

The following six series of standard bearings are prepared for a wide variety of applications.

## Type AR [Sleeve Bearing]

AR series is machined from a bar or pipe made of BEAREE FL 3000 material.

This bearing only carries radial load and the standard bore size is  $\phi$  3 to  $\phi$  50mm.



## Type ARF [Flanged Sleeve Bearing]

Type ARF adds a flange to type AR and can carry radial and axial load. The standard bore size is  $\phi$  3 to  $\phi$  50mm.



## Type BRF [Flanged Sleeve Bearing]

Type BRF is made by injection molding and its material is BEAREE AS 5005. This bearing is flanged to carry radial and axial load. The standard bore size is  $\phi$  3 to  $\phi$  25mm. Lighter weight and more compact designs than with the ARF type are possible.



## Type TW [Thrust Washer]

The Type TW thrust washer is made from BEAREE FL 3000 tape, the thickness is 0.8mm and standard bore is  $\phi$  6 to  $\phi$  50mm.



## Type ML [M Liner bearing]

Type ML is a rolled steel plate bushing with BEAREE FL 3060 liner bonded on its bore, and the steel plate is zinc coated for rust prevention. This bearing carries higher pressure than types AR or ARF, having a thin wall, and a more compact design is possible. The standard bore size is  $\phi$  3 to  $\phi$  70mm and several widths are available for each bore.



## MLC TYPE [MLC bearing]

The MLC type is a three layered bearing composed of a special filler containing tetrafluoroethylene impregnated on the porous sintered layer made of bronze powder sintered on the back metal steel plate. The MLC Bearing for radial loads, the flanged MLCF bearing that can accept radial and axial loads, and thrust load MLCW bearings are standardized.

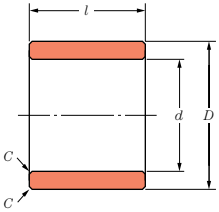


1. BEAREE FL can be deformed or scratched by shock load, etc. and BEAREE PI can be cracked or chipped.
2. Surface roughness of the mating material greatly affects bearing life. NTN recommends surface roughness of 0.1-0.8Ra.
3. The operating temperature may loose the clearance in the shaft and result in overheating, burning and seizing of the mechanism. Completely check the relation between fittings and clearances before application.

Dimensions to be measured at 25°C

**Type AR**

Sleeve Bearing



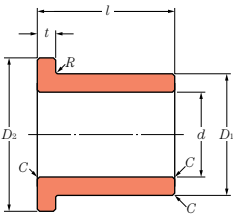
Part No.	Dimension mm				Recommended Fit mm		Minimum Mounted Clearance mm
	d tolerances	D tolerances	l tolerances	C	Shaft h6	Housing M7	
R-AR0305	3 <sup>+0.21</sup> / <sub>+0.16</sub>	6 <sup>+0.09</sup> / <sub>+0.04</sub>	5 <sup>0</sup> / <sub>-0.20</sub>	0.3	3 <sup>0</sup> / <sub>-0.006</sub>	6 <sup>0</sup> / <sub>-0.012</sub>	0.06
R-AR0406	4 <sup>+0.21</sup> / <sub>+0.16</sub>	7 <sup>+0.09</sup> / <sub>+0.04</sub>	6 <sup>0</sup> / <sub>-0.20</sub>	0.3	4 <sup>0</sup> / <sub>-0.006</sub>	7 <sup>0</sup> / <sub>-0.015</sub>	0.06
R-AR0506	5 <sup>+0.21</sup> / <sub>+0.16</sub>	8 <sup>+0.09</sup> / <sub>+0.04</sub>	6 <sup>0</sup> / <sub>-0.20</sub>	0.3	5 <sup>0</sup> / <sub>-0.008</sub>	8 <sup>0</sup> / <sub>-0.015</sub>	0.06
R-AR0608	6 <sup>+0.21</sup> / <sub>+0.16</sub>	9 <sup>+0.09</sup> / <sub>+0.04</sub>	8 <sup>0</sup> / <sub>-0.20</sub>	0.3	6 <sup>0</sup> / <sub>-0.008</sub>	9 <sup>0</sup> / <sub>-0.015</sub>	0.06
R-AR0708	7 <sup>+0.23</sup> / <sub>+0.18</sub>	11 <sup>+0.10</sup> / <sub>+0.05</sub>	8 <sup>0</sup> / <sub>-0.20</sub>	0.5	7 <sup>0</sup> / <sub>-0.009</sub>	11 <sup>0</sup> / <sub>-0.018</sub>	0.06
R-AR0808	8 <sup>+0.23</sup> / <sub>+0.18</sub>	12 <sup>+0.10</sup> / <sub>+0.05</sub>	8 <sup>0</sup> / <sub>-0.20</sub>	0.5	8 <sup>0</sup> / <sub>-0.009</sub>	12 <sup>0</sup> / <sub>-0.018</sub>	0.06
R-AR0910	9 <sup>+0.23</sup> / <sub>+0.18</sub>	13 <sup>+0.10</sup> / <sub>+0.05</sub>	10 <sup>0</sup> / <sub>-0.25</sub>	0.5	9 <sup>0</sup> / <sub>-0.009</sub>	13 <sup>0</sup> / <sub>-0.018</sub>	0.06
R-AR1010	10 <sup>+0.24</sup> / <sub>+0.19</sub>	14 <sup>+0.10</sup> / <sub>+0.05</sub>	10 <sup>0</sup> / <sub>-0.25</sub>	0.5	10 <sup>0</sup> / <sub>-0.009</sub>	14 <sup>0</sup> / <sub>-0.018</sub>	0.07
R-AR1210	12 <sup>+0.24</sup> / <sub>+0.19</sub>	16 <sup>+0.10</sup> / <sub>+0.05</sub>	10 <sup>0</sup> / <sub>-0.25</sub>	0.5	12 <sup>0</sup> / <sub>-0.011</sub>	16 <sup>0</sup> / <sub>-0.018</sub>	0.07
R-AR1515	15 <sup>+0.27</sup> / <sub>+0.20</sub>	21 <sup>+0.10</sup> / <sub>+0.05</sub>	15 <sup>0</sup> / <sub>-0.25</sub>	0.5	15 <sup>0</sup> / <sub>-0.011</sub>	21 <sup>0</sup> / <sub>-0.021</sub>	0.08
R-AR1715	17 <sup>+0.27</sup> / <sub>+0.20</sub>	23 <sup>+0.10</sup> / <sub>+0.05</sub>	15 <sup>0</sup> / <sub>-0.25</sub>	0.5	17 <sup>0</sup> / <sub>-0.011</sub>	23 <sup>0</sup> / <sub>-0.021</sub>	0.08
R-AR2020	20 <sup>+0.33</sup> / <sub>+0.21</sub>	26 <sup>+0.11</sup> / <sub>+0.06</sub>	20 <sup>0</sup> / <sub>-0.25</sub>	0.8	20 <sup>0</sup> / <sub>-0.013</sub>	26 <sup>0</sup> / <sub>-0.021</sub>	0.08
R-AR2220	22 <sup>+0.33</sup> / <sub>+0.21</sub>	28 <sup>+0.11</sup> / <sub>+0.06</sub>	20 <sup>0</sup> / <sub>-0.25</sub>	0.8	22 <sup>0</sup> / <sub>-0.013</sub>	28 <sup>0</sup> / <sub>-0.021</sub>	0.08
R-AR2525	25 <sup>+0.33</sup> / <sub>+0.21</sub>	31 <sup>+0.11</sup> / <sub>+0.06</sub>	25 <sup>0</sup> / <sub>-0.25</sub>	0.8	25 <sup>0</sup> / <sub>-0.013</sub>	31 <sup>0</sup> / <sub>-0.025</sub>	0.08
R-AR2830	28 <sup>+0.33</sup> / <sub>+0.21</sub>	34 <sup>+0.11</sup> / <sub>+0.06</sub>	30 <sup>0</sup> / <sub>-0.25</sub>	0.8	28 <sup>0</sup> / <sub>-0.013</sub>	34 <sup>0</sup> / <sub>-0.025</sub>	0.08
R-AR3030	30 <sup>+0.33</sup> / <sub>+0.21</sub>	36 <sup>+0.11</sup> / <sub>+0.06</sub>	30 <sup>0</sup> / <sub>-0.25</sub>	0.8	30 <sup>0</sup> / <sub>-0.013</sub>	36 <sup>0</sup> / <sub>-0.025</sub>	0.08
R-AR3230	32 <sup>+0.38</sup> / <sub>+0.22</sub>	40 <sup>+0.11</sup> / <sub>+0.06</sub>	30 <sup>0</sup> / <sub>-0.25</sub>	1.0	32 <sup>0</sup> / <sub>-0.016</sub>	40 <sup>0</sup> / <sub>-0.025</sub>	0.09
R-AR3535	35 <sup>+0.38</sup> / <sub>+0.22</sub>	43 <sup>+0.11</sup> / <sub>+0.06</sub>	35 <sup>0</sup> / <sub>-0.25</sub>	1.0	35 <sup>0</sup> / <sub>-0.016</sub>	43 <sup>0</sup> / <sub>-0.025</sub>	0.09
R-AR4040	40 <sup>+0.38</sup> / <sub>+0.22</sub>	48 <sup>+0.11</sup> / <sub>+0.06</sub>	40 <sup>0</sup> / <sub>-0.25</sub>	1.0	40 <sup>0</sup> / <sub>-0.016</sub>	48 <sup>0</sup> / <sub>-0.025</sub>	0.09
R-AR4550	45 <sup>+0.39</sup> / <sub>+0.23</sub>	53 <sup>+0.11</sup> / <sub>+0.06</sub>	50 <sup>0</sup> / <sub>-0.25</sub>	1.0	45 <sup>0</sup> / <sub>-0.016</sub>	53 <sup>0</sup> / <sub>-0.030</sub>	0.09
R-AR5050	50 <sup>+0.39</sup> / <sub>+0.23</sub>	60 <sup>+0.11</sup> / <sub>+0.06</sub>	50 <sup>0</sup> / <sub>-0.25</sub>	1.0	50 <sup>0</sup> / <sub>-0.016</sub>	60 <sup>0</sup> / <sub>-0.030</sub>	0.09

Remark 1. Use  $1.0 \times 10^{-7} \text{ mm}^3/\text{N}\cdot\text{Em}$  as a guide line for the specific wear rate  $K$ .

