

Drystar Outline

SO#936FR

Lead Free

RoHS

Features

It is the bearing which has sintered porosity of bronze powder on the steel back plate, with improved self-lubrication and wear resistance by adding polytetrafluoro-ethylene (PTFE), which has small friction coefficient, and special filler through impregnation.

- Lead-free bearing which can be used without lubrication.
- Excellent sliding performance under high load and impact load.
- Excellent in wear resistance and long life.
- Suitable for sliding motion and continued motion Stick-slip hardly occurs. Silent operation can be achieved.

Precautions for use

- Do not grind the bushing inner surface or the outer diameter to change the size.
- Polish the surface of the mating surface to the value better than $3 \mu \text{mRmax}$.
- Offset the joint of the bushing as far as possible from the maximum load point.
- To press fit the bushing, press fit it vertically into the housing.
- Special lock is not required for Drystar.
- Initial lubrication can make the product life longer.

Operation Range

Lubricating Condition	Max. Allowable Load P N/mm ²				Operation Range Temperature °C
	Very Slow Movement	Rotation, Oscillation or Sliding	Change of Load 100,000 Times or Less	Change of Load 10 million Times or More	
No lubrication	147	59	29	15	-200 ~ +280

Physical Properties

Compression Strength Mpa	Linear Expansion Coefficient $\times 10^{-6}/^{\circ}\text{C}$		Thermal Conductivity W / (m · K)
	Parallel to Bearing Surface	Vertical to Bearing Surface	
304	11	30	42

Dimensions and tolerance for press-fit of bushing and how to obtain maximum press-fit force F (general formula)

$$F \doteq 0.8tL \delta \text{ max}$$

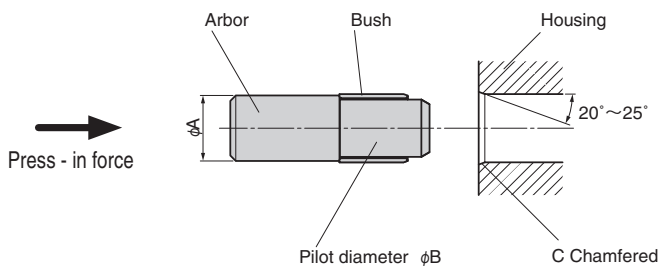
even t : Bush thickness(mm)

L : Bush length(mm)

$\delta \text{ max}$: Circumferential maximum stress (N)

$$= 18.6 \times 10^4 \times \frac{\text{Max. Bush Dia} - \text{Housing Dia}}{\text{Max. Bush Dia}}$$

For max bush dia., use the value measured with "GO ring gauge"



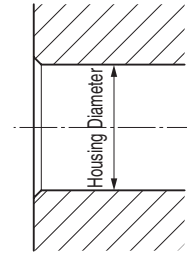
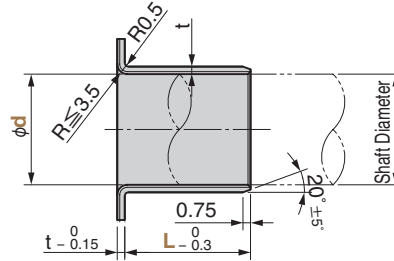
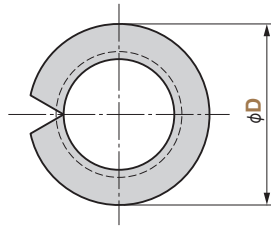
Arbor dia = Housing I.D. - (0.2 ~ 0.4 mm)

Pilot dia = Bush I.D. - (0.2 ~ 0.3 mm)

Housing chamfering procedures (C value)

Housing dia	C value
$\phi 30$ or less	0.8mm
$\phi 30 \leq \phi 50$	1.2mm
$\leq \phi 50$	1.6mm

LBMF



Material SO#936 FR

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Refer to P. 139 for caution in using



Order

Catalog No.

LBMF

d

06

D

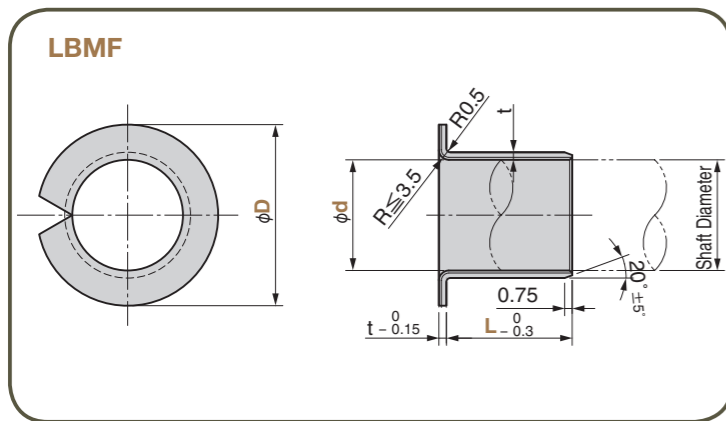
12

L

08

Housing		Shaft		Dimension of Bushing				Catalog No.	d	D	L	
I.D.	H7	O.D.	Tolerance	Tolerance I.D. after press-fit	O.D.	Tolerance	Thickness t					Tolerance
4.6	+0.012 0	3	-0.025 -0.034	3	+0.062 0	4.6	+0.047 +0.017	0.8	LBMF	03	07	03
5.6		4		4		5.6				04	09	04
7		5		5		7				05	10	05
			-0.025 -0.037									06
												04
												05
8	+0.015 0	6		6	+0.065 0	8	+0.053 +0.023	1.0	LBMF	06	12	06
		7		7		9					07	13
			-0.025 -0.040									08
												10
												05
9		7		7		9						06
												12
												06
10		8		8		10	+0.055 +0.025					08
												10
												12

* Tolerance I.D. after press-fit is for reference only.



