

LB-20 Steel Bronze Powder with POM Marginal Bearings

RoHS



Features

Suitable for rotating and oscillating movement, less maintenance requirements due to the long re-lubrication intervals, lower wear, lower susceptibility to edge loading, no absorption of water and therefore no swelling, good damping behaviours, good resistance to shock loads.

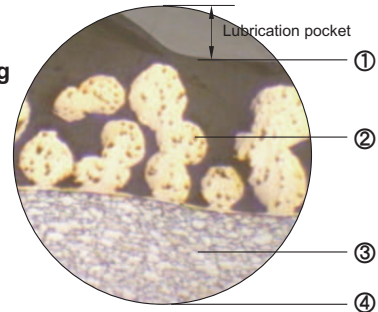
Structure

1. POM thickness 0.30~0.50 mm, it provides high wear resistance and low friction even with only minute volume of lubricant are supplied, this bearing surface carries a pattern of circular indents which should be filled with grease on assembly of the bearing.

2. Sintered bronze powder thickness 0.20-0.35mm, provides max. thermal conductivity away from the bearing surface, also serves as a reservoir for the resin mixture.

3. Low-carbon steel, provides exceptionally high load carrying capacity, excellent heat dissipation.

4. Copper/Tin plating thickness 0.002mm, provides good corrosion resistance.



Tech. Data					
Max. load	Static	250N/mm ²	Temp. limit	-40°C~+110°C	
	Very low speed	140N/mm ²		Max. speed	Pre-lubricated
	Rotating oscillating	70N/mm ²	Oiling Grease		Continuous
Max. PV		3N/mm ² *m/s	Thermal conductivity		50W(m*K) ⁻¹
Coefficient of thermal expansion		11*10 ⁻⁶ *K ⁻¹	Friction coefficient		0.05~0.20
Initial pre-lubrication at assembly is strongly recommended.					

Typical Applications

Recommended for applications involving intermittent operation or boundary lubrication...

Automotive: suspension joints, kingpin assemblies and stub axles of trucks, automobile driving joint hinges, steering and other linkages, articulation joints, rear chassis hinges, fair leader rollers...

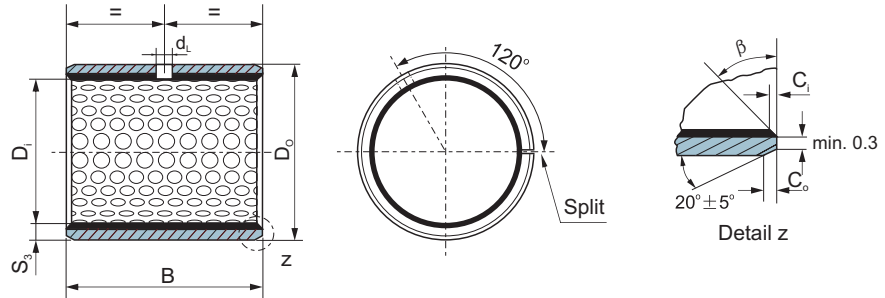
Machine tool building industry: spindles in drill, grinding, and milling machines, ram guide plates in multi-ram

presses...

Agricultural equipment: gearbox, clutch, bale trips and wheel caster swivels for bale accumulators, front axle pivot bearings, steering idler box bearings and kingpin bearings for harvesters...

It is especially well-suited for applications where lubricant can not be supplied continuously or repeatedly.

LB-20 Metric Cylindrical Bushes



ID and OD chamfers

S ₃	C _o	C _i	β	S ₃	C _o	C _i	β
1.0	0.6±0.3	0.30±0.2	30° ±5°	2.0	1.2±0.4	0.50±0.3	30° ±5°
1.5	0.7±0.3	0.50±0.2	30° ±5°	2.5	1.8±0.6	0.80±0.3	45° ±5°