Dimensions to be measured at 25°C

**Type ARF**

Flanged Sleeve Bearing



Part No.	Dimension mm					Recommended Fit mm		Minimum Mounted Clearance mm
	d tolerances	D <sub>1</sub> tolerances	l tolerances	D <sub>2</sub>	t tolerances	Shaft h6	Housing M7	
R-ARF0305	3 <sup>+0.21</sup> / <sub>+0.16</sub>	6 <sup>+0.09</sup> / <sub>+0.04</sub>	5 <sup>0</sup> / <sub>-0.20</sub>	9	1.5 <sup>+0.10</sup> / <sub>0</sub>	3 <sup>0</sup> / <sub>-0.006</sub>	6 <sup>0</sup> / <sub>-0.012</sub>	0.06
R-ARF0406	4 <sup>+0.21</sup> / <sub>+0.16</sub>	7 <sup>+0.09</sup> / <sub>+0.04</sub>	6 <sup>0</sup> / <sub>-0.20</sub>	9	1.5 <sup>+0.10</sup> / <sub>0</sub>	4 <sup>0</sup> / <sub>-0.008</sub>	7 <sup>0</sup> / <sub>-0.015</sub>	0.06
R-ARF0508	5 <sup>+0.21</sup> / <sub>+0.16</sub>	8 <sup>+0.09</sup> / <sub>+0.04</sub>	8 <sup>0</sup> / <sub>-0.20</sub>	11	1.5 <sup>+0.10</sup> / <sub>0</sub>	5 <sup>0</sup> / <sub>-0.008</sub>	8 <sup>0</sup> / <sub>-0.015</sub>	0.06
R-ARF0608	6 <sup>+0.21</sup> / <sub>+0.16</sub>	9 <sup>+0.09</sup> / <sub>+0.04</sub>	8 <sup>0</sup> / <sub>-0.20</sub>	12	1.5 <sup>+0.10</sup> / <sub>0</sub>	6 <sup>0</sup> / <sub>-0.008</sub>	9 <sup>0</sup> / <sub>-0.015</sub>	0.06
R-ARF0710	7 <sup>+0.23</sup> / <sub>+0.18</sub>	11 <sup>+0.10</sup> / <sub>+0.05</sub>	10 <sup>0</sup> / <sub>-0.25</sub>	15	2 <sup>+0.10</sup> / <sub>0</sub>	7 <sup>0</sup> / <sub>-0.009</sub>	11 <sup>0</sup> / <sub>-0.018</sub>	0.06
R-ARF0810	8 <sup>+0.23</sup> / <sub>+0.18</sub>	12 <sup>+0.10</sup> / <sub>+0.05</sub>	10 <sup>0</sup> / <sub>-0.25</sub>	16	2 <sup>+0.10</sup> / <sub>0</sub>	8 <sup>0</sup> / <sub>-0.009</sub>	12 <sup>0</sup> / <sub>-0.018</sub>	0.06
R-ARF0910	9 <sup>+0.23</sup> / <sub>+0.18</sub>	13 <sup>+0.10</sup> / <sub>+0.05</sub>	10 <sup>0</sup> / <sub>-0.25</sub>	17	2 <sup>+0.10</sup> / <sub>0</sub>	9 <sup>0</sup> / <sub>-0.009</sub>	13 <sup>0</sup> / <sub>-0.018</sub>	0.06
R-ARF1015	10 <sup>+0.24</sup> / <sub>+0.19</sub>	14 <sup>+0.10</sup> / <sub>+0.05</sub>	15 <sup>0</sup> / <sub>-0.25</sub>	18	2 <sup>+0.10</sup> / <sub>0</sub>	10 <sup>0</sup> / <sub>-0.009</sub>	14 <sup>0</sup> / <sub>-0.018</sub>	0.07
R-ARF1215	12 <sup>+0.24</sup> / <sub>+0.19</sub>	16 <sup>+0.10</sup> / <sub>+0.05</sub>	15 <sup>0</sup> / <sub>-0.25</sub>	20	2 <sup>+0.10</sup> / <sub>0</sub>	12 <sup>0</sup> / <sub>-0.011</sub>	16 <sup>0</sup> / <sub>-0.018</sub>	0.07
R-ARF1520	15 <sup>+0.27</sup> / <sub>+0.20</sub>	21 <sup>+0.10</sup> / <sub>+0.05</sub>	20 <sup>0</sup> / <sub>-0.25</sub>	27	3 <sup>+0.10</sup> / <sub>0</sub>	15 <sup>0</sup> / <sub>-0.011</sub>	21 <sup>0</sup> / <sub>-0.021</sub>	0.08
R-ARF1720	17 <sup>+0.27</sup> / <sub>+0.20</sub>	23 <sup>+0.10</sup> / <sub>+0.05</sub>	20 <sup>0</sup> / <sub>-0.25</sub>	29	3 <sup>+0.10</sup> / <sub>0</sub>	17 <sup>0</sup> / <sub>-0.011</sub>	23 <sup>0</sup> / <sub>-0.021</sub>	0.08
R-ARF2025	20 <sup>+0.33</sup> / <sub>+0.21</sub>	26 <sup>+0.11</sup> / <sub>+0.06</sub>	25 <sup>0</sup> / <sub>-0.25</sub>	32	3 <sup>+0.10</sup> / <sub>0</sub>	20 <sup>0</sup> / <sub>-0.013</sub>	26 <sup>0</sup> / <sub>-0.021</sub>	0.08
R-ARF2225	22 <sup>+0.33</sup> / <sub>+0.21</sub>	28 <sup>+0.11</sup> / <sub>+0.06</sub>	25 <sup>0</sup> / <sub>-0.25</sub>	34	3 <sup>+0.10</sup> / <sub>0</sub>	22 <sup>0</sup> / <sub>-0.013</sub>	28 <sup>0</sup> / <sub>-0.021</sub>	0.08
R-ARF2530	25 <sup>+0.33</sup> / <sub>+0.21</sub>	31 <sup>+0.11</sup> / <sub>+0.06</sub>	30 <sup>0</sup> / <sub>-0.25</sub>	37	3 <sup>+0.10</sup> / <sub>0</sub>	25 <sup>0</sup> / <sub>-0.013</sub>	31 <sup>0</sup> / <sub>-0.025</sub>	0.08
R-ARF2830	28 <sup>+0.33</sup> / <sub>+0.21</sub>	34 <sup>+0.11</sup> / <sub>+0.06</sub>	30 <sup>0</sup> / <sub>-0.25</sub>	40	3 <sup>+0.10</sup> / <sub>-0.05</sub>	28 <sup>0</sup> / <sub>-0.013</sub>	34 <sup>0</sup> / <sub>-0.025</sub>	0.08
R-ARF3035	30 <sup>+0.33</sup> / <sub>+0.21</sub>	36 <sup>+0.11</sup> / <sub>+0.06</sub>	35 <sup>0</sup> / <sub>-0.25</sub>	42	3 <sup>+0.10</sup> / <sub>-0.05</sub>	30 <sup>0</sup> / <sub>-0.013</sub>	36 <sup>0</sup> / <sub>-0.025</sub>	0.08
R-ARF3235	32 <sup>+0.38</sup> / <sub>+0.22</sub>	40 <sup>+0.11</sup> / <sub>+0.06</sub>	35 <sup>0</sup> / <sub>-0.25</sub>	48	4 <sup>+0.10</sup> / <sub>-0.05</sub>	32 <sup>0</sup> / <sub>-0.016</sub>	40 <sup>0</sup> / <sub>-0.025</sub>	0.09
R-ARF3540	35 <sup>+0.38</sup> / <sub>+0.22</sub>	43 <sup>+0.11</sup> / <sub>+0.06</sub>	40 <sup>0</sup> / <sub>-0.25</sub>	51	4 <sup>+0.10</sup> / <sub>-0.05</sub>	35 <sup>0</sup> / <sub>-0.016</sub>	43 <sup>0</sup> / <sub>-0.025</sub>	0.09
R-ARF4045	40 <sup>+0.38</sup> / <sub>+0.22</sub>	48 <sup>+0.11</sup> / <sub>+0.06</sub>	45 <sup>0</sup> / <sub>-0.25</sub>	56	4 <sup>+0.10</sup> / <sub>-0.05</sub>	40 <sup>0</sup> / <sub>-0.016</sub>	48 <sup>0</sup> / <sub>-0.025</sub>	0.09
R-ARF4550	45 <sup>+0.39</sup> / <sub>+0.23</sub>	53 <sup>+0.11</sup> / <sub>+0.06</sub>	50 <sup>0</sup> / <sub>-0.25</sub>	61	4 <sup>+0.10</sup> / <sub>-0.05</sub>	45 <sup>0</sup> / <sub>-0.016</sub>	53 <sup>0</sup> / <sub>-0.030</sub>	0.09
R-ARF5060	50 <sup>+0.39</sup> / <sub>+0.23</sub>	60 <sup>+0.11</sup> / <sub>+0.06</sub>	60 <sup>0</sup> / <sub>-0.25</sub>	70	5 <sup>+0.10</sup> / <sub>-0.05</sub>	50 <sup>0</sup> / <sub>-0.016</sub>	60 <sup>0</sup> / <sub>-0.030</sub>	0.09

