

# FLANGE DATA

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## **Copamate Products**

### **A – Actuators, Cylinders, Actuator Mounting Kits**

- Mounting Kits
- Positioner Kits
- Pneumatic Cylinders SA & DA
- Gas Springs

### **C – Copamate flange system**

- Female Socket & Male Spigot copamate flange system
- Reducers
- Water board (flanges to suit)

### **F – Flanges**

- Slip on Weld, Blind, Screwed,
- Mild Steel, Stainless Steel 304 & 316, Bronze
- Galvanised Backing Flanges & Angle Rings
- Specials

### **G – Gaskets, Gaskets & Bolt Sets, Bolts**

- Fibre & Rubber – Full Face / Ring (with gummed backing)
- Mild Steel galvanised bolts
- Gasket & Bolts sets to suit application
- 

### **N – Nameplates, Tags**

- Stainless steel in all shapes and sizes with custom etching or stamping
- Metallic stickers (for most application including metal)

### **S – Separators**

- Centrifical separators

### **T – Test Plugs, Extension Pieces**

- Test Plugs & Probes
- Extension Piece Range

### **V – Valve Products**

- Valve testing and refurbishment
- Hi Temperature Damper Valves
- Damper & Positive Sealing Butterfly Valves
- Linear Pneumatic Actuator Valves
- Slurry Mate – Slurry Butterfly Valves
- Orifice Plates

## FLANGE IDENTIFICATION

PIPE SIZE (DN)	
TYPE	
OUTSIDE DIAMETER	
PITCH CIRCLE DIAMETER	
HOLE DIAMETER	
No OF HOLES	
RAISED FACE DIAMETER	
RAISED FACE HEIGHT	
INSIDE DIAMETER	

ALL DIMENSIONS IN MILLIMETERS			TOLERANCES 0 - 300 = ±0.5mm ABOVE 300 - 1000 = ±1.0mm	SCALE 1 : 1	TITLE FLANGE IDENTIFICATION
THIS DRAWING AND THE INFORMATION CONTAINED THEREIN IS THE PROPERTY OF COP-A-MATE PRODUCTS PTY. LTD. - AUSTRALIA. THIS DRAWING AND THE INFORMATION CONTAINED THEREIN IS CONFIDENTIAL INFORMATION WHICH ONLY MAY BE DISCLOSED ON A CONFIDENTIAL BASIS TO PERSONS DULY AUTHORIZED BY THE OWNER. NO REPRODUCTION OF THIS DRAWING OR ANY OF THE INFORMATION CONTAINED THEREIN MAY BE MADE WITHOUT THE PRIOR EXPRESS PERMISSION OF THE OWNER, COP-A-MATE PRODUCTS PTY. LTD.					
MATERIAL			DRN CAM	DATE 25/7/00	
CHKD			DATE		
No.	CHANGE	DATE	BY	COP-A-MATE PRODUCTS PTY LTD ACN No 091 031 677	
REVISIONS				BREAK AND DEBUR ALL SHARP EDGES AND CORNERS	DRG. No. 0390
				SUFFIX - 1	QTY RAW MAT. 1
					QTY/ASSEMBLY 1

This figure is used to help you identify unknown flanges. After filling in all the information required on the top right hand side corner you can easily identify the Flange that you have or the Flange that you need. Simply refer to the Flange table data attached with this, match the corresponding information to a particular flange size and type which will enable you to find out what type of Flange you are using or what type of Flange you need.

Full forms of abbreviations used in the figure above

Abbreviations	Full Forms
FS	Fastener size
H D/A	Diameter of holes
ID	Inside diameter
No	Number of holes
OD	Outside diameter
PCD	Pitch circle diameter
RF	Raised face
RFH	Raised face height
TB	Bronze thickness
TI	Iron thickness
TS	Steel thickness

## Pipe and Tube Outside Diameter

DN = Diameter Nominal (NB = Nominal bore)

Size DN	Pipe (NB)	Pipe OD Australian Actual	Pipe OD USA Actual		Tube DN	Tube OD Australian Actual
3					1/8+	3.175
6	1/8+	10.3	10.3		1/4+	6.350
8	1/4+	13.5	13.7		N/A	N/A
10	3/8+	17.2	17.1		3/8+	9.525
15	1/2+	21.3	21.3		1/2+	12.70
20	3/4+	26.9	26.7		3/4+	19.05
25	1+	33.7	33.4		1+	25.40
32	1 1/4+	42.4	42.2		1 1/4+	31.75
40	1 1/2+	48.3	48.3		1 1/2+	38.10
50	2+	60.3	60.3		2+	50.80
65	2 1/2+	76.1	73.0		2 1/2+	63.50
80	3+	88.9	88.9		3+	76.2
90	3 1/2+	N/A	101.6		N/A	88.90
100	4+	114.3	114.3		4+	101.6
125	5+	139.7	141.3		5+	127.00
150	6+	165.1	168.3		6+	152.40
200	8+	N/A	219.1		8+	203.20
225	9+	N/A	N/A		9+	228.60
250	10+	N/A	273.1		10+	254.00
300	12+	N/A	323.9		12+	304.80
350	14+	N/A	355.6		14+	355.60
375	15+	N/A			15+	381.00
400	16+	N/A	406.4		16+	406.40
450	18+	N/A	457.0		18+	457.20
500	20+	N/A	508.0		20+	508.00
600	24+	N/A	610.0		24+	609.60
700	28+	N/A	711.0		28+	711.20
750	30+	N/A	762.0		30+	762.00
800	32+	N/A	813.0		32+	812.80
900	36+	N/A	914.0		36+	914.40
1000	40+	N/A	N/A		40+	1016.00
1100	42+	N/A	1067.0		42+	1066.80
1150	44+	N/A	N/A		44+	1117.60
1200	48+	N/A	N/A		48+	1219.20
1350	54+	N/A	N/A		N/A	1371.60
1400	56+	N/A	N/A		N/A	1422.40
1600	62+	N/A	N/A		N/A	1574.80
1800	72+	N/A	N/A		N/A	1828.80

**DN = Diameter Nominal (NB = Nominal Bore)**

**BOLT SET APPLICATIONS**

Listed below are numerous Copamate bolt sets for use with particular flange to flange or flanged calce to flange connections as specified. Copamate bolt sets were designed with convenience as a key factor, eliminating the time consuming process of obtaining the components required for your particular connection.

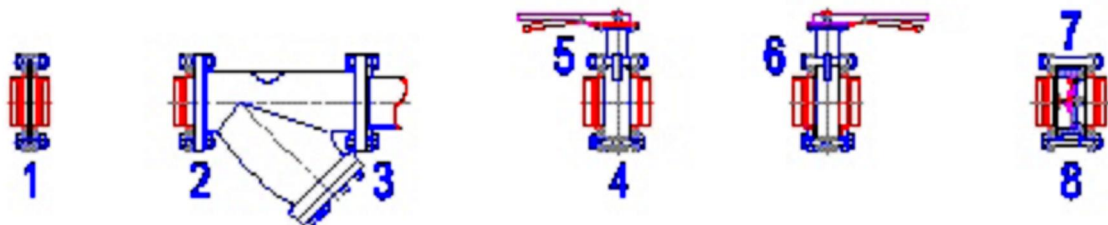
<b>COPAMATE BOLT SET LIST</b>		
<b>Set Number</b>	<b>Application Description (Used For)</b>	<b>Fastener Type</b>
Set 1	Steel Flange to Steel Flange	Bolt
Set 2	Steel Flange to Iron Flange -Strainer	Bolt
Set 3	Iron Flange to SOW (Slip on Weld) Flange	Bolt
Set 4	Flange to Lugged Butterfly Valve	Bolt
Set 5	Steel Flange to Wafer Butterfly Valve	Bolt
Set 6	Steel Flange to Wafer Butterfly Valve	Through Bolt
Set 7	Steel Flange to Check Valve	Stud
Set 8	Steel Flange to Check Valve	Through Bolt

**Materials**

Hex head Bolts, Nuts & Washers - Mild Steel Galvanised.

Gasket Material - Natural /Insertion Rubber, Fibre

Above mentioned bolt sets and fasteners can be used with Rubber Ring, Rubber Full Face, Fibre ring, Fibre Full Face Gaskets.





## Flange Inside Diameters

Flange Size DN		Pipe	Tube	Tube Angle ring Standard & Heavy Duty (DFART & DFART-HD)	Pipe Angle ring Heavy Duty (DFARP-HD)	Stub End Tube (Vanstone)	Stub End Pipe	PVC Class 12 Pressure Piping	PVC Class 18 Pressure Piping	ABS Pipe (Duro Flo)
mm	In	DFSOWFF	DFSOWTB	DFGALT-AR	DFGALP-AR	DFGALSET	DFSOWSEP/TN	P12	P18	DFGALABS
15	½	22.5	12.9	15.0 . 3	26.0	14.9	26.0	34		22.4
20	¾	28.0	19.2	22.0 . 3	32.0	21.2	32.0	43.5		27.8
25	1	35.0	25.6	28.0 . 4	40.0	27.5	38.70	47.5	50.0-3	34.6
32	1 ¼	44.0	32.0	35.0 - 4	49.0	34.0	47.40	53.5		43.3
40	1 ½	50.0	38.4	42.0 . 4	55.0	40.4	53.30	64		49.3
50	2	62.5	51.1	54.0 . 5	67.0	53.6	65.30	80.0 - 3	74.0-3	78
65	2 ½	76.5	64.0	66.0 . 5	81.0	66.0	81.10	92.0 - 3		94
65*	2 ½	75.0								
80	3	90.9	76.7	87.0 . 5	100.0	79.2	93.90	110.0 - 3		112
100	4	116.6	102.1	113.0 . 5	126.0	104.6	119.30	140.0 - 4	140.0-4	138
125	5	143.5	127.5	140.0 . 5	152.0	130.0	144.70	174		167
150	6	167.5	153.1	164.0 . 5	184.0	156.4	173.30	203.0 - 5		196
150*	6	170.5								
200	8	221.0	203.9	215.0 . 5	235.0	207.2	224.10	253		271
250	10	273.5	255.0	268.0 . 5	289.0	258.0	278.10	271		
300	12	324.4	306.0	320.0 . 5	340.0	309.8	328.90	271		366
350	14	358.0		370.0 . 6	375.0	360.6	360.60	365		419
400	16	408.0		422.0 . 6	426.0	411.4	411.40			510
450	18	459.0		474.0 . 7	476.0	462.0	462.00			565
500	20	510.0		525.0 . 7	527.0	513.0	513.00			615
600	24	612.0		625.0 . 8	630.0	615.0	615.00			
700	28	714.0		731.0 . 8						
750	30	765.0		781.0 . 8						870
800	32	816.0		822.0 . 8						
900	36	921.0			935.0 - 8					
225	9									
375	15									

Below is the list of the Inside Diameters of the Australian Flanges to suit different standards of Pipes and Tubes.