Unit:mm

Shaft D _s h8	Housing H7 D _H	OD tolerance D _o	ID after fixed D _{i,a}	Clearance C _o	Wall thickness S ₃	Oil hole d _L	B ⁰ _{-0.40}													
							10	15	20	25	30	35	40	45	50	60				
10 ^{-0.022}	12 ^{+0.018}	12 ^{+0.065} +0.030	10.108 10.040	0.130 0.040	0.980 0.955	4	LB-20 1010	LB-20 1015	LB-20 1020											
12 ^{-0.027}	14 ^{+0.018}	14 ^{+0.065} +0.030	12.108 12.040	0.135 0.040			LB-20 1210	LB-20 1215	LB-20 1220											
14 ^{-0.027}	16 ^{+0.018}	16 ^{+0.065} +0.030	14.108 14.040				LB-20 1415	LB-20 1420												
15 ^{-0.027}	17 ^{+0.018}	17 ^{+0.065} +0.030	15.108 15.040				LB-20 1515	LB-20 1520	LB-20 1525											
16 ^{-0.027}	18 ^{+0.018}	18 ^{+0.065} +0.030	16.108 16.040				LB-20 1615	LB-20 1620	LB-20 1625											
18 ^{-0.027}	20 ^{+0.021}	20 ^{+0.075} +0.035	18.111 18.040				0.138 0.040	LB-20 1815	LB-20 1820	LB-20 1825										
20 ^{-0.033}	23 ^{+0.021}	23 ^{+0.075} +0.035	20.131 20.050	0.164 0.050	1.475 1.445	4	LB-20 2015	LB-20 2020	LB-20 2025	LB-20 2030										
22 ^{-0.033}	25 ^{+0.021}	25 ^{+0.075} +0.035	22.131 22.050				LB-20 2215		LB-20 2225											
25 ^{-0.033}	28 ^{+0.021}	28 ^{+0.075} +0.035	25.131 25.050	0.188 0.060	1.970 1.935	6	LB-20 2515	LB-20 2520	LB-20 2525	LB-20 2530										
28 ^{-0.033}	32 ^{+0.025}	32 ^{+0.085} +0.045	28.155 28.060				LB-20 2820		LB-20 2830											
30 ^{-0.033}	34 ^{+0.025}	34 ^{+0.085} +0.045	30.155 30.060				LB-20 3020	LB-20 3025	LB-20 3030		LB-20 3040									
35 ^{-0.039}	39 ^{+0.025}	39 ^{+0.085} +0.045	35.155 35.060	0.194 0.060	1.970 1.935	6		LB-20 3520		LB-20 3530	LB-20 3535	LB-20 3540								
40 ^{-0.039}	44 ^{+0.025}	44 ^{+0.085} +0.045	40.155 40.060				LB-20 4020		LB-20 4030		LB-20 4040				LB-20 4050					
45 ^{-0.039}	50 ^{+0.025}	50 ^{+0.085} +0.045	45.195 45.080	0.234 0.080	2.460 2.415	8		LB-20 4520		LB-20 4530		LB-20 4540	LB-20 4545	LB-20 4550						
50 ^{-0.039}	55 ^{+0.030}	55 ^{+0.100} +0.055	50.200 50.080				LB-20 5030		LB-20 5040		LB-20 5050		LB-20 5060							
55 ^{-0.046}	60 ^{+0.030}	60 ^{+0.100} +0.055	55.200 55.080				LB-20 5530		LB-20 5540		LB-20 5550		LB-20 5560							
60 ^{-0.046}	65 ^{+0.030}	65 ^{+0.100} +0.055	60.200 60.080	0.246 0.080				LB-20 6030		LB-20 6040		LB-20 6050	LB-20 6060							



