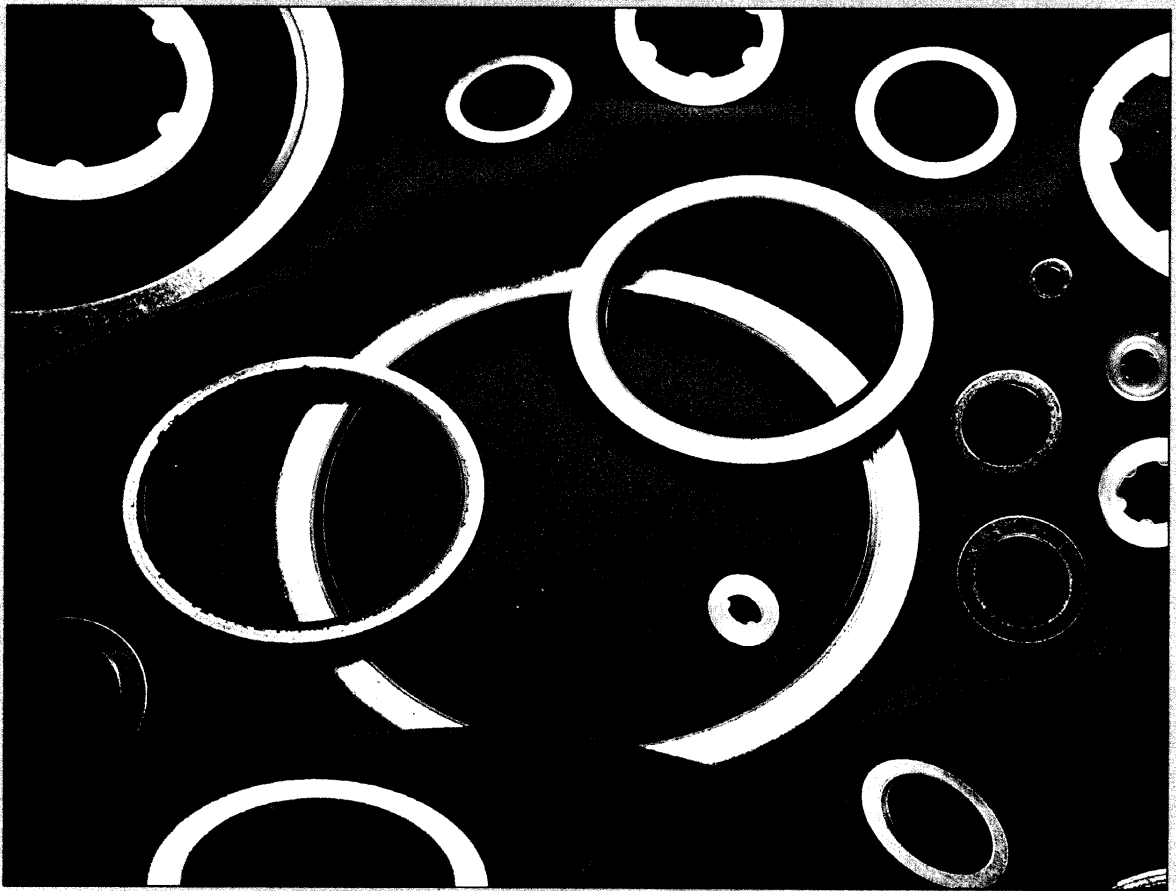


Barnwell

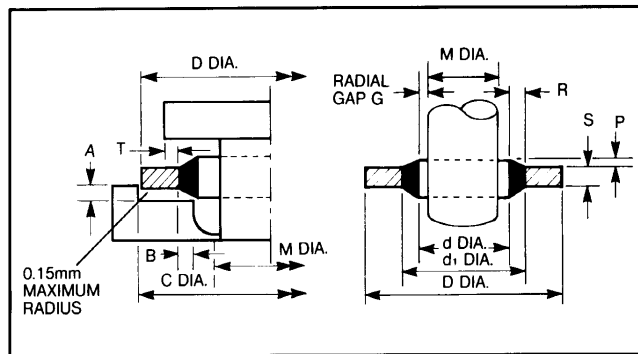


Sealing Washers

Issue 4/96

Sealing Washers - Standard range

British Imperial



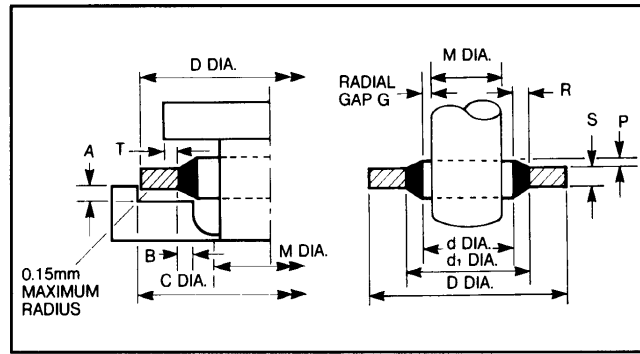
THREAD DIA 'M'		PART NO.	D +0.13 -0.00	d ±0.13	d ₁ ±0.13	S	TOL	R ±0.13	P	RADIAL GAP G+0.07		
INCH	B.S.P.									INCH	B.S.P.	
6BA		MB45-001	6.35	3.05	4.09/4.16	1.22	+0.15 -0.00	0.54	0.2/0.38	0.13		
4BA		MB45-002	7.26	4.12	5.26			0.57		0.26		
2BA		MB45-003	8.38	5.21	6.35			0.57		0.26		
1/4		MB45-004	13.21	6.86	8			0.57		0.26		
1/4		MB45-005	13.34	6.99	9.53			1.27		0.32		
5/16		MB45-006	13.34	8.31	9.53			0.56		0.19		
5/16		MB45-007	14.22	8.64	10.04			0.70		0.35		
3/8	1/8	MB45-020	15.88	10.37	11.84	2.03	+0.15 -0.00	0.73		0.42		
40		MB45-008	18.36	11.26	12.45			0.60		0.55		
7/16		MB45-009	19.05	11.69	13.08			0.70		0.29		
1/2	1/4	MB45-021	20.57	13.74	15.21			0.73		0.52	0.29	
9/16		MB45-010	22.23	14.86	16.39			0.76		0.29		
.60		MB45-022	22.23	15.83	17.30			0.73		0.30		
5/8		MB45-011	25.40	16.51	18.75			1.12		0.32		
	3/8	MB45-023	23.80	17.28	18.75	0.73			0.31			
11/16		MB45-012	25.40	18.16	19.69	2.34	+0.26 -0.00	0.76	0.25/0.51	0.35		
3/4		MB45-024	26.92	19.69	21.21			0.76		0.32		
