

BMS 14 - ASME B16.20 SWG Dimensional Tables & Tolerances
 Suitable for Use With Metric Bolts
 (All Class Ratings)

Issued by:

A D Senior

Date:

1st Jan 2011

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Class 150 LB Rated - Dimensions are in Millimetres

Nominal Bore		Sealing Element O/D	Sealing Element I/D	Inner Ring I/D	Nominal Bore
Inches	Metric				
1/2	15	31.8	19.1	14.3	1/2
3/4	20	39.6	25.4	20.7	3/4
1	25	47.8	31.8	27.0	1
1 1/4	32	60.5	47.8	38.1	1 1/4
1 1/2	40	69.9	54.1	44.5	1 1/2
2	50	85.9	69.9	55.6	2
2 1/2	65	98.6	82.6	66.7	2 1/2
3	80	120.7	101.6	81.0	3
4	100	149.4	127.0	106.4	4
5	125	177.8	155.7	131.8	5
6	150	209.6	182.6	157.2	6
8	200	263.7	233.4	215.9	8
10	250	317.5	287.3	268.3	10
12	300	374.7	339.9	317.5	12
14	350	406.4	371.6	349.3	14
16	400	461.0	422.0	400.0	16
18	450	527.1	474.7	449.3	18
20	500	577.9	525.5	500.0	20
24	600	685.8	628.7	603.3	24

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Class 300 LB Rated - Dimensions are in Millimetres

Nominal Bore		Sealing Element O/D	Sealing Element I/D	Inner Ring I/D	Nominal Bore
Inches	Metric				
1/2	15	31.8	19.1	14.3	1/2
3/4	20	39.6	25.4	20.7	3/4
1	25	47.8	31.8	27.0	1
1 1/4	32	60.5	47.8	38.1	1 1/4
1 1/2	25	69.9	54.1	44.5	1 1/2
2	50	85.9	69.9	55.6	2
2 1/2	65	98.6	82.6	66.7	2 1/2
3	80	120.7	101.6	81.0	3
4	100	149.4	127.0	106.4	4
5	125	177.8	155.7	131.8	5
6	150	209.6	182.6	157.2	6
8	200	263.7	233.4	215.9	8
10	250	317.5	287.3	268.3	10
12	300	374.7	339.9	317.5	12
14	350	406.4	371.6	349.3	14
16	400	463.6	422.4	400.0	16
18	450	527.1	474.7	449.3	18
20	500	577.9	525.5	500.0	20
24	600	685.8	628.7	603.3	24

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Class 600 LB Rated - Dimensions are in Millimetres

Nominal Bore		Sealing Element O/D	Sealing Element I/D	Inner Ring I/D	Nominal Bore
Inches	Metric				
1/2	15	31.8	19.1	14.3	1/2
3/4	20	39.6	25.4	20.7	3/4
1	25	47.8	31.8	27.0	1
1 1/4	32	60.5	47.8	38.1	1 1/4
1 1/2	25	69.9	54.1	44.5	1 1/2
2	50	85.9	69.9	55.6	2
2 1/2	65	98.6	82.6	66.7	2 1/2
3	80	120.7	101.6	81.0	3
4	100	149.4	120.7	106.4	4
5	125	177.8	147.6	131.8	5
6	150	209.6	174.8	157.2	6
8	200	263.7	225.6	209.6	8
10	250	317.5	274.6	260.4	10
12	300	374.7	327.2	317.5	12
14	350	406.4	362.0	349.3	14
16	400	463.6	412.8	400.0	16
18	450	527.1	469.9	449.3	18
20	500	577.9	520.7	500.0	20
24	600	685.8	628.7	603.3	24

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Class 900 LB Rated - Dimensions are in Millimetres

Nominal Bore		Sealing Element O/D	Sealing Element I/D	Inner Ring I/D	Nominal Bore
Inches	Metric				
1/2	15	31.8	19.1	14.2	1/2
3/4	20	39.6	25.4	20.6	3/4
1	25	47.8	31.8	26.9	1
1 1/4	32	60.5	39.6	33.3	1 1/4
1 1/2	25	69.9	47.8	41.4	1 1/2
2	50	85.9	58.7	52.3	2
2 1/2	65	98.6	69.9	63.5	2 1/2
3	80	120.7	95.3	78.7	3
4	100	149.4	120.7	102.6	4
5	125	177.8	147.6	128.3	5
6	150	209.6	174.8	154.9	6
8	200	257.3	222.3	196.9	8
10	250	311.2	276.4	246.1	10
12	300	368.3	323.9	292.1	12
14	350	400.1	355.6	320.8	14
16	400	457.2	412.8	374.7	16
18	450	520.7	463.6	425.5	18
20	500	571.5	520.7	482.6	20
24	600	679.5	628.7	590.6	24