AUTOLUBRIFICANTES

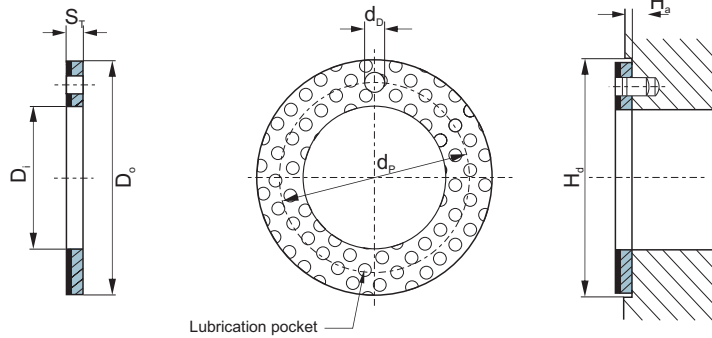
LB-20 Metric Cylindrical Bushes

Unit:mm

Shaft D _s h8	Housing H7 D _H	OD tolerance D _O	ID after fixed D _{i,a}	Clearance C _O	Wall thickness S ₃	Oil hole d _L	B ⁰ _{-0.40}												
							40	50	60	80	90	95	100	110	120				
65 _{-0.046}	70 ^{+0.030}	70 ^{+0.100} _{+0.055}	65.200 65.080	0.246 0.080	2.460 2.415	8	LB-20 6540		LB-20 6560										
70 _{-0.046}	75 ^{+0.030}	75 ^{+0.100} _{+0.055}	70.200 70.080				LB-20 7040	LB-20 7050		LB-20 7080									
75 _{-0.046}	80 ^{+0.030}	80 ^{+0.100} _{+0.055}	75.200 75.080				LB-20 7540		LB-20 7560	LB-20 7580									
80 _{-0.046}	85 ^{+0.035}	85 ^{+0.120} _{+0.070}	80.265 80.100	0.313 0.100	2.450 2.385	9.5	LB-20 8040		LB-20 8060	LB-20 8080									
85 _{-0.054}	90 ^{+0.035}	90 ^{+0.120} _{+0.070}	85.265 85.100				LB-20 8540		LB-20 8560	LB-20 8580									
90 _{-0.054}	95 ^{+0.035}	95 ^{+0.120} _{+0.070}	90.265 90.100	0.321 0.100			LB-20 9040		LB-20 9060	LB-20 9080	LB-20 9090								
100 _{-0.054}	105 ^{+0.035}	105 ^{+0.120} _{+0.070}	100.265 100.100					LB-20 10050		LB-20 10080		LB-20 10095							
105 _{-0.054}	110 ^{+0.035}	110 ^{+0.120} _{+0.070}	105.265 105.110						LB-20 10560	LB-20 10580		LB-20 10595			LB-20 105110				
110 _{-0.054}	115 ^{+0.035}	115 ^{+0.120} _{+0.070}	110.265 110.110	0.324 0.110					LB-20 11060	LB-20 11080		LB-20 11095			LB-20 110110				
120 _{-0.054}	125 ^{+0.040}	125 ^{+0.170} _{+0.100}	120.270 120.110							LB-20 12060	LB-20 12080					LB-20 120110			
125 _{-0.063}	130 ^{+0.040}	130 ^{+0.170} _{+0.100}	125.270 125.110							LB-20 12560						LB-20 125110			
130 _{-0.063}	135 ^{+0.040}	135 ^{+0.170} _{+0.100}	130.270 130.110							LB-20 13050	LB-20 13060	LB-20 13080				LB-20 130100			
140 _{-0.063}	145 ^{+0.040}	145 ^{+0.170} _{+0.100}	140.270 140.110							LB-20 14050	LB-20 14060	LB-20 14080				LB-20 140100			
150 _{-0.063}	155 ^{+0.040}	155 ^{+0.170} _{+0.100}	150.270 150.110							LB-20 15050	LB-20 15060	LB-20 15080				LB-20 150100			
160 _{-0.063}	165 ^{+0.040}	165 ^{+0.170} _{+0.100}	160.270 160.110							LB-20 16050	LB-20 16060	LB-20 16080				LB-20 160100			
170 _{-0.063}	175 ^{+0.040}	175 ^{+0.170} _{+0.100}	170.270 170.110							LB-20 17050		LB-20 17080				LB-20 170100			
180 _{-0.063}	185 ^{+0.046}	185 ^{+0.210} _{+0.130}	180.276 180.110				0.339 0.110			LB-20 18050	LB-20 18060	LB-20 18080				LB-20 180100			
190 _{-0.072}	195 ^{+0.046}	195 ^{+0.210} _{+0.130}	190.276 190.110								LB-20 19050	LB-20 19060	LB-20 19080				LB-20 190100		LB-20 190120
200 _{-0.072}	205 ^{+0.046}	205 ^{+0.210} _{+0.130}	200.276 200.110							LB-20 20050	LB-20 20060	LB-20 20080				LB-20 200100		LB-20 200120	
220 _{-0.072}	225 ^{+0.046}	225 ^{+0.210} _{+0.130}	220.276 220.110	0.354 0.110					LB-20 22050	LB-20 22060	LB-20 22080				LB-20 220100		LB-20 220120		
240 _{-0.072}	245 ^{+0.046}	245 ^{+0.210} _{+0.130}	240.276 240.110							LB-20 24050	LB-20 24060	LB-20 24080				LB-20 240100		LB-20 240120	
250 _{-0.072}	255 ^{+0.052}	255 ^{+0.260} _{+0.170}	250.282 250.110							LB-20 25050	LB-20 25060	LB-20 25080				LB-20 250100		LB-20 250120	
260 _{-0.081}	265 ^{+0.052}	265 ^{+0.260} _{+0.170}	260.282 260.110							LB-20 26050	LB-20 26060	LB-20 26080				LB-20 260100		LB-20 260120	
280 _{-0.081}	285 ^{+0.052}	285 ^{+0.260} _{+0.170}	280.282 280.110					LB-20 28050	LB-20 28060	LB-20 28080				LB-20 280100		LB-20 280120			
300 _{-0.081}	305 ^{+0.052}	305 ^{+0.260} _{+0.170}	300.282 300.110					LB-20 30050	LB-20 30060	LB-20 30080				LB-20 300100		LB-20 300120			

