Sintered Metric Plain Bearings

Reference	Bore	Outside Diameter	Lengths (L)
2/4 x L	2	4	4
2/5 X L	2	5	2-3-4-5
3/5 x L	3	5	3-4-6
3/6 x L	3	6	3-4
3/8 x L	3	8	4
4/7 x L	4	7	3-4-6
4/8 x L	4	8	3-4-6-8-12
4/10 x L	4	10	8
5/8 x L	5	8	4-5-8-10-12-16
5/9 x L	5	9	4-5-8
5/10 x L	5	10	6-8-10
5/12 x L	5	12	10
6/9 x L	6	9	4-6-10-12-16
6/10 x L	6	10	4-6-10-12-16
6/12 x L	6	12	6-8-12
6/14 x L	6	14	12
7/10 x L	7	10	5-8-10
7/11 x L	7	11	8-10
8/11 x L	8	11	6-8-12
8/12 x L	8	12	6-8-12-16-20
8/14 x L	8	14	8-12-16-20
8/18 x L	8	18	16
9/12 x L	9	12	6-10-14
9/14 x L	9	14	6-10-14
10/13 x L	10	13	10-16
10/14 x L	10	14	8-10-16-20-25
10/15 x L	10	15	10-16-20-25
10/16 x L	10	16	8-10-16-20-25
10/22 x L	10	22	20
12/15 x L	12	15	12-16-20-25
12/16 x L	12	16	8-12-16-20-25
12/18 x L	12	18	8-12-16-20-25
12/25 x L	12	25	25
14/18 x L	14	18	10-14-20
14/20 x L	14	20	10-12-14-20-30
14/28 x L	14	28	30
15/19 x L	15	19	10-15-20-25-30
15/20 x L	15	20	10-15-20-25-30
15/21 x L	15	21	10-15-20-25
15/22 x L	15	22	16-20-30
15/30 x L	15	30	30
16/20 x L	16	20	12-16-20-25-30
16/22 x L	16	22	12-16-20-25-30
16/32 x L	16	32	30
18/22 x L	18	22	12-18-30
18/24 x L	18	24	12-18-30
18/25 x L	18	25	16-20-22-30
18/35 x L	18	35	30
20/24 x L	20	24	16-20-25-32
20/25 x L	20	25	15-20-25-30
20/26 x L	20	26	15-20-25-30
20/28 x L	20	28	20-25-30-40-50
20/40 x L	20	40	40
22/27 x L	22	27	15-20-25
22/28 x L	22	28	15-20-25-28-30
22/32 x L	22	32	20-30-50

Reference	Bore	Outside Diameter	Lengths (L)
25/30 x L	25	30	20-25-30-50
25/32 x L	25	32	20-25-30-35-40
25/35 x L	25	35	25-35-50
25/45 x L	25	45	35
28/33 x L	28	33	20-30
28/36 x L	28	36	20-25-30-40
30/35 x L	30	35	20-25-30
30/38 x L	30	38	20-25-30-40
30/40 x L	30	40	25-30-35-45-50-60
30/50 x L	30	50	60
32/38 x L	32	38	20-25-30
32/40 x L	32	40	20-25-30-40-50
35/41 x L	35	41	25-35-40
35/44 x L	35	44	22-28-35
35/45 x L	35	45	25-35-40-50-70
36/42 x L	36	42	22-28-36-45
36/45 x L	36	45	22-28-36-45
38/44 x L	38	44	25-35-45
38/48 x L	38	48	25-35-45-55
40/46 x L	40	46	30-40-50
40/50 x L	40	50	25-30-32-35-40-50-60-80
42/48 x L	42	48	40-50
42/52 x L	42	52	40-50
45/51 x L	45	51	35-45-55
45/55 x L	45	55	35-45-55-60-65-75
45/56 x L	45	56	28-36-45-56
45/65 x L	45	65	80
48/55 x L	48	55	50
48/58 x L	48	58	50
50/58 x L	50	58	35-50
50/60 x L	50	60	30-35-40-50-63-70-75-100
50/70 x L	50	70	70
55/63 x L	55	63	40-55
55/65 x L	55	65	40-55-70
55/70 x L	55	70	70
60/68 x L	60	68	50-60-70
60/70 x L	60	70	50-60
60/72 x L	60	72	50-60-70
60/75 x L	60	75	60-90
60/85 x L	60	85	90
63/70 x L	63	70	40-50
65/75 x L	65	75	60-90
65/80 x L	65	80	60-90
70/80 x L	70	80	60-90
70/85 x L	70	85	60-90
75/85 x L	75	85	70-100
75/90 x L	75	90	70-100
75/100 x L	75	100	100
80/90 x L	80	90	70-100
80/95 x L	80	95	70-100
80/105 x L	80	105	100
85/95 x L	85	95	100
85/100 x L	85	100	100
90/105 x L	90	105	80
90/110 x L	90	110	80
100/120 x L	100	120	80