\* American schedule pipe. (2.5-3mm has been allowed on the ID for angle rings).

Note: All stainless steel pipe is schedule pipe (American)



**Temperature / Pressure Ratings for Flanges of Stainless Steel Types 304, 316, 321, 347 & 348**

Flange Table	Pressure, kPa														Maximum allowable hydrostatic test pressure kPa
	Temperature °C														
	-200 to 50	100	150	200	250	275	300	325	350	375	400	425	450	475	
D	700	700	700	650	650	600	570	550	500	450	400	350	-	-	1430
E	1400	1400	1400	1300	1300	1200	1100	1000	950	900	800	700	-	-	2850
F	2100	2100	2100	2000	1900	1800	1700	1600	1400	1300	1200	100	-	-	4350
G	3500	3500	3500	3300	3200	3100	2900	2600	2400	2200	2000	1700	1300	900	7200

**Temperature / Pressure Ratings for Flanges of Stainless Steel Types 304L & 316L**

Flange Table	Pressure, kPa														Maximum allowable hydrostatic test pressure kPa
	Temperature °C														
	-200 to 50	100	150	200	250	275	300	325	350	375	400	425	450	475	
D	700	700	650	600	550	550	550	550	500	450	400	350	-	-	1200
E	1400	1400	1300	1200	1100	1100	1100	1000	950	900	800	700	-	-	2400
F	2100	2100	1900	1800	1700	1600	1600	1600	1400	1300	1200	1000	-	-	3750
G	3500	3500	3200	2900	2800	2800	2800	2600	2400	2200	2000	1700	1300	900	6150



**Temperature / Pressure Ratings for Flanges of Ductile Iron**

Flange Table	Temperature °C							Maximum allowable hydrostatic test pressure  KPA
	-18 To 232	250	275	300	325	350	375	
	D	700	660	610	570	540	490	
E	1400	1300	1200	1100	1000	950	900	2800
F	2100	2000	1800	1700	1600	1400	1300	4200
H	3500	3300	3100	2900	2600	2400	2200	7000

**Temperature / Pressure Ratings for Flanges of Copper Alloy DN 15 to DN 80 Inclusive**

Flange Table	Brass							Maximum allowable hydrostatic test pressure  KPA
	Temperature °C							
	-200 to 120	150	175	200	225	232	250	
A	350	170	170	170	170	170	-	525
D	700	650	650	570	500	450	400	1050
E	1400	1400	1400	1200	1000	900	750	2100
F	2100	2100	2100	1800	1400	1350	1200	3150
H	3500	3500	3500	2900	2400	2300	1900	5250
J	3800	3600	3600	3100	2800	2700	2500	5700
K	4800	4600	4600	4000	3600	3500	3200	7200

**Temperature / Pressure Ratings for Flanges of Copper Alloy DN 90 and Larger**

Flange Table	Pressure kPa									Maximum allowable hydrostatic test pressure  KPA
	Temperature °C									
	-200 to 120			150	175	200	225	232	250	
	Nominal Size									
	DN90 to DN200	DN250 to DN 600	DN650 to DN1200	DN 90 to DN 200						
A	350	350	-	170	170	170	170	170	-	525
D	700	700	-	650	600	550	500	450	400	1050
E	1200	1200	-	1100	1100	950	850	800	750	1800
F	1700	1700	-	1700	1500	1400	1200	1250	1100	2550
H	2800	2800	-	2600	2400	2200	2000	1900	1800	4200
J	3800	-	-	3600	3400	3100	2800	2700	2500	5700
K	4800	-	-	4600	4300	3900	3600	3500	3200	7200

## FLANGE STANDARDS AND PIPE SIZES

In order to make flange identification easier, we have developed a colour coding system as noted in the table.

**Steel Flange and Copper Tube temperature and working pressures.**

**FLANGE STANDARDS - Rating apply to temperature less than 232° for Steel**

Standard	Std. No.	Flange Type	copamate Colour	Temperature (°C)	Working Pressure kPa
Australian	AS2129	Table C		-18 to 120	1200
Australian	AS2129	Table D	Black	-50 to 232	700
Australian	AS2129	Table E	Dark Blue	-50 to 232	1400
Australian	AS2129	Table F		-50 to 232	2100
Australian	AS2129	Table H	Claret	-50 to 232	3500
British/ISO/DIN	BS4504	DIN6		Up to 150	600
British/ISO/DIN	BS4504	DIN10		Up to 150	1000
British/ISO/DIN	BS4504	DIN16	Light Blue	Up to 150	1600
British/ISO/DIN	BS4504	DIN25		Up to 150	2500
British/ISO/DIN	BS4504	DIN40		Up to 150	4000
American/ANSI	B16.5	125/150	Grey	-20 to 100	2000
American/ANSI	B16.5	250/300		-20 to 100	5150
American/ANSI	B16.5	600		-20 to 100	10300
Japanese/JIS		10		Up to 120	700

**Note: British and ISO/DIN are identical.**

**Std. No.** = Standard Number

## PIPE SIZES - ISO/IMPERIAL CONVERSION

DN (mm)	Imperial (Inches)	ISO (mm)	Imperial (Inches)
3	1/8 <sup>00</sup>	350	14+
6	1/4+	400	16+
10	3/8+	450	18+
15	1/2+	500	20+
20	3/4+	600	24+
25	1+	700	27+
32	1 1/4+	750	30+
40	1 1/2+	800	32+
50	2+	900	36+
65	2 1/2+	1000	40+
80	3+	1050	42+
100	4+	1100	44+
125	5+	1200	48+
150	6+	1350	54+
200	8+		
225	9+		
250	10+		
300	12+		



## COPAMATE FLANGE SAFE WORKING PRESSURE (Type A)

**Copper Tube** Safe working pressure and Testing Pressure up to 50C - AS1432 - 1996

DN (mm)	Imperial (Inches)	Type A		Type B	
		Psw	Pt	Psw	Pt
6	1/8 <sub>0</sub>	11990	17980	8710	13070
8	1/4+	9320	13970	6820	10240
10	3/8+	8670	13000	7630	11440
15	1/2+	6330	9490	5590	8380
20	3/4+	5860	8790	4110	6170
25	1+	5040	7560	3680	5520
32	1 1/4+	3980	5970	2920	4370
40	1 1/2+	3290	4940	2420	3620
50	2+	2440	3670	1800	2700
65	2 1/2+	1940	2910	1430	2150
80	3+	2020	3030	1610	2420
100	4+	1500	2260	1200	1800
125	5+	1200	1800	960	1440
150	6+	1300	1950	1000	1500
200	8+	910	1370	720	1090
225	9+				
250	10+				
300	12+				

Note - We recommend heavy wall copper component for type A.

**Psw** = Safe working pressure (in kilopascals)

**Pt** = Testing pressure (in kilopascals)

## Flange Data

**DN 15 - 1/2"**

Flange Type	Outside diameter	Raised face diameter	Raised face height RFH	Thick $\phi$ Steel	Thick $\phi$ Iron	Thick $\phi$ Bronze	Pitch circle diameter	Number of holes	Diameter of holes	Fastener size
	OD	RF		TS	TI	TB	PCD	No	H DIA	FS

Table (AS2129)

C	95	47	1.6	6	13	13	67	4	14	M12
D	95	47	1.6	5	13	6	67	4	14	M12
E	95	47	1.6	6	13	6	67	4	14	M12
F	95	47	1.6	10	13	8	67	4	14	M12
H	115	57	1.6	13	16	10	83	4	18	M16

DIN (BS4504)

6	80	40	2	12	12	6	55	4	11	M10
10	95	45	2	14	14	8	65	4	14	M12
16	95	45	2	14	14	8	65	4	14	M12
25	95	45	2	14	16	16	65	4	14	M12
40	95	45	2	14	16	16	65	4	14	M12

ANSI (ASME B16.5)

150	90	35	1.6	13	12	8	60.5	4	16	M12
300	95	35	1.6	14.5	18	13	66.5	4	16	M12
600	95	35	6.4	14.5 *	-	-	66.5	4	16	M12

JIS (B2214)

10	95	52	1	12	16	N/A	70	4	15	M12
20	90	52	1	14	-	-	70	4	15	M12

\* RAISED FACE HEIGHT INCLUDED IN FLANGE THICKNESS

## Gasket & Bolt Set Data

Flange Type	Fastener Quantity	Fastener Size FS	Bolt Set 1	Bolt Set 2	Bolt Set 3	Bolt Set 4	Stud Set 5	Bolt Set 6	Stud Set 7	Bolt Set 8	Wafer Valve (OD)
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Table (AS2129)

Fastener Length



C	4	M12	50	50	45	N/A	N/A	N/A	N/A	N/A	53
D	4	M12	50	50	45	N/A	N/A	N/A	N/A	N/A	53
E	4	M12	50	50	45	N/A	N/A	N/A	N/A	N/A	53
F	4	M12	50	50	45	N/A	N/A	N/A	N/A	N/A	53
H	4	M16	55	65	55	N/A	N/A	N/A	N/A	N/A	65

DIN (BS4504)

Fastener Length



6	4	M10	45	45	45	N/A	N/A	N/A	N/A	N/A	39
10	4	M12	55	50	50	N/A	N/A	N/A	N/A	N/A	51
16	4	M12	55	50	50	N/A	N/A	N/A	N/A	N/A	51
25	4	M12	55	55	50	N/A	N/A	N/A	N/A	N/A	51
40	4	M12	55	55	50	N/A	N/A	N/A	N/A	N/A	51

ANSI (ASME B16.5)

Fastener Length



150	4	M12	50	50	45	N/A	N/A	N/A	N/A	N/A	44.5
300	4	M12	55	65	65	N/A	N/A	N/A	N/A	N/A	44.5
600	4	M12	55	55	50	N/A	N/A	N/A	N/A	N/A	50.5

JIS (B2214)

Fastener Length



10	4	M12	50	45	45	N/A	N/A	N/A	N/A	N/A	55
20	4	M12	55	50	50	N/A	N/A	N/A	N/A	N/A	55

All Steel Fasteners Hot Dipped Galvanised

N/A . NOT APPLICABLE

Pre . packed gasket & bolt sets available now from copamate products.  
Refer to page 6 for bolt set application & identifications or refer to our website.

