

# BRM 10/80

Wrapped sliding bearings



**JOHNSON METALL AB**

# BRM 10/80 Wrapped sliding bearings

The BRM 10/80 sliding bearing is a bronze bearing according to **DIN 17662 CuSn8P**. The bearing is intended for oil or grease lubrication together with mating steel materials. The bearing surface is provided with lubrication pockets by processing. This gives an increased lubrication effect as the surface retains the lubricant where it is to lubricate. Lubrication is improved even if the consumption of lubricant is reduced. The bearing is ideal for oscillating movements that are otherwise very difficult to lubricate.

## BRM 10/80

The BRM 10/80 program mainly consists of cylindrical bearings (**DIN 1494**) with or without flange. The wall thickness of the bearings depends on the diameter and varies from 1 mm in the smallest bearings to 2.5 mm in the largest ones.

The program also includes washers, plates and special designs according to the customer's requirements.

BRM 10/80 bearings offer many advantages:

- High loadability.
- Compact dimensions.
- High chemical resistance in aggressive environments.
- High thermal conductivity.
- Wide working-temperature range.
- Easy to assemble and maintain.
- Large standard range available.
- Possibility to obtain special designs.

For further information on the use of sliding bearings, please contact our tribologists.

## Sliding Surface BRM 10

To obtain the best possible distribution of the lubricant over the sliding surface, it is provided with diamond-shaped indentations. These occupy 24% of the surface.

The lubrication pockets provide optimum lubrication with both oil and grease. However, in both cases lubricants must be supplied at short intervals depending on the type of use.

## BRM 80

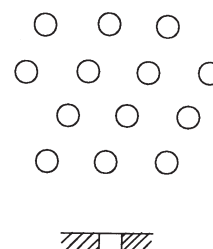
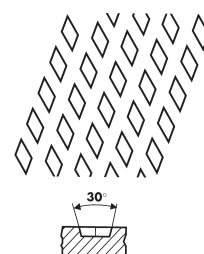
Bearings with through-hole lubrication pockets.

## Design data

For designs using sliding bearings, primarily the load, sliding speed, type of lubrication as well as hardness and surface finish of mating materials should be known.

### Mechanical properties

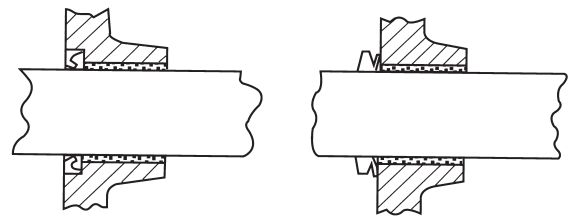
Tensile strength $R_m$ , N/mm <sup>2</sup>	450
Yield strength $R_{p0.2}$ , N/mm <sup>2</sup>	250
Elongation $A^{10}$ , %	55
Hardness, HB	110
Surface finish, $\mu\text{m}$	2
Thermal conductivity, W/m <sup>2</sup> K	60
Length expansion coefficient, $^{\circ}\text{C}^{-1}$	$2 \times 10^{-5}$
Maximum permissible surface pressure:	
• Static ( $v < 0.01$ m/s), N/mm <sup>2</sup>	150
• Dynamic ( $v < 2$ m/s), N/mm <sup>2</sup>	60



# Lubrication

BRM 10/80 bearings are intended to be lubricated with oil or grease. Lubrication is also beneficial to prevent corrosion on mating materials. When the bearing is used in aggressive environments, seals are recommended. These always have a beneficial effect on the life of the bearing.

When lubrication is periodic, grease is used while oil should be used for continuous lubrication.



# Installation

BRM 10/80 bearings are manufactured for press fitting in seats with tolerance **H7**. After pressing in, the inner diameter of the bearing assumes tolerance **H9**. The inner diameter may be affected by the type and material of the seat.

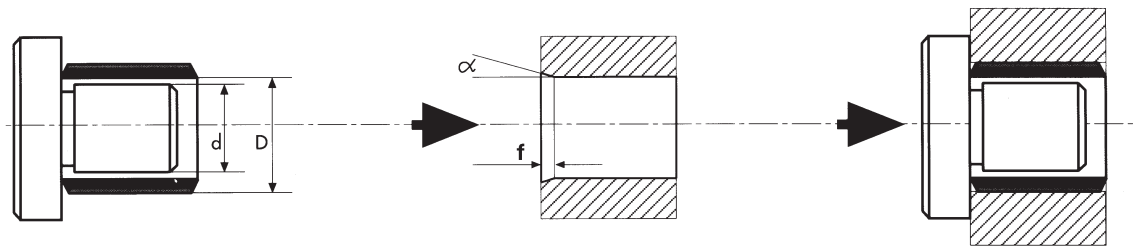
A rule of thumb for selecting bearing clearance may be as shown in the table.