13/16	1/2	MB45-025	28.58	21.54	23.01			0.73		0.45	.029	
7/8	5/8	MB45-026	31.75	23.49	24.97			0.74		0.63	.029	
15/16		MB45-013	33.27	24.26	26.04			0.89		0.23		
1	3/4	MB45-027	34.93	27.05	28.53			0.74		0.82	.030	
1 1/16		MB45-028	38.61	27.82	30.61			1.40		0.41		
1 1/8		MB45-014	36.58	29.33	30.86	0.76		0.38				
1 3/16	7/8	MB45-029	38.10	30.81	32.29	0.74		0.33		0.30		
1 1/4		MB45-015	41.40	32.64	35.69	3.25		1.52		0.45		
1 5/16	1	MB45-030*	42.80	33.89	36.88	2.50*		1.50		0.28	0.40	
1 5/16	1	MB45-031	42.80	33.89	36.88	2.34		+0.26 -0.00		1.50	0.28	0.40
1 3/8		MB45-016	44.45	35.94	38.99	1.52				0.51		
1 1/2		MB45-017	47.75	38.96	42.04	1.54	0.43					
1 5/8	1 1/4	MB45-032*	52.38	42.93	45.93	1.50	0.82		0.51			
1 3/4		MB45-018	57.15	45.34	48.39	1.52	0.45					
1 7/8	1 1/2	MB45-033*	58.60	48.44	51.39	1.47	0.40		0.32			
2		MB45-019	63.50	51.69	54.74	1.52	0.45					
2 1/8	1 3/4	MB45-034	69.85	54.89	58.30	2.50*	1.70		0.45	0.57		
2 1/4		MB45-035	70.36	58.04	61.09		1.52		0.45			
	2	MB45-036*	73.03	60.58	63.63		1.52			0.48		
2 1/2		MB45-037	77.72	64.39	67.44		1.52		0.45			
	2 1/4	MB45-038	79.50	66.68	69.98		1.65		0.59			
	2 1/2	MB45-039	90.17	76.08	79.38		1.65		0.45			