LB-20 Metric Thrust Washer and Strip

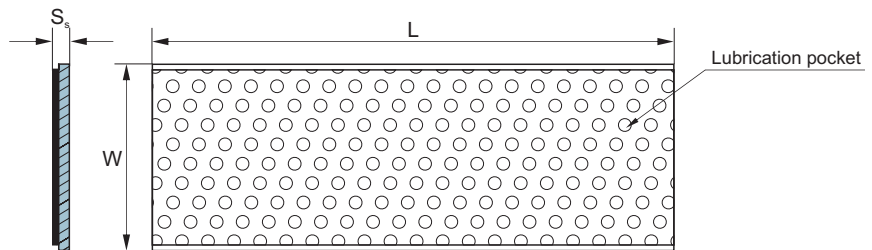
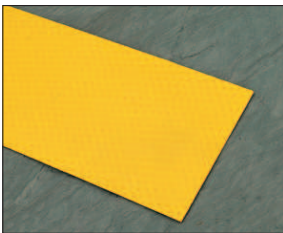
Metric thrust washer



Unit:mm

Shaft D_s	Designation	Washer dimension				Installation size			
		$D_i +0.25$	$D_o -0.25$	$S_r -0.05$	$d_p \pm 0.125$	$d_o^{+0.4}_{+0.1}$	$H_a \pm 0.2$	$H_b +0.12$	
8	LB-20WC10	10	20	1.5	15	1.5	1	20	
10	LB-20WC12	12	24		18			24	
12	LB-20WC14	14	26		20	2		26	
14	LB-20WC16	16	30		23			30	
16	LB-20WC18	18	32		25	3		32	
18	LB-20WC20	20	36		28			36	
20	LB-20WC22	22	38		30	4		1.5	38
22	LB-20WC24	24	42		33				42
24	LB-20WC26	26	44		35	4		1.5	44
26	LB-20WC28	28	48		38				48
30	LB-20WC32	32	54	43	2	1.5	54		
36	LB-20WC38	38	62	50			62		
40	LB-20WC42	42	66	54			66		
46	LB-20WC48	48	74	61			74		
50	LB-20WC52	52	78	65			78		
60	LB-20WC62	62	90	76			90		

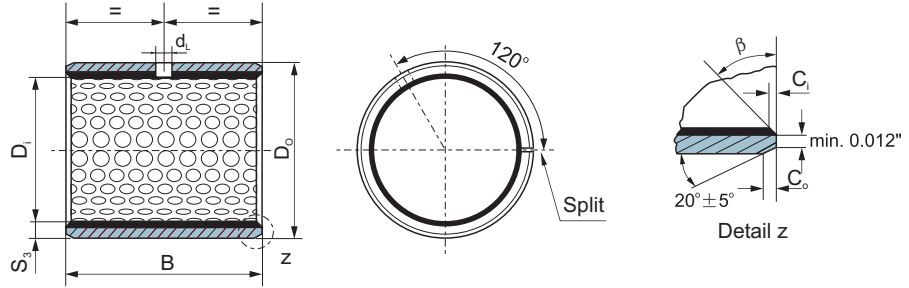
Metric standard strip



Unit:mm

Type	Length ± 1	Width ± 1	Thickness -0.05
LB-20SP	500	150	1.0
LB-20SP	500	150	1.5
LB-20SP	500	150	2.0
LB-20SP	500	150	2.5

