required in lieu of bolts for the higher pressure/temperature applications

NOMINAL SIZE 400MM (16")

BS EN 1092	Diameter of Flange	Bolt Circle Diameter	No of Bolts	Diameter of Bolts	Diameter of Holes Iron	Diameter of Holes Steel		Diameter of Raised Face(3) Iron	Diameter of Raised Face(3) Steel	Height of Raised Face(3) Iron	Height of Raised Face(3) Steel	Thickness Of Flange			
												Grey Cast Iron	Copper Alloy	Cast & Forged Steel	Ductile Cast Iron
PN6	540	495	16	M20	23	22		463	465	4	2	28 (1)	-	22	-
PN10	565	515	16	M24	28	26		480	482	4	2	32 (1)	-	26	24.5
PN16	580	525	16	M27	31	30		480	490	4	2	38 (1)	-	32	28
PN25	620	550	16	M33	37	36		503	505	4	2	48 (1)	-	40	32
PN40	660	585	16	M36	41	39		535	535	4	2	-	-	50	48
PN64	670	585	16	M39	-	42		-	535	-	2	-	-	60	-
PN100	715	620	16	M45	-	48		-	535	-	2	-	-	78	-
ANSI															
Class 125/150	23½ (597)	21¼ (540)	16	1 (25)	1½ (29)	1½ (29)		-	18½ (470)	-	⅜ (2)	1⅞ (37)	-	1⅞ (37)	-
Class 300	25½ (648)	22½ (571)	20	1¼ (32)	-	1¾ (35)		-	18½ (470)	-	⅜ (2)	-	-	2¼ (57)	-
Class 600	27 (686)	23¾ (603)	20	1½ (38)	-	1¾ (41)		-	18½ (470)	-	¼ (6)	-	-	3 (76)	-
Class 900	27¾ (705)	24¼ (616)	20	1¾ (41)	-	1¾ (44)		-	18½ (470)	-	¼ (6)	-	-	3½ (89)	-
Class 1500	32½ (826)	27¾ (705)	16	2½ (64)	-	2¾ (67)		-	18½ (470)	-	¼ (6)	-	-	5¼ (146)	-
BS 10															
Table A	22¼ (578)	20½ (521)	12	7⁄8 (22)	1 (25)	1 (25)		-	-	-	-	1⅞ (27)	1 (25)	-	-
Table D	22¼ (578)	20½ (521)	12	7⁄8 (22)	1 (25)	1 (25)		-	-	-	-	1⅞ (29)	1 (25)	1 (25)	-
Table E	22¼ (578)	20½ (521)	12	7⁄8 (22)	1 (25)	1 (25)		-	-	-	-	1¼ (32)	1 (25)	1 (25)	-
Table F	24 (610)	21¼ (552)	20	1 (25)	1½ (29)	1½ (29)		-	-	-	-	1¾ (35)	1¼ (32)	1¼ (32)	-
Table H	24 (610)	21¼ (552)	20	1 (25)	1½ (29)	1½ (29)		-	19 (483)	-	⅜ (2)	2 (51)	1¾ (44)	1¾ (44)	-

- These flange thicknesses are also valid for ductile iron flanges type 21-2
- For ductile iron pipes and fittings, the outside diameters shall be: for PN10, D = 455mm, for PN16, D = 455mm
- Copper-alloy flanges are always flat-faced

NOMINAL SIZE 450MM (18")