Sintered Metric Flanged Bearings

Reference	Bore	O/D	Lengths (L)	Flange Size (Outside Diameter x Width)
2/5 x L - 8 x 1.5	2	5	3	8 x 1.5
3/5 x L - 8 x 1.5	3	5	4	8 x 1.5
3/6 x L - 9 x 1.5	3	6	4	9 x 1.5
4/8 x L - 10 x 1.5	4	8	6	10 x 1.5
4/8 x L - 12 x 2	4	8	4-6-8-12	12 x 2
5/9 x L - 13 x 2	5	9	4-5-8	13 x 2
5/10 x L - 12 x 2	5	10	6	12 x 2
6/10 x L - 14 x 2	6	10	4-6-10	14 x 2
6/12 x L - 14 x 2	6	12	6	14 x 2
7/10 x L - 14 x 2	7	10	5-8-10	14 x 2
7/11 x L - 15 x 2	7	11	8	15 x 2
7/12 x L - 15 x 2	7	12	5-8-10	15 x 2
8/12 x L - 16 x 2	8	12	6-8-12-16	16 x 2
8/14 x L - 18 x 3	8	14	8	18 x 3
9/14 x L - 19 x 2.5	9	14	6-10-14	19 x 2.5
10/13 x L - 17 x 2.5	10	13	8-10-16-20	17 x 2.5
10/15 x L - 21 x 3	10	15	10-16-20	21 x 3
10/16 x L - 20 x 3	10	16	8-10	20 x 3
10/16 x L - 22 x 3	10	16	8-10-16	22 x 3
12/15 x L - 21 x 3	12	15	12-16-20	21 x 3
12/17 x L - 23 x 3	12	17	12-16-20-25	23 x 3
12/18 x L - 22 x 3	12	18	10-12	22 x 3
12/18 x L - 24 x 3	12	18	8-12-20	24 x 3
14/20 x L - 25 x 3	14	20	10-12	25 x 3
14/20 x L - 26 x 3	14	20	10-14-20	26 x 3
15/19 x L - 25 x 3	15	19	16-20-25	25 x 3
15/21 x L - 27 x 3	15	21	10-15-20-25	27 x 3
15/22 x L - 28 x 3	15	22	12-16	28 x 3
16/20 x L - 27 x 3	16	20	16-20-25	27 x 3
16/22 x L - 28 x 3	16	22	12-16-20-25	28 x 3
16/22 x L - 28 x 4	16	22	12-16	28 x 4
18/24 x L - 30 x 3	18	24	12-18-22-30	30 x 3
18/25 x L - 32 x 4	18	25	12-16	32 x 4
20/24 x L - 30 x 3	20	24	16-20-25	30 x 3
20/26 x L - 32 x 3	20	26	15-20-25-30	32 x 3
20/28 x L - 35 x 4	20	28	16-20	35 x 4
22/28 x L - 34 x 3	22	28	15-20-25-30	34 x 3
25/30 x L - 39 x 3.5	25	30	20-25-32	39 x 3.5
25/32 x L - 39 x 3.5	25	32	20-25-30	39 x 3.5
25/35 x L - 45 x 5	25	35	16-25	45 x 5
28/32 x L - 40 x 4	28	32	20-25-30	40 x 4
28/35 x L - 42 x 4	28	35	20-25-30	42 x 4
28/36 x L - 44 x 4	28	36	20-25-30	44 x 4
30/38 x L - 46 x 4	30	38	20-25-30	46 x 4
30/40 x L - 50 x 5	30	40	20-30	50 x 5
32/38 x L - 46 x 4	32	38	20-25-32	46 x 4
32/40 x L - 48 x 4	32	40	20-25-30	48 x 4
35/45 x L - 55 x 5	35	45	20-25-35-40	55 x 5
38/48 x L - 58 x 5	38	48	25-35-45	58 x 5
40/46 x L - 56 x 5	40	46	25-32-40	56 x 5
40/50 x L - 60 x 5	40	50	25-30-40-50	60 x 5
40/50 x L - 60 x 6	40	50	25-40	60 x 6
42/52 x L - 62 x 5	42	52	30-40-50	62 x 5
45/55 x L - 65 x 5	45	55	35-45-55	65 x 5
45/55 x L - 65 x 6	45	55	30-45	65 x 6
50/60 x L - 70 x 5	50	60	32-35-40-50	70 x 5
50/60 x L - 70 x 6	50	60	30-50	70 x 6
60/72 x L - 84 x 6	60	72	50-60	84 x 6
60/75 x L - 85 x 8	60	75	35-60	85 x 8
70/85 x L - 95 x 8	70	85	60	95 x 8
80/95 x L - 105 x 8	80	95	70	105 x 8
90/110 x L - 120 x 8	90	110	50	120 x 8
100/120 x L - 130 x 8	100	120	80	130 x 8

