

BMS 03 - ASME B16.20 SWG Dimensional Tables & Tolerances
 (All Class Ratings)

Issued by:	A D Senior
Date:	1st Jan 2011
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Class 150 LB Rated - Dimensions are in Millimetres

NOM BORE INCHES	CENTERING RING		SEALING ELEMENT		INNER RING	
	OD	ID	OD	ID	OD	ID
	mm	mm	mm	mm	mm	mm
	d4		d3	d2		d1
½	47.8	30.3	31.8	19.1	20.1	14.2
¾	57.2	38.1	39.6	25.4	26.4	20.6
1	66.8	46.3	47.8	31.8	32.8	26.9
1 1/4	76.2	59.0	60.5	47.8	48.8	38.1
1 1/2	85.9	68.4	69.9	54.1	55.6	44.5
2	104.9	84.4	85.9	69.9	71.4	55.6
2 1/2	124.0	97.1	98.6	82.6	84.1	66.5
3	136.7	119.2	120.7	101.6	103.1	81.0
4	174.8	147.9	149.4	127.0	128.5	106.4
5	196.9	176.3	177.8	155.7	157.2	131.8
6	222.3	208.1	209.6	182.6	184.1	157.2
8	279.4	262.2	263.7	233.4	234.9	215.9
10	339.9	316.0	317.5	287.3	288.8	268.2
12	409.7	373.2	374.7	339.9	341.4	317.5
14	450.9	404.9	406.4	371.6	373.1	349.3
16	514.4	462.1	463.6	422.4	423.9	400.1
18	549.4	525.6	527.1	474.7	476.2	449.3
20	606.6	576.4	577.9	525.5	527.0	500.1
24	717.6	684.3	685.8	628.7	630.2	603.3

Class 300 LB Rated - Dimensions are in Millimetres

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NOM BORE INCHES	CENTERING RING		SEALING ELEMENT		INNER RING	
	OD	ID	OD	ID	OD	ID
	mm	mm	mm	mm	mm	mm
	d4		d3	d2		d1
½	54.1	30.3	31.8	19.1	20.1	14.2
¾	66.8	38.1	39.6	25.4	26.4	20.6
1	73.2	46.3	47.8	31.8	32.8	26.9
1 1/4	82.6	59.0	60.5	47.8	48.8	38.1
1 1/2	95.3	68.4	69.9	54.1	55.6	44.5
2	111.3	84.4	85.9	69.9	71.4	55.6
2 1/2	130.3	97.1	98.6	82.6	84.1	66.5
3	149.4	119.2	120.7	101.6	103.1	81.0
4	181.1	147.9	149.4	127.0	128.5	106.4
5	215.9	176.3	177.8	155.7	157.2	131.8
6	251.0	208.1	209.6	182.6	184.1	157.2
8	308.1	262.2	263.7	233.4	234.9	215.9
10	362.0	316.0	317.5	287.3	288.8	268.2
12	422.4	373.2	374.7	339.9	341.4	317.5
14	485.9	404.9	406.4	371.6	373.1	349.3
16	539.8	462.1	463.6	422.4	423.9	400.1
18	596.9	525.6	527.1	474.7	476.2	449.3
20	654.1	576.4	577.9	525.5	527.0	500.1
24	774.7	684.3	685.8	628.7	630.2	603.3

Class 400 LB Rated - Dimensions are in Millimetres

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NOM BORE INCHES	CENTERING RING		SEALING ELEMENT		INNER RING	
	OD	ID	OD	ID	OD	ID
	mm	mm	mm	mm	mm	mm
	d4		d3	d2		d1
½	54.1	30.3	31.8	19.1	20.1	14.2
¾	66.8	38.1	39.6	25.4	26.4	20.6
1	73.2	46.3	47.8	31.8	32.8	26.9
1 1/4	82.6	59.0	60.5	47.8	48.8	38.1
1 1/2	95.3	68.4	69.9	54.1	55.6	44.5
2	111.3	84.4	85.9	69.9	71.4	55.6
2 1/2	130.3	97.1	98.6	82.6	84.1	66.5
3	149.4	119.2	120.7	101.6	103.1	81.0
4	177.8	147.9	149.4	120.7	122.2	102.6
5	212.9	176.3	177.8	147.6	149.1	128.3
6	247.7	208.1	209.6	174.8	176.3	154.9
8	304.8	262.2	263.7	225.6	227.1	205.7
10	358.9	316.0	317.5	274.6	276.1	255.3
12	419.1	373.2	374.7	327.2	328.7	307.3
14	482.6	404.9	406.4	362.0	363.5	342.9
16	536.7	462.1	463.6	412.8	414.3	389.9
18	593.9	525.6	527.1	469.9	471.4	438.2
20	647.7	576.4	577.9	520.7	522.2	489.0
24	768.4	684.3	685.8	628.7	630.2	590.6

Class 600 LB Rated - Dimensions are in Millimetres

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NOM BORE INCHES	CENTERING RING		SEALING ELEMENT		INNER RING	
	OD	ID	OD	ID	OD	ID
	mm	mm	mm	mm	mm	mm
	d4		d3	d2		d1
½	54.1	30.3	31.8	19.1	20.1	14.2
¾	66.8	38.1	39.6	25.4	26.4	20.6
1	73.2	46.3	47.8	31.8	32.8	26.9
1 1/4	82.6	59.0	60.5	47.8	48.8	38.1
1 1/2	95.3	68.4	69.9	54.1	55.6	44.5
2	111.3	84.4	85.9	69.9	71.4	55.6
2 1/2	130.3	97.1	98.6	82.6	84.1	66.5
3	149.4	119.2	120.7	101.6	103.1	81.0
4	193.8	147.9	149.4	120.7	122.2	102.6
5	241.3	176.3	177.8	147.6	149.1	128.3
6	266.7	208.1	209.6	174.8	176.3	154.9
8	320.8	262.2	263.7	225.6	227.1	205.7
10	400.1	316.0	317.5	274.6	276.1	255.3
12	457.2	373.2	374.7	327.2	328.7	307.3
14	492.3	404.9	406.4	362.0	363.5	342.9
16	565.2	462.1	463.6	412.8	414.3	389.9
18	612.9	525.6	527.1	469.9	471.4	438.2
20	682.8	576.4	577.9	520.7	522.2	489.0
24	790.7	684.3	685.8	628.7	630.2	590.6