BS EN 1092	Diameter of Flange	Bolt Circle Diameter	No of Bolts	Diameter of Bolts	Diameter of Holes Iron	Diameter of Holes Steel		Diameter of Raised Face(3) Iron	Diameter of Raised Face(3) Steel	Height of Raised Face(3) Iron	Height of Raised Face(3) Steel	Thickness Of Flange			
												Grey Cast Iron	Copper Alloy	Cast & Forged Steel	Ductile Cast Iron
PN6	595	550	16	M20	23	22		518	520	4	2	28 (1)	-	22	-
PN10	615	565	20	M24	28	26		530	532	4	2	32 (1)	-	28	25.5
PN16	640	585	20	M27	31	30		548	550	4	2	40 (1)	-	40	30
PN25	670	600	20	M33	37	36		548	555	4	2	50 (1)	-	46	34.5
PN40	685	610	20	M36	41	39		560	560	4	2	-	-	57	49
PN64	-	-	-	-	-	-		-	-	-	-	-	-	-	-
PN100	-	-	-	-	-	-		-	-	-	-	-	-	-	-
ANSI															
Class 125/150	25 (635)	22¾ (578)	16	1½ (29)	1¼ (32)	1¼ (32)		-	21 (533)	-	⅜ (2)	1½ (40)	-	1½ (40)	-
Class 300	28 (711)	24¾ (629)	24	1¼ (32)	-	1½ (35)		-	21 (533)	-	⅜ (2)	-	-	2½ (60)	-
Class 600	29¼ (743)	25¾ (654)	20	1½ (41)	-	1¾ (44)		-	21 (533)	-	¼ (6)	-	-	3¼ (83)	-
Class 900	31 (787)	27 (686)	20	1½ (48)	-	2 (51)		-	21 (533)	-	¼ (6)	-	-	4 (102)	-
Class 1500	36 (914)	30½ (775)	16	2¾ (70)	-	2½ (73)		-	21 (533)	-	¼ (6)	-	-	6½ (162)	-
BS 10															
Table A	25¼ (641)	23 (584)	12	7⁄8 (22)	-	1 (25)		-	-	-	-	1½ (27)	1½ (27)	-	-
Table D	25¼ (641)	23 (584)	12	7⁄8 (22)	-	1 (25)		-	-	-	-	1¼ (32)	1½ (29)	1½ (29)	-
Table E	25¼ (641)	23 (584)	16	7⁄8 (22)	-	1 (25)		-	-	-	-	1½ (35)	1½ (29)	1½ (29)	-
Table F	26½ (673)	24 (610)	20	1½ (29)	-	1¼ (32)		-	-	-	-	1½ (38)	1½ (35)	1½ (35)	-
Table H	26½ (673)	24 (610)	20	1½ (29)	-	1¼ (32)		-	21 (533)	-	⅜ (2)	2½ (54)	1½ (48)	1½ (48)	-

1. These flange thicknesses are also valid for ductile iron flanges type 21-2
2. Flange thicknesses for copper alloy are from BS EN 1092 - Formerly BS 3274
3. Copper-alloy flanges are always flat-faced

NOMINAL SIZE 500MM (20")

BS EN 1092	Diameter of Flange	Bolt Circle Diameter	No of Bolts	Diameter of Bolts	Diameter of Holes Iron	Diameter of Holes Steel		Diameter of Raised Face(3) Iron	Diameter of Raised Face(3) Steel	Height of Raised Face(3) Iron	Height of Raised Face(3) Steel	Thickness Of Flange			
												Grey Cast Iron	Copper Alloy	Cast & Forged Steel	Ductile Cast Iron
PN6	645	600	20	M20	23	22		568	570	4	2	30 (1)	-	24 (2)	-
PN10	670	620	20	M24	28	26		582	585	4	2	34 (1)	-	28 (2)	26.5
PN16	715	650	20	M30	34	33		609	610	4	2	42 (1)	-	44 (2)	31.5
PN25	730	660	20	M33	37	36		609	615	4	2	52 (1)	-	48 (2)	36.5
PN40	755	670	20	M39	44	42		615	615	4	2	-	-	57 (2)	52
PN64	800	705	20	M45	-	48		-	615	-	2	-	-	68 (2)	-
PN100	870	760	20	M52	-	56		-	615	-	2	-	-	94 (2)	-
ANSI															
Class 125/150	27½ (699)	25 (635)	20	1½ (29)	1¼ (32)	1¼ (32)		-	23 (584)	-	⅜ (2)	1⅞ (43)	-	1⅞ (43)	-
Class 300	30½ (775)	27 (686)	24	1¼ (32)	-	1⅝ (35)		-	23 (584)	-	⅜ (2)	-	-	2½ (64)	-
Class 600	32 (813)	28½ (724)	24	1⅝ (41)	-	1¾ (44)		-	23 (584)	-	¼ (6)	-	-	3½ (89)	-
Class 900	33¾ (857)	29½ (749)	20	2 (51)	-	2⅝ (54)		-	23 (584)	-	¼ (6)	-	-	4¼ (108)	-
Class 1500	38¾ (984)	32¾ (832)	16	3 (76)	-	3⅝ (79)		-	23 (584)	-	¼ (6)	-	-	7 (178)	-
BS 10															
Table A	27¾ (705)	25¼ (641)	12	⅞ (22)	1 (25)	1 (25)		-	-	-	-	1⅝ (29)	1⅝ (29)	-	-
Table D	27¾ (705)	25¼ (641)	16	⅞ (22)	1 (25)	1 (25)		-	-	-	-	1¼ (32)	1¼ (32)	-	-
Table E	27¾ (705)	25¼ (641)	16	⅞ (22)	1 (25)	1 (25)		-	-	-	-	1½ (38)	1¼ (32)	1¼ (32)	-
Table F	29 (737)	26½ (673)	24	1⅝ (29)	1¼ (32)	1¼ (32)		-	-	-	-	1⅝ (41)	1½ (38)	1½ (38)	-
Table H	29 (737)	26½ (673)	24	1⅝ (29)	1¼ (32)	1¼ (32)		-	23½ (597)	-	⅜ (2)	2¼ (57)	2 (51)	2 (51)	-