T = 0.7mm minimum, R minimum = 0.9R

* Prior to April '96 thickness S was 3.25

Sealing Washers - Metric range

Metric threads to ISO R261,
BS3643 (GERMAN)

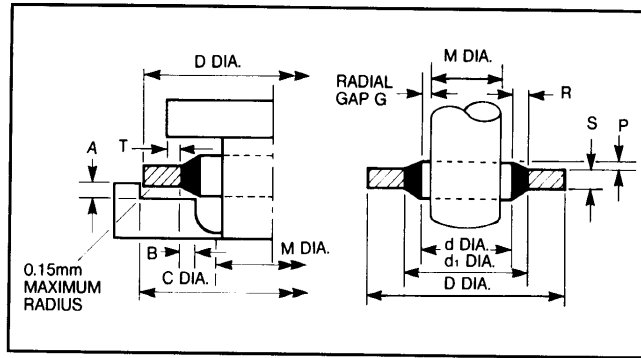


THREAD DIA. 'M'	PART NO.	D +0.13 -0.00	d ±0.1	d ±0.1	S TOL		R 0.1	P +0.25 -0.00	RADIAL GAP G±0.05
3.5	MB45-201	7.2	4.1	5.2	1	±0.1	0.55	0.3	0.3
4	MB45-202	7	4.5	5.4			0.45		0.25
5	MB45-203	9	5.7	6.8			0.65		0.35
5	MB45-204	10	5.7	7.4			0.85		0.35
5.5	MB45-205	9.2	6.2	7.2			0.5		0.35
6	MB45-206	10	6.7	8			0.65		0.35
6	MB45-207	11	6.7	8.2			0.75		0.35
6	MB45-208	11	6.7	8.2	2.5		0.75		0.35
6.5	MB45-209	12	7.1	8.8	1		0.85		0.3
6.7	MB45-210	10.2	7.3	8.6			0.65		0.3
8	MB45-211	13.4	8.5	9.4			0.45		0.25
8	MB45-212	13	8.7	10			0.65		0.35
8	MB45-213	14	8.7	10.4			0.85		0.35
8	MB45-214	16	8.7	10.4			0.85		0.35
8.5	MB45-215	13.3	9.3	10.5		0.6	0.4		
10	MB45-216	16	10.35	12	2	0.82	0.4	0.17	
10	MB45-217	16	10.7	12.4	1.5	0.85		0.35	
10	MB45-218	18	10.7	12.4		0.85		0.35	
11	MB45-219	16.3	11.4	12.7		0.65		0.2	
11	MB45-220	18.5	11.8	13.7		0.95		0.4	
11	MB45-221	19.1	11.8	13.5		0.85		0.4	
12	MB45-222	18	12.7	14.4		0.85		0.35	
12	MB45-223	20	12.7	14.4		0.85		0.35	
13	MB45-224	20	13.7	15.4		0.85		0.35	
13	MB45-225	22	13.7	15.4		0.85		0.35	
13.5	MB45-226	18.7	14	15.7		0.85		0.25	
14	MB45-227	22	14.7	16.4		0.85		0.35	
15	MB45-228	22.7	16	17.78		0.89		0.50	
16	MB45-229	24	16.7	18.4		0.85		0.35	

T = 0.7mm minimum. B minimum = 0.9R.
Spot face dia. C = dia. D + 0.3mm.
A maximum = 0.5S.