**Flange Data**

Flange Type	Outside diameter	Raised face diameter	Raised face height	Thick $\phi$ Steel	Thick $\phi$ Iron	Thick $\phi$ Bronze	Pitch circle diameter	Number of holes	Diameter of holes	Fastener size
	OD	RF	RFH	TS	TI	TB	PCD	No	H DIA	FS

**Table (AS2129)**

C	100	53	1.6	6	13	13	73	4	14	M12
D	100	53	1.6	5	13	6	73	4	14	M12
E	100	53	1.6	6	13	6	73	4	14	M12
F	100	53	1.6	10	13	8	73	4	14	M12
H	115	57	1.6	13	16	10	83	4	18	M16

**DIN (BS4504)**

6	90	50	2	14	14	6	65	4	11	M10
10	105	58	2	16	16	8	75	4	14	M12
16	105	58	2	16	16	8	75	4	14	M12
25	105	58	2	16	18	16	75	4	14	M12
40	105	58	2	16	18	16	75	4	14	M12

**ANSI (ASME B16.5)**

150	100	43	1.6	13	12	9	70	4	16	M12
300	120	43	1.6	16	18	14	82.5	4	20	M16
600	120	43	6.4	16 *	-	-	82.5	4	20	M16

**JIS (B2214)**

10	100	58	1	14	18	-	75	4	15	M12
20	100	58	1	16	-	-	75	4	15	M12

\* RAISED FACE HEIGHT INCLUDED IN FLANGE THICKNESS

**Gasket & Bolt Set Data**

Flange Type	Fastener Quantity	Fastener Size	Bolt Set 1	Bolt Set 2	Bolt Set 3	Bolt Set 4	Stud Set 5	Bolt Set 6	Stud Set 7	Bolt Set 8	Wafer Valve (OD)
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**Table (AS2129)**
**Fastener Length**


C	4	M12	50	50	45	N/A	N/A	N/A	N/A	N/A	59
D	4	M12	50	50	45	N/A	N/A	N/A	N/A	N/A	59
E	4	M12	50	50	45	N/A	N/A	N/A	N/A	N/A	59
F	4	M12	50	50	45	N/A	N/A	N/A	N/A	N/A	59
H	4	M16	55	65	55	N/A	N/A	N/A	N/A	N/A	65

**DIN (BS4504)**
**Fastener Length**


6	4	M10	50	50	45	N/A	N/A	N/A	N/A	N/A	54
10	4	M12	55	55	55	N/A	N/A	N/A	N/A	N/A	61
16	4	M12	55	55	55	N/A	N/A	N/A	N/A	N/A	61
25	4	M12	55	55	55	N/A	N/A	N/A	N/A	N/A	61
40	4	M12	55	55	55	N/A	N/A	N/A	N/A	N/A	61

**ANSI (ASME B16.5)**
**Fastener Length**


150	4	M12	50	50	45	N/A	N/A	N/A	N/A	N/A	54
300	4	M16	65	65	65	N/A	N/A	N/A	N/A	N/A	62.5
600	4	M16	65	45	45	N/A	N/A	N/A	N/A	N/A	62.5

**JIS (B2214)**
**Fastener Length**

10	4	M12	55	55	50	N/A	N/A	N/A	N/A	N/A	60
20	4	M12	65	55	55	N/A	N/A	N/A	N/A	N/A	60

All Steel Fasteners Hot Dipped Galvanised

N/A – NOT APPLICABLE

Pre . packed gasket & bolt sets available now from copamate products.  
Refer to page 6 for bolt set application & identifications or refer to our website.

### Flange Data

Flange Type	Outside diameter	Raised face diameter	Raised face height RFH	Thick $\phi$ Steel	Thick $\phi$ Iron	Thick $\phi$ Bronze	Pitch circle diameter	Number of holes	Diameter of holes	Fastener size
	OD	RF		TS	TI	TB	PCD	No	H DIA	FS

**Table (AS2129)**

<b>C</b>	115	63	1.6	7	13	13	83	4	14	M12
<b>D</b>	115	65	1.6	5	13	8	83	4	14	M12
<b>E</b>	115	63	1.6	7	13	8	83	4	14	M12
<b>F</b>	120	63	1.6	10	13	10	87	4	18	M16
<b>H</b>	120	64	1.6	14	19	11	87	4	18	M16

**DIN (BS4504)**

<b>6</b>	100	60	2	14	14	8	75	4	11	M10
<b>10</b>	115	68	2	16	16	9	85	4	14	M12
<b>16</b>	115	68	2	16	16	9	85	4	14	M12
<b>25</b>	115	68	2	16	18	18	85	4	14	M12
<b>40</b>	115	68	2	16	18	18	85	4	14	M12

**ANSI (ASME B16.5)**

<b>150</b>	110	51	1.6	14.5	12	10	79.5	4	16	M12
<b>300</b>	125	51	1.6	17.5	18	15	89	4	20	M16
<b>600</b>	125	51	6.4	17.5 *	-	-	89	4	20	M16

**JIS (B2214)**

<b>10</b>	125	70	1	14	18	-	90	4	19	M16
<b>20</b>	125	70	1	16	-	-	90	4	19	M16

\* RAISED FACE HEIGHT INCLUDED IN FLANGE THICKNESS

### Gasket & Bolt Set Data

Flange Type	Fastener Quantity No	Size FS	Bolt Set 1	Bolt Set 2	Bolt Set 3	Bolt Set 4	Stud Set 5	Bolt Set 6	Stud Set 7	Bolt Set 8	Wafer Valve (OD)
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**Table (AS2129)**
**Fastener Length** ←

<b>C</b>	4	M12	50	50	45	N/A	N/A	N/A	N/A	N/A	69
<b>D</b>	4	M12	50	50	45	N/A	N/A	N/A	N/A	N/A	69
<b>E</b>	4	M12	50	50	45	N/A	N/A	N/A	N/A	N/A	69
<b>F</b>	4	M16	50	50	45	N/A	N/A	N/A	N/A	N/A	69
<b>H</b>	4	M16	65	65	65	N/A	N/A	N/A	N/A	N/A	69

**DIN (BS4504)**
**Fastener Length** ←

<b>6</b>	4	M10	50	50	45	N/A	N/A	N/A	N/A	N/A	64
<b>10</b>	4	M12	55	55	55	N/A	N/A	N/A	N/A	N/A	71
<b>16</b>	4	M12	55	55	55	N/A	N/A	N/A	N/A	N/A	71
<b>25</b>	4	M12	55	55	55	N/A	N/A	N/A	N/A	N/A	71
<b>40</b>	4	M12	55	55	55	N/A	N/A	N/A	N/A	N/A	71

**ANSI (ASME B16.5)**
**Fastener Length** ←

<b>150</b>	4	M12	55	50	50	N/A	N/A	N/A	N/A	N/A	63.5
<b>300</b>	4	M16	65	65	65	N/A	N/A	N/A	N/A	N/A	69
<b>600</b>	4	M16	65	45	45	N/A	N/A	N/A	N/A	N/A	69

**JIS (B2214)**
**Fastener Length**

<b>10</b>	4	M16	65	55	55	N/A	N/A	N/A	N/A	N/A	71
<b>20</b>	4	M16	65	60	65	N/A	N/A	N/A	N/A	N/A	71

All Steel Fasteners Hot Dipped Galvanised

N/A . NOT APPLICABLE

Pre . packed gasket & bolt sets available now from copamate products.  
Refer to page 6 for bolt set application & identifications or refer to our website.

### Flange Data

Flange Type	Outside diameter	Raised face diameter	Raised face height	Thick $\phi$ Steel	Thick $\phi$ Iron	Thick $\phi$ Bronze	Pitch circle diameter	Number of holes	Diameter of holes	Fastener size
	OD	RF	RFH	TS	TI	TB	PCD	No	H DIA	FS

Table (AS2129)

C	120	67	1.6	8	16	16	87	4	14	M12
D	120	67	1.6	6	16	8	87	4	14	M12
E	120	67	1.6	8	16	8	87	4	14	M12
F	135	74	1.6	13	16	10	98	4	18	M16
H	135	76	1.6	17	22	11	98	4	18	M16

DIN (BS4504)

6	120	70	2	16	16	8	90	4	14	M12
10	140	78	2	18	18	10	100	4	18	M16
16	140	78	2	18	18	10	100	4	18	M16
25	140	78	2	18	20	18	100	4	18	M16
40	140	78	2	18	20	18	100	4	18	M16

ANSI (ASME B16.5)

150	120	64	1.6	16	13	10.5	89	4	16	M12
300	135	64	1.6	19.0	19	16	98.5	4	20	M16
600	135	64	6.4	21 *	-	-	98.5	4	20	M16

JIS (B2214)

10	135	80	2	16	20	-	100	4	19	M16
20	135	80	2	18	-	-	100	4	19	M16

\* RAISED FACE HEIGHT INCLUDED IN FLANGE THICKNESS

### Gasket & Bolt Set Data

Flange Type	Fastener Quantity	Fastener Size	Bolt Set 1	Bolt Set 2	Bolt Set 3	Bolt Set 4	Stud Set 5	Bolt Set 6	Stud Set 7	Bolt Set 8	Wafer Valve (OD)
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Table (AS2129)

Fastener Length ←

C	4	M12	50	50	50	N/A	N/A	N/A	N/A	N/A	73
D	4	M12	50	50	50	N/A	N/A	N/A	N/A	N/A	73
E	4	M12	50	50	50	N/A	N/A	N/A	N/A	N/A	73
F	4	M16	55	65	55	N/A	N/A	N/A	N/A	N/A	80
H	4	M16	65	75	65	N/A	N/A	N/A	N/A	N/A	80

DIN (BS4504)

Fastener Length ←

6	4	M12	55	55	55	N/A	N/A	N/A	N/A	N/A	76
10	4	M16	65	65	60	N/A	N/A	N/A	N/A	N/A	81
16	4	M16	65	65	65	N/A	N/A	N/A	N/A	N/A	81
25	4	M16	65	65	65	N/A	N/A	N/A	N/A	N/A	81
40	4	M16	65	65	65	N/A	N/A	N/A	N/A	N/A	81

ANSI (ASME B16.5)

Fastener Length ←

150	4	M12	55	50	50	N/A	N/A	N/A	N/A	N/A	73
300	4	M16	75	75	65	N/A	N/A	N/A	N/A	N/A	75.5
600	4	M16	75	50	50	N/A	N/A	N/A	N/A	N/A	75.5

JIS (B2214)

Fastener Length ←

10	4	M16	65	65	65	N/A	N/A	N/A	N/A	N/A	81
20	4	M16	65	65	65	N/A	N/A	N/A	N/A	N/A	81

All Steel Fasteners Hot Dipped Galvanised

N/A – NOT APPLICABLE

Pre . packed gasket & bolt sets available now from copamate products.  
Refer to page 6 for bolt set application & identifications or refer to our website.