Class 900 LB Rated - Dimensions are in Millimetres

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NOM BORE INCHES	CENTERING RING		SEALING ELEMENT		INNER RING	
	OD	ID	OD	ID	OD	ID
	mm	mm	mm	mm	mm	mm
	d4		d3	d2		d1
½	63.5	30.3	31.8	19.1	20.1	14.2
¾	69.9	38.1	39.6	25.4	26.4	20.6
1	79.5	46.3	47.8	31.8	32.8	26.9
1 1/4	88.9	59.0	60.5	39.6	40.6	33.3
1 1/2	98.6	68.4	69.9	47.8	49.3	41.4
2	143.0	84.4	85.9	58.7	60.2	52.3
2 1/2	165.1	97.1	98.6	69.9	71.4	63.5
3	168.4	119.2	120.7	95.3	96.8	78.7
4	206.5	147.9	149.4	120.7	122.2	102.6
5	247.7	176.3	177.8	147.6	149.1	128.3
6	289.1	208.1	209.6	174.8	176.3	154.9
8	358.9	255.8	257.3	222.3	223.8	196.9
10	435.1	309.7	311.2	276.4	277.9	246.1
12	498.6	366.8	368.3	323.9	325.4	292.1
14	520.7	398.6	400.1	355.6	357.1	320.8
16	574.8	455.7	457.2	412.8	414.3	374.7
18	638.3	519.2	520.7	463.6	465.1	425.5
20	698.5	570.0	571.5	520.7	522.2	482.6
24	838.2	678.0	679.5	628.7	630.2	590.6

Class 1500 LB Rated - Dimensions are in Millimetres

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NOM BORE INCHES	CENTERING RING		SEALING ELEMENT		INNER RING	
	OD	ID	OD	ID	OD	ID
	mm	mm	mm	mm	mm	mm
	d4		d3	d2		d1
½	63.5	30.3	31.8	19.1	20.1	14.2
¾	69.9	38.1	39.6	25.4	26.4	20.6
1	79.5	46.3	47.8	31.8	32.8	26.9
1 1/4	88.9	59.0	60.5	39.6	40.6	33.3
1 1/2	98.6	68.4	69.9	47.8	49.3	41.4
2	143.0	84.4	85.9	58.7	60.2	52.3
2 1/2	165.1	97.1	98.6	69.9	71.4	63.5
3	174.8	119.2	120.7	92.2	93.7	78.7
4	209.6	147.9	149.4	117.6	119.1	97.8
5	254.0	176.3	177.8	143.0	144.5	124.5
6	282.7	208.1	209.6	171.5	173.0	147.3
8	352.6	255.8	257.3	215.9	217.4	196.9
10	435.1	309.7	311.2	266.7	268.2	246.1
12	520.7	366.8	368.3	323.9	325.4	292.1
14	577.9	398.6	400.1	362.0	363.5	320.8
16	641.4	455.7	457.2	406.4	407.9	368.3
18	704.9	519.2	520.7	463.6	465.1	425.5
20	755.7	570.0	571.5	514.4	515.9	476.3
24	901.7	678.0	679.5	616.0	617.5	577.9

Class 2500 LB Rated - Dimensions are in Millimetres

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NOM BORE INCHES	CENTERING RING		SEALING ELEMENT		INNER RING	
	OD	ID	OD	ID	OD	ID
	mm	mm	mm	mm	Mm	mm
	d4		d3	d2		d1
1/2	69.9	30.3	31.8	19.1	20.1	14.2
3/4	76.2	38.1	39.6	25.4	26.4	20.6
1	85.9	46.3	47.8	31.8	32.8	26.9
1 1/4	104.9	59.0	60.5	39.6	40.6	33.3
1 1/2	117.6	68.4	69.9	47.8	49.3	41.4
2	146.1	84.4	85.9	58.7	60.2	52.3
2 1/2	168.4	97.1	98.6	69.9	71.4	63.5
3	196.9	119.2	120.7	92.2	93.7	78.7
4	235.0	147.9	149.4	117.6	119.1	97.8
5	279.4	176.3	177.8	143.0	144.5	124.5
6	317.5	208.1	209.6	171.5	173.0	147.3
8	387.4	255.8	257.3	215.9	217.4	196.9
10	476.3	309.7	311.2	270.0	271.5	246.1
12	549.4	366.8	368.3	317.5	319.0	292.1
14	-	-	-	-	-	-
16	-	-	-	-	-	-
18	-	-	-	-	-	-
20	-	-	-	-	-	-
24	-	-	-	-	-	-

Tolerances - ASME B16.20 - 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 - 0.76	* A	2.97 to 3.32	+ 0.76 - 0.76	+ 1.52 - 1.52	4.5 + 0.13 4.5 - 0.13	* B	* B * C	2.97 to 3.32
Over 8" NPS	+ 0.76 - 0.76	* D	2.97 to 3.32	+ 1.52 - 0.76	+ 0.76 - 0.76	4.5 + 0.13 4.5 - 0.13	* E	* C	

- * 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.