For standard bearings with tolerance **H9** for the inner diameter, shafts with tolerance **e** or **f** are recommended. When **h** shafts are used, the inner diameter should be reamed to **F7** after assembly of the bearing. In some cases, e.g. with oscillating movement and very low sliding speed, when small clearances are required, it may be advantageous to use the bearing without adjusting the inner diameter together with the **h** shaft.

The bearings are assembled by press fitting.

Bearing clearance	Lubrication agent		Surface pressure		Movement		
	Grease	Oil	High	Low	Fast	Osc	Slow
Small		•	•			•	•
Medium	•			•	•		

- The following points are recommended:
- Make an input chamfer of 1 mm x 20°
  - Deburr carefully
  - Lubricate the outside of the bearing before pressing in
  - Carefully check the alignment between bearing and seat
  - If possible, use a press mandrel of the correct size.



Assembly can be done with hydraulic or mechanical tools. The pressing force (in **N**) is shown in the following table. **L** is the bearing length.

When assembling bearings >50 mm, a mounting ring should be used. Its diameter should be 0.3 to 0.4 mm greater than the diameter of the bearing.

When assembling BRM 10/80 straight bearings, the input chamfer  $f \times \alpha$  must be 1 mm x 20°.

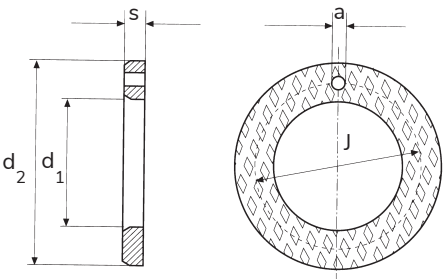
When assembling BRM 10/80 flange bearings, the input chamfer must be 2 mm x 45° (2.5 x 45° for bearings with a thickness of 2.5 mm).

Bearing goods thickness in mm	Pressing Force, N
1.0	300 x L
1.5	500 x L
2.0	700 x L
2.5	900 x L

# Axial bearings

Please state when ordering:  
BRM 10/80, AXIAL d<sub>1</sub>  
Limited inventory

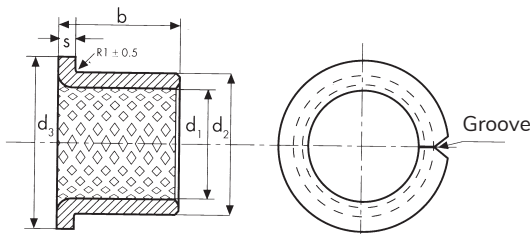
Dimensions in mm				
d <sup>1</sup> (+0.25)	d <sup>2</sup> (-0.25)	s (-0.05)	J (±0.1)	a (+0.4+0.1)
10	20	1.5	15	1.5
12	24	1.5	18	1.5
18	32	1.5	25	2
20	36	1.5	28	3
22	38	1.5	30	3
28	48	1.5	38	4
32	54	1.5	43	4
42	66	1.5	54	4
48	74	2	61	4
52	78	2	65	4
62	90	2	76	4



# Radial bearings flange

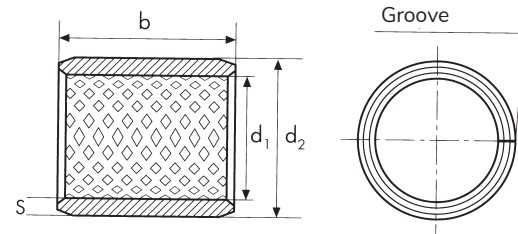
Please state when ordering:  
BRM 10/80, FLANGE d<sub>1</sub>xL  
Limited inventory

Dimensions in mm	Length b±0.25 mm												
	d <sup>1</sup> x d <sup>2</sup> / d <sup>3</sup>	15	20	25	30	35	40	45	50	60	70	80	90
25 x 28 / 35	•		•										
30 x 34 / 45		•	(•)	•									
35 x 39 / 50		•		(•)	•								
40 x 44 / 55			•				•						
45 x 50 / 60				•				•					
50 x 55 / 65				•					•				
55 x 60 / 70				•					•				
60 x 65 / 75				•						•			
65 x 70 / 80				•			•			•			
70 x 75 / 85							•				•		
75 x 80 / 90							•				•		
80 x 85 / 100							•					•	
90 x 95 / 110									(•)				•
100 x 105 / 120									•				•
110 x 115 / 130									•				•
120 x 125 / 140									•				•
130 x 135 / 155										•			•
140 x 145 / 165										•			•
150 x 155 / 180										•			•
160 x 165 / 190										•			•



# Radial bearings straight

Please state when ordering: BRM 10/80,  
STRAIGHT  $d_1 \times L$  Limited inventory



## Special designs

Dimensions in addition to those specified in  
the tables are available on request.