Remarks 1. The corner radius of flange is 0.2 mm or smaller.

2. Dimensions of chamfer is the same as Type AR for the same bore.

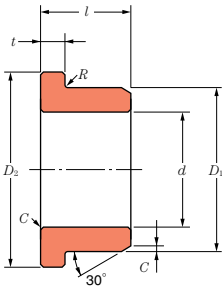
3. The minimum mounting clearance shall be the value when the product is mounted on the M7 ultra strong housing.

4. Use  $1.0 \times 10^{-7} \text{ mm}^3/\text{N}\cdot\text{Em}$  as a guide line for the specific wear rate  $K$ .

Dimensions to be measured at 25°C

**Type BRF**

Flanged Sleeve Bearing



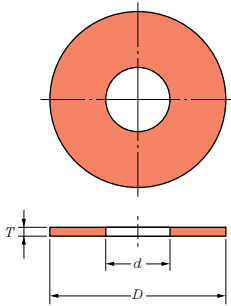
Part No.	Dimension mm					Recommended Fit mm		Minimum Mounted Clearance mm
	d tolerances	D <sub>1</sub> tolerances	l tolerances	D <sub>2</sub>	t tolerances	Shaft h7	Housing H7	
R-BRF0304	3 <sup>+0.21</sup> / <sub>+0.16</sub>	6 <sup>+0.11</sup> / <sub>+0.06</sub>	4 ±0.2	9	1.5 ±0.1	3 <sup>0</sup> / <sub>-0.010</sub>	6 <sup>+0.012</sup> / <sub>0</sub>	0.05
R-BRF0404	4 <sup>+0.22</sup> / <sub>+0.17</sub>	7 <sup>+0.12</sup> / <sub>+0.06</sub>	4 ±0.2	10	1.5 ±0.1	4 <sup>0</sup> / <sub>-0.012</sub>	7 <sup>+0.015</sup> / <sub>0</sub>	0.05
R-BRF0505	5 <sup>+0.22</sup> / <sub>+0.17</sub>	8 <sup>+0.12</sup> / <sub>+0.06</sub>	5 ±0.2	11	1.5 ±0.1	5 <sup>0</sup> / <sub>-0.012</sub>	8 <sup>+0.015</sup> / <sub>0</sub>	0.05
R-BRF0605	6 <sup>+0.22</sup> / <sub>+0.17</sub>	9 <sup>+0.12</sup> / <sub>+0.06</sub>	5 ±0.2	12	1.5 ±0.1	6 <sup>0</sup> / <sub>-0.012</sub>	9 <sup>+0.015</sup> / <sub>0</sub>	0.05
R-BRF0806	8 <sup>+0.26</sup> / <sub>+0.20</sub>	12 <sup>+0.14</sup> / <sub>+0.07</sub>	6 ±0.2	15	2 ±0.1	8 <sup>0</sup> / <sub>-0.015</sub>	12 <sup>+0.018</sup> / <sub>0</sub>	0.06
R-BRF1008	10 <sup>+0.27</sup> / <sub>+0.21</sub>	14 <sup>+0.14</sup> / <sub>+0.07</sub>	8 ±0.2	17	2 ±0.1	10 <sup>0</sup> / <sub>-0.015</sub>	14 <sup>+0.018</sup> / <sub>0</sub>	0.07
R-BRF1208	12 <sup>+0.28</sup> / <sub>+0.21</sub>	16 <sup>+0.14</sup> / <sub>+0.07</sub>	8 ±0.2	19	2 ±0.1	12 <sup>0</sup> / <sub>-0.018</sub>	16 <sup>+0.018</sup> / <sub>0</sub>	0.07
R-BRF1510	15 <sup>+0.30</sup> / <sub>+0.23</sub>	21 <sup>+0.15</sup> / <sub>+0.07</sub>	10 ±0.2	24	3 ±0.1	15 <sup>0</sup> / <sub>-0.018</sub>	21 <sup>+0.021</sup> / <sub>0</sub>	0.08
R-BRF2012	20 <sup>+0.31</sup> / <sub>+0.23</sub>	26 <sup>+0.15</sup> / <sub>+0.07</sub>	12 ±0.2	29	3 ±0.1	20 <sup>0</sup> / <sub>-0.021</sub>	26 <sup>+0.021</sup> / <sub>0</sub>	0.08
R-BRF2515	25 <sup>+0.32</sup> / <sub>+0.24</sub>	31 <sup>+0.16</sup> / <sub>+0.08</sub>	15 ±0.2	34	3 ±0.1	25 <sup>0</sup> / <sub>-0.021</sub>	31 <sup>+0.025</sup> / <sub>0</sub>	0.08

- Remarks 1. Dimension of chamfer is 0.3 mm for 6mm or smaller bore and 0.5mm for 8 mm or larger bore.  
 2. The corner radius of flange is 0.2 mm or smaller.  
 3. Use  $1.5 \times 10^{-7} \text{ mm}^3/\text{N}\cdot\text{Em}$  as a guide line for the specific wear rate *K*.

Dimensions to be measured at 25°C

**Type TW**

Thrust Washer

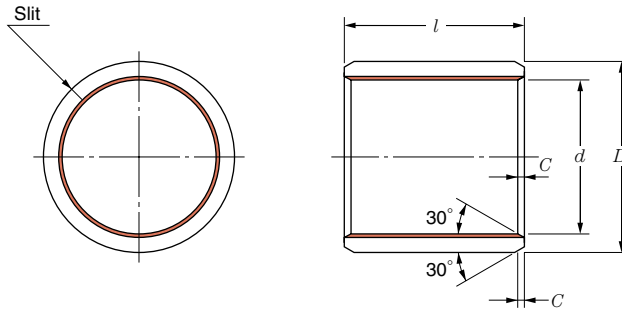


Part No.	Dimension mm		
	d <sup>+0.25</sup> / <sub>0</sub>	D <sup>0</sup> / <sub>-0.25</sub>	T <sup>±0.06</sup>
R-TW0613	6.2	12.8	0.8
R-TW0715	7.2	14.8	0.8
R-TW0815	8.2	14.8	0.8
R-TW0920	9.2	19.8	0.8
R-TW1020	10.2	19.8	0.8
R-TW1225	12.2	24.7	0.8
R-TW1530	15.3	29.7	0.8
R-TW1735	17.3	34.6	0.8
R-TW2040	20.4	39.6	0.8
R-TW2245	22.4	44.5	0.8
R-TW2550	25.4	49.5	0.8
R-TW2855	28.4	54.4	0.8
R-TW3060	30.4	59.4	0.8
R-TW3260	32.4	59.4	0.8
R-TW3565	35.6	64.3	0.8
R-TW4070	40.6	69.3	0.8
R-TW4575	45.6	74.2	0.8
R-TW5080	50.8	79.2	0.8

Remark 1. Use  $1.0 \times 10^{-7} \text{ mm}^3/\text{N}\cdot\text{Em}$  as a guide line for the specific wear rate *K*.