1. These flange thicknesses are also valid for ductile iron flanges type 21-2
2. These flange thicknesses are changed substantially as a result of the flange calculation method used in BS EN 1092-1
3. Copper-alloy flanges are always flat-faced

NOMINAL SIZE 600MM (24")

BS EN 1092	Diameter of Flange	Bolt Circle Diameter	No of Bolts	Diameter of Bolts	Diameter of Holes Iron	Diameter of Holes Steel		Diameter of Raised Face(3) Iron	Diameter of Raised Face(3) Steel	Height of Raised Face(3) Iron	Height of Raised Face(3) Steel	Thickness Of Flange			
												Grey Cast Iron	Copper Alloy	Cast & Forged Steel	Ductile Cast Iron
PN6	755	705	20	M24	28	26		667	670	5	2	30 (1)	-	30	-
PN10	780	725	20	M27	31	30		682	685	5	2	36 (1)	-	34	30
PN16	840	770	20	M33	37	36		720	720	5	2	48 (1)	-	54	36
PN25	845	770	20	M36	41	39		720	725	5	2	-	-	58	42
PN40	890	795	20	M45	50	48		735	735	5	2	-	-	72	58
PN64	930	820	20	M52	-	56		-	735	-	2	-	-	76	-
ANSI															
Class 125/150	32 (813)	29½ (749)	20	1¼ (32)	1⅝ (35)	1⅝ (35)		-	27¼ (692)	-	⅞ (2)	1⅝ (48)	-	1⅝ (48)	-
Class 300	36 (914)	32 (813)	24	1½ (38)	-	1⅝ (41)		-	27¼ (692)	-	⅞ (2)	-	-	2¾ (70)	-
Class 600	37 (940)	33 (838)	24	1⅝ (48)	-	2 (51)		-	27¼ (692)	-	¼ (6)	-	-	4 (102)	-
Class 900	41 (1041)	35½ (902)	20	2½ (64)	-	2⅝ (67)		-	27¼ (692)	-	¼ (6)	-	-	5½ (140)	-
Class 1500	46 (1168)	39 (991)	16	3½ (89)	-	3⅝ (92)		-	27¼ (692)	-	¼ (6)	-	-	8 (203)	-
BS 10															
Table A	32½ (826)	29¾ (756)	12	1 (25)	1⅝ (29)	1⅝ (29)		-	-	-	-	1⅝ (30)	1⅝ (30)	-	-
Table D	32½ (826)	29¾ (756)	16	1 (25)	1⅝ (29)	1 ⅞ (29)		-	-	-	-	1⅝ (35)	1⅝ (35)	1⅝ (35)	-
Table E	32½ (826)	29¾ (756)	16	1⅝ (29)	1¼ (32)	1¼ (32)		-	-	-	-	1⅝ (41)	1½ (38)	1½ (38)	-
Table F	33½ (851)	30¾ (781)	24	1¼ (32)	1¼ (32)	1⅝ (35)		-	-	-	-	1¾ (44)	1⅝ (41)	1⅝ (41)	-
Table H	33½ (851)	30¾ (781)	24	1¼ (32)	1⅝ (35)	1⅝ (35)		-	27½ (699)	-	⅞ (2)	2½ (64)	2¼ (57)	2¼ (57)	-

