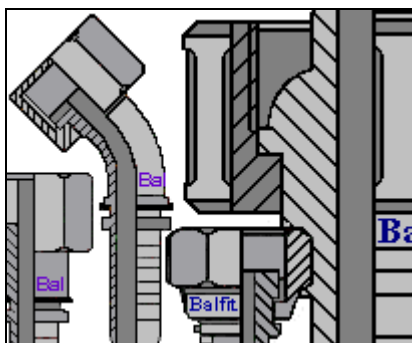




Balfit[®] Hydraulic Hose Fittings



Balfit[®] Hydraulic Hose Fittings

The range of **Balfit[®]** hydraulic hose connectors is produced according to **Balflex[®]** specifications and to **ISO, SAE, DIN, JIS, BS, NF** and other standards. It covers a very wide variety of applications typical of hydraulic pressure hose lines.

Balflex[®] optimized the production of these connectors and their compatibility with a wide range of hydraulic hoses, in order to assure the highest performance and the most extensive range of applications. The **Balfit[®]** hydraulic connectors program in this catalogue includes the following standard crimped two-piece type (connector + ferrule) parts:

Series **20** - **Balfit[®]** ferrules for all types of crimped **Balfit[®]** connectors

Series **23** - **Balfit[®]** crimped connectors for standard 1 and 2 wire braided hydraulic hoses

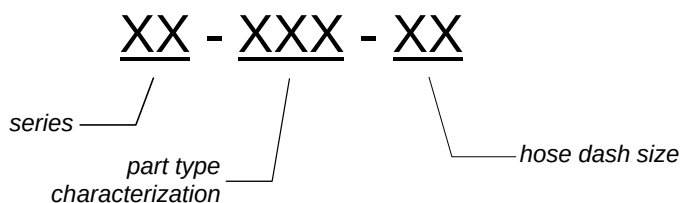
Series **24** - **Balfit[®]** crimped connectors for **Balmaster** multi-spiral hydraulic hoses

Series **26** - **Balfit[®]** crimped interlocking connectors for **Powerspir** multi-spiral hydraulic hoses

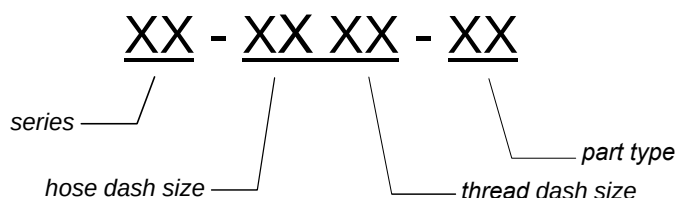
An overview of these parts is given in the following pages.

The **Balfit[®]** connectors parts code is composed of three groups of digits:

Ferrules



Fittings



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Hose Vs Fittings			3/16"	1/4"	5/16"	3/8"	1/2"	5/8"	3/4"	1"	1.1/4"	1.1/2"	2"
			- 03	- 04	- 05	- 06	- 08	- 10	- 12	- 16	- 20	- 24	- 32
Balflex®			Balflit®	Balflit®	Balflit®	Balflit®	Balflit®	Balflit®	Balflit®	Balflit®	Balflit®	Balflit®	Balflit®
10.1216		R6 / 1TE	20.107	20.107	20.107	20.107	20.107	20.107	20.107	20.107	X	X	X
			23.XXXX	23.XXXX	23.XXXX	23.XXXX	23.XXXX	23.XXXX	23.XXXX	23.XXXX			
10.1217		2TE	20.107	20.107	20.107	20.107	20.107	20.107	20.107	20.107	X	X	X
			23.XXXX	23.XXXX	23.XXXX	23.XXXX	23.XXXX	23.XXXX	23.XXXX	23.XXXX			
10.1220		R3 / 3TE	20.201	20.201	20.201	20.201	20.202	20.202	20.202	20.201	20.201	20.201	20.201
			23.XXXX	23.XXXX	23.XXXX	23.XXXX	23.XXXX	23.XXXX	23.XXXX	23.XXXX	23.XXXX	23.XXXX	23.XXXX
10.1002		R1T / 1SN	20.101	20.101	20.101	20.101	20.202	20.202	20.202	20.101	20.101	20.101	20.101
				20.204	20.204	20.204	20.204	20.204	20.204	20.204	20.204	20.204	20.204
			20.302	20.302	20.302	20.302	20.302	20.302	20.302	20.301	20.301	20.301	20.301
			23.XXXX	23.XXXX	23.XXXX	23.XXXX	23.XXXX	23.XXXX	23.XXXX	23.XXXX	23.XXXX	23.XXXX	23.XXXX
10.1004		R2T / 2SN	20.200	20.200	20.200	20.200	20.200	20.200	20.200	20.200	20.200	20.200	20.200
			20.201	20.201	20.201	20.201	20.202	20.202	20.202	20.201	20.201	20.201	20.201
				20.204	20.204	20.204	20.204	20.204	20.204	20.204	20.204	20.204	20.204
			20.302	20.302	20.302	20.302	20.302	20.302	20.302	20.302	20.302	20.302	
			23.XXXX	23.XXXX	23.XXXX	23.XXXX	23.XXXX	23.XXXX	23.XXXX	23.XXXX	23.XXXX	23.XXXX	23.XXXX
10.1017		R17 / 1SC	X	20.204	20.204	20.204	20.204	20.204	20.204	20.204	X	X	X
				20.305	20.305	20.305	20.305	20.302	20.302	20.302			
				23.XXXX	23.XXXX	23.XXXX	23.XXXX	23.XXXX	23.XXXX	23.XXXX			
10.1018		1SC	X	X	X	X	X	20.305	20.305	20.305	X	X	X
								23.XXXX	23.XXXX	23.XXXX			
10.1019		R16/2SC	X	20.302	20.302	20.302	20.302	20.302	20.302	20.302	X	X	X
				23.XXXX	23.XXXX	23.XXXX	23.XXXX	23.XXXX	23.XXXX	23.XXXX			
10.1012		R12	X	X	X	20.200	20.200	20.200	20.200	20.200	20.403	20.403	20.403
						24.XXXX	24.XXXX	24.XXXX	24.XXXX	24.XXXX			
10.1008		4SP	X	20.400	X	20.200	20.200	20.200	20.200	20.200	20.400	20.400	20.400
				24.XXXX		24.XXXX	24.XXXX	24.XXXX	24.XXXX	23.XXXX			
10.1009		4SH	X	X	X	X	X	X	20.400	20.400	20.403	20.403	20.403
									20.406	20.406	20.405	20.405	20.405
									24.XXXX	24.XXXX	24.XXXX	24.XXXX	24.XXXX
10.1014		R13	X	X	X	X	X	X	20.406	20.406	20.406	20.406	X
									26.XXXX	26.XXXX	26.XXXX	26.XXXX	
10.1016		R15	X	X	X	X	X	X	20.406	20.406	20.406	20.406	X
									26.XXXX	26.XXXX	26.XXXX	26.XXXX	
10.1029		2-MAX JACK	X	20.204	X	20.204	X	X	X	X	X	X	X
				20.302		20.302							
				23.XXXX		23.XXXX							
10.1030		R7 TEXTILE	20.107	20.107	20.107	20.107	20.107	20.107	20.107	20.107	X	X	X
			23.XXXX	23.XXXX	23.XXXX	23.XXXX	23.XXXX	23.XXXX	23.XXXX	23.XXXX			
10.1031		R7 STEEL	20.107	20.107	20.107	20.107	20.107	20.107	20.107	20.107	X	X	X
			23.XXXX	23.XXXX	23.XXXX	23.XXXX	23.XXXX	23.XXXX	23.XXXX	23.XXXX			
10.1033		R8	20.107	20.107	20.107	20.107	20.107	20.107	20.107	20.107	X	X	X
			23.XXXX	23.XXXX	23.XXXX	23.XXXX	23.XXXX	23.XXXX	23.XXXX	23.XXXX			
10.2000 (AMERICAN) 10.2003 (EUROPEAN)		R14	20.107	20.107	20.107	20.107	20.107	20.107	20.107	20.107	20.107	20.107	20.107
			23.XXXX	23.XXXX	23.XXXX	23.XXXX	23.XXXX	23.XXXX	23.XXXX	23.XXXX	23.XXXX	23.XXXX	23.XXXX
10.2010		PTFE OND	X	20.107	20.107	20.107	20.107	20.107	20.107	20.107	20.107	20.107	20.107
				20.TFC	20.TFC	20.TFC	20.TFC	20.TFC	20.TFC	20.TFC	20.TFC	20.TFC	20.TFC
				23.XXXX	23.XXXX	23.XXXX	23.XXXX	23.XXXX	23.XXXX	23.XXXX	23.XXXX	23.XXXX	23.XXXX



Balflex® Hydraulic Hose Fittings

Torque

For each type of fitting a torque value that assures sealing without damaging the thread is recommended in table 2. Whenever a torque meter is not available, follow the rule of thumb given for the fitting type.