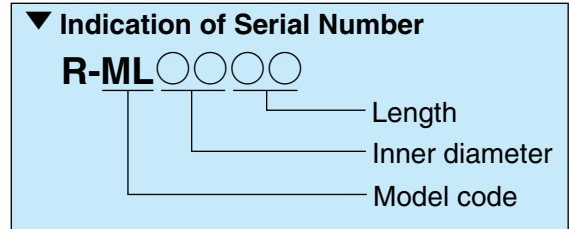
# Type ML

M Liner Bearing



Inner diameter <i>d</i> mm	Outer diameter <i>D</i> mm	Part No.									
		Length <i>l</i> (Tolerances $\begin{smallmatrix} 0 \\ -0.25 \end{smallmatrix}$ ) mm									
		3	4	5	6	7	8	10	12	15	20
3	5	R-ML0303	R-ML0304	R-ML0305	R-ML0306						
4	6		R-ML0404		R-ML0406		R-ML0408				
5	7		R-ML0504	R-ML0505	R-ML0506		R-ML0508				
6	8			R-ML0605	R-ML0606	R-ML0607	R-ML0608	R-ML0610			
7	9			R-ML0705		R-ML0707		R-ML0710	R-ML0712		
8	10				R-ML0806		R-ML0808	R-ML0810	R-ML0812		
9	11							R-ML0910			
10	12				R-ML1006	R-ML1007	R-ML1008	R-ML1010	R-ML1012	R-ML1015	R-ML1020
12	14				R-ML1206		R-ML1208	R-ML1210	R-ML1212	R-ML1215	R-ML1220
13	15									R-ML1315	
14	16							R-ML1410	R-ML1412	R-ML1415	R-ML1420
15	17							R-ML1510	R-ML1512	R-ML1515	R-ML1520
16	18							R-ML1610	R-ML1612	R-ML1615	R-ML1620
17	19									R-ML1715	
18	20							R-ML1810	R-ML1812	R-ML1815	R-ML1820
19	22									R-ML1915	
20	23							R-ML2010	R-ML2012	R-ML2015	R-ML2020
22	25							R-ML2210	R-ML2212	R-ML2215	R-ML2220
24	27									R-ML2415	R-ML2420
25	28							R-ML2510	R-ML2512	R-ML2515	R-ML2520
26	30										R-ML2620
28	32								R-ML2812	R-ML2815	R-ML2820
30	34								R-ML3012	R-ML3015	R-ML3020
31	35										
32	36										R-ML3220
35	39								R-ML3512		R-ML3520
38	42										R-ML3820
40	44								R-ML4012		R-ML4020
45	50										R-ML4520
50	55							R-ML5010			R-ML5020
55	60										
60	65										
65	70										
70	75										

Remark 1. Use  $1.2 \times 10^{-7} \text{ mm}^3/\text{N}\cdot\text{Em}$  as a guide line for the specific wear rate *K*.

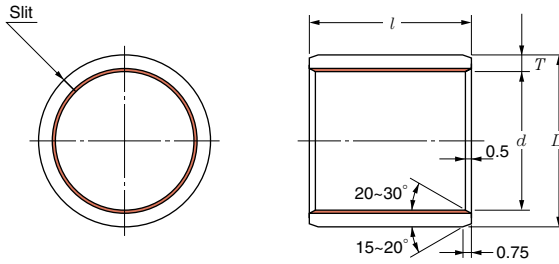


Dimensions to be measured at 25°C

Part No.						Dimension <i>C</i> mm	Recommended Fit mm		Mounted clearance mm (When mounted in H7 housing made of carbide)	
Length <i>l</i> (Tolerances $\begin{smallmatrix} 0 \\ -0.25 \end{smallmatrix}$ ) mm							Shaft h7	Housing H7	Minimum	Maximum
25	30	40	50	60	80					
						0.3	3 $\begin{smallmatrix} 0 \\ -0.010 \end{smallmatrix}$	5 $\begin{smallmatrix} +0.012 \\ 0 \end{smallmatrix}$	0.025	0.075
						0.5	4 $\begin{smallmatrix} 0 \\ -0.012 \end{smallmatrix}$	6 $\begin{smallmatrix} +0.012 \\ 0 \end{smallmatrix}$	0.025	0.085
						0.5	5 $\begin{smallmatrix} 0 \\ -0.012 \end{smallmatrix}$	7 $\begin{smallmatrix} +0.015 \\ 0 \end{smallmatrix}$	0.025	0.095
						0.5	6 $\begin{smallmatrix} 0 \\ -0.012 \end{smallmatrix}$	8 $\begin{smallmatrix} +0.015 \\ 0 \end{smallmatrix}$	0.025	0.095
						0.5	7 $\begin{smallmatrix} 0 \\ -0.015 \end{smallmatrix}$	9 $\begin{smallmatrix} +0.015 \\ 0 \end{smallmatrix}$	0.025	0.100
						0.5	8 $\begin{smallmatrix} 0 \\ -0.015 \end{smallmatrix}$	10 $\begin{smallmatrix} +0.015 \\ 0 \end{smallmatrix}$	0.025	0.100
						0.5	9 $\begin{smallmatrix} 0 \\ -0.015 \end{smallmatrix}$	11 $\begin{smallmatrix} +0.018 \\ 0 \end{smallmatrix}$	0.025	0.100
						0.5	10 $\begin{smallmatrix} 0 \\ -0.015 \end{smallmatrix}$	12 $\begin{smallmatrix} +0.018 \\ 0 \end{smallmatrix}$	0.025	0.100
						0.5	12 $\begin{smallmatrix} 0 \\ -0.018 \end{smallmatrix}$	14 $\begin{smallmatrix} +0.018 \\ 0 \end{smallmatrix}$	0.025	0.115
						0.5	13 $\begin{smallmatrix} 0 \\ -0.018 \end{smallmatrix}$	15 $\begin{smallmatrix} +0.018 \\ 0 \end{smallmatrix}$	0.025	0.115
						0.5	14 $\begin{smallmatrix} 0 \\ -0.018 \end{smallmatrix}$	16 $\begin{smallmatrix} +0.018 \\ 0 \end{smallmatrix}$	0.025	0.115
R-ML1525						0.5	15 $\begin{smallmatrix} 0 \\ -0.018 \end{smallmatrix}$	17 $\begin{smallmatrix} +0.018 \\ 0 \end{smallmatrix}$	0.025	0.115
R-ML1625						0.5	16 $\begin{smallmatrix} 0 \\ -0.018 \end{smallmatrix}$	18 $\begin{smallmatrix} +0.018 \\ 0 \end{smallmatrix}$	0.025	0.115
						0.5	17 $\begin{smallmatrix} 0 \\ -0.018 \end{smallmatrix}$	19 $\begin{smallmatrix} +0.021 \\ 0 \end{smallmatrix}$	0.025	0.115
R-ML1825						0.5	18 $\begin{smallmatrix} 0 \\ -0.018 \end{smallmatrix}$	20 $\begin{smallmatrix} +0.021 \\ 0 \end{smallmatrix}$	0.025	0.115
						0.7	19 $\begin{smallmatrix} 0 \\ -0.021 \end{smallmatrix}$	22 $\begin{smallmatrix} +0.021 \\ 0 \end{smallmatrix}$	0.025	0.130
R-ML2025	R-ML2030					0.7	20 $\begin{smallmatrix} 0 \\ -0.021 \end{smallmatrix}$	23 $\begin{smallmatrix} +0.021 \\ 0 \end{smallmatrix}$	0.025	0.130
R-ML2225						0.7	22 $\begin{smallmatrix} 0 \\ -0.021 \end{smallmatrix}$	25 $\begin{smallmatrix} +0.021 \\ 0 \end{smallmatrix}$	0.025	0.130
R-ML2425	R-ML2430					0.7	24 $\begin{smallmatrix} 0 \\ -0.021 \end{smallmatrix}$	27 $\begin{smallmatrix} +0.021 \\ 0 \end{smallmatrix}$	0.025	0.130
R-ML2525	R-ML2530					0.7	25 $\begin{smallmatrix} 0 \\ -0.021 \end{smallmatrix}$	28 $\begin{smallmatrix} +0.021 \\ 0 \end{smallmatrix}$	0.025	0.130
R-ML2625	R-ML2630					0.9	26 $\begin{smallmatrix} 0 \\ -0.021 \end{smallmatrix}$	30 $\begin{smallmatrix} +0.021 \\ 0 \end{smallmatrix}$	0.025	0.130
	R-ML2830					0.9	28 $\begin{smallmatrix} 0 \\ -0.021 \end{smallmatrix}$	32 $\begin{smallmatrix} +0.025 \\ 0 \end{smallmatrix}$	0.025	0.135
R-ML3025	R-ML3030	R-ML3040				0.9	30 $\begin{smallmatrix} 0 \\ -0.021 \end{smallmatrix}$	34 $\begin{smallmatrix} +0.025 \\ 0 \end{smallmatrix}$	0.025	0.135
R-ML3125		R-ML3140				0.9	31 $\begin{smallmatrix} 0 \\ -0.025 \end{smallmatrix}$	35 $\begin{smallmatrix} +0.025 \\ 0 \end{smallmatrix}$	0.035	0.165
R-ML3225	R-ML3230	R-ML3240				0.9	32 $\begin{smallmatrix} 0 \\ -0.025 \end{smallmatrix}$	36 $\begin{smallmatrix} +0.025 \\ 0 \end{smallmatrix}$	0.035	0.165
R-ML3525	R-ML3530	R-ML3540	R-ML3550			0.9	35 $\begin{smallmatrix} 0 \\ -0.025 \end{smallmatrix}$	39 $\begin{smallmatrix} +0.025 \\ 0 \end{smallmatrix}$	0.035	0.165
		R-ML3840				0.9	38 $\begin{smallmatrix} 0 \\ -0.025 \end{smallmatrix}$	42 $\begin{smallmatrix} +0.025 \\ 0 \end{smallmatrix}$	0.035	0.165
R-ML4025	R-ML4030	R-ML4040	R-ML4050			0.9	40 $\begin{smallmatrix} 0 \\ -0.025 \end{smallmatrix}$	44 $\begin{smallmatrix} +0.025 \\ 0 \end{smallmatrix}$	0.035	0.165
R-ML4525	R-ML4530	R-ML4540	R-ML4550			1.1	45 $\begin{smallmatrix} 0 \\ -0.025 \end{smallmatrix}$	50 $\begin{smallmatrix} +0.025 \\ 0 \end{smallmatrix}$	0.035	0.165
	R-ML5030	R-ML5040	R-ML5050	R-ML5060		1.1	50 $\begin{smallmatrix} 0 \\ -0.025 \end{smallmatrix}$	55 $\begin{smallmatrix} +0.030 \\ 0 \end{smallmatrix}$	0.035	0.165
	R-ML5530	R-ML5540		R-ML5560		1.1	55 $\begin{smallmatrix} 0 \\ -0.030 \end{smallmatrix}$	60 $\begin{smallmatrix} +0.030 \\ 0 \end{smallmatrix}$	0.045	0.195
	R-ML6030	R-ML6040		R-ML6060		1.1	60 $\begin{smallmatrix} 0 \\ -0.030 \end{smallmatrix}$	65 $\begin{smallmatrix} +0.030 \\ 0 \end{smallmatrix}$	0.045	0.195
	R-ML6530	R-ML6540		R-ML6560		1.1	65 $\begin{smallmatrix} 0 \\ -0.030 \end{smallmatrix}$	70 $\begin{smallmatrix} +0.030 \\ 0 \end{smallmatrix}$	0.045	0.195
		R-ML7040		R-ML7060	R-ML7080	1.1	70 $\begin{smallmatrix} 0 \\ -0.030 \end{smallmatrix}$	75 $\begin{smallmatrix} +0.030 \\ 0 \end{smallmatrix}$	0.045	0.195