**Flange Data**

Flange Type	Outside diameter	Raised face diameter	Raised face height	Thick $\phi$ Steel	Thick $\phi$ Iron	Thick $\phi$ Bronze	Pitch circle diameter	Number of holes	Diameter of holes	Fastener size
	OD	RF	RFH	TS	TI	TB	PCD	No	H DIA	FS

Table (AS2129)

C	135	78	1.6	9	16	16	98	4	14	M12
D	135	78	1.6	6	16	10	98	4	14	M12
E	135	78	1.6	9	16	10	98	4	14	M12
F	140	81	1.6	13	16	11	105	4	18	M16
H	140	83	1.6	17	22	13	105	4	18	M16

DIN (BS4504)

6	130	80	3	16	16	9	100	4	14	M12
10	150	88	3	18	18	11	110	4	18	M16
16	150	88	3	18	18	11	110	4	18	M16
25	150	88	3	18	20	18	110	4	18	M16
40	150	88	3	18	20	18	110	4	18	M16

ANSI (ASME B16.5)

150	130	74	1.6	17.5	14.5	12	98.5	4	16	M12
300	155	74	1.6	21	21	18	114.5	4	23	M20
600	155	74	6.4	22.5 *	-	-	114.5	4	23	M20

JIS (B2214)

10	140	85	2	16	20	-	105	4	19	M16
20	140	85	2	18	-	-	105	4	19	M16

\* RAISED FACE HEIGHT INCLUDED IN FLANGE THICKNESS

**Gasket & Bolt Set Data**

Flange Type	Fastener Quantity	Bolt Set 1	Bolt Set 2	Bolt Set 3	Bolt Set 4	Stud Set 5	Bolt Set 6	Stud Set 7	Bolt Set 8	Wafer Valve (OD)
	No									
	FS									

Table (AS2129)

Fastener Length  $\Leftarrow$

C	4	M12	50	50	50	35	100	90	110	100	84
D	4	M12	50	50	50	35	100	90	110	100	53
E	4	M12	50	50	50	35	100	90	110	100	84
F	4	M16	65	65	65	40	120	110	130	110	87
H	4	M16	65	75	65	40	120	110	130	110	87

DIN (BS4504)

Fastener Length  $\Leftarrow$

6	4	M12	55	55	55	35	110	100	120	110	86
10	4	M16	65	65	65	40	130	110	130	120	91
16	4	M16	65	65	65	40	130	110	130	120	91
25	4	M16	65	65	65	40	130	110	130	120	91
40	4	M16	65	65	65	40	130	110	130	120	91

ANSI (ASME B16.5)

Fastener Length  $\Leftarrow$

150	4	M12	60	55	55	40	110	100	120	110	82.5
300	4	M20	75	75	75	45	140	120	150	130	91.3
600	4	M20	80	55	55	45	140	120	150	130	91.3

JIS (B2214)

Fastener Length

10	4	M16	65	65	65	40	120	110	130	110	86
20	4	M16	75	65	65	45	130	110	130	120	86

All Steel Fasteners Hot Dipped Galvanised



**Flange Data**

Flange Type	Outside diameter	Raised face diameter	Raised face height	Thick $\phi$ Steel	Thick $\phi$ Iron	Thick $\phi$ Bronze	Pitch circle diameter	Number of holes	Diameter of holes	Fastener size
	OD	RF	RFH	TS	TI	TB	PCD	No	H DIA	FS

Table (AS2129)

C	150	90	1.6	10	19	19	114	4	18	M16
D	150	90	1.6	8	17	10	114	4	18	M16
E	150	90	1.6	10	19	10	114	4	18	M16
F	165	103	1.6	16	19	11	127	4	18	M16
H	165	102	1.6	19	25	13	127	4	18	M16

DIN (BS4504)

6	140	90	3	16	16	11	110	4	14	M12
10	165	102	3	20	20	13	125	4	18	M16
16	165	102	3	20	20	13	125	4	18	M16
25	165	102	3	20	22	20	125	4	18	M16
40	165	102	3	20	22	20	125	4	18	M16

ANSI (ASME B16.5)

150	150	92	1.6	19	16	13	120.5	4	20	M16
300	165	92	1.6	22.5	22.5	19.	127	8	20	M16
600	165	92	6.4	25.5 *	-	-	127	8	20	M16

JIS (B2214)

10	155	100	2	16	20	-	120	4	19	M16
20	155	100	2	18	-	-	120	8	19	M16

\* RAISED FACE HEIGHT INCLUDED IN FLANGE THICKNESS

**Gasket & Bolt Set Data**

Flange Type	Fastener Quantity	Fastener Size	Bolt Set 1	Bolt Set 2	Bolt Set 3	Bolt Set 4	Stud Set 5	Bolt Set 6	Stud Set 7	Bolt Set 8	Wafer Valve (OD)
	No	FS									

Table (AS2129)

 Fastener Length $\leftarrow$ 

C	4	M16	55	65	65	35	110	100	120	100	96
D	4	M16	55	65	55	35	110	100	120	100	96
E	4	M16	55	65	65	35	110	100	120	100	96
F	4	M16	65	65	65	40	120	110	130	110	109
H	4	M16	75	75	75	40	130	110	130	120	109

DIN (BS4504)

 Fastener Length $\leftarrow$ 

6	4	M12	55	55	55	35	110	100	120	110	96
10	4	M16	75	75	65	40	130	110	140	120	106
16	4	M16	75	75	65	40	130	110	140	120	106
25	4	M16	75	75	75	40	130	110	140	120	106
40	4	M16	75	75	75	40	130	110	140	120	106

ANSI (ASME B16.5)

 Fastener Length $\leftarrow$ 

150	4	M16	75	65	60	40	130	110	130	120	100.5
300	8	M16	75	75	75	45	130	120	140	120	107
600	8	M16	80	55	55	45	140	120	150	130	107

JIS (B2214)

 Fastener Length $\leftarrow$ 

10	4	M16	65	65	65	40	120	110	130	110	101
20	8	M16	65	65	65	45	130	110	130	120	101

All Steel Fasteners Hot Dipped Galvanised

Pre . packed gasket & bolt sets available now from copamate products.  
Refer to page 6 for bolt set application & identifications or refer to our website.

### Flange Data

Flange Type	Outside diameter OD	Raised face diameter RF	Raised face height RFH	Thick $\phi$ Steel TS	Thick $\phi$ Iron TI	Thick $\phi$ Bronze TB	Pitch circle diameter PCD	Number of holes No	Diameter of holes H DIA	Fastener size FS
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Table (AS2129)

C	165	103	1.6	8	19	19	127	4	18	M16
D	165	103	1.6	8	17	11	127	4	18	M16
E	165	103	1.6	10	19	11	127	4	18	M16
F	185	122	1.6	16	19	13	146	8	18	M16
H	185	114	1.6	19	25	14	146	8	18	M16

DIN (BS4504)

6	160	110	3	16	16	13	130	4	14	M12
10	185	122	3	20	20	13	145	4	18	M16
16	185	122	3	20	20	20	145	4	18	M16
25	185	122	3	22	24	20	145	8	18	M16
40	185	122	3	22	24	20	145	8	18	M16

ANSI (ASME B16.5)

150	180	105	1.6	22.5	18	14.5	139.5	4	20	M16
300	190	105	1.6	25.5	25.5	21	149.0	8	23	M20
600	190	105	6.4	29*	-	-	149.0	8	23	M20

JIS (B2214)

10	175	120	2	18	22	-	140	4	19	M16
20	175	120	2	20	-	-	140	8	19	M16

\* RAISED FACE HEIGHT INCLUDED IN FLANGE THICKNESS

### Gasket & Bolt Set Data

Flange Type	Fastener Quantity No FS	Size	Bolt Set 1	Bolt Set 2	Bolt Set 3	Bolt Set 4	Stud Set 5	Bolt Set 6	Stud Set 7	Bolt Set 8	Wafer Valve (OD)
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Table (AS2129)

Fastener Length

C	4	M16	55	65	65	35	120	100	120	110	109
D	4	M16	55	65	55	35	120	100	120	110	109
E	4	M16	55	65	65	35	120	100	120	110	109
F	8	M16	65	65	65	40	120	110	130	110	128
H	8	M16	75	75	75	40	130	110	140	120	128

DIN (BS4504)

Fastener Length

6	4	M12	55	55	55	40	110	100	120	110	116
10	4	M16	75	50	45	45	130	120	140	120	126
16	4	M16	75	75	65	45	130	120	140	120	126
25	8	M16	75	75	75	45	140	120	140	130	126
40	8	M16	75	75	75	45	140	120	140	130	126

ANSI (ASME B16.5)

Fastener Length

150	4	M16	75	75	65	45	140	120	140	130	119.5
300	8	M20	90	90	80	50	150	130	175	140	126
600	8	M20	100	65	65	55	175	140	175	140	126

JIS (B2214)

Fastener Length

10	4	M16	65	65	65	45	130	110	130	120	121
20	8	M16	75	75	65	50	130	120	140	120	121

^ All Steel Fasteners Hot Dipped Galvanised

Pre . packed gasket & bolt sets available now from copamate products.  
Refer to page 6 for bolt set application & identifications or refer to our website.