Sealing Washers - Metric range

Metric threads to ISO R261,
BS3643 (GERMAN)



THREAD DIA. 'M'	PART NO.	D +0.13 -0.00	d ±0.1	d ₁ ±0.1	S TOL		R ±0.1	P +0.25 -0.00	RADIAL GAP G+0.05
17	MB45-230	24	17.4	19.2	1.5	±0.1	0.9	0.4	0.2
17.5	MB45-231	24.7	18	20.1			1.05		0.25
18	MB45-232	26	18.7	20.4			0.85		0.35
20	MB45-233	28	20.7	22.5			0.9		0.35
21	MB45-234	28.7	21.5	23.3	2.5	±0.15	0.9		0.25
22	MB45-235	28	22.5	24.2	1.5	±0.1			0.25
22	MB45-236	30	22.7	24.4	2	±0.1	0.85		0.35
22	MB45-237	30	22.7	24.4	3	±0.15	0.85		0.35
24	MB45-238	32	24.7	26.4	2	±0.1	0.85		0.35
†26	MB45-239	35	26.7	28.4			0.85		0.35
27	MB45-240	36	27.2	29			0.9		0.1
†28	MB45-241	37	28.7	30.4			0.85		0.35
30	MB45-242	39	31	33			1		0.5
33	MB45-243	42	33.7	35.8			1.05		0.35
33	MB45-244	43	34.3	36.4			1.05		0.65
36	MB45-245	46	36.7	38.8			1.05		0.35
39	MB45-246	51	40	41.9	2.5		0.95		0.5
42	MB45-247	53	42.7	44.4	3	±0.15	0.85		0.35
48	MB45-248	59	48.7	50.8			1.05		0.35
51	MB45-249	60	52	54.1					0.5
52	MB45-250	64.5	53.3	56.4					0.65
60	MB45-251	73	60.7	63			1.15		0.35
68	MB45-252	79.5	68.6	72.1	3.5		1.75		0.3
75	MB45-253	90.3	76.08	79.1	3.38		1.51		0.54
88	MB45-254	101.48	89.09	92.1	3.25		1.5		0.54
125	MB45-255	143.67	127	132.7	5				1
6	MB45-305	13.27	6.85	8	1.3	±0.1	0.57	0.3	0.42
13	MB45-315	20.1	13.8	15.2	2.1	±0.1	0.7	0.4	0.4
16.5	MB45-319	23.9	17.2	18.7			0.75		0.35
23	MB45-325	32	23.7	25.4	2		0.85		0.35
26	MB45-327	35.3	27	28.7			0.85		0.5
28	MB45-329	36	28.6	30.3			0.85		0.3
28.5	MB45-330	37.5	29.2	30.9			0.85		0.35

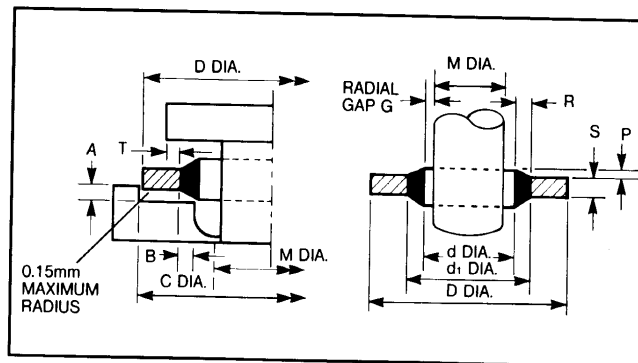
T = 0.7mm minimum. B minimum = 0.9R.

Spot face dia. C = dia. D + 0.3mm.

A maximum = 0.5S.

Sealing Washers - Metric range

Metric threads to ISO R261,
BS3643 (FRENCH)