Dimensions in mm		Length $b \pm 0.25$ mm															
$d_1$	$d_2$	10	15	20	25	30	35	40	50	60	70	80	90	100			
10	12	•	•	•													
12	14	•	•	•													
13	15		•	•													
14	16	•	•	•	•												
15	17	•	•	•	•												
16	18	•	•	•	•												
17	19		•	•													
18	20		•	•	•												
20	22	•		(•)	•												
20	23	•	•	•	•	•											
22	25		•	•	•	•											
24	27		•	•	•	(•)											
24	28		(•)	(•)	•												
25	28		•	•	•	•			•								
28	31		(•)	•	•	•											
28	32		(•)	•	•	•											
30	34		•	•	•	•			•								
32	36			•		•		•									
35	39			•	(•)	•	•	•	•								
40	44			•	(•)	•		•	•								
45	50			•		•		•	•	(•)							
50	55			•	(•)	•		•	•	•							
55	60			•	•	•		•	•	•							
60	65			•	•	•		•	•	•	•	•					
65	70				•	•		•	•	•	•	•	•				
70	75				(•)			•	•	•	•	•	•	•			
75	80					•		•	•	•	•	•	•	•			
80	85					•		•		•		•		•			
85	90					•		•		•		•		•			
90	95							•		•			•	•			
95	100									•				•			
100	105							•	•	•				•			
105	110				(•)					•				•			
110	115									•				•			
115	120									(•)		(•)		•			
120	125									•				•			
125	130									•				•			
130	135									•				•			
135	140									•				•			
140	145									•				•			
145	150									(•)				•			
150	155									•				•			
155	160									(•)				•			
160	165									•				•			
170	175									(•)				•			
175	180									(•)				•			
180	185									•				(•)			
190	195									•				•			
195	200									•				•			
200	205									•				•			
230	235									•				•			
300	305									•				•			

## BRM 80

Bearings with through-hole lubrication pockets.  
Available with the same dimensions as BRM 10.

BRM 10/80 is stocked to a limited extent.





## Your first choice in bronze

Johnson Metall has great experience in casting, metallurgy, tribology and cutting machining –

Experience that together with modern machinery provides us with efficient manufacture and unique opportunities in collaboration with our customers.

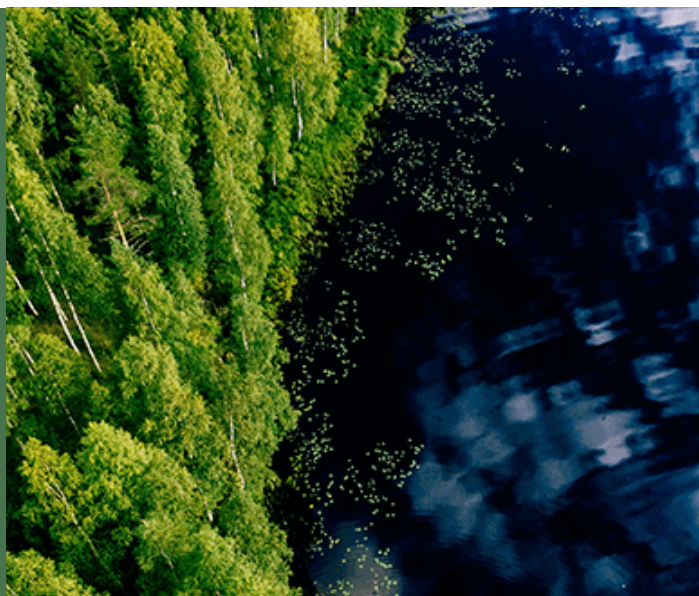
We are the Nordic countries' biggest manufacturer of sliding bearings, hollow bars and mould components made of bronze.

## For a sustainable future

Our business is based on the casting and machining of 100% recyclable copper alloys.

With our manufacturing process from raw material to finished product taking place within the same plant we get energy-efficient production with minimal environmental impact from transportation.

To minimise our carbon footprint we only use fossil-free electricity.



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We are the Nordic countries' leading manufacturer of cast and machined bronze products for industrial applications. We offer a comprehensive range of everything from standard stocked products to custom-manufactured components. Our vision is to always be your obvious choice as a supplier.



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