**Flange Data**

Flange Type	Outside diameter	Raised face diameter	Raised face height	Thick $\phi$ Steel	Thick $\phi$ Iron	Thick $\phi$ Bronze	Pitch circle diameter	Number of holes	Diameter of holes	Fastener size
	OD	RF	RFH	TS	TI	TB	PCD	No	H DIA	FS

Table (AS2129)

C	185	122	1.6	11	19	19	146	4	18	M16
D	185	122	1.6	10	19	13	146	4	18	M16
E	185	122	1.6	11	19	13	146	4	18	M16
F	205	141	1.6	16	19	14	165	8	18	M16
H	205	127	1.6	22	29	16	165	8	18	M16

DIN (BS4504)

6	190	128	3	18	18	13	150	4	18	M16
10	200	138	3	20	22	13	160	8	18	M16
16	200	138	3	20	22	20	160	8	18	M16
25	200	138	3	24	26	22	160	8	18	M16
40	200	138	3	24	26	22	160	8	18	M16

ANSI (ASME B16.5)

150	190	127	1.6	24	19	16	152.5	4	20	M16
300	210	127	1.6	28.5	28.5	23.5	168.5	8	23	M20
600	210	127	6.4	32*	-	-	168.5	8	23	M20

JIS (B2214)

10	185	130	2	18	22	-	150	8	19	M16
20	200	135	2	22	-	-	160	8	23	M20

\* RAISED FACE HEIGHT INCLUDED IN FLANGE THICKNESS

**Gasket & Bolt Set Data**

Flange Type	Fastener Quantity No	Fastener Size FS	Bolt Set 1	Bolt Set 2	Bolt Set 3	Bolt Set 4	Stud Set 5	Bolt Set 6	Stud Set 7	Bolt Set 8	Wafer Valve (OD)
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Table (AS2129)

 Fastener Length  $\leftarrow$ 

C	4	M16	55	65	65	35	120	100	140	120	128
D	4	M16	55	65	65	35	120	100	140	120	128
E	4	M16	55	65	65	35	120	100	140	120	128
F	8	M16	65	65	65	40	120	110	150	130	147
H	8	M16	75	80	80	45	140	120	160	140	147

DIN (BS4504)

 Fastener Length  $\leftarrow$ 

6	4	M16	65	75	65	40	130	110	150	140	131
10	8	M16	75	75	75	45	130	120	175	140	141
16	8	M16	75	75	75	45	130	120	175	140	141
25	8	M16	80	80	80	45	140	120	175	140	141
40	8	M16	80	80	80	45	140	120	175	150	141

ANSI (ASME B16.5)

 Fastener Length  $\leftarrow$ 

150	4	M16	80	75	75	45	140	120	175	150	132.5
300	8	M20	90	90	90	50	175	140	200	175	145.5
600	8	M20	100	65	65	55	175	140	200	175	145.5

JIS (B2214)

 Fastener Length  $\leftarrow$ 

10	8	M16	70	65	65	45	130	110	150	140	131
20	8	M23	80	75	75	50	140	120	175	150	137

All Steel Fasteners Hot Dipped Galvanised

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**Flange Data**

Flange Type	Outside diameter OD	Raised face diameter RF	Raised face height RFH	Thick $\phi$ Steel TS	Thick $\phi$ Iron TI	Thick $\phi$ Bronze TB	Pitch circle diameter PCD	Number of holes No	Diameter of holes H DIA	Fastener size FS
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Table (AS2129)

C	215	154	1.6	11	22	22	178	4	18	M16
D	215	154	1.6	10	19	16	178	4	18	M16
E	215	154	1.6	13	22	16	178	8	18	M16
F	230	167	1.6	19	22	17	191	8	18	M16
H	230	152	1.6	25	32	19	191	8	18	M16

DIN (BS4504)

6	210	148	3	18	18	16	170	4	18	M16
10	220	162	3	22	24	16	180	8	18	M16
16	220	162	3	22	24	20	180	8	18	M16
25	235	162	3	26	28	22	190	8	22	M20
40	235	162	3	26	28	22	190	8	22	M20

ANSI (ASME B16.5)

150	230	158	1.6	24	24	18	190.5	8	20	M16
300	255	158	1.6	32	32	27	200	8	23	M20
600	275	158	6.4	38.5*	-	-	216	8	26	M24

JIS (B2214)

10	210	155	2	18	24	-	175	8	19	M16
20	225	160	2	24	-	-	185	8	23	M20

\* RAISED FACE HEIGHT INCLUDED IN FLANGE THICKNESS

**Gasket & Bolt Set Data**

Flange Type	Fastener Quantity No	Fastener Size FS	Bolt Set 1	Bolt Set 2	Bolt Set 3	Bolt Set 4	Stud Set 5	Bolt Set 6	Stud Set 7	Bolt Set 8	Wafer Valve (OD)
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Table (AS2129)

 Fastener Length  $\leftarrow$ 

C	4	M16	55	65	65	40	120	110	140	120	160
D	4	M16	55	65	65	40	120	110	140	120	160
E	8	M16	55	65	65	40	120	110	140	130	160
F	8	M16	75	75	75	45	140	120	150	140	173
H	8	M16	80	90	90	50	150	130	175	150	173

DIN (BS4504)

 Fastener Length  $\leftarrow$ 

6	4	M16	65	65	65	45	130	120	150	140	151
10	8	M16	75	75	75	50	140	130	175	140	161
16	8	M16	75	75	75	50	140	130	175	140	161
25	8	M20	90	90	80	50	150	130	175	150	167
40	8	M20	90	90	90	50	175	140	175	175	167

ANSI (ASME B16.5)

 Fastener Length  $\leftarrow$ 

150	8	M16	80	75	75	50	150	130	175	150	170.5
300	8	M20	100	100	100	60	175	150	200	175	177
600	8	M24	120	75	75	65	200	175	225	200	190

JIS (B2214)

 Fastener Length  $\leftarrow$ 

10	8	M16	65	65	65	50	130	120	150	140	156
20	8	M20	90	80	80	60	150	130	175	150	162

All Steel Fasteners Hot Dipped Galvanised

Pre . packed gasket & bolt sets available now from copamate products.  
Refer to page 6 for bolt set application & identifications or refer to our website.

**Flange Data**

Flange Type	Outside diameter	Raised face diameter	Raised face height RFH	Thick $\phi$ Steel	Thick $\phi$ Iron	Thick $\phi$ Bronze	Pitch circle diameter	Number of holes	Diameter of holes	Fastener size
	OD	RF	RFH	TS	TI	TB	PCD	No	H DIA	FS

Table (AS2129)

C	255	186	1.6	13	22	22	210	8	18	M16
D	255	186	1.6	13	21	17	210	8	18	M16
E	255	186	1.6	14	22	17	210	8	18	M16
F	280	207	1.6	22	25	19	235	8	22	M20
H	280	178	1.6	29	35	22	235	8	22	M20

DIN (BS4504)

6	240	178	3	20	20	18	200	8	18	M16
10	250	188	3	22	26	18	210	8	18	M16
16	250	188	3	22	26	22	210	8	18	M16
25	270	188	3	28	30	24	220	8	26	M24
40	270	188	3	28	30	24	220	8	26	M24

ANSI (ASME B16.5)

150	255	186	1.6	24	24	19.5	216	8	23	M20
300	280	186	1.6	35	35	29	235	8	23	M20
600	330	186	6.4	45	-	-	267	8	30	M27

JIS (B2214)

10	250	185	2	20	24	-	210	8	23	M20
20	270	195	2	26	-	-	225	8	25	M22

\* RAISED FACE HEIGHT INCLUDED IN FLANGE THICKNESS

**Gasket & Bolt Set Data**

Flange Type	Fastener Quantity No	Fastener Size FS	Bolt Set 1	Bolt Set 2	Bolt Set 3	Bolt Set 4	Stud Set 5	Bolt Set 6	Stud Set 7	Bolt Set 8	Wafer Valve (OD)
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Table (AS2129)

Fastener Length ←

C	8	M16	65	65	65	40	130	110	150	130	192
D	8	M16	65	65	65	40	130	110	150	130	192
E	8	M16	65	65	65	40	130	110	150	130	192
F	8	M20	80	80	80	50	150	130	175	150	213
H	8	M20	100	100	100	55	175	150	200	175	213

DIN (BS4504)

Fastener Length ←

6	8	M16	75	75	65	50	140	130	175	150	181
10	8	M16	75	75	75	50	150	130	175	150	191
16	8	M16	75	75	75	50	150	130	175	150	191
25	8	M24	100	100	100	55	175	150	200	175	192
40	8	M24	100	100	100	55	175	150	200	175	192

ANSI (ASME B16.5)

Fastener Length ←

150	8	M20	90	80	80	50	175	140	175	175	193
300	8	M20	110	110	100	65	200	175	200	200	212
600	8	M27	130	85	80	75	225	200	250	225	238

JIS (B2214)

Fastener Length ←

10	8	M20	80	75	75	55	150	130	170	150	187
20	8	M22	90	90	85	60	175	150	200	175	200

All Steel Fasteners Hot Dipped Galvanised80

Pre . packed gasket & bolt sets available now from copamate products.  
Refer to page 6 for bolt set application & identifications or refer to our website.