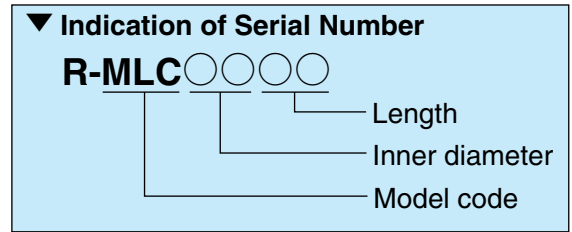
MLC TYPE

MLC bearing



Inner diameter <i>d</i>	Outer diameter <i>D</i>	Length <i>l</i> (Tolerances $\frac{0}{-0.4}$ )											
		3	4	5	6	7	8	10	12	15	20	25	30
3	5	MLC0303	MLC0304	MLC0305	MLC0306								
4	6	MLC0403	MLC0404		MLC0406		MLC0408						
5	7		MLC0504	MLC0505	MLC0506		MLC0508						
6	8			MLC0605	MLC0606	MLC0607	MLC0608	MLC0610					
7	9			MLC0705		MLC0707		MLC0710	MLC0712				
8	10			MLC0805	MLC0806	MLC0807	MLC0808	MLC0810	MLC0812				
9	11					MLC0907		MLC0910					
10	12				MLC1006	MLC1007	MLC1008	MLC1010	MLC1012	MLC1015	MLC1020		
12	14				MLC1206		MLC1208	MLC1210	MLC1212	MLC1215	MLC1220		
13	15						MLC1308	MLC1310		MLC1315			
14	16				MLC1406			MLC1410	MLC1412	MLC1415	MLC1420		
15	17						MLC1508	MLC1510	MLC1512	MLC1515	MLC1520	MLC1525	
16	18							MLC1610	MLC1612	MLC1615	MLC1620	MLC1625	
17	19									MLC1715	MLC1720		
18	20							MLC1810	MLC1812	MLC1815	MLC1820	MLC1825	
19	22							MLC1910		MLC1915			
20	23							MLC2010	MLC2012	MLC2015	MLC2020	MLC2025	MLC2030
22	25							MLC2210	MLC2212	MLC2215	MLC2220	MLC2225	MLC2230
24	27							MLC2410		MLC2415	MLC2420	MLC2425	MLC2430
25	28							MLC2510	MLC2512	MLC2515	MLC2520	MLC2525	MLC2530
26	30									MLC2615	MLC2620		MLC2630
28	32							MLC2810	MLC2812	MLC2815	MLC2820	MLC2825	MLC2830
30	34							MLC3010	MLC3012	MLC3015	MLC3020	MLC3025	MLC3030
31	35									MLC3115		MLC3125	
32	36										MLC3220	MLC3225	MLC3230
35	39							MLC3510	MLC3512	MLC3515	MLC3520	MLC3525	MLC3530
38	42										MLC3820	MLC3825	MLC3830
40	44								MLC4012	MLC4015	MLC4020	MLC4025	MLC4030
45	50								MLC4512		MLC4520	MLC4525	MLC4530
50	55								MLC5012	MLC5015	MLC5020	MLC5025	MLC5030
55	60								MLC5512			MLC5525	MLC5530
60	65									MLC6015	MLC6020		MLC6030
65	70									MLC6515			MLC6530
70	75									MLC7015	MLC7020		MLC7030
75	80										MLC7520		MLC7530
80	85									MLC8015	MLC8020		MLC8030
85	90												MLC8530
90	95										MLC9020		
95	100												MLC9530
100	105												MLC10030
105	110												
110	115										MLC11020		MLC11030
120	125												
130	135										MLC13020		
140	145												
150	155												
160	165												

Remarks 1. The minimum clearance is 0.025 mm when the preferred shaft and housing are used.  
 2. Use  $1.7 \times 10^{-7} \text{ mm}^3/\text{N}\cdot\text{Em}$  as a guide line for the specific wear rate *K*.