1. These flange thicknesses are also valid for ductile iron flanges type 21-2
2. These flange thicknesses are changed substantially as a result of the flange calculation method used in BS EN 1092-1
3. Copper-alloy flanges are always flat-faced

NOMINAL SIZE 700MM (28")

FLANGE TYPE		FLANGE DIMENSIONS					BOLT DATA				
Standard	Class Rating Table	Outside Diameter	Raised Face Diameter	Thickness		Thickness	Bolt Circle Diameter	No. of Bolts	Bolt Size		Hole Size
				Iron		Steel			Metric	Inch	
DIN 2501-Part 1 (PN6-100) BS ISO 7005-1:2011 - Formerly BS 4504 (PN6-40) BS EN 1092 - Formerly BS 3274-Section 3.2:1989 (PN6-40)	PN6	860	775	32		34	810	24	M24	-	26
	PN10	895	800	40		46	840	24	M27	-	30
	PN16	910	795	54		58	840	24	M33	-	36
	PN25	960	820	-		-	875	24	M39	-	42
	PN40	995	840	-		-	900	24	M45	-	48
	PN64	1045	840	-		-	935	24	M52	-	56
	PN100	1145	840	-		-	1020	24	M64	-	70

NOMINAL SIZE 800MM (32")

FLANGE TYPE		FLANGE DIMENSIONS					BOLT DATA				
Standard	Class Rating Table	Outside Diameter	Raised Face Diameter	Thickness		Thickness	Bolt Circle Diameter	No. of Bolts	Bolt Size		Hole Size
				Iron		Steel			Metric	Inch	
DIN 2501-Part 1 (PN6-100) BS ISO 7005-1:2011 - Formerly BS 4504 (PN6-40) BS EN 1092 - Formerly BS 3274-Section 3.2:1989 (PN6-40)	PN6	975	880	34		38	920	24	M27	-	29.5
	PN10	1015	905	44		52	950	24	M30	-	33
	PN16	1025	900	58		64	950	24	M36	-	39
	PN25	1085	930	-		-	990	24	M45	-	48
	PN40	1140	960	-		-	1030	24	M52	-	56
	PN64	1165	960	-		-	1050	24	M56	-	62
	PN100	-	-	-		-	-	-	-	-	-

NOMINAL SIZE 900MM (36")

FLANGE TYPE		FLANGE DIMENSIONS					BOLT DATA				
Standard	Class Rating Table	Outside Diameter	Raised Face Diameter	Thickness		Thickness	Bolt Circle Diameter	No. of Bolts	Bolt Size		Hole Size
				Iron		Steel			Metric	Inch	
DIN 2501-Part 1 (PN6-100) BS ISO 7005-1:2011 - Formerly BS 4504 (PN6-40) BS EN 1092 - Formerly BS 3274-Section 3.2:1989 (PN6-40)	PN6	1075	980	36		42	1020	24	M27	-	30
	PN10	1115	1005	46		56	1050	28	M30	-	33
	PN16	1125	1000	62		72	1050	28	M36	-	39
	PN25	1185	1030	55.5		58	1090	28	M45	-	48
	PN40	1285	1070	-		-	1170	28	M52	-	56
	PN64	1285	1070	-		-	1170	28	M56	-	62
	PN100	-	-	-		-	-	-	-	-	-

NOMINAL SIZE 1000MM (40")

FLANGE TYPE		FLANGE DIMENSIONS					BOLT DATA				
Standard	Class Rating Table	Outside Diameter	Raised Face Diameter	Thickness		Thickness	Bolt Circle Diameter	No. of Bolts	Bolt Size		Hole Size
				Iron		Steel			Metric	Inch	
DIN 2501-Part 1 (PN6-100) BS ISO 7005-1:2011 - Formerly BS 4504 (PN6-40) BS EN 1092 - Formerly BS 3274-Section 3.2:1989 (PN6-40)	PN6	1175	1080	36		46	1120	28	M27	-	30
	PN10	1230	1110	50		62	1160	28	M33	-	36
	PN16	1255	1115	66		78	1170	28	M39	-	42
	PN25	1320	1140	60		-	1210	28	M52	-	56
	PN40	1360	1180	-		-	1250	28	M52	-	56
	PN64	1415	1180	-		-	1290	28	M64	-	70
	PN100	-	-	-		-	-	-	-	-	-