### Flange Data

Flange Type	Outside diameter	Raised face diameter	Raised face height	Thick $\phi$ Steel	Thick $\phi$ Iron	Thick $\phi$ Bronze	Pitch circle diameter	Number of holes	Diameter of holes	Fastener size
	OD	RF	RFH	TS	TI	TB	PCD	No	H DIA	FS

Table (AS2129)

C	280	211	1.6	13	22	22	235	8	18	M16
D	280	211	1.6	13	21	17	235	8	18	M16
E	280	207	1.6	17	22	17	235	8	22	M20
F	305	232	1.6	22	25	22	260	12	22	M20
H	305	210	1.6	29	35	25	260	12	22	M20

DIN (BS4504)

6	265	202	3	20	20	18	225	8	18	M16
10	285	212	3	24	26	20	240	8	22	M20
16	285	212	3	24	26	22	240	8	22	M20
25	300	218	3	30	34	24	250	8	26	M24
40	300	218	3	30	34	24	250	8	26	M24

ANSI (ASME B16.5)

150	280	216	1.6	25.5	25.5	21	241.5	8	23	M20
300	320	216	1.6	36.5	37	30.5	270	12	23	M20
600	355	216	6.4	48*	-	-	292	12	30	M27

JIS (B2214)

10	280	215	2	22	26	-	240	8	23	M20
20	305	230	2	28	-	-	260	12	25	M22

\* RAISED FACE HEIGHT INCLUDED IN FLANGE THICKNESS

### Gasket & Bolt Set Data

Flange Type	Fastener Quantity No	Fastener Size FS	Bolt Set 1	Bolt Set 2	Bolt Set 3	Bolt Set 4	Stud Set 5	Bolt Set 6	Stud Set 7	Bolt Set 8	Wafer Valve (OD)
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Table (AS2129)

Fastener Length



C	8	M16	65	65	65	45	130	120	160	140	217
D	8	M16	65	65	65	45	130	120	175	140	217
E	8	M20	75	75	75	45	150	130	175	150	213
F	12	M20	80	80	80	50	175	140	200	175	238
H	12	M20	100	100	100	60	175	150	200	175	238

DIN (BS4504)

Fastener Length



6	8	M16	75	75	65	50	140	130	175	150	206
10	8	M20	90	90	80	55	175	140	200	175	217
16	8	M20	90	90	80	55	175	140	200	175	217
25	8	M24	100	110	100	60	200	175	225	200	222
40	8	M24	100	100	100	60	200	175	225	200	222

ANSI (ASME B16.5)

Fastener Length



150	8	M20	90	90	80	55	175	140	200	175	218.5
300	12	M20	110	110	110	65	200	175	225	200	245
600	12	M27	140	90	90	75	225	200	250	225	263

JIS (B2214)

Fastener Length



10	8	M20	80	80	75	55	175	140	200	160	217
20	12	M22	100	100	90	60	175	150	200	175	235

All Steel Fasteners Hot Dipped Galvanised

Pre . packed gasket & bolt sets available now from copamate products.  
Refer to page 6 for bolt set application & identifications or refer to our website.

**Flange Data**

Flange Type	Outside diameter OD	Raised face diameter RF	Raised face height RFH	Thick $\phi$ Steel TS	Thick $\phi$ Iron TI	Thick $\phi$ Bronze TB	Pitch circle diameter PCD	Number of holes No	Diameter of holes H DIA	Fastener size FS
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Table (AS2129)

C	335	268	1.6	13	25	25	292	8	18	M16
D	335	268	1.6	13	22	19	292	8	18	M16
E	335	264	1.6	19	25	19	292	8	22	M20
F	370	296	1.6	25	29	25	324	12	22	M20
H	370	260	1.6	32	38	32	324	12	22	M20

DIN (BS4504)

6	320	258	3	22	22	20	280	8	18	M16
10	340	268	3	24	26	24	295	8	22	M20
16	340	268	3	26	30	26	295	12	22	M20
25	360	278	3	32	34	26	310	12	26	M24
40	375	285	3	36	40	30	320	12	30	M27

ANSI (ASME B16.5)

150	345	270	1.6	28.5	28.5	24	298.5	8	23	M20
300	380	270	1.6	41.5	41.5	35	330	12	26	M24
600	420	270	6.4	56*	-	-	349	12	33	M30

JIS (B2214)

10	330	265	2	22	26	-	290	12	23	M20
20	350	275	2	30	-	-	305	12	25	M22

\* RAISED FACE HEIGHT INCLUDED IN FLANGE THICKNESS

**Gasket & Bolt Set Data**

Flange Type	Fastener Quantity Size No FS	Bolt Set 1	Bolt Set 2	Bolt Set 3	Bolt Set 4	Stud Set 5	Bolt Set 6	Stud Set 7	Bolt Set 8	Wafer Valve (OD)
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Table (AS2129)

Fastener Length



C	8	M16	65	75	65	45	130	120	175	150	274
D	8	M16	75	75	75	50	150	130	200	175	274
E	8	M20	75	80	75	50	150	130	200	175	270
F	12	M20	90	90	90	55	175	150	200	200	302
H	12	M20	100	110	100	65	175	175	225	200	302

DIN (BS4504)

Fastener Length



6	8	M16	75	75	75	55	150	140	200	175	261
10	8	M20	90	90	80	55	175	140	200	175	272
16	12	M20	90	90	90	55	175	150	200	200	272
25	12	M24	105	105	100	65	200	175	225	200	282
40	12	M27	120	120	120	65	200	175	250	225	289

ANSI (ASME B16.5)

Fastener Length



150	8	M20	100	90	90	60	175	150	225	200	275.5
300	12	M24	130	130	120	75	225	200	250	225	304
600	12	M30	175	100	100	80	250	225	300	250	317

JIS (B2214)

Fastener Length



10	12	M20	80	80	75	55	160	140	200	175	267
20	12	M22	100	100	100	65	175	175	225	200	280

All Steel Fasteners Hot Dipped Galvanised

Pre . packed gasket & bolt sets available now from copamate products.  
Refer to page 6 for bolt set application & identifications or refer to our website.

**Flange Data**

Flange Type	Outside diameter	Raised face diameter	Raised face height RFH	Thick $\phi$ Steel	Thick $\phi$ Iron	Thick $\phi$ Bronze	Pitch circle diameter	Number of holes	Diameter of holes	Fastener size
	OD	RF	RFH	TS	TI	TB	PCD	No	H DIA	FS

Table (AS2129)

C	405	328	1.6	16	25	25	356	8	22	M20
D	405	328	1.6	16	25	19	356	8	22	M20
E	405	328	1.6	22	25	22	356	12	22	M20
F	430	349	1.6	29	29	25	381	12	26	M24
H	430	311	1.6	35	41	35	381	12	26	M24

DIN (BS4504)

6	375	312	3	24	24	22	335	12	18	M16
10	395	320	3	26	28	26	350	12	22	M20
16	405	320	3	29	32	28	355	12	26	M24
25	425	335	3	35	36	32	370	12	30	M27
40	450	345	3	42	46	36	385	12	33	M30

ANSI (ASME B16.5)

150	405	324	1.6	30.5	30.5	25.5	362	12	26	M24
300	445	324	1.6	48	48	-	387.5	16	30	M27
600	510	324	6.4	64*	-	-	432	16	36	M33

JIS (B2214)

10	400	325	2	24	30	-	355	12	25	M22
20	430	345	2	34	-	-	380	12	27	M24

\* RAISED FACE HEIGHT INCLUDED IN FLANGE THICKNESS

**Gasket & Bolt Set Data**

Flange Type	Fastener Quantity No	Fastener Size FS	Bolt Set 1	Bolt Set 2	Bolt Set 3	Bolt Set 4	Stud Set 5	Bolt Set 6	Stud Set 7	Bolt Set 8	Wafer Valve (OD)
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Table (AS2129)

Fastener Length



C	8	M20	75	80	75	50	175	140	225	200	334
D	8	M20	75	80	75	50	175	140	225	200	334
E	12	M20	80	80	80	55	175	150	225	200	334
F	12	M24	100	110	110	65	200	175	250	225	355
H	12	M24	120	120	120	70	200	200	275	250	355

DIN (BS4504)

Fastener Length



6	12	M16	80	80	80	60	175	150	225	200	316
10	12	M20	90	90	90	60	175	175	225	225	327
16	12	M24	100	100	100	65	200	175	250	225	327
25	12	M27	120	120	120	70	225	200	275	250	339
40	12	M30	120	120	120	80	200	200	250	250	351

ANSI (ASME B16.5)

Fastener Length



150	12	M24	110	100	100	65	200	175	250	225	336
300	16	M27	140	140	140	80	250	225	300	375	358.5
600	16	M33	200	120	110	100	275	250	350	300	397

JIS (B2214)

Fastener Length



10	12	M22	90	90	80	65	175	150	225	225	330
20	12	M24	110	110	110	75	200	175	250	250	353

All Steel Fasteners Hot Dipped Galvanised

Pre-packed gasket & bolt sets available now from copamate products.  
Refer to page 6 for bolt set application & identifications or refer to our website.



**Flange Data**

Flange Type	Outside diameter	Raised face diameter	Raised face height	Thick $\phi$ Steel	Thick $\phi$ Iron	Thick $\phi$ Bronze	Pitch circle diameter	Number of holes	Diameter of holes	Fastener size
	OD	RF	RFH	TS	TI	TB	PCD	No	H DIA	FS

Table (AS2129)

C	455	378	1.6	16	29	29	406	12	22	M20
D	455	378	1.6	19	25	22	406	12	22	M20
E	455	374	1.6	25	29	25	406	12	26	M24
F	490	406	1.6	32	32	29	438	16	26	M24
H	490	362	1.6	41	44	38	438	16	26	M24

DIN (BS4504)

6	440	365	4	24	24	22	395	12	22	M20
10	445	370	4	26	28	26	400	12	22	M20
16	460	378	4	32	32	-	410	12	26	M24
25	485	395	4	38	40	-	430	16	30	M27
40	515	410	4	48	50	40	450	16	33	M30

ANSI (ASME B16.5)

150	485	381	1.6	32	32	27	432	12	26	M24
300	520	381	1.6	55	51	-	451	16	33	M30
600	560	381	6.4	67*	-	-	489	20	36	M33

JIS (B2214)

10	445	370	3	24	32	-	400	16	25	M22
20	480	395	3	35	-	-	430	16	27	M24

\* RAISED FACE HEIGHT INCLUDED IN FLANGE THICKNESS

**Gasket & Bolt Set Data**

Flange Type	Fastener Quantity No	Fastener Size FS	Bolt Set 1	Bolt Set 2	Bolt Set 3	Bolt Set 4	Stud Set 5	Bolt Set 6	Stud Set 7	Bolt Set 8	Wafer Valve (OD)
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Table (AS2129)

Fastener Length ←

C	12	M20	75	80	75	55	175	150	225	200	384
D	12	M20	75	80	75	65	175	150	225	200	384
E	12	M24	100	100	90	65	200	175	250	225	380
F	16	M24	110	110	100	75	225	200	250	225	412
H	16	M24	130	130	120	80	225	200	275	250	412

DIN (BS4504)

Fastener Length ←

6	12	M20	90	80	80	65	200	175	225	200	372
10	12	M20	90	90	90	65	200	175	225	225	377
16	12	M24	110	110	100	75	225	200	250	225	382
25	16	M27	120	120	120	80	225	200	275	250	399
40	16	M30	150	150	140	90	250	225	300	275	416

ANSI (ASME B16.5)

Fastener Length ←

150	12	M24	110	110	100	75	225	200	250	225	406
300	16	M30	150	150	150	90	275	250	300	275	419
600	20	M33	200	120	120	110	300	275	350	325	454

JIS (B2214)

Fastener Length ←

10	16	M22	90	90	80	70	200	175	225	225	375
20	16	M24	120	110	110	80	225	200	275	250	403

All Steel Fasteners Hot Dipped Galvanised

Pre . packed gasket & bolt sets available now from copamate products.  
Refer to page 6 for bolt set application & identifications or refer to our website.