Non-standard lengths can be supplied. If the size you require is not listed please contact our sales dept. We also offer a specialised machining service for low volume non-standard sizes and tolerances.

Sintered Imperial Plain Bearings

Reference	Bore	Outside Diameter	Lengths (L)
3/16 x 5/16 x L	3/16	5/16	1/4 - 3/8 - 1/2 - 5/8 - 3/4
1/4 x 3/8 x L	1/4	3/8	1/4 - 3/8 - 1/2 - 5/8 - 3/4
1/4 x 7/16 x L	1/4	7/16	3/8 - 1/2 - 5/8 - 3/4
1/4 x 1/2 x L	1/4	1/2	3/8 - 1/2 - 3/4
5/16 x 7/16 x L	5/16	7/16	5/16 - 3/8 - 1/2 - 5/8 - 3/4 - 1
5/16 x 1/2 x L	5/16	1/2	1/4 - 3/8 - 1/2 - 5/8 - 3/4
3/8 x 1/2 x L	3/8	1/2	3/8 - 1/2 - 5/8 - 3/4 - 7/8 - 1 - 1 1/8 - 1 1/4
3/8 x 5/8 x L	3/8	5/8	3/8 - 1/2 - 5/8 - 3/4 - 7/8 - 1
7/16 x 9/16 x L	7/16	9/16	3/8 - 1/2 - 5/8 - 3/4 - 1
7/16 x 11/16 x L	7/16	11/16	1/2
1/2 x 5/8 x L	1/2	5/8	3/8 - 1/2 - 5/8 - 3/4 - 7/8 - 1 - 1 1/8 - 1 1/4 - 1 1/2
1/2 x 11/16 x L	1/2	11/16	1/2 - 5/8 - 3/4 - 7/8 - 1 - 1 1/4
1/2 x 3/4 x L	1/2	3/4	1/2 - 5/8 - 3/4 - 7/8 - 1 - 1 1/4 - 1 1/2 - 2
9/16 x 11/16 x L	9/16	11/16	1/2 - 5/8 - 3/4 - 1 - 1 1/4
9/16 x 3/4 x L	9/16	3/4	1
5/8 x 3/4 x L	5/8	3/4	1/2 - 5/8 - 3/4 - 7/8 - 1 - 1 1/4
5/8 x 13/16 x L	5/8	13/16	3/4 - 1 - 1 1/4 - 1 3/8
5/8 x 7/8 x L	5/8	7/8	1/2 - 5/8 - 3/4 - 7/8 - 1 - 1 1/8 - 1 1/4
11/16 x 15/16 x L	11/16	15/16	1 - 1 1/4
3/4 x 7/8 x L	3/4	7/8	1/2 - 5/8 - 3/4 - 7/8 - 1 - 1 1/8 - 1 1/4
3/4 x 15/16 x L	3/4	15/16	3/4 - 1
3/4 x 1 x L	3/4	1	5/8 - 3/4 - 7/8 - 1 - 1 1/8 - 1 1/4 - 1 1/2 - 1 3/4 - 2
3/4 x 1 1/8 x L	3/4	1 1/8	3/4 - 1 - 1 1/4