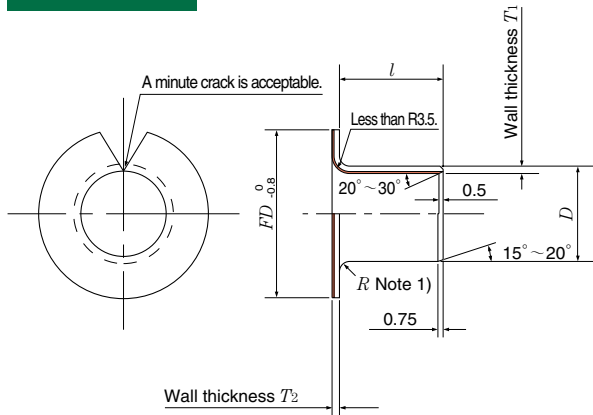


Dimensions to be measured at 25°C / unit in mm

Length / (Tolerances $\begin{smallmatrix} 0 \\ -0.4 \end{smallmatrix}$ )									Wall thickness	Recommended shaft	Recommended housing	
35	40	50	60	70	80	90	95	100	$T$	$d_a$	$D_a$	
									1.0 $\begin{smallmatrix} 0 \\ -0.025 \end{smallmatrix}$	3 $\begin{smallmatrix} -0.025 \\ -0.035 \end{smallmatrix}$	5 (H7) $\begin{smallmatrix} +0.012 \\ 0 \end{smallmatrix}$	
										4 $\begin{smallmatrix} -0.025 \\ -0.037 \end{smallmatrix}$	6 (H7) $\begin{smallmatrix} +0.012 \\ 0 \end{smallmatrix}$	
										5 $\begin{smallmatrix} -0.025 \\ -0.037 \end{smallmatrix}$	7 (H7) $\begin{smallmatrix} +0.015 \\ 0 \end{smallmatrix}$	
										6 $\begin{smallmatrix} -0.025 \\ -0.037 \end{smallmatrix}$	8 (H7) $\begin{smallmatrix} +0.015 \\ 0 \end{smallmatrix}$	
										7 $\begin{smallmatrix} -0.025 \\ -0.040 \end{smallmatrix}$	9 (H7) $\begin{smallmatrix} +0.015 \\ 0 \end{smallmatrix}$	
										8 $\begin{smallmatrix} -0.025 \\ -0.040 \end{smallmatrix}$	10 (H7) $\begin{smallmatrix} +0.015 \\ 0 \end{smallmatrix}$	
										9 $\begin{smallmatrix} -0.025 \\ -0.040 \end{smallmatrix}$	11 (H7) $\begin{smallmatrix} +0.018 \\ 0 \end{smallmatrix}$	
										10 $\begin{smallmatrix} -0.025 \\ -0.040 \end{smallmatrix}$	12 (H7) $\begin{smallmatrix} +0.018 \\ 0 \end{smallmatrix}$	
										12 $\begin{smallmatrix} -0.025 \\ -0.043 \end{smallmatrix}$	14 (H7) $\begin{smallmatrix} +0.018 \\ 0 \end{smallmatrix}$	
										13 $\begin{smallmatrix} -0.025 \\ -0.043 \end{smallmatrix}$	15 (H7) $\begin{smallmatrix} +0.018 \\ 0 \end{smallmatrix}$	
										14 $\begin{smallmatrix} -0.025 \\ -0.043 \end{smallmatrix}$	16 (H7) $\begin{smallmatrix} +0.018 \\ 0 \end{smallmatrix}$	
										15 $\begin{smallmatrix} -0.025 \\ -0.043 \end{smallmatrix}$	17 (H7) $\begin{smallmatrix} +0.018 \\ 0 \end{smallmatrix}$	
										16 $\begin{smallmatrix} -0.025 \\ -0.043 \end{smallmatrix}$	18 (H7) $\begin{smallmatrix} +0.018 \\ 0 \end{smallmatrix}$	
										17 $\begin{smallmatrix} -0.025 \\ -0.043 \end{smallmatrix}$	19 (H7) $\begin{smallmatrix} +0.021 \\ 0 \end{smallmatrix}$	
										18 $\begin{smallmatrix} -0.025 \\ -0.043 \end{smallmatrix}$	20 (H7) $\begin{smallmatrix} +0.021 \\ 0 \end{smallmatrix}$	
										1.5 $\begin{smallmatrix} 0 \\ -0.030 \end{smallmatrix}$	19 $\begin{smallmatrix} -0.025 \\ -0.046 \end{smallmatrix}$	22 (H7) $\begin{smallmatrix} +0.021 \\ 0 \end{smallmatrix}$
											20 $\begin{smallmatrix} -0.025 \\ -0.046 \end{smallmatrix}$	23 (H7) $\begin{smallmatrix} +0.021 \\ 0 \end{smallmatrix}$
											22 $\begin{smallmatrix} -0.025 \\ -0.046 \end{smallmatrix}$	25 (H7) $\begin{smallmatrix} +0.021 \\ 0 \end{smallmatrix}$
									24 $\begin{smallmatrix} -0.025 \\ -0.046 \end{smallmatrix}$		27 (H7) $\begin{smallmatrix} +0.021 \\ 0 \end{smallmatrix}$	
MLC2535	MLC2540								2.0 $\begin{smallmatrix} 0 \\ -0.030 \end{smallmatrix}$	25 $\begin{smallmatrix} -0.025 \\ -0.046 \end{smallmatrix}$	28 (H7) $\begin{smallmatrix} +0.021 \\ 0 \end{smallmatrix}$	
										26 $\begin{smallmatrix} -0.025 \\ -0.046 \end{smallmatrix}$	30 (H7) $\begin{smallmatrix} +0.021 \\ 0 \end{smallmatrix}$	
										28 $\begin{smallmatrix} -0.025 \\ -0.046 \end{smallmatrix}$	32 (H7) $\begin{smallmatrix} +0.025 \\ 0 \end{smallmatrix}$	
MLC3035	MLC3040									2.0 $\begin{smallmatrix} 0 \\ -0.030 \end{smallmatrix}$	30 $\begin{smallmatrix} -0.025 \\ -0.046 \end{smallmatrix}$	34 (H7) $\begin{smallmatrix} +0.025 \\ 0 \end{smallmatrix}$
	MLC3140								31 $\begin{smallmatrix} -0.025 \\ -0.050 \end{smallmatrix}$		35 (H7) $\begin{smallmatrix} +0.025 \\ 0 \end{smallmatrix}$	
MLC3235	MLC3240	MLC3250							32 $\begin{smallmatrix} -0.025 \\ -0.050 \end{smallmatrix}$		36 (H7) $\begin{smallmatrix} +0.025 \\ 0 \end{smallmatrix}$	
MLC3535	MLC3540	MLC3550							35 $\begin{smallmatrix} -0.025 \\ -0.050 \end{smallmatrix}$		39 (H7) $\begin{smallmatrix} +0.025 \\ 0 \end{smallmatrix}$	
MLC3835	MLC3840								38 $\begin{smallmatrix} -0.025 \\ -0.050 \end{smallmatrix}$		42 (H7) $\begin{smallmatrix} +0.025 \\ 0 \end{smallmatrix}$	
MLC4035	MLC4040	MLC4050							40 $\begin{smallmatrix} -0.025 \\ -0.050 \end{smallmatrix}$		44 (H7) $\begin{smallmatrix} +0.025 \\ 0 \end{smallmatrix}$	
MLC4535	MLC4540	MLC4550							2.5 $\begin{smallmatrix} 0 \\ -0.040 \end{smallmatrix}$		45 $\begin{smallmatrix} -0.025 \\ -0.050 \end{smallmatrix}$	50 (H7) $\begin{smallmatrix} +0.025 \\ 0 \end{smallmatrix}$
MLC5035	MLC5040	MLC5050	MLC5060		MLC5080						50 $\begin{smallmatrix} -0.025 \\ -0.050 \end{smallmatrix}$	55 (H7) $\begin{smallmatrix} +0.030 \\ 0 \end{smallmatrix}$
MLC5535	MLC5540	MLC5550	MLC5560								55 $\begin{smallmatrix} -0.025 \\ -0.055 \end{smallmatrix}$	60 (H7) $\begin{smallmatrix} +0.030 \\ 0 \end{smallmatrix}$
MLC6035	MLC6040	MLC6050	MLC6060	MLC6070							60 $\begin{smallmatrix} -0.025 \\ -0.055 \end{smallmatrix}$	65 (H7) $\begin{smallmatrix} +0.030 \\ 0 \end{smallmatrix}$
	MLC6540	MLC6550	MLC6560	MLC6570						65 $\begin{smallmatrix} +0.035 \\ +0.005 \end{smallmatrix}$	70 (H7) $\begin{smallmatrix} +0.030 \\ 0 \end{smallmatrix}$	
MLC7035	MLC7040	MLC7050	MLC7060		MLC7080					70 $\begin{smallmatrix} +0.035 \\ +0.005 \end{smallmatrix}$	75 (H7) $\begin{smallmatrix} +0.030 \\ 0 \end{smallmatrix}$	
MLC7535	MLC7540	MLC7550	MLC7560		MLC7580					75 $\begin{smallmatrix} +0.035 \\ +0.005 \end{smallmatrix}$	80 (H7) $\begin{smallmatrix} +0.030 \\ 0 \end{smallmatrix}$	
	MLC8040	MLC8050	MLC8060		MLC8080					80 $\begin{smallmatrix} +0.035 \\ +0.005 \end{smallmatrix}$	85 (H7) $\begin{smallmatrix} +0.035 \\ 0 \end{smallmatrix}$	
	MLC8540	MLC8550	MLC8560		MLC8580				85 $\begin{smallmatrix} +0.035 \\ 0 \end{smallmatrix}$	90 (H7) $\begin{smallmatrix} +0.035 \\ 0 \end{smallmatrix}$		
MLC9035	MLC9040	MLC9050	MLC9060			MLC9090			90 $\begin{smallmatrix} +0.035 \\ 0 \end{smallmatrix}$	95 (H7) $\begin{smallmatrix} +0.035 \\ 0 \end{smallmatrix}$		
MLC9535	MLC9540								95 $\begin{smallmatrix} +0.035 \\ 0 \end{smallmatrix}$	100 (H7) $\begin{smallmatrix} +0.035 \\ 0 \end{smallmatrix}$		
MLC10035	MLC10040	MLC10050		MLC10070				MLC10095	2.47 $\begin{smallmatrix} 0 \\ -0.050 \end{smallmatrix}$	100 $\begin{smallmatrix} +0.035 \\ 0 \end{smallmatrix}$	105 (H7) $\begin{smallmatrix} +0.035 \\ 0 \end{smallmatrix}$	
		MLC10550					MLC10590	MLC10595		105 $\begin{smallmatrix} +0.035 \\ 0 \end{smallmatrix}$	110 (H7) $\begin{smallmatrix} +0.035 \\ 0 \end{smallmatrix}$	
MLC11035	MLC11040	MLC11050	MLC11060	MLC11070	MLC11080	MLC11090	MLC11095			110 $\begin{smallmatrix} +0.035 \\ 0 \end{smallmatrix}$	115 (H7) $\begin{smallmatrix} +0.035 \\ 0 \end{smallmatrix}$	
		MLC12040	MLC12050	MLC12060	MLC12070			MLC12095		120 $\begin{smallmatrix} +0.035 \\ 0 \end{smallmatrix}$	125 (H7) $\begin{smallmatrix} +0.040 \\ 0 \end{smallmatrix}$	
			MLC13050			MLC13080				130 $\begin{smallmatrix} +0.035 \\ -0.005 \end{smallmatrix}$	135 (H7) $\begin{smallmatrix} +0.040 \\ 0 \end{smallmatrix}$	
			MLC14050		MLC14070	MLC14080		MLC140100		140 $\begin{smallmatrix} +0.035 \\ -0.005 \end{smallmatrix}$	145 (H7) $\begin{smallmatrix} +0.040 \\ 0 \end{smallmatrix}$	
	MLC15040	MLC15050			MLC15080			MLC150100		150 $\begin{smallmatrix} +0.035 \\ -0.005 \end{smallmatrix}$	155 (H7) $\begin{smallmatrix} +0.040 \\ 0 \end{smallmatrix}$	
		MLC16050			MLC16080			MLC160100		160 $\begin{smallmatrix} +0.035 \\ -0.005 \end{smallmatrix}$	165 (H7) $\begin{smallmatrix} +0.040 \\ 0 \end{smallmatrix}$	

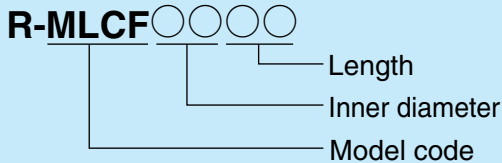
## MLCF TYPE

MLC bearing



Note 1) The dimension  $R$  shown in the above drawing is less than 0.75 when the wall thickness  $T_1 = 1.0$ , but less than 1.0 when the wall thickness  $T_2$  is larger than 1.5.

