



LINEAR BALL BUSHINGS AND **SHAFTING**



WWW.NTN.CA





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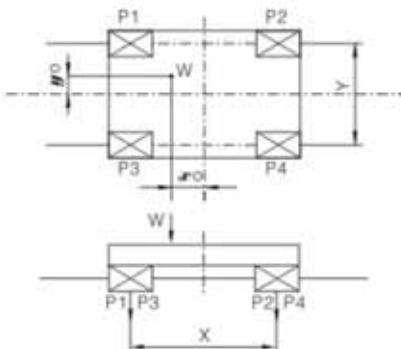
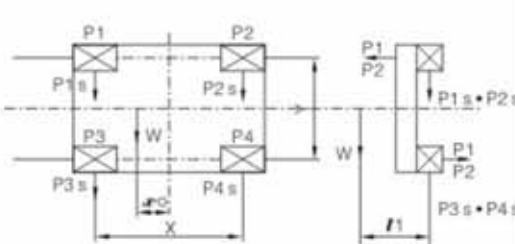
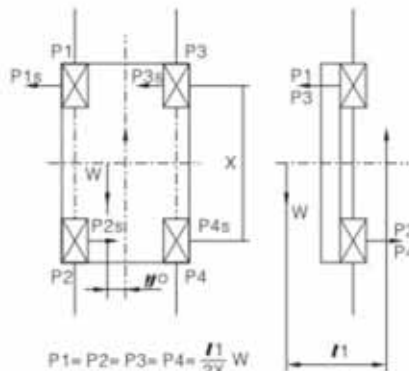
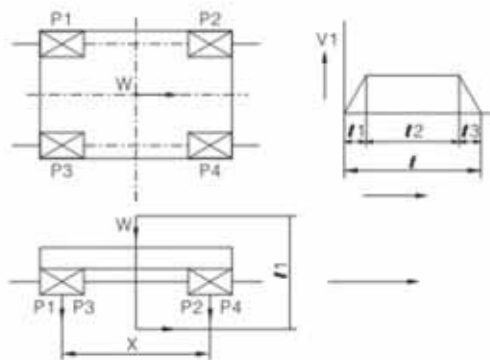
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