3/4 x 1 1/4 x L	3/4	1 1/4	1 1/2 - 2
7/8 x 1 x L	7/8	1	3/4 - 1 - 1 1/8 - 1 1/4 - 1 1/2
7/8 x 1 1/8 x L	7/8	1 1/8	3/4 - 7/8 - 1 - 1 1/8 - 1 1/4 - 1 1/2
1 x 1 1/8 x L	1	1 1/8	3/4 - 1 - 1 1/4 - 1 1/2
1 x 1 1/4 x L	1	1 1/4	3/4 - 7/8 - 1 - 1 1/8 - 1 1/4 - 1 3/8 - 1 1/2 - 1 3/4 - 2
1 x 1 1/2 x L	1	1 1/2	1 - 1 1/2 - 1 3/4 - 2
1 1/8 x 1 3/8 x L	1 1/8	1 3/8	3/4 - 1- 1 1/4 - 1 1/2 - 1 3/4 - 2
1 1/4 x 1 1/2 x L	1 1/4	1 1/2	7/8 - 1- 1 1/4 - 1 3/8 - 1 1/2 - 1 3/4 - 1 7/8 - 2
1 1/4 x 1 5/8 x L	1 1/4	1 5/8	1- 1 1/4 - 1 1/2 - 1 3/4 - 2 - 2 1/2
1 3/8 x 1 5/8 x L	1 3/8	1 5/8	1- 1 1/4 - 1 1/2 - 1 3/4 - 2
1 3/8 x 1 3/4 x L	1 3/8	1 3/4	1 1/2 - 2
1 1/2 x 1 3/4 x L	1 1/2	1 3/4	1 1/4 - 1 1/2 - 1 3/4 - 2 - 2 1/4
1 1/2 x 1 7/8 x L	1 1/2	1 7/8	1 1/4 - 1 1/2 - 1 3/4 - 2
1 1/2 x 2 x L	1 1/2	2	1 1/2 - 2 - 2 1/2 - 3
1 5/8 x 2 1/16 x L	1 5/8	2 1/16	1 7/8 - 2 - 2 1/2
1 3/4 x 2 x L	1 3/4	2	1 1/4 - 1 1/2 - 1 3/4 - 2
1 3/4 x 2 1/4 x L	1 3/4	2 1/4	2
2 x 2 1/4 x L	2	2 1/4	1 1/2 - 2 - 2 1/2
2 x 2 3/8 x L	2	2 3/8	1 1/2 - 2 1/2 - 3
2 x 2 1/2 x L	2	2 1/2	1 1/2 - 2 - 2 1/2 - 3
2 1/4 x 2 5/8 x L	2 1/4	2 5/8	2 1/2 - 3
2 1/4 x 2 3/4 x L	2 1/4	2 3/4	1 1/2 - 2 - 2 1/2 - 3
2 1/2 x 2 7/8 x L	2 1/2	2 7/8	2 1/2 - 3
2 1/2 x 3 x L	2 1/2	3	1 1/2 - 2 - 2 1/2 - 3
3 x 3 1/2 x L	3	3 1/2	2 1/2 - 3
3 1/2 x 4 x L	3 1/2	4	3
4 x 4 1/2 x L	4	4 1/2	4

Non-standard lengths can be supplied. If the size you require is not listed please contact our sales dept. We also offer a specialised machining service for low volume non-standard sizes and tolerances.