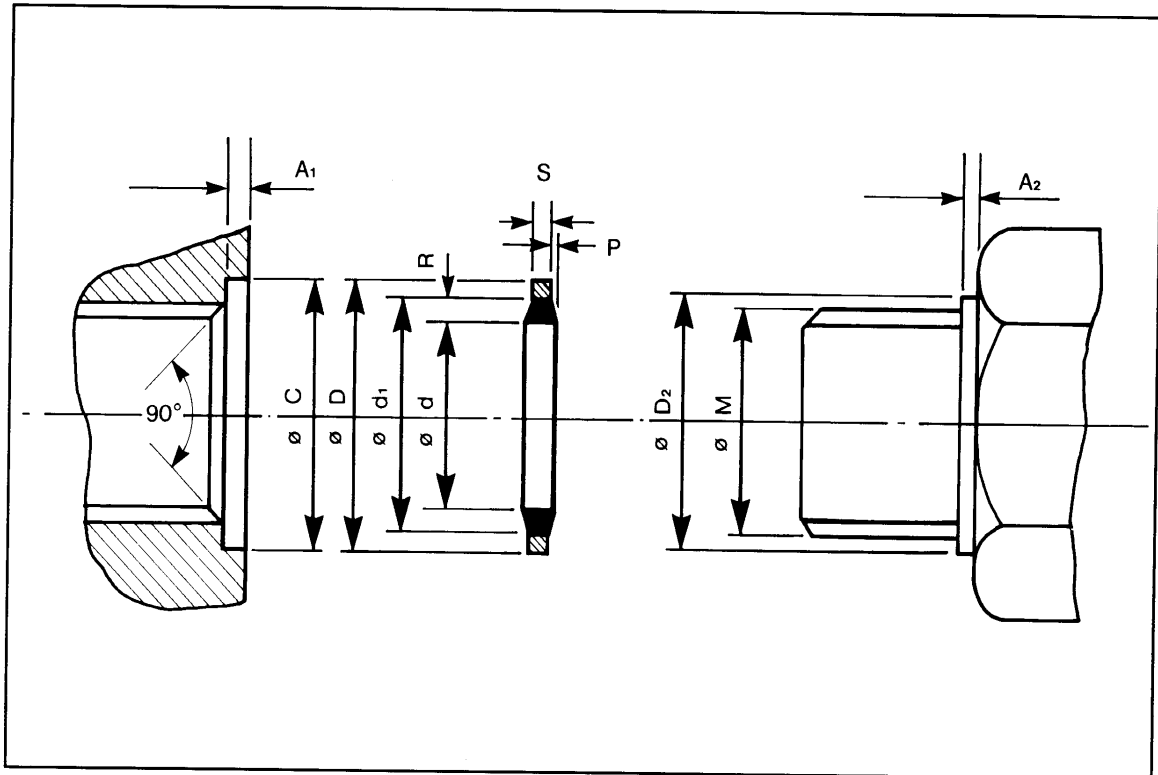
THREAD DIA. 'M'	PART NO.	D +0.13 -0.00	d ±0.1	d ₁ ±0.1	S	TOL	R ±0.1	P +0.25 -0.00	RADIAL GAP G+0.05
3	MB45-301	7.5	3.6	5	1	±0.1	0.7	0.3	0.3
4	MB45-302	9	4.6	6	1		0.7		
5	MB45-303	10	5.6	7	1		0.7		
6	MB45-304	11	6.6	8	1		0.7		
6	MB45-306	11.4	7	8.4	1		0.7		0.5
8	MB45-307	13	8.6	10	1		0.7		0.3
10	MB45-310	17	10.7	12.1	1.5		0.7		0.35
11	MB45-312	18.1	11.8	13.2	1.5		0.65		0.4
12	MB45-313	19	12.7	14.1	1.5		0.7		0.2
14	MB45-316	21	14.7	16.1	1.5		0.7		
16	MB45-317	23	16.7	18.1	1.5		0.7		
17	MB45-318	23.7	17.4	18.8	1.5		0.7		
18	MB45-320	27	18.7	20.4	2	±0.15	0.85	0.4	0.35
20	MB45-321	29	20.7	22.4	2		0.85		
20.63	MB45-322	28.6	21.5	23	2.5		0.75		0.44
21	MB45-323	30	21.7	23.4	2		0.85		0.5
22	MB45-324	31	22.7	24.4	2		0.85		
24	MB45-326	33	24.7	26.4	2		0.85		
26	MB45-327	35.3	27	28.7	2		0.85		
27	MB45-328	36	27.7	29.4	2		0.85		
30	MB45-331	39	30.7	32.4	2		0.85		
33	MB45-332	42	33.7	35.4	2		0.85		
36	MB45-333	48	37	39.6	2.5	±0.15	1.3		0.5
39	MB45-334	51	40	42.6	2.5		1.3		
42	MB45-335	54	43	45.6	2.5		1.3		
45	MB45-336	57	46	48.6	2.5		1.3		
48	MB45-337	60	49	51.6	2.5		1.3		

T = 0.7mm minimum. B minimum = 0.9R.
Spot face dia. C = dia. D + 0.3mm.
A maximum = 0.5S.