**Flange Data**

Flange Type	Outside diameter	Raised face diameter	Raised face height	Thick $\phi$ Steel	Thick $\phi$ Iron	Thick $\phi$ Bronze	Pitch circle diameter	Number of holes	Diameter of holes	Fastener size
	OD	RF	RFH	TS	TI	TB	PCD	No	H DIA	FS

Table (AS2129)

C	525	438	1.6	19	32	32	470	12	26	M24
D	525	438	1.6	22	29	25	470	12	26	M24
E	525	438	1.6	29	32	25	470	12	26	M24
F	550	459	1.6	35	35	32	495	16	30	M27
H	550	419	1.6	48	48	41	495	16	30	M27

DIN (BS4504)

6	490	415	4	26	26	22	445	12	22	M20
10	505	430	4	28	30	26	460	16	22	M20
16	520	438	4	35	36	-	470	16	26	M24
25	555	450	4	42	44	-	490	16	33	M30
40	580	465	4	54	54	46	510	16	36	M33

ANSI (ASME B16.5)

150	535	413	1.6	35	35	-	476	12	30	M27
300	585	413	1.6	54	54	-	514.5	20	33	M30
600	605	413	6.4	70*	-	-	527	20	39	M36

JIS (B2214)

10	490	415	3	26	34	-	445	16	25	M22
20	540	440	3	40	-	-	480	16	33	M30x3

\* RAISED FACE HEIGHT INCLUDED IN FLANGE THICKNESS

**Gasket & Bolt Set Data**

Flange Type	Fastener Quantity No	Fastener Size FS	Bolt Set 1	Bolt Set 2	Bolt Set 3	Bolt Set 4	Stud Set 5	Bolt Set 6	Stud Set 7	Bolt Set 8	Wafer Valve (OD)
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Table (AS2129)

Fastener Length



C	12	M24	90	90	90	60	200	175	250	225	444
D	12	M24	100	100	90	65	200	175	250	225	444
E	12	M24	110	100	110	70	200	200	275	250	444
F	16	M27	120	120	110	75	225	200	275	250	465
H	16	M27	150	140	140	90	250	225	300	275	465

DIN (BS4504)

Fastener Length



6	12	M20	90	90	90	65	200	175	250	225	422
10	16	M20	100	100	90	70	200	175	250	225	437
16	16	M24	120	110	110	75	225	200	275	250	442
25	16	M30	140	140	130	80	250	225	300	275	456
40	16	M33	175	175	175	90	275	250	325	300	473

ANSI (ASME B16.5)

Fastener Length



150	12	M27	120	120	110	75	225	200	275	250	447.5
300	20	M30	175	175	150	90	275	250	325	300	482.5
600	20	M36	200	120	120	110	325	375	375	325	488

JIS (B2214)

Fastener Length



10	16	M22	100	90	90	70	200	175	250	225	420
20	16	M30x3	130	130	130	90	250	225	290	275	447

All Steel Fasteners Hot Dipped Galvanised

Pre . packed gasket & bolt sets available now from copamate products.  
 Refer to page 6 for bolt set application & identifications or refer to our website.

**Flange Data**

Flange Type	Outside diameter OD	Raised face diameter RF	Raised face height RFH	Thick $\phi$ Steel TS	Thick $\phi$ Iron TI	Thick $\phi$ Bronze TB	Pitch circle diameter PCD	Number of holes No	Diameter of holes H DIA	Fastener size FS
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Table (AS2129)

C	580	489	1.6	19	32	32	521	12	26	M24
D	580	489	1.6	22	29	25	521	12	26	M24
E	580	489	1.6	32	32	25	521	12	26	M24
F	610	516	1.6	41	35	32	552	20	30	M27
H	610	483	1.6	54	51	44	552	20	30	M27

DIN (BS4504)

6	540	465	4	28	28	22	495	16	22	M20
10	565	482	4	32	32	26	515	16	26	M24
16	580	490	4	38	38	-	525	16	30	M27
25	620	505	4	46	48	0	550	16	36	M33
40	660	535	4	60	62	50	585	16	39	M36

ANSI (ASME B16.5)

150	600	470	1.6	37	37	-	540	16	30	M27
300	650	470	1.6	58	58	-	571.5	20	36	M33
600	685	470	6.4	77*	-	-	603	20	42	M39

JIS (B2214)

10	560	475	3	28	36	-	510	16	27	M24
20	605	495	3	46	-	-	540	16	33	M30X3

\* RAISED FACE HEIGHT INCLUDED IN FLANGE THICKNESS

**Gasket & Bolt Set Data**

Flange Type	Fastener Quantity No	Size FS	Bolt Set 1	Bolt Set 2	Bolt Set 3	Bolt Set 4	Stud Set 5	Bolt Set 6	Stud Set 7	Bolt Set 8	Wafer Valve (OD)
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Table (AS2129)

Fastener Length

←

C	12	M24	90	90	90	75	225	200	250	225	495
D	12	M24	100	100	90	80	225	200	275	250	495
E	12	M24	110	110	100	80	250	225	275	250	495
F	20	M27	130	120	120	90	275	250	300	275	522
H	20	M27	175	150	150	110	300	275	325	300	522

DIN (BS4504)

Fastener Length

←

6	16	M20	100	90	90	80	225	200	275	250	472
10	16	M24	110	110	100	80	250	225	275	250	487
16	16	M27	130	120	120	90	250	225	300	275	494
25	16	M33	150	150	140	100	300	250	325	300	513
40	16	M36	175	175	175	110	325	275	375	325	545

ANSI (ASME B16.5)

Fastener Length

←

150	16	M27	120	120	120	90	250	225	300	275	511
300	20	M33	175	175	175	110	300	275	350	325	536.5
600	20	M39	225	140	130	130	375	325	400	375	561

JIS (B2214)

Fastener Length

←

10	16	M24	110	100	100	90	225	200	275	250	483
20	16	M30x3	150	150	140	110	300	250	325	300	507

All Steel Fasteners Hot Dipped Galvanised

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Refer to page 6 for bolt set application & identifications or refer to our website.

**Flange Data**

Flange Type	Outside diameter	Raised face diameter	Raised face height	Thick $\phi$ Steel	Thick $\phi$ Iron	Thick $\phi$ Bronze	Pitch circle diameter	Number of holes	Diameter of holes	Fastener size
	OD	RF	RFH	TS	TI	TB	PCD	No	H DIA	FS

Table (AS2129)

C	640	552	1.6	22	35	35	584	12	26	M24
D	640	532	1.6	25	32	29	584	12	26	M24
E	640	552	1.6	35	35	29	584	16	26	M24
F	675	571	1.6	44	38	35	610	20	33	M30
H	675	533	1.6	60	54	48	610	20	33	M30

DIN (BS4504)

6	595	520	4	30	28	24	550	16	22	M20
10	615	532	4	36	32	28	565	20	26	M24
16	640	550	4	42	40	-	585	20	30	M27
25	670	555	4	50	50	-	600	20	36	M33
40	685	560	4	66	-	-	610	20	39	M36

ANSI (ASME B16.5)

150	635	534	1.6	40	40	-	578	16	33	M30
300	710	534	1.6	61	61	-	628.5	24	36	M33
600	745	534	6.4	83*	-	-	654	20	45	M42

JIS (B2214)

10	620	530	3	30	38	-	565	20	27	M24
20	675	560	3	48	-	-	603	20	33	M30x3

\* RAISED FACE HEIGHT INCLUDED IN FLANGE THICKNESS

**GASKET & BOLT SET DATA**

Flange Type	Fastener Quantity No	Fastener Size FS	Bolt Set 1	Bolt Set 2	Bolt Set 3	Bolt Set 4	Stud Set 5	Bolt Set 6	Stud Set 7	Bolt Set 8	Wafer Valve (OD)
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Table (AS2129)

Fastener Length



C	12	M24	90	100	100	80	225	200	275	250	558
D	12	M24	110	110	100	90	250	225	300	275	558
E	16	M24	120	110	110	90	250	250	300	275	558
F	20	M30	140	130	130	100	300	250	325	300	577
H	20	M30	175	175	175	120	325	300	375	350	577

DIN (BS4504)

Fastener Length



6	16	M20	100	100	90	90	250	225	275	275	527
10	20	M24	120	110	110	90	275	250	300	275	537
16	20	M27	140	130	120	100	275	250	325	300	554
25	20	M33	175	150	150	110	300	275	350	325	563
40	20	M36	200	200	200	120	350	300	400	350	570

ANSI (ASME B16.5)

Fastener Length



150	16	M30	140	130	130	100	275	250	325	300	546
300	24	M33	200	175	175	120	325	300	375	350	593.5
600	20	M42	250	150	140	140	400	350	450	400	609

JIS (B2214)

Fastener Length



10	20	M24	110	110	100	100	250	225	300	275	538
20	20	M30x3	150	150	150	120	300	275	350	325	570

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Refer to page 6 for bolt set application & identifications or refer to our website.