Sintered Imperial Flanged Bearings

Reference	Bore	Outside Diameter	Lengths (L)	Flange Size (Outside Diameter x Width)
3/16 x 5/16 x L - 3/8 x 1/16	3/16	5/16	1/4 - 3/8 - 1/2	3/4 x 1/8
1/4 x 3/8 x L - 1/2 x 1/16	1/4	3/8	1/4 - 3/8 - 1/2 - 3/4	1/2 x 1/16
5/16 x 1/2 x L - 5/8 x 1/16	5/16	1/2	1/4 - 3/8 - 1/2 - 3/4	5/8 x 1/16
5/16 x 9/16 x L - 5/8 x 1/8	5/16	9/16	3/8 - 3/4	5/8 x 1/8
3/8 x 1/2 x L - 5/8 x 1/16	3/8	1/2	3/8 - 1/2 - 3/4 - 7/8	5/8 x 1/16
3/8 x 1/2 x L - 5/8 x 0.14	3/8	1/2	1/2 - 3/4 - 7/8	5/8 x 0.14
3/8 x 9/16 x L - 3/4 x 1/16	3/8	9/16	1/2	3/4 x 1/16
3/8 x 5/8 x L - 3/4 x 1/8	3/8	5/8	3/8 - 1/2 - 5/8 - 3/4	3/4 x 1/8
1/2 x 5/8 x L - 3/4 x 3/32	1/2	5/8	1/2 - 1	3/4 x 3/32
1/2 x 3/4 x L - 1 x 1/8	1/2	3/4	1/2 - 3/4 - 1 - 1 1/8	1 x 1/8
5/8 x 3/4 x L - 1 1/8 x 3/32	5/8	3/4	1/2 - 1 - 1 1/8	1 1/8 x 3/32
5/8 x 7/8 x L - 1 1/4 x 1/8	5/8	7/8	1/2 - 3/4 - 1 - 1 1/8 - 1 1/4	1 1/4 x 1/8
3/4 x 1 x L - 1 3/8 x 1/8	3/4	1	3/4 - 1- 1 1/4 - 1 1/2	1 3/8 x 1/8
7/8 x 1 x L - 1 1/4 x 1/8	7/8	1	1	1 1/4 x 1/8
7/8 x 1 1/8 x L - 1 5/8 x 1/8	7/8	1 1/8	3/4 - 1- 1 1/4 - 1 1/2	1 5/8 x 1/8
1 x 1 1/4 x L - 1 3/4 x 1/8	1	1 1/4	1 - 1 1/4 - 1 1/2 - 1 3/4 - 2	1 3/4 x 1/8
1 x 1 1/4 x L - 1 1/2 x 1/8	1	1 1/4	3/4 - 1 - 1 1/8 - 1 1/4 - 1 1/2	1 1/2 x 1/8
1 1/8 x 1 3/8 x L - 1 7/8 X 1/8	1 1/8	1 3/8	1 - 1 1/4 - 1 1/2 - 1 3/4	1 7/8 X 1/8
1 1/4 x 1 1/2 x L - 1 7/8 x 1/8	1 1/4	1 1/2	3/4 - 1 1/4 - 1 1/2	1 7/8 x 1/8
1 1/4 x 1 5/8 x L - 2 x 1/8	1 1/4	1 5/8	1 - 1 1/4 - 1 1/2 - 1 3/4	2 x 1/8
1 3/8 x 1 5/8 x L - 1 7/8 x 1/8	1 3/8	1 5/8	3/4 - 1 1/4	1 7/8 x 1/8
1 1/2 x 1 3/4 x L - 1 7/8 x 1/8	1 1/2	1 3/4	1 1/2 - 1 7/8	1 7/8 x 1/8
1 1/2 x 1 7/8 x L - 2 1/2 x 3/16	1 1/2	1 7/8	1 - 1 1/4 - 1 1/2 - 1 3/4 - 2	2 1/2 x 3/16

Non-standard lengths can be supplied. If the size you require is not listed please contact our sales dept. We also offer a specialised machining service for low volume non-standard sizes and tolerances.