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Class 1500 LB Rated - Dimensions are in Millimetres

Nominal Bore		Sealing Element O/D	Sealing Element I/D	Inner Ring I/D	Nominal Bore
Inches	Metric				
1/2	15	31.8	19.1	14.2	1/2
3/4	20	39.6	25.4	20.6	3/4
1	25	47.8	31.8	26.9	1
1 1/4	32	60.5	39.6	33.3	1 1/4
1 1/2	25	69.9	47.8	41.4	1 1/2
2	50	85.9	58.7	52.3	2
2 1/2	65	98.6	69.9	63.5	2 1/2
3	80	120.7	92.2	78.7	3
4	100	149.4	117.6	97.8	4
5	125	177.8	143.0	124.5	5
6	150	209.6	171.5	147.3	6
8	200	257.3	215.9	196.9	8
10	250	311.2	266.7	246.1	10
12	300	368.3	323.9	292.1	12
14	350	400.1	362.0	320.8	14
16	400	457.2	406.4	368.3	16
18	450	520.7	463.6	425.5	18
20	500	571.5	514.4	476.3	20
24	600	679.5	616.0	577.9	24

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**External Guide Rings To ASME B16.20 On ANSI B16.5 Metric Flanges-
 Dimensions are in Millimetres**

Nominal Bore		PRESSURE CLASS						
Inches	Metric	PN20 150	PN50 300	PN68 400	PN100 600	PN150 900	PN250 1500	PN420 2500
1/2	15	46.5	52.5	52.5	52.5	*	*	*
3/4	20	56.0	64.5	64.5	64.5	*	*	75.0
1	25	65.5	71.0	71.0	71.0	77.5	77.5	84.0
1 1/4	32	75.0	80.5	80.5	80.5	87.0	87.0	*
1 1/2	40	84.5	*	*	*	*	*	*
2	50	102.5	109.0	109.0	109.0	141.0	141.0	*
2 1/2	65	121.5	129.0	129.0	129.0	*	*	*
3	80	134.5	*	*	*	166.5	*	*
3 1/2	-	160.0	164	160	160	-	-	-
4	100	172.0	*	176.0	192.0	205.0	*	*
5	125	*	*	211.0	*	246.5	*	*
6	150	*	*	246.0	*	287.5	*	*
8	200	*	306.0	*	*	*	*	*
10	250	338.0	*	*	*	*	*	*
12	300	408.0	*	*	*	*	*	547.0
14	350	449.0	484.5	481.5	491.0	520.0	579.0	-
16	400	513.0	538.5	535.5	564.0	574.0	641.0	-
18	450	548.0	595.5	592.5	612.0	638.0	702.5	-
20	500	605.0	653.0	647.0	682.0	697.5	756.0	-
24	600	716.5	774.0	768.0	790.0	833.5	900.0	-

* Indicates standard ASME B16.20 Guide Rings Will Fit ANSI B16.5 Metric Flanges

Tolerances - ASME B16.20 For Use On Metric Bolts- In Millimetres

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	CENTERING RING			SEALING ELEMENT			INNER RING		
	O/D	I/D	THK	O/D	I/D	THK	O/D	I/D	THK
Up to 8" NPS	+ 0.76	* A	2.97	+ 0.76	+ 1.52	4.5 + 0.13	* B	* B	2.97
	- 0.76		to 3.32	- 0.76	- 1.52	4.5 - 0.13			
Over 8" NPS	+ 0.76	* D	2.97	+ 1.52	+ 0.76	4.5 + 0.13	* E	* C	
	- 0.76		to 3.32	- 0.76	- 0.76	4.5 - 0.13			

- * A External guide ring Internal diameter tolerance not stated in ASME B16.20. Standard practice is to use same tolerance as given for outside diameter of sealing element + / - 0.76mm.
- * B Internal guide ring outside diameter tolerance not stated in ASME B16.20. Standard practice is to use same tolerance as given for inside diameter of sealing element + / - 0.4mm.
- * C For sizes NPS 1 1/4" through to NPS 3", the inside diameter tolerance is + / 0.76mm. For larger sizes the inner ring diameter tolerance is + 1.52 / - 0.76mm.
- * D External guide ring internal diameter tolerance not stated in ASME B16.20. Standard practice is to use same tolerance as given for outside diameter of sealing element + 1.52mm / - 0.76mm.
- * E Internal guide ring outside diameter tolerance not stated in ASME B16.20. Standard practice is to use same tolerance as given for inside diameter of sealing element + / - 0.76mm.