Seals for pipe connections and couplings

As recommended in ISO 1179-1973

Installation data

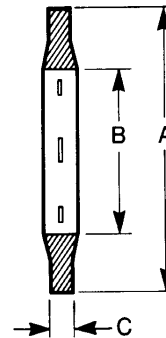
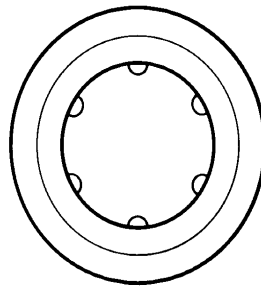


THREAD DIA. 'M' B.S.P.F.	PART NO.	D -0.2	d +0.2	d ₁ +0.2	S ±0.15	R ±0.2	P ±0.25	D ₂ +0.25 -0.00	A A ₁ max A ₂ min	C +0.4
1/16	MB45-519	12.7	8.3	9.9	1.25	1.4	0.25	12	1	13
1/8	MB45-510	14.7	10.4	12		1.35		14	1	15
1/4	MB45-511	18.7	13.85	15.75		1.47		18	1.5	19
3/8	MB45-512	22.7	17.35	19.25		1.72		22	2	23
1/2	MB45-513	26.7	21.65	23.55		1.57		26	2.5	27
3/4	MB45-514	32.5	27.3	29.2		1.65		32	2.5	33
1	MB45-515	39.5	34.2	36.1	2	1.7		39	2.5	40
1 1/4	MB45-516	49.5	42.8	44.7		2.4		49	2.5	50
1 1/2	MB45-517	55.5	48.7	50.6		2.45		55	2.5	56
2	MB45-518	68.5	60.5	62.4		3.05		68	3	69

BARLON

Nylon Captive Washer

- Easily assembled
- Positively retained
- Concentrically located
- Secures against vibration
- Resistant to oils and fuels
- Excellent mechanical properties



The BARLON is a nylon captive sealing washer for screwed assemblies which is suitable for applications of up to 200 lbf/in² working pressure.

Flexible tongues on the internal diameter of the sealing washer spring into the thread to retain the washer when the plug, bolt or adaptor to which it is fitted is removed. This both secures the washer against vibration and ensures that it never becomes detached during assembly or dismantling.

BARLON washers can easily be pre-assembled with components and stored without becoming separated - a clear advantage for storemen and production line operators to whom speed and ease of handling are of primary importance.

Much lighter than traditional copper or copper-asbestos washers, the BARLON washer has excellent mechanical properties and is extremely durable. Furthermore, it is resistant to oils and fuels, and, unlike copper based washers, is not prone to electrolytic corrosion.

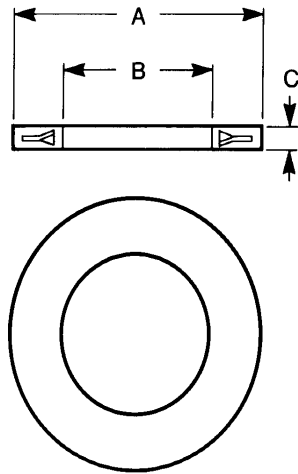
The BARLON washer is widely used in the motor industry and is particularly suitable for use on sumps, gear boxes, axles and drain plugs. It is not recommended for use in temperatures exceeding 100°C.