Sintered Imperial Washers

Reference		
Bore	Outside Diameter	Length
3/8	5/8	1/8
1/2	7/8	1/8
21/32	1 1/4	3/32
3/4	1 1/4	1/8
25/32	1 1/2	1/8
7/8	1 1/2	1/8
7/8	1 55/64	1/8
1	1 25/32	1/8
1 1/32	2	1/8
1 1/4	1 7/8	1/8
1 1/4	3	1/8
1 5/8	2 3/8	1/8
2 1/4	3 1/2	1/8

Other sizes available – please contact our sales dept.

Sintered Cored Bars

Reference			Metric Equivalent (mm)		
Bore	Outside Diameter	Length	Bore	Outside Diameter	Length
½	1	6½	12.7	25.4	165
½	1½	6½	12.7	38.1	165
⅝	1⅜	6½	15.88	34.9	165
⅝	1½	6½	15.88	38.1	165
¾	2	6½	19.05	50.8	165
⅞	1½	6½	22.23	38.1	165
⅞	2	6½	22.23	50.8	165
⅞	2¼	6½	22.23	57.2	165
1	2	6½	25.4	50.8	165
1	3	6½	25.4	76.2	165
1⅛	2⅛	6½			
1½	2½	6½			
1½	3	6½	38.1	76.2	165
2	3	6½	50.8	76.2	165
2	4	6½	50.8	101.6	165
2	4½	6½			
2¼	4½	6½			
2⅛	3	6½			
2½	4	6½	63.5	101.6	165
2½	3½	6½			
2½	5	6½			
3	4	6½			
3	4½	6½			
3½	4¾	6½			
3¾	5	6½	95.25	127.0	165
4	6	6½	101.6	152.4	165

All bores and outside diameters have a 1⁄16 (1.5mm) machining allowance so as to enable actual sizes listed to be achieved. Many other sizes are available to order. We offer a competative machining and re-lubricating service – please contact our sales dept.

Sintered Solid Bars

Reference		Metric Equivalent (mm)	
Outside Diameter	Length	Outside Diameter	Length
⅜	3	9.5	76.2
½	6½	12.7	165
0.787	2.047	20	52
1	6½	25.4	165
1⅛	6½		
1½	6½	38.1	165
1.574	2.047	40	52
2	6½	50.8	165
2.362	2.362	60	60
2¾	6½		
3.149	3.149	80	80
3¼	6½		
6	6½	152	165

We offer a competative machining and re-lubricating service – please contact our sales dept.

Sintered Metric Spherical Bearings

Reference		
Bore	**Spherical Diameter**	**Length**
3.18	8	6
3.5	8	6
4	8	6
4	9	5
4	10	7
4	12	8
4.5	9	5
4.5	12	8
5	10	7
5	12	8
5	12	9
5	13	8
5	13	9
6	10	4
6	12	8
6	12	9
6	13	8
6	13	9
7	13	8
7	14	10
7	16	11
8	13.5	9
8	14	10
8	16	11
9	16	12

Sintered Metric Spherical Bearings with Collars

Reference			
Bore	**Spherical Dia**	**Collar Dia**	**Collar Length**
4	9	6	2
5	12	9	3
6	12	9	2

All spherical bearings can be supplied in various grades of sintered bronze and iron, with lubricants to suit different applications. Spherical bearings can be supplied with one or two collars. Various bore tolerances and non-standard lengths can be supplied. Imperial sizes also available.

Technical Information for Sintered Bearings

Fitting

The bearings are porous and can be damaged if fitting is not carried out correctly. Assembly by hammer blows deforms the bearing. The correct method is by using a shouldered insertion pin. Fitting without the use of an insertion pin can only be done where a tolerance of more than IT8 is acceptable on the fitted bearing.

A chamfer in the housing bore is necessary to serve as a lead for the bearing. Any out-of-roundness in the bearing is corrected when the bearing is pressed into the housing.