LB-20 Inch Cylindrical Bushes



ID and OD chamfers

S ₃	C _o	C _i	β	S ₃	C _o	C _i	β
0.0505	0.012-0.035	0.004-0.020	30° ± 5°	0.0971	0.047-0.095	0.020-0.043	45° ± 5°
0.0663	0.016-0.040	0.008-0.030	30° ± 5°	0.0978	0.047-0.095	0.020-0.043	45° ± 5°
0.0817	0.030-0.063	0.008-0.030	30° ± 5°				

Unit:inch"

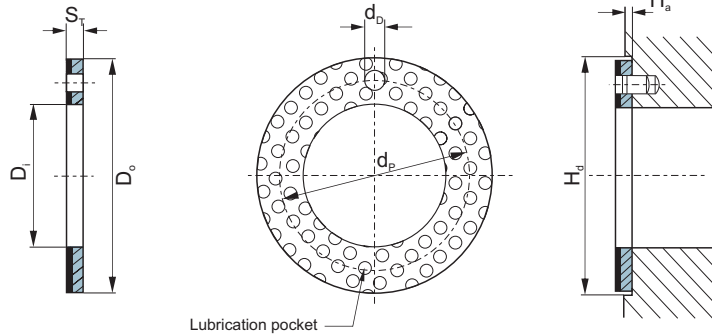
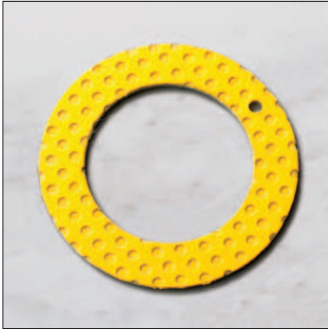
D _i	D _o	Shaft D _s	Housing H7 D _H	ID after fixed D _{l,a}	Clearance C _D	Wall thickness S ₃	Oil hole d _L	Length ± 0.010													
3/8	15/32	0.3648	0.4694	0.3694	0.0055	0.0510	—	LB-20 06IB06	LB-20 06IB08	LB-20 06IB12											
		0.3639	0.4687	0.3667	0.0019			LB-20 07IB08	LB-20 07IB12												
7/16	17/32	0.4273	0.5319	0.4319	0.0056			0.0500	5/32	LB-20 08IB06	LB-20 08IB08	LB-20 08IB10	LB-20 08IB14								
		0.4263	0.5312	0.4292	0.0019					LB-20 09IB08	LB-20 09IB12										
1/2	19/32	0.4897	0.5944	0.4944	0.0057					0.0669	1/4	LB-20 10IB08	LB-20 10IB10	LB-20 10IB12	LB-20 10IB14						
		0.4887	0.5937	0.4917	0.0020							LB-20 11IB14									
9/16	21/32	0.5522	0.6569	0.5569	0.0057							0.0824	5/16	LB-20 12IB08	LB-20 12IB12	LB-20 12IB16					
		0.5512	0.6562	0.5542	0.0020									LB-20 14IB12	LB-20 14IB14	LB-20 14IB16					
5/8	23/32	0.6146	0.7195	0.6195	0.0059									0.0810	3/8	LB-20 16IB12	LB-20 16IB16	LB-20 16IB24			
		0.6136	0.7178	0.6167	0.0021											LB-20 18IB12	LB-20 18IB16				
11/16	25/32	0.6770	0.7820	0.6820	0.0060											0.0980	5/8	LB-20 20IB12	LB-20 20IB16	LB-20 20IB20	LB-20 20IB28
		0.6760	0.7812	0.6792	0.0022													LB-20 22IB16	LB-20 22IB22	LB-20 22IB28	
3/4	7/8	0.7390	0.8758	0.7444	0.0066	0.0962	3/4											LB-20 24IB16	LB-20 24IB20	LB-20 24IB24	
		0.7378	0.8750	0.7412	0.0022													LB-20 26IB16	LB-20 26IB24		LB-20 24IB32
7/8	1	0.8639	1.0008	0.8694	0.0067			0.0991	7/8									LB-20 28IB16	LB-20 28IB24	LB-20 28IB28	
		0.8627	1.0000	0.8662	0.0023													LB-20 30IB16	LB-20 30IB30	LB-20 30IB36	LB-20 28IB32
1	1 1/8	0.9888	1.1258	0.9944	0.0068					0.0965	1							LB-20 32IB16	LB-20 32IB24	LB-20 32IB32	
		0.9876	1.1250	0.9912	0.0024													LB-20 36IB32	LB-20 36IB36	LB-20 36IB40	LB-20 32IB40
1 1/8	1 9/32	1.1138	1.2822	1.1202	0.0076							0.0100	1 1/8					LB-20 40IB32	LB-20 40IB40		
		1.1126	1.2812	1.1164	0.0026													LB-20 44IB32	LB-20 44IB40	LB-20 44IB48	
1 1/4	1 13/32	1.2387	1.4072	1.2452	0.0081									0.0103	1 1/4			LB-20 48IB32	LB-20 48IB48	LB-20 48IB60	
		1.2371	1.4062	1.2414	0.0027													LB-20 56IB40	LB-20 56IB48	LB-20 56IB60	LB-20 44IB56
1 3/8	1 17/32	1.3635	1.5322	1.3702	0.0083											0.0106	1 3/8	LB-20 64IB48	LB-20 64IB60		
		1.3619	1.5312	1.3664	0.0029													LB-20 64IB60	LB-20 64IB76		
1 1/2	1 21/32	1.4884	1.6572	1.4952	0.0084	0.0124	1 1/2														
		1.4868	1.6562	1.4914	0.0030																
1 5/8	1 25/32	1.6133	1.7822	1.6202	0.0085			0.0128	1 5/8												
		1.6117	1.7812	1.6164	0.0031																
1 3/4	1 15/16	1.7383	1.9385	1.7461	0.0094					0.0128	1 3/4										
		1.7367	1.9375	1.7415	0.0032																
1 7/8	2 1/16	1.8632	2.0637	1.8713	0.0097							0.0137	1 7/8								
		1.8616	2.0625	1.8665	0.0033																
2	2 3/16	1.9881	2.1887	1.9963	0.0100									0.0142	2						
		1.9863	2.1875	1.9915	0.0034																
2 1/4	2 7/16	2.2378	2.4387	2.2463	0.0103											0.0142	2 1/4				
		2.2360	2.4375	2.2415	0.0037																
2 1/2	2 11/16	2.4875	2.6887	2.4963	0.0106	0.0142	2 1/2														
		2.4857	2.6875	2.4915	0.0040																
2 3/4	2 15/16	2.7351	2.9387	2.7457	0.0124			0.0142	2 3/4												
		2.7333	2.9375	2.7393	0.0042																
3	3 3/16	2.9849	3.1889	2.9959	0.0128					0.0142	3										
		2.9831	3.1875	2.9893	0.0044																
3 1/2	3 11/16	3.4844	3.6889	3.4959	0.0137							0.0142	3 1/2								
		3.4822	3.6875	3.4893	0.0049																
4	4 3/16	3.9839	4.1889	3.9959	0.0142									0.0142	4						
		3.9817	4.1875	3.9893	0.0054																