BARLON - Nylon Captive Washer

PART NO.	THREAD DIA.		'A'		'B'		'C'	
	INCH	mm	INCH	mm	INCH	mm	±.005 INCH	±0.13 mm
MB1127-700	2 B.A. (.185) 3/16 No. 10 U.N. (.190)	5	.385	9.78	.220	5.59	.050	1.27
MB1127-701	1/4	6	.517	13.13	.292	7.42	.060	1.53
MB1127-702	5/16	8	.557	14.15	.357	9.07	.060	1.53
MB1127-703	3/8 & 1/4 B.S.P. (.383)	10	.622	15.80	.427	10.85	.060	1.53
MB1127-704	7/16	11/12	.747	18.98	.482	12.24	.060	1.53
MB1127-705	1/2 & 1/4 B.S.P. (.518)	—	.807	20.50	.567	14.40	.060	1.53
MB1127-706	5/8	16	.997	25.33	.677	17.20	.060	1.53
MB1127-707	3/8 B.S.P. (.656)	—	.934	23.72	.707	17.96	.060	1.53
MB1127-708	3/4	18	1.055	26.80	.805	20.45	.080	2.03
MB1127-709	13/16 & 1/2 B.S.P. (.825)	20	1.120	28.45	.885	22.48	.080	2.03
MB1127-710	7/8 & 5/8 B.S.P. (.902)	22/24	1.245	31.63	.960	24.38	.080	2.03
MB1127-711	1 & 3/4 B.S.P. (1.041)	27	1.370	34.80	1.120	28.45	.080	2.03
MB1127-712	13/16 & 7/8 B.S.P. (1.189)	30	1.495	37.98	1.255	31.88	.080	2.03
MB1127-713	15/16 & 1 B.S.P. (1.309)	33	1.680	42.67	1.380	35.05	.080	2.03
MB1127-716	15/8 & 1 1/4 B.S.P. (1.650)	42	2.057	52.25	1.680	42.67	.080	2.03

BARLOC

Rubber Covered Lock Washer



The BARLOC is a dual purpose vibration resistive lock washer which protects as it locks. Enclosed in a synthetic rubber sheath, the BARLOC is ideal for surfaces coated with paint, plating, enamel, etc.

The BARLOC lock washer is designed specifically to resist vibration. The tightening of the accompanying nut or bolt forces the washer's metal serrations or 'tangs' to pierce the rubber, which subsequently grips the adjoining surface and provides the required locking action.

The rubber covering protects the 'tangs' from corrosion, as well as protecting the adjoining coated surface from abrasion.

The BARLOC washer is suitable for use with water, mineral base oils and alkalis over a temperature of -10°C to +80°C and is used extensively in the automobile and domestic appliance industries.

BARLOC - Rubber Covered Lock Washer

PART NO.	TO SUIT BOLT DIA.		'A'		'B'		'C'	
	INCH	mm	INCH	mm	INCH	mm	INCH	mm
MB1321-001	6 B.A. (.110) & No. 4 U.N.C. (.112)	2.5/2.6	.300	7.62	.120	3.05	.050	1.27
MB1321-002	4 B.A. (.140) & No. 6 U.N.C. (.138)	3	.340	8.64	.150	3.81	.050	1.27
MB1321-003	3 B.A. (.161) & No. 8 U.N.C. (.164)	3.5/4	.400	10.16	.170	4.32	.055	1.40
MB1321-004	2 B.A. (.185) $\frac{3}{16}$ "	4	.440	11.18	.195	4.95	.060	1.52
MB1321-005	$\frac{1}{4}$ "	6	.525	13.34	.260	6.60	.070	1.78
MB1321-006	$\frac{5}{16}$ "	8	.640	16.26	.325	8.26	.070	1.78
MB1321-007	$\frac{3}{8}$ "	9	.730	18.54	.385	9.78	.080	2.03
MB1321-008	$\frac{7}{16}$ "	10	.825	20.56	.448	11.38	.090	2.29
MB1321-009	$\frac{1}{2}$ "	12	.920	23.37	.515	13.08	.090	2.29
MB1321-010	$\frac{9}{16}$ "	14	1.010	25.65	.580	14.73	.090	2.29
MB1321-011	$\frac{5}{8}$ "	16	1.110	28.19	.640	16.26	.100	2.54
MB1321-012	$\frac{3}{4}$ "	18	1.295	32.90	.765	19.43	.105	2.67
MB1321-013	$\frac{7}{8}$ "	22	1.440	36.58	.900	22.86	.110	2.79
MB1321-014	1"	24	1.675	42.55	1.020	26.29	.120	3.05