Shaft

It is important that the fitting of the bearing is carried out correctly and that the shaft has a good surface finish. The best results are obtained by grinding or polishing the shaft. A shaft with a poor surface finish can act as a reamer and thereby close the pores of the bearing surface. A surface finish of Ra≤ 0.4 (N5) is recommended. The shaft should be ground and can in most cases be used unhardened. Hard chromium plating is recommended where the shaft comes in contact with corrosive substances. Shafts of stainless steel can also be used but should be chromium plated or must be used with bearings lubricated with a molybdenum disulphide additive. Bearings used in dirty or polluted environments should be protected by seals.

Design

When considering a new application or when designing a new sintered bearing, it is always good practice to consider the option of iron as a lower cost alternative to bronze if operating conditions allow.

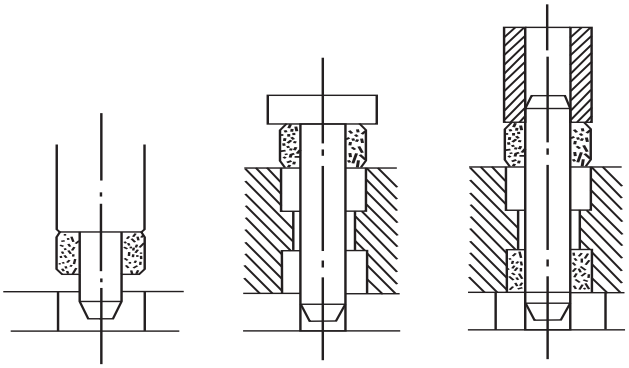
Life

When used under ideal conditions a self-lubricating bearing can run for thousands of hours without additional lubrication. Abnormal running conditions, such as loading above the maximum permissible PV-value, shortens the life. Vibrations, misalignment and high ambient temperatures also shorten the life of oil lubricated bearings.

If possible, bearings should have lower loading and speed during a short running-in period than during normal usage.

Loads and Speeds

Load and speed limitations must be ascertained in order to ensure proper bearing design. If design limits are exceeded, the bearing life will decrease and could result in premature failure. To determine the capacity of a bearing, use the following PV calculation as a guide.



PV Imperial Calculation

The normal load carrying capacity of Oilube™ bearings is expressed as a PV factor (pressure x surface velocity) where :-

P = The load in pounds per square inch on the projected bearing area (bearing I.D. x length)

V = Surface velocity of the shaft in feet per minute (SFM).

$$PV = \frac{W}{LD} \times \frac{\pi DR}{12} = \frac{3\text{-}14\ WR}{12L}$$

W = Total load on bearing (pounds).

L = Length of bearing (inches).

D = I.D. of bearing (inches).

R = Shaft speed (RPM).

Normal upper limits for Oilube™ bearing materials

Material	PV	P(PSI)		V(SFM)
		Static	Dynamic	
Oilube™ A50 A51	50,000	8,000	2,000	1,200
Super Oilube™	45,000	20,000	4,000	750
Oilube™ A00	45,000	10,000	3,000	1,100
Graphite Bronze	12,000	6,000	1,000	1,100
MoS_2 Bronze	12,000	6,000	1,000	50/1,200*

*This higher figure can only be achieved if oil impregnation is also carried out.

A factor of safety has been allowed for in the chart above and figures are based on normal bearing usage.

Exceeding any of these four factors could affect normal bearing life. Under certain conditions and with special lubricants and additives they can be exceeded. For unusual conditions contact our sales department who have a wealth of information that has been compiled from over 25 years of experience of applying Oilube™ bearings in numerous applications.