AUTOLUBRICANTES

LB-20 Inch Thrust Washer

Inch Thrust washer



Unit:inch"

Specification	Dimension				installation size		
	inner side $D_i+0.010$	outside $D_o-0.010$	S_T	d_p -0.010	d_b $+0.010$	H_a ± 0.010	H_b $+0.010$
LB-20 WC06IB	0.500	0.875	0.0660 0.0625	0.692	0.067	0.04	0.875
LB-20 WC07IB	0.562	1.000		0.786			1.000
LB-20 WC08IB	0.625	1.125		0.880			1.125
LB-20 WC09IB	0.687	1.187		0.942			1.187
LB-20 WC10IB	0.750	1.250		1.005			1.250
LB-20 WC11IB	0.812	1.375		1.099			1.375
LB-20 WC12IB	0.875	1.500		1.192	1.500		
LB-20 WC13IB	0.937	1.625		1.286	0.130		1.625
LB-20 WC14IB	1.000	1.750		1.380	1.750		
LB-20 WC16IB	1.125	2.000		1.567	2.000		
LB-20 WC18IB	1.250	2.125		1.692	0.161		2.125
LB-20 WC20IB	1.375	2.250		1.817	2.250		
LB-20 WC22IB	1.500	2.500		2.005	0.192		2.500
LB-20 WC24IB	1.625	2.625		2.130			2.625
LB-20 WC26IB	1.750	2.750	2.255	2.750			
LB-20 WC28IB	2.000	3.000	2.505	0.07		3.000	
LB-20 WC30IB	2.125	3.125	2.630		3.125		
LB-20 WC32IB	2.250	3.250	2.755		3.250		