NOMINAL SIZE 1200MM (48")

FLANGE TYPE		FLANGE DIMENSIONS					BOLT DATA				
Standard	Class Rating Table	Outside Diameter	Raised Face Diameter	Thickness		Thickness	Bolt Circle Diameter	No. of Bolts	Bolt Size		Hole Size
				Iron		Steel			Metric	Inch	
DIN 2501-Part 1 (PN6-100) ISO 7005-1:1992 (PN6-40) BS EN 1092 - Formerly BS 3274-Section 3.2:1989 (PN6-40)	PN6	1405	1295	40		56	1340	32	M30	-	33
	PN10	1455	1330	56		74	1380	32	M36	-	39
	PN16	1485	1330	-		94	1390	32	M45	-	48
	PN25	1530	1350	-		-	1420	32	M52	-	56
	PN40	1575	1380	-		-	1460	32	M56	-	62
	PN64	1665	1380	-		-	1530	32	M72	-	78
	PN100	-	-	-		-	-	-	-	-	-

NOMINAL SIZE 1400MM (56")

FLANGE TYPE		FLANGE DIMENSIONS					BOLT DATA				
Standard	Class Rating Table	Outside Diameter	Raised Face Diameter	Thickness		Thickness	Bolt Circle Diameter	No. of Bolts	Bolt Size		Hole Size
				Iron		Steel			Metric	Inch	
DIN 2501-Part 1 (PN6-100) ISO 7005-1:1992 (PN6-40) BS EN 1092 - Formerly BS 3274-Section 3.2:1989 (PN6-40)	PN6	1630	1510	-		-	1560	36	M33	-	36
	PN10	1675	1535	-		-	1590	36	M39	-	42
	PN16	1685	1530	-		-	1590	36	M45	-	48
	PN25	1755	1560	-		-	1640	36	M56	-	60
	PN40	1795	1600	-		-	1680	36	M56	-	62
	PN64	-	-	-		-	-	-	-	-	-
	PN100	-	-	-		-	-	-	-	-	-

NOMINAL SIZE 1600MM (64")

FLANGE TYPE		FLANGE DIMENSIONS					BOLT DATA				
Standard	Class Rating Table	Outside Diameter	Raised Face Diameter	Thickness		Thickness	Bolt Circle Diameter	No. of Bolts	Bolt Size		Hole Size
				Iron		Steel			Metric	Inch	
DIN 2501-Part 1 (PN6-100) ISO 7005-1:1992 (PN6-40) BS EN 1092 - Formerly BS 3274-Section 3.2:1989 (PN6-40)	PN6	1830	1710	-		-	1760	40	M33	-	36
	PN10	1915	1760	-		-	1820	40	M45	-	48
	PN16	1930	1750	-		-	1820	40	M52	-	56
	PN25	1975	1780	-		-	1860	40	M56	-	60
	PN40	2025	1815	-		-	1900	40	M64	-	70
	PN64	-	-	-		-	-	-	-	-	-
	PN100	-	-	-		-	-	-	-	-	-

NOMINAL SIZE 1800MM (72")

FLANGE TYPE		FLANGE DIMENSIONS					BOLT DATA				
Standard	Class Rating Table	Outside Diameter	Raised Face Diameter	Thickness		Thickness	Bolt Circle Diameter	No. of Bolts	Bolt Size		Hole Size
				Iron		Steel			Metric	Inch	
DIN 2501-Part 1 (PN6-100) ISO 7005-1:1992 (PN6-40) BS EN 1092 - Formerly BS 3274-Section 3.2:1989 (PN6-40)	PN6	2045	1920	-		-	1970	44	M36	-	39
	PN10	2115	1960	-		-	2020	44	M45	-	48
	PN16	2130	1950	-		-	2020	44	M52	-	56
	PN25	2195	1985	-		-	-	-	-	-	-
	PN40	-	-	-		-	2070	44	M64	-	69
	PN64	-	-	-		-	-	-	-	-	-
	PN100	-	-	-		-	-	-	-	-	-