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Sintered Material Specifications

Typical Properties			Bowman Oilube™ Grade A00	Bowman Oilube™ Grade A50	Bowman Oilube™ Grade A51	Bowman Super Oilube™	Bowman Graphite Bronze	Bowman MoS_2 Bronze
Approximate Composition %	Carbon	**C**	0.3	0.2	0.75	0.3	6	0.2
	Copper	**Cu**	1	87.8	87.25	20	76	85.8
	Iron	**Fe**	96.7	0	0	77.7	0	0
	Lead	**Pb**	0	0	0	0	8	0
	Tin	**Sn**	0	10	10	0	8	8
	Other		2	2	2	2	2	2
	Solid MoS_2		0	0	0	0	0	4
Nominal Density g/cm³			5.8	6.6	6.2	6.0	6.6	6.2
Porosity (% Oil by volume)			24	20	24	20	N/A	N/A
"K" Strength Constant (Mpa)			170	160	130	200	120	160
Maximum Operating Temperature Range using standard lubricant ˚C			-10 to +85	-10 to +85	-10 to +85	-10 to +85	-100 to +400˚C	-100 to +400˚C
Maximum Operating Temperature Range using enhanced lubricant ˚C			-60 to +220	-60 to +220	-60 to +220	-60 to +220	N/A	N/A
Recommended Shaft Surface Finish			Ra<=0.4um	Ra<=0.4um	Ra<=0.4um	Ra<=0.4um	Ra<=0.4um	Ra<=0.4um
Recommended Shaft Hardness			HRC60	HRC60	HRC60	HRC60	HRC60	HRC60

These figures are based on Bowman standard lubrication. Operating temperatures of up to 220˚C can be achieved using high temperature lubricants. Please note the bearing clearances and standard fitting data may not be applicable for bearings operating at elevated temperatures.

Lubrication

Lubrication is one of the most important factors affecting bearing performance. Many different lubricants can be provided for varying applications. These have not been listed, as new oils and additives are constantly being developed. Please therefore consult with our sales department for up to date advice.

For certain applications it is beneficial to incorporate special additives in the lubricant e.g. MoS_2 (molybdenum disulphide), P.T.F.E. or graphite. These additives are recommended for use where slow running, reciprocal movement, high loads, low starting torque or stainless steel shafts are a factor.

The oil-cushioning characteristics of Oilube™ bearings permit them to operate efficiently under heavy loads at moderate speeds or light loads at high speeds.

If dry lubrication is required or high temperatures are involved then graphite bronze or MoS_2 bronze should be considered.

Combination insertion and sizing pin

The amount of close-in may be controlled by the use of a combination insertion and sizing pin. The pin diameter should be approximately 0.0003" (0.0076mm) greater than the desired final bearing I.D. The bearing must be such that the pin fits freely in the bearing I.D. before installation. When the bearing is pressed into the housing, its I.D. will close-in on the pin.

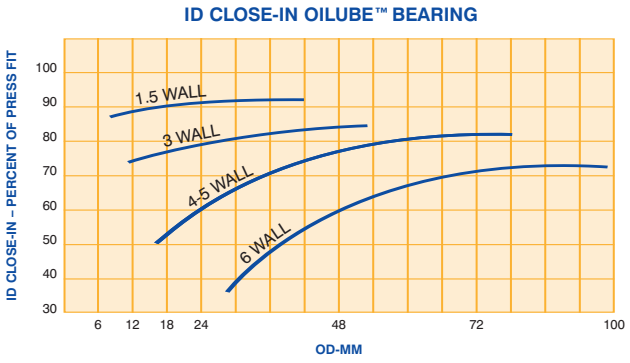
Oilube™ bearings generate their own oil film so there is no difficulty in extracting the pin. Upon its withdrawal, the bearing I.D. will spring back approximately 0.0003" (0.0076mm) in most cases but the exact amount must be determined by trial.

Precision toleranced bores

A bore I.D. tolerance of 0.0005" (0.0127mm) can be obtained by different sizing methods. Please consult our sales department for a detailed data sheet.

Controlling bore size

If the shouldered insertion pin is loose in the bearing bore, then the I.D. of the bearing will close-in without restraint. The approximate amount of close-in may be determined in advance (see chart below).



Storage of Bearings

Oilube™ bearings must be stored in non-absorbent containers. Do not store in paper or cloth containers. Do not store in wood or cardboard boxes. The best containers are made of plastic or metal.