**Flange Data**

Flange Type	Outside diameter	Raised face diameter	Raised face height RFH	Thick $\phi$ Steel	Thick $\phi$ Iron	Thick $\phi$ Bronze	Pitch circle diameter	Number of holes	Diameter of holes	Fastener size
	OD	RF		TS	TI	TB	PCD	No	H DIA	FS

Table (AS2129)

C	705	609	1.6	25	38	38	641	16	26	M24
D	705	609	1.6	29	32	32	641	16	26	M24
E	705	609	1.6	38	38	32	641	16	26	M24
F	735	634	1.6	51	41	38	673	24	33	M30
H	735	597	1.6	67	57	51	673	24	33	M30

DIN (BS4504)

6	645	570	4	30	30	24	600	20	22	M20
10	670	585	4	38	34	28	620	20	26	M24
16	715	610	4	46	42	0	650	20	33	M30
25	730	615	4	56	52	0	660	20	36	M33
40	755	615	4	72	-	-	670	20	42	M39

ANSI (ASME B16.5)

150	700	585	1.6	43	43	-	635	20	33	M30
300	775	585	1.6	64	64	-	686	24	36	M33
600	815	585	6.4	89*	-	-	724	24	45	M42

JIS (B2214)

10	675	585	3	30	40	-	620	20	27	M24
20	730	615	3	50	-	-	660	20	33	M30x3

\* RAISED FACE HEIGHT INCLUDED IN FLANGE THICKNESS

**GASKET & BOLT SET DATA**

Flange Type	Fastener Quantity No	Fastener Size FS	Bolt Set 1	Bolt Set 2	Bolt Set 3	Bolt Set 4	Stud Set 5	Bolt Set 6	Stud Set 7	Bolt Set 8	Wafer Valve (OD)
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Table (AS2129)

Fastener Length



C	16	M24	100	110	100	90	250	225	275	250	615
D	16	M24	110	110	100	100	275	250	300	275	615
E	16	M24	130	120	120	100	275	250	300	275	615
F	24	M30	175	140	140	120	325	300	350	325	640
H	24	M30	200	175	175	130	350	325	375	350	640

DIN (BS4504)

Fastener Length



6	20	M20	100	100	90	90	250	225	275	275	577
10	20	M24	130	120	110	100	275	250	300	300	592
16	20	M30	150	140	130	110	300	275	350	300	616
25	20	M33	175	175	175	120	325	300	375	325	623
40	20	M39	175	175	175	120	325	300	375	325	627

ANSI (ASME B16.5)

Fastener Length



150	20	M30	140	140	130	110	300	275	325	300	603
300	24	M33	200	200	175	130	350	325	375	350	651
600	24	M42	250	150	150	160	425	375	450	400	679

JIS (B2214)

Fastener Length



10	20	M24	110	110	100	110	275	250	300	275	593
20	20	M30x3	175	175	150	130	325	300	350	325	627

Pre . packed gasket & bolt sets available now from copamate products.  
Refer to page 6 for bolt set application & identifications or refer to our website.

**Flange Data**

Flange Type	Outside diameter	Raised face diameter	Raised face height	Thick $\phi$ Steel	Thick $\phi$ Iron	Thick $\phi$ Bronze	Pitch circle diameter	Number of holes	Diameter of holes	Fastener size
	OD	RF	RFH	TS	TI	TB	PCD	No	H DIA	FS

Table (AS2129)

C	825	720	1.6	29	41	41	756	16	30	M27
D	825	720	1.6	32	35	35	756	16	30	M27
E	825	717	1.6	48	41	38	756	16	33	M30
F	850	739	1.6	57	44	41	781	24	36	M33
H	850	699	1.6	76	64	57	781	24	36	M33

DIN (BS4504)

6	755	670	5	32	30	30	705	20	26	M24
10	780	685	5	42	36	31	725	20	30	M27
16	840	725	5	52	48	-	770	20	36	M33
25	845	720	5	68	56	-	770	20	39	M36
40	890	735	5	84	-	-	795	20	48	M45

ANSI (ASME B16.5)

150	815	693	1.6	48	48	-	749.5	20	36	M33
300	915	693	1.6	70	70	-	813	24	42	M39
600	940	693	6.4	102*	-	-	838	24	51	M48

JIS (B2214)

10	795	690	3	32	44	-	730	24	33	M30
20	845	720	3	54	-	-	770	24	39	M36x3

\* RAISED FACE HEIGHT INCLUDED IN FLANGE THICKNESS

**GASKET & BOLT SET DATA**

Flange Type	Fastener Quantity	Fastener Size	Bolt Set 1	Bolt Set 2	Bolt Set 3	Bolt Set 4	Stud Set 5	Bolt Set 6	Stud Set 7	Bolt Set 8	Wafer Valve (OD)
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Table (AS2129)

 Fastener Length  $\leftarrow$ 

C	16	M27	110	120	110	110	300	275	325	300	726
D	16	M27	120	110	110	110	300	275	325	300	726
E	16	M30	150	140	130	130	325	300	375	350	723
F	24	M33	170	150	150	130	350	325	400	350	745
H	24	M33	225	200	200	150	400	375	425	400	745

DIN (BS4504)

 Fastener Length  $\leftarrow$ 

6	20	M24	110	110	100	110	300	275	325	300	677
10	20	M27	130	120	120	120	325	300	350	325	694
16	20	M33	175	150	150	130	350	325	375	350	733
25	20	M36	200	200	175	150	400	350	425	400	730
40	20	M45	250	250	250	150	450	400	475	425	746

ANSI B16.5

 Fastener Length  $\leftarrow$ 

150	20	M33	150	150	140	130	350	300	375	350	714.5
300	24	M39	225	200	200	150	400	350	425	400	771
600	24	M48	275	175	175	180	475	425	525	475	787

JIS (B2214)

 Fastener Length  $\leftarrow$ 

10	24	M30	120	120	110	120	300	275	350	300	697
20	24	M30X3	175	175	175	150	375	325	400	350	731

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Pre . packed gasket & bolt sets available now from copamate products.  
 Refer to page 6 for bolt set application & identifications or refer to our website.

## AS4087 PN: DN225 – 9”

### Flange Data

Flange Type	Outside diameter	Thickness Steel	Thickness Iron	Thickness Bronze	Thickness Ductile	Pitch circle diameter	Number of holes	Diameter of holes	Fastener size
Class	OD	TS	TI	TB	TD	PCD	No	H DIA	FS

#### AS4087 Flanges

14 (D)	370	16	25	25	N/A	324	8	18	M16
16 (E)	370	19	N/A	N/A	24	324	8	22	M16
21	405	30	29	N/A	N/A	356	12	26	M24
35	405	38	41	N/A	34	356	12	26	M24

#### JIS (B2214)

10	350	285	22	28	-	310	12	23	M20
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### Gasket & Bolt Set Data

Flange Type	Fastener Quantity No	Fastener Size FS	Bolt Set 1	Bolt Set 2	Bolt Set 3	Bolt Set 4	Stud Set 5	Bolt Set 6	Stud Set 7	Bolt Set 8	Wafer Valve (OD)
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#### AS4087

#### Fastener Length ←

14	8	M16	70	75	70	55	150	140	225	200	306
16	8	M16	80	80	75	60	160	150	225	200	306
21	12	M24	110	100	100	60	200	175	250	225	230
35	12	M24	120	120	120	70	225	200	275	250	230

#### JIS (B2214)

#### Fastener Length ←

10	12	M20	120	120	120	70	225	200	275	250	287
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All Steel Fasteners Hot Dipped Galvanised

## DN375 - 15”

### Flange Data

Flange Type	Outside diameter	Thickness Steel	Thickness Iron	Thickness Bronze	Thickness Ductile	Pitch circle diameter	Number of holes	Diameter of holes	Fastener size
Class	OD	TS	TI	TB	TD	PCD	No	H DIA	FS

#### AS4087 Flanges

14	550	30	32	32	N/A	495	12	26	M24
16 (E)	550	N/A	N/A	N/A	33	495	12	26	M24
21	580	38	35	N/A	N/A	521	16	30	M27
35	580	48	51	N/A	42	521	16	30	M27

### Gasket & Bolt Set

Flange Type	Fastener Quantity No	Fastener Size FS	Bolt Set 1	Bolt Set 2	Bolt Set 3	Bolt Set 4	Stud Set 5	Bolt Set 6	Stud Set 7	Bolt Set 8	Wafer Valve (OD)
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#### AS4087

#### Fastener Length ←

14	12	M24	110	110	100	80	250	225	275	250	469
16	12	M24	110	110	110	80	250	225	300	275	469
21	16	M27	130	120	120	90	250	225	300	275	491
35	16	M27	150	150	140	100	275	250	325	300	491

All Steel Fasteners Hot Dipped Galvanised

**Flange Data 4087**

Flange Type	Outside diameter	Thick $\phi$ Steel	Thick $\phi$ Iron	Thick $\phi$ Bronze	Thick $\phi$ Ductile	Pitch circle diameter PCD	Number of holes	Diameter of holes	Fastener size
Class	OD	TS	TI	TB	TD		No	H DIA	FS
16 (E)	150	11	N/A	N/A	N/A	114	4	18	M16
21	165	15	N/A	N/A	N/A	127	4	18	M16
35	165	19	N/A	N/A	N/A	127	4	18	M16

**DN65 - 2 1/2 "**

16 (E)	165	11	N/A	N/A	N/A	127	4	18	M16
21	185	15	N/A	N/A	N/A	146	8	18	M16
35	185	19	N/A	N/A	N/A	146	8	18	M16

**DN80 - 3"**

16 (E)	185	11	N/A	N/A	N/A	146	4	18	M16
21	205	15	N/A	N/A	N/A	165	8	18	M16
35	205	24	N/A	N/A	N/A	165	8	18	M16

**DN100 - 4"**

16	215	13	N/A	N/A	N/A	178	4	18	M16
21	230	19	N/A	N/A	N/A	191	8	18	M16
35	230	24	N/A	N/A	N/A	191	8	18	M16

**DN150 - 6"**

16	280	13	N/A	N/A	N/A	235	8	18	M16
21	305	24	N/A	N/A	N/A	260	12	22	M20
35	305	31	N/A	N/A	N/A	260	12	22	M20

**DN200 - 8"**

16 (E)	335	19	N/A	N/A	N/A	292	8	18	M16
21	370	24	N/A	N/A	N/A	324	12	22	M20
35	370	31	N/A	N/A	N/A	324	12	22	M20

**DN250 - 10"**

16 (E)	405	19	N/A	N/A	N/A	356	8	22	M20
21	430	30	N/A	N/A	N/A	381	12	26	M24
35	430	38	N/A	N/A	N/A	381	12	26	M24

**DN300 - 12"**

16 (E)	455	23	N/A	N/A	N/A	406	12	22	M20
21	490	30	N/A	N/A	N/A	438	16	26	M24
35	490	38	N/A	N/A	N/A	438	16	26	M24

**DN350 - 14"**

16 (E)	525	30	N/A	N/A	N/A	470	12	26	M24
21	550	30	N/A	N/A	N/A	495	16	30	M27
35	550	48	N/A	N/A	N/A	495	16	30	M27