Order **Catalog No.** **LBMF** **d** — **D** — **L**
LBMF **26** — **38** — **20**

Operation Range

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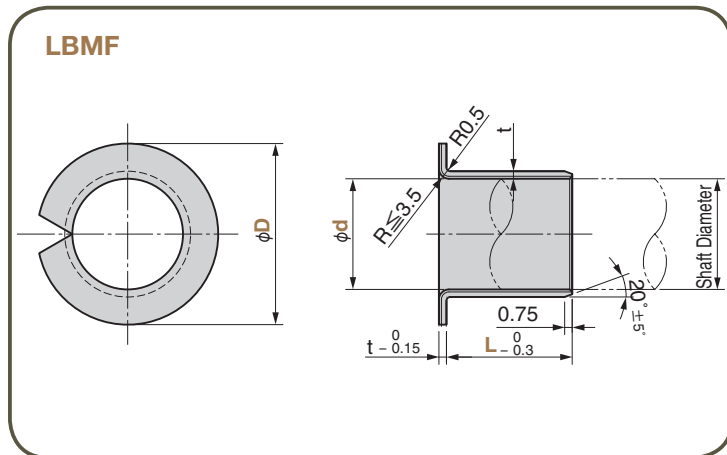
Housing		Shaft		Dimension of Bushing				Catalog No.	d	D	L
I.D.	H7	O.D.	Tolerance	Tolerance I.D. after press-fit	O.D.	Tolerance	Thickness t				
											06
											07
12		10	$\begin{matrix} -0.025 \\ -0.040 \end{matrix}$	10							08
											10
											12
											15
											06
											07
14		12		12							08
											10
											12
											15
											20
											06
16		14		14							10
											12
											15
											20
											10
17		15	$\begin{matrix} -0.025 \\ -0.043 \end{matrix}$	15							12
											15
											20
											25
											10
18		16		16							15
											20
											25
											10
20		18		18							12
											15
											20
											25

* Tolerance I.D. after press-fit is for reference only.

Housing		Shaft		Dimension of Bushing				Catalog No.	d	D	L
I.D.	H7	O.D.	Tolerance	Tolerance I.D. after press-fit	O.D.	Tolerance	Thickness t				
											10
											12
23		20		20							15
											20
											25
											30
											10
25		22		22							12
											15
											20
											25
											15
27		24		24							20
											25
											30
											10
											12
28		25		25							15
											20
											25
											30
											10
											12
30		26		26							15
											20
											12
32		28		28							15
											20
											30
											12
											15
34		30		30							20
											25
											30
											40
35		31		31							25
											20
36		32		32							25
											30
											12
											20
39		35		35							25
											30
											40
											20
42		38		38							30
											40
											12
											20
44		40		40							25
											30
											40

* Tolerance I.D. after press-fit is for reference only.

Resin Sliding Materials



Order

Catalog No.

LBMF

d

50

D

65

L

40

Operation Range

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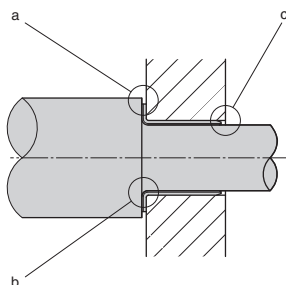
Physical Properties

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Housing		Shaft		Dimension of Bushing				Catalog No.	d	D	L
I.D.	H7	O.D.	Tolerance	Tolerance I.D. after press-fit	O.D.	Tolerance	Thickness t				
50	$\begin{matrix} +0.025 \\ 0 \end{matrix}$	45	$\begin{matrix} -0.025 \\ -0.050 \end{matrix}$	45	$\begin{matrix} +0.105 \\ 0 \end{matrix}$	50	$\begin{matrix} +0.115 \\ +0.075 \end{matrix}$		45	60	20
											25
											30
											40
55		50		50		55		2.5	$\begin{matrix} 0 \\ -0.040 \end{matrix}$	LBMF	50
											65
											30
60	$\begin{matrix} +0.030 \\ 0 \end{matrix}$	55	$\begin{matrix} -0.025 \\ -0.055 \end{matrix}$	55	$\begin{matrix} +0.110 \\ 0 \end{matrix}$	60	$\begin{matrix} +0.145 \\ +0.095 \end{matrix}$				40
											70
65		60		60		65					30
											40

* Tolerance I.D. after press-fit is for reference only.

Caution in Using Flange Bush



- Make the shaft outer diameter larger than the flange outer diameter. In press fit, make the arbor diameter larger than the flange outer diameter.
- Chamfer on the shaft is 1R.
- Keep the bushing end inside the housing end.