### ▼ Indication of Serial Number



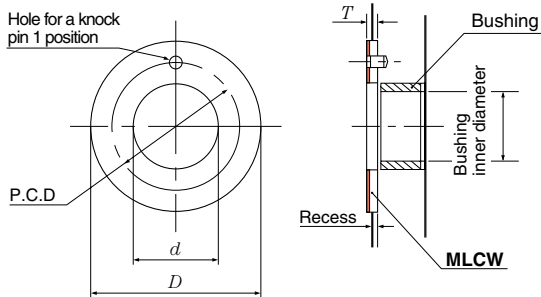
Inner diameter $d$	Outer diameter $D$	Collar diameter $FD$	Length $l$ (Tolerances $\begin{smallmatrix} 0 \\ -0.4 \end{smallmatrix}$ )					
			3	4	5	6	7	8
3	4.6	7	MLCF0303					
4	5.6	9		MLCF0404				
5	7	10		MLCF0504	MLCF0505			
6	8	12			MLCF0605	MLCF0606	MLCF0607	MLCF0608
7	9	13			MLCF0705		MLCF0707	
8	10	15				MLCF0806		MLCF0808
10	12	18				MLCF1006	MLCF1007	MLCF1008
12	14	20				MLCF1206		MLCF1208
14	16	22						
15	17	23						
16	18	24						
18	20	26						
20	23	31						
22	25	33						
24	27	35						
25	28	36						
26	30	38						
28	32	40						
30	34	42						
31	35	45						
32	36	46						
35	39	49						
38	42	52						
40	44	54						
45	50	60						
50	55	65						
55	60	70						
60	65	75						

Remarks 1. The minimum clearance is 0.025 mm when the preferred shaft and housing are used.

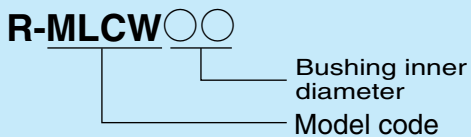
2. Use  $1.7 \times 10^{-7} \text{ mm}^3/\text{N}\cdot\text{Em}$  as a guide line for the specific wear rate  $K$ .

## MLCW TYPE

MLC bearing



### ▼ Indication of Serial Number



Bushing inner diameter for combination	Part No.	Inner diameter $d$ mm	Outer diameter $D$ mm	Wall thickness $T$ mm
6	MLCW06	8 $\begin{smallmatrix} +0.25 \\ 0 \end{smallmatrix}$	16 $\begin{smallmatrix} 0 \\ -0.25 \end{smallmatrix}$	1.5 $\begin{smallmatrix} -0.03 \\ -0.08 \end{smallmatrix}$
8	MLCW08	10 $\begin{smallmatrix} +0.25 \\ 0 \end{smallmatrix}$	18 $\begin{smallmatrix} 0 \\ -0.25 \end{smallmatrix}$	1.5 $\begin{smallmatrix} -0.03 \\ -0.08 \end{smallmatrix}$
10	MLCW10	12 $\begin{smallmatrix} +0.25 \\ 0 \end{smallmatrix}$	24 $\begin{smallmatrix} 0 \\ -0.25 \end{smallmatrix}$	1.5 $\begin{smallmatrix} -0.03 \\ -0.08 \end{smallmatrix}$
12	MLCW12	14 $\begin{smallmatrix} +0.25 \\ 0 \end{smallmatrix}$	26 $\begin{smallmatrix} 0 \\ -0.25 \end{smallmatrix}$	1.5 $\begin{smallmatrix} -0.03 \\ -0.08 \end{smallmatrix}$
14	MLCW14	16 $\begin{smallmatrix} +0.25 \\ 0 \end{smallmatrix}$	30 $\begin{smallmatrix} 0 \\ -0.25 \end{smallmatrix}$	1.5 $\begin{smallmatrix} -0.03 \\ -0.08 \end{smallmatrix}$
16	MLCW16	18 $\begin{smallmatrix} +0.25 \\ 0 \end{smallmatrix}$	32 $\begin{smallmatrix} 0 \\ -0.25 \end{smallmatrix}$	1.5 $\begin{smallmatrix} -0.03 \\ -0.08 \end{smallmatrix}$
18	MLCW18	20 $\begin{smallmatrix} +0.25 \\ 0 \end{smallmatrix}$	36 $\begin{smallmatrix} 0 \\ -0.25 \end{smallmatrix}$	1.5 $\begin{smallmatrix} -0.03 \\ -0.08 \end{smallmatrix}$
20	MLCW20	22 $\begin{smallmatrix} +0.25 \\ 0 \end{smallmatrix}$	38 $\begin{smallmatrix} 0 \\ -0.25 \end{smallmatrix}$	1.5 $\begin{smallmatrix} -0.03 \\ -0.08 \end{smallmatrix}$
22	MLCW22	24 $\begin{smallmatrix} +0.25 \\ 0 \end{smallmatrix}$	42 $\begin{smallmatrix} 0 \\ -0.25 \end{smallmatrix}$	1.5 $\begin{smallmatrix} -0.03 \\ -0.08 \end{smallmatrix}$
24	MLCW24	26 $\begin{smallmatrix} +0.25 \\ 0 \end{smallmatrix}$	44 $\begin{smallmatrix} 0 \\ -0.25 \end{smallmatrix}$	1.5 $\begin{smallmatrix} -0.03 \\ -0.08 \end{smallmatrix}$
25	MLCW25	28 $\begin{smallmatrix} +0.25 \\ 0 \end{smallmatrix}$	48 $\begin{smallmatrix} 0 \\ -0.25 \end{smallmatrix}$	1.5 $\begin{smallmatrix} -0.03 \\ -0.08 \end{smallmatrix}$
30	MLCW30	32 $\begin{smallmatrix} +0.25 \\ 0 \end{smallmatrix}$	54 $\begin{smallmatrix} 0 \\ -0.25 \end{smallmatrix}$	1.5 $\begin{smallmatrix} -0.03 \\ -0.08 \end{smallmatrix}$
35	MLCW35	38 $\begin{smallmatrix} +0.25 \\ 0 \end{smallmatrix}$	62 $\begin{smallmatrix} 0 \\ -0.25 \end{smallmatrix}$	1.5 $\begin{smallmatrix} -0.03 \\ -0.08 \end{smallmatrix}$
40	MLCW40	42 $\begin{smallmatrix} +0.25 \\ 0 \end{smallmatrix}$	66 $\begin{smallmatrix} 0 \\ -0.25 \end{smallmatrix}$	1.5 $\begin{smallmatrix} -0.03 \\ -0.08 \end{smallmatrix}$
45	MLCW45	48 $\begin{smallmatrix} +0.25 \\ 0 \end{smallmatrix}$	74 $\begin{smallmatrix} 0 \\ -0.25 \end{smallmatrix}$	2.0 $\begin{smallmatrix} -0.03 \\ -0.08 \end{smallmatrix}$
50	MLCW50	52 $\begin{smallmatrix} +0.25 \\ 0 \end{smallmatrix}$	78 $\begin{smallmatrix} 0 \\ -0.25 \end{smallmatrix}$	2.0 $\begin{smallmatrix} -0.03 \\ -0.08 \end{smallmatrix}$

Remark 1. The minimum clearance is 0.025 mm when the preferred shaft and housing are used.