Table 2a: Recommended Torque for JIC Connectors

Size	Dash	Torque (Nm)
7/16"	-4	14
1/2"	-5	19
9/16"	-6	23
5/8"	-7	25
3/4"	-8	30
7/8"	-10	35
1-1/16"	-12	41
1-3/16"	-14	47
1-5/16"	-16	52
1-5/8"	-20	60
1-7/8"	-24	69
2-1/2"	-32	80

Table 2b: Recommended Torque for BSP Connectors

Size	Dash	Torque (Nm)
1/8"	-2	15
1/4"	-4	20
3/8"	-6	31
1/2"	-8	36
5/8"	-10	41
3/4"	-12	46
1"	-16	57
1-1/4"	-20	65
1-1/2"	-24	74
2"	-32	86

Table 2c: Recommended Torque for Metric Connectors

Size	Dash	Torque (Nm)
M12 x 1,5	12	11
M14 x 1,5	14	16
M16 x 1,5	16	20
M18 x 1,5	18	22
M20 x 1,5	20	27
M22 x 1,5	22	32
M24 x 1,5	24	38
M26 x 1,5	26	44
M30 x 2,0	30	49
M36 x 2,0	36	57
M42 x 2,0	42	66
M45 x 2,0	45	77
M52 x 2,0	52	79

Table 2d: Recommended Torque for ORFS Connectors

Size	Dash	Torque (Nm)
9/16"	-6	15
11/16"	-9	20
13/16"	-11	26
1"	-13	31
1-3/16"	-14	36
1-7/16"	-15	41
1-11/16"	-21	46
2-1/2"	-32	51

Table 2e: Recommended Torque for Code 61 Flange

Size	Dash	Torque (Nm)
1/2"	- 8	17
3/4"	- 12	25
1"	- 16	31
1-1/4"	- 20	40
1-1/2"	- 24	52
2"	- 32	60
2.1/2"	- 40	85

Table 2f: Recommended Torque for Code 62 Flange

Size	Dash	Torque (Nm)
1/2"	- 8	17
3/4"	- 12	29
1"	- 16	46
1-1/4"	- 20	68
1-1/2"	- 24	125
2"	- 32	208

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Balfit® Hydraulic Hose Fittings



Thread Dash and Dash Sizes of Balfit® Connectors

**Table 3a: Thread dash for JIC (37° flared)
series 23 / 24 / P23 / P12 / P24 / P25 / 26 connectors**

Nominal Hose Size	Hose Dash	Nominal Thread	Thread Dash
3/16"	- 3	7/16" – 20	- 4
1/4"	- 4	7/16" – 20	- 4
1/4"	- 4	1/2" – 20	- 5
1/4"	- 4	9/16" – 18	- 6
5/16"	- 5	9/16" – 18	- 6
3/8"	- 6	9/16" – 18	- 6
3/8"	- 6	3/4" – 16	- 8
13/32"	- 6.5	3/4" – 16	- 8
1/2"	- 8	3/4" – 16	- 8
1/2"	- 8	7/8" – 14	- 10
5/8"	- 10	7/8" – 14	- 10
5/8"	- 10	1-1/16" – 12	- 12
3/4"	- 12	7/8" – 14	- 10
3/4"	- 12	1-1/16" – 12	- 12
3/4"	- 12	1-3/16" – 12	- 14
7/8"	- 14	1-3/16" – 12	- 14
7/8"	- 14	1-5/16" – 12	- 16
1"	- 16	1-5/16" – 12	- 16
1-1/4"	- 20	1-5/8" – 12	- 20
1-1/2"	- 24	1-7/8" – 12	- 24
2"	- 32	2-1/2" – 12	- 32