Dimensions to be measured at 25°C / unit in mm

Length <i>l</i> (Tolerances $\begin{smallmatrix} 0 \\ -0.4 \end{smallmatrix}$ )										Wall thickness		Recommended shaft <i>d<sub>a</sub></i>	Recommended housing <i>D<sub>a</sub></i>		
10	12	15	20	25	30	40	45	50	60	<i>T</i> <sub>1</sub>	<i>T</i> <sub>2</sub>				
										0.8 $\begin{smallmatrix} 0 \\ -0.025 \end{smallmatrix}$	0.8 $\begin{smallmatrix} 0 \\ -0.2 \end{smallmatrix}$	3 $\begin{smallmatrix} -0.025 \\ -0.035 \end{smallmatrix}$	4.6 (H7) $\begin{smallmatrix} +0.012 \\ 0 \end{smallmatrix}$		
												4 $\begin{smallmatrix} -0.025 \\ -0.037 \end{smallmatrix}$	5.6 (H7) $\begin{smallmatrix} +0.012 \\ 0 \end{smallmatrix}$		
												5 $\begin{smallmatrix} -0.025 \\ -0.037 \end{smallmatrix}$	7 (H7) $\begin{smallmatrix} +0.015 \\ 0 \end{smallmatrix}$		
MLCF0610												6 $\begin{smallmatrix} -0.025 \\ -0.037 \end{smallmatrix}$	8 (H7) $\begin{smallmatrix} +0.015 \\ 0 \end{smallmatrix}$		
MLCF0710	MLCF0712									1.0 $\begin{smallmatrix} 0 \\ -0.025 \end{smallmatrix}$	1.0 $\begin{smallmatrix} 0 \\ -0.2 \end{smallmatrix}$	7 $\begin{smallmatrix} -0.025 \\ -0.040 \end{smallmatrix}$	9 (H7) $\begin{smallmatrix} +0.015 \\ 0 \end{smallmatrix}$		
MLCF0810	MLCF0812											8 $\begin{smallmatrix} -0.025 \\ -0.040 \end{smallmatrix}$	10 (H7) $\begin{smallmatrix} +0.015 \\ 0 \end{smallmatrix}$		
MLCF1010	MLCF1012	MLCF1015										10 $\begin{smallmatrix} -0.025 \\ -0.040 \end{smallmatrix}$	12 (H7) $\begin{smallmatrix} +0.018 \\ 0 \end{smallmatrix}$		
MLCF1210	MLCF1212	MLCF1215	MLCF1220									12 $\begin{smallmatrix} -0.025 \\ -0.043 \end{smallmatrix}$	14 (H7) $\begin{smallmatrix} +0.018 \\ 0 \end{smallmatrix}$		
MLCF1410	MLCF1412	MLCF1415	MLCF1420									14 $\begin{smallmatrix} -0.025 \\ -0.043 \end{smallmatrix}$	16 (H7) $\begin{smallmatrix} +0.018 \\ 0 \end{smallmatrix}$		
MLCF1510	MLCF1512	MLCF1515	MLCF1520	MLCF1525								15 $\begin{smallmatrix} -0.025 \\ -0.043 \end{smallmatrix}$	17 (H7) $\begin{smallmatrix} +0.018 \\ 0 \end{smallmatrix}$		
MLCF1610	MLCF1612	MLCF1615	MLCF1620	MLCF1625								16 $\begin{smallmatrix} -0.025 \\ -0.043 \end{smallmatrix}$	18 (H7) $\begin{smallmatrix} +0.018 \\ 0 \end{smallmatrix}$		
MLCF1810	MLCF1812	MLCF1815	MLCF1820	MLCF1825								18 $\begin{smallmatrix} -0.025 \\ -0.043 \end{smallmatrix}$	20 (H7) $\begin{smallmatrix} +0.021 \\ 0 \end{smallmatrix}$		
MLCF2010	MLCF2012	MLCF2015	MLCF2020	MLCF2025	MLCF2030							1.5 $\begin{smallmatrix} 0 \\ -0.030 \end{smallmatrix}$	1.5 $\begin{smallmatrix} 0 \\ -0.2 \end{smallmatrix}$	20 $\begin{smallmatrix} -0.025 \\ -0.046 \end{smallmatrix}$	23 (H7) $\begin{smallmatrix} +0.021 \\ 0 \end{smallmatrix}$
MLCF2210	MLCF2212	MLCF2215	MLCF2220	MLCF2225										22 $\begin{smallmatrix} -0.025 \\ -0.046 \end{smallmatrix}$	25 (H7) $\begin{smallmatrix} +0.021 \\ 0 \end{smallmatrix}$
		MLCF2415	MLCF2420	MLCF2425	MLCF2430					24 $\begin{smallmatrix} -0.025 \\ -0.046 \end{smallmatrix}$	27 (H7) $\begin{smallmatrix} +0.021 \\ 0 \end{smallmatrix}$				
MLCF2510	MLCF2512	MLCF2515	MLCF2520	MLCF2525	MLCF2530					25 $\begin{smallmatrix} -0.025 \\ -0.046 \end{smallmatrix}$	28 (H7) $\begin{smallmatrix} +0.021 \\ 0 \end{smallmatrix}$				
		MLCF2615	MLCF2620							26 $\begin{smallmatrix} -0.025 \\ -0.046 \end{smallmatrix}$	30 (H7) $\begin{smallmatrix} +0.021 \\ 0 \end{smallmatrix}$				
	MLCF2812	MLCF2815	MLCF2820	MLCF2825	MLCF2830					28 $\begin{smallmatrix} -0.025 \\ -0.046 \end{smallmatrix}$	32 (H7) $\begin{smallmatrix} +0.025 \\ 0 \end{smallmatrix}$				
	MLCF3012	MLCF3015	MLCF3020	MLCF3025	MLCF3030	MLCF3040				30 $\begin{smallmatrix} -0.025 \\ -0.046 \end{smallmatrix}$	34 (H7) $\begin{smallmatrix} +0.025 \\ 0 \end{smallmatrix}$				
			MLCF3125							31 $\begin{smallmatrix} -0.025 \\ -0.050 \end{smallmatrix}$	35 (H7) $\begin{smallmatrix} +0.025 \\ 0 \end{smallmatrix}$				
			MLCF3220	MLCF3225	MLCF3230					32 $\begin{smallmatrix} -0.025 \\ -0.050 \end{smallmatrix}$	36 (H7) $\begin{smallmatrix} +0.025 \\ 0 \end{smallmatrix}$				
	MLCF3512		MLCF3520	MLCF3525	MLCF3530	MLCF3540	MLCF3545	MLCF3550		35 $\begin{smallmatrix} -0.025 \\ -0.050 \end{smallmatrix}$	39 (H7) $\begin{smallmatrix} +0.025 \\ 0 \end{smallmatrix}$				
			MLCF3820	MLCF3825	MLCF3830	MLCF3840				38 $\begin{smallmatrix} -0.025 \\ -0.050 \end{smallmatrix}$	42 (H7) $\begin{smallmatrix} +0.025 \\ 0 \end{smallmatrix}$				
	MLCF4012		MLCF4020	MLCF4025	MLCF4030	MLCF4040		MLCF4050		40 $\begin{smallmatrix} -0.025 \\ -0.050 \end{smallmatrix}$	44 (H7) $\begin{smallmatrix} +0.025 \\ 0 \end{smallmatrix}$				
			MLCF4520	MLCF4525	MLCF4530	MLCF4540		MLCF4550		45 $\begin{smallmatrix} -0.025 \\ -0.050 \end{smallmatrix}$	50 (H7) $\begin{smallmatrix} +0.025 \\ 0 \end{smallmatrix}$				
			MLCF5020	MLCF5025	MLCF5030	MLCF5040		MLCF5050	MLCF5060	2.5 $\begin{smallmatrix} 0 \\ -0.040 \end{smallmatrix}$	2.5 $\begin{smallmatrix} 0 \\ -0.3 \end{smallmatrix}$	50 $\begin{smallmatrix} -0.025 \\ -0.050 \end{smallmatrix}$	55 (H7) $\begin{smallmatrix} +0.030 \\ 0 \end{smallmatrix}$		
					MLCF5530	MLCF5540		MLCF5550	MLCF5560			55 $\begin{smallmatrix} -0.025 \\ -0.055 \end{smallmatrix}$	60 (H7) $\begin{smallmatrix} +0.030 \\ 0 \end{smallmatrix}$		
					MLCF6030	MLCF6040		MLCF6050	MLCF6060			60 $\begin{smallmatrix} -0.025 \\ -0.055 \end{smallmatrix}$	65 (H7) $\begin{smallmatrix} +0.030 \\ 0 \end{smallmatrix}$		

Dimensions to be measured at 25°C

Knock pin hole diameter mm	Position of a knock pin P.C.D mm	Depth of the housing recess mm
1.100~1.300	12 ±0.12	0.95~1.20
1.100~1.300	14 ±0.12	0.95~1.20
1.625~1.875	18 ±0.12	0.95~1.20
2.125~2.375	20 ±0.12	0.95~1.20
2.125~2.375	23 ±0.12	0.95~1.20
2.125~2.375	25 ±0.12	0.95~1.20
3.125~3.375	28 ±0.12	0.95~1.20
3.125~3.375	30 ±0.12	0.95~1.20
3.125~3.375	33 ±0.12	0.95~1.20
3.125~3.375	35 ±0.12	0.95~1.20
4.125~4.375	38 ±0.12	0.95~1.20
4.125~4.375	43 ±0.12	0.95~1.20
4.125~4.375	50 ±0.12	0.95~1.20
4.125~4.375	54 ±0.12	0.95~1.20
4.125~4.375	61 ±0.12	1.45~1.70
4.125~4.375	65 ±0.12	1.45~1.70