**Table 3b: Thread dash for NPT (dryseal taper)
series 23 / 24 / P23 / P12 / P24 / P25 / 26 connectors**

Nominal Hose Size	Hose Dash	Dryseal Taper Thread	Thread Dash
3/16"	-3	1/8" – 27	-2
3/16"	-3	1/4" – 18	-4
1/4"	-4	1/8" – 27	-2
1/4"	-4	1/4" – 18	-4
5/16"	-5	1/4" – 18	-4
5/16"	-5	3/8" – 18	-6
3/8"	-6	1/4" – 18	-4
3/8"	-6	3/8" – 18	-6
3/8"	-6	1/2" – 14	-8
13/32"	-6.5	3/8" – 18	-6
13/32"	-6.5	1/2" – 14	-8
1/2"	-8	3/8" – 18	-6
1/2"	-8	1/2" – 14	-8
5/8"	-10	1/2" – 14	-8
5/8"	-10	3/4" – 14	-12
3/4"	-12	3/4" – 14	-12
7/8"	-14	1" – 11.1/2"	-16
1"	-16	1" – 11.1/2"	-16
1-1/4"	-20	1-1/4" – 11.1/2"	-20
1-1/2"	-24	1-1/2" – 11.1/2"	-24
2"	-32	2" – 11.1/2"	-32

**Table 3c: Thread dash for SAE (45° flared)
series 23 / 24 / P23 / P12 / P24 / P25 / 26 connectors**

Nominal Hose Size	Hose Dash	Nominal Thread	Thread Dash
1/4"	-4	7/16" – 20	- 4
1/4"	-4	1/2" – 20	- 5
5/16"	-5	5/8" – 18	- 6
3/8"	-6	5/8" – 18	- 6
3/8"	-6	3/4" – 16	- 8
1/2"	-8	3/4" – 16	- 8
1/2"	-8	7/8" – 14	- 10
5/8"	-10	7/8" – 14	- 10
5/8"	-10	1-1/16" – 14	- 12
3/4"	-12	7/8" – 14	- 10
3/4"	-12	1-1/16" – 14	- 12

**Table 3d: Thread dash for ORFS (O-Ring Face Seal)
series 23 / 24 / P23 / P12 / P24 / P25 / 26 connectors**

Nominal Hose Size	Hose Dash	Dryseal Taper Thread	Thread Dash
1/4"	- 4	9/16" – 18	- 4
3/8"	- 6	11/16" – 16	- 6
1/2"	- 8	13/16" – 16	- 8
5/8"	- 10	1" – 14	- 10
3/4"	- 12	1-3/16" – 12"	- 12
1"	- 16	1-7/16" – 12	- 16
1-1/4"	- 20	1-11/16" – 12	- 20
1-1/2"	- 24	2" – 12	- 24

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Balfit[®] Hydraulic Hose Fittings

Thread Dash and Dash Sizes of Balfit[®] Connectors

**Table 3e: Dash size for Code 61
series 23 / 24 / P23 / P12 / P24 / 26 connectors**

Nominal Hose Size	Hose Dash	Nominal Flange Size	Flange Dash
1/2"	- 8	30,16	- 8
3/4"	- 12	38,10	- 12
1"	- 16	44,45	- 16
1-1/4"	- 20	50,80	- 20
1-1/2"	- 24	60,32	- 24
2"	- 32	71,43	- 32

**Table 3f: Dash size for Code 62
series 23 / 24 / P23 / P12 / P24 / 26 connectors**

Nominal Hose Size	Hose Dash	Nominal Flange Size	Flange Dash
1/2"	- 8	31,75	- 8
3/4"	- 12	41,27	- 12
1"	- 16	47,62	- 16
1-1/4"	- 20	53,97	- 20
1-1/2"	- 24	63,50	- 24
2"	- 32	79,37	- 32

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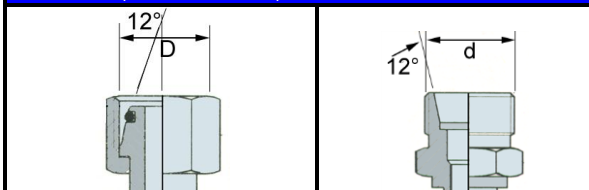
Balfit® Hydraulic Hose Fittings



Quick identification of
hydraulic connectors

Metric Connections (ISO 8434-1)

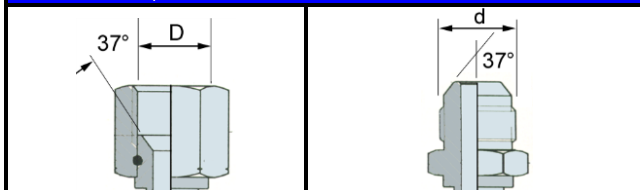
DIN 8434, Metric thread, 24° cone



thread	D (mm)	d (mm)	Ø L pipe (mm)	Ø S pipe (mm)
M10 x 1,0	9,0	10,0	4	-
M12 x 1,5	10,5	12,0	6	-
M14 x 1,5	12,5	14,0	8	6
M16 x 1,5	14,5	16,0	10	8
M18 x 1,5	16,5	18,0	12	10
M20 x 1,5	18,5	20,0	-	12
M22 x 1,5	20,5	22,0	15	14
M24 x 1,5	22,5	24,0	-	16
M26 x 1,5	24,5	26,0	18	-
M30 x 2,0	28,0	30,0	22	20
M36 x 2,0	34,0	36,0	28	25
M42 x 2,0	40,0	42,0	-	30
M45 x 2,0	43,0	45,0	35	-
M52 x 2,0	50,0	52,0	42	38

JIC Connections (ISO 8434-2)

ANSI thread, 37° flared

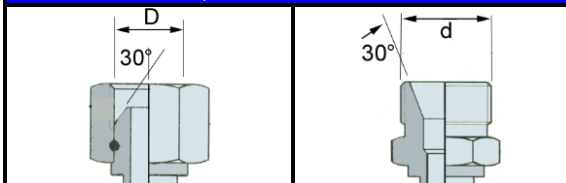


thread	D (mm)	d (mm)	threads per inch
7/16"	10,00	11,07	20
1/2"	11,60	12,70	20
9/16"	13,00	14,25	18
5/8"	14,70	15,85	18
3/4"	17,60	19,00	16
7/8"	20,50	22,17	14
1-1/16"	25,00	26,95	12
1-1/16"	25,30	26,95	14
1-3/16"	27,95	30,12	12
1-5/16"	31,30	33,30	12
1-5/8"	39,20	41,22	12
1-7/8"	45,60	47,57	12
2-1/2"	61,50	63,45	12

Sizes 5/8"-18 UNF and 1-1/16"-14 UNF are 45° flared

BSP Connections (BS 5200)

Whitworth thread, 60° cone



thread	D (mm)	d (mm)	threads per inch
1/8"	8,60	9,73	28
1/4"	11,60	13,16	19
3/8"	15,10	16,66	19
1/2"	18,90	20,96	14
5/8"	20,90	22,91	14
3/4"	24,40	26,44	14
1"	30,60	33,25	11
1-1/4"	39,30	41,91	11
1-1/2"	45,10	47,80	11
2"	56,70	59,60	11

NPT Connections (SAE J476)

ANSI taper thread, 60° cone



thread	d (mm)	threads per inch
1/8"	10,00	27
1/4"	13,60	18
3/8"	17,00	18
1/2"	21,00	14
3/4"	26,00	14
1"	33,50	11-1/2"
1.1/4"	42,10	11-1/2"
1.1/2"	47,80	11-1/2"
2"	59,60	11-1/2"

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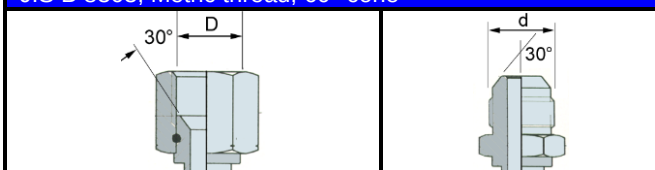
Balfit® Hydraulic Hose Fittings



Quick identification of
hydraulic connectors

Japanese Metric Connections

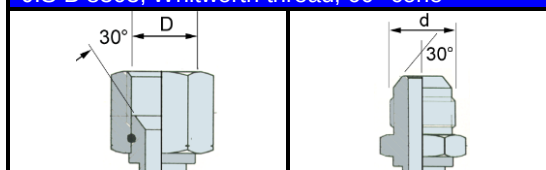
JIS B 8363, Metric thread, 60° cone



thread	D (mm)	d (mm)	pitch (mm)
M14 x 1,5	12,50	14,00	1,5
M16 x 1,5	14,50	16,00	1,5
M18 x 1,5	16,50	18,00	1,5
M22 x 1,5	20,50	22,00	1,5
M24 x 1,5	22,50	24,00	1,5
M30 x 1,5	28,50	30,00	1,5
M33 x 1,5	31,50	33,00	1,5
M42 x 1,5	40,50	42,00	1,5

Japanese Gas Connections

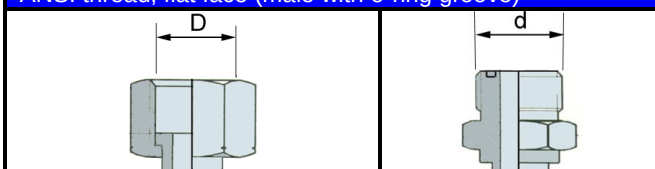
JIS B 8363, Whitworth thread, 60° cone



thread	D (mm)	d (mm)	threads per inch
1/8"	8,60	9,73	28
1/4"	11,60	13,16	19
3/8"	15,10	16,66	19
1/2"	18,90	20,96	14
5/8"	20,90	22,91	14
3/4"	24,40	26,44	14
1"	30,60	33,25	11
1-1/4"	39,30	41,91	11
1-1/2"	45,10	47,80	11
2"	56,70	59,60	11

ORFS Connections (ISO 8434-3)

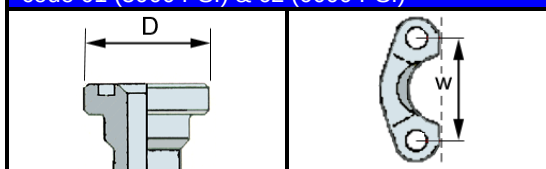
ANSI thread, flat face (male with o-ring groove)



threads	d (mm)	D (mm)	threads per inch
9/16"	12,70	14,28	18
11/16"	15,87	17,46	16
13/16"	19,05	20,63	16
1"	23,81	25,40	14
1.3/16"	27,78	30,16	12
1.7/16"	34,13	36,51	12
1.11/16"	40,48	42,86	12
2"	48,41	50,80	12

Split Flanges (SAE J518)

code 61 (3000 PSI) & 62 (6000 PSI)



DN	D (mm)	w (mm)	D (mm)	w (mm)
	code 61 - 3000 PSI		code 62 - 6000 PSI	
1/2"	30,16	38,10	31,75	40,48
3/4"	38,10	47,62	41,27	50,80
1"	44,45	52,38	47,62	57,15
1-1/4"	50,80	58,73	53,97	66,67
1-1/2"	60,32	69,85	63,50	79,37
2"	71,43	77,78	79,37	96,83

Construction characteristics and dimensions may be changed at any time without prior notice.

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Balfit® Hydraulic Hose Fittings



Thread Codes

thread code	NPT	ORFS	JIC / SAE UN / UNF	METRIC	BSP
02	1/8" – 27				1/8" – 28
04	1/4" – 18	9/16" – 18	7/16" – 20		1/4" – 19
05			1/2" – 20		
06	3/8" – 18	11/16" – 16	9/16" – 18		3/8" – 19
07			5/8" – 18		
08	1/2" – 14	13/16" – 16	3/4" – 16		1/2" – 14
10		1" – 14	7/8" – 14	M10 x 1,0	5/8" – 14
12	3/4" – 14	1.3/16" – 14	1.1/16" – 12	M12 x 1,5	3/4" – 14
14			1.3/16" – 12	M14 x 1,5	
16	1" – 11.1/2	1.7/16" – 12	1.5/16" – 12	M16 x 1,5	1" – 11
18				M18 x 1,5	
20	1.1/4" – 11.1/2	1.11/16" – 12	1.5/8" – 12	M20 x 1,5	1.1/4" – 11
22				M22 x 1,5	
24	1.1/2" – 11.1/2	2" – 12	1.7/8" – 12	M24 x 1,5	1.1/2" – 11
26				M26 x 1,5	
30				M30 x 2,0	
32	2" – 11.1/2		2.1/2" – 12		2" – 11
36				M36 x 2,0	
42				M42 x 2,0	
45				M45 x 2,0	
52				M52 x 2,0	

Flange Codes

flange code	flange 61 code 3000 PSI	flange 62 code 6000 PSI
08	1/2" – 30,2 mm	1/2" – 31,7 mm
10	5/8" – 34,0 mm	
12	3/4" – 38,1 mm	3/4" – 41,3 mm
16	1" – 44,5 mm	1" – 47,6 mm
20	1.1/4" – 50,8 mm	1.1/4" – 54,0 mm
24	1.1/2" – 60,3 mm	1.1/2" – 63,5 mm
32	2" – 71,4 mm	2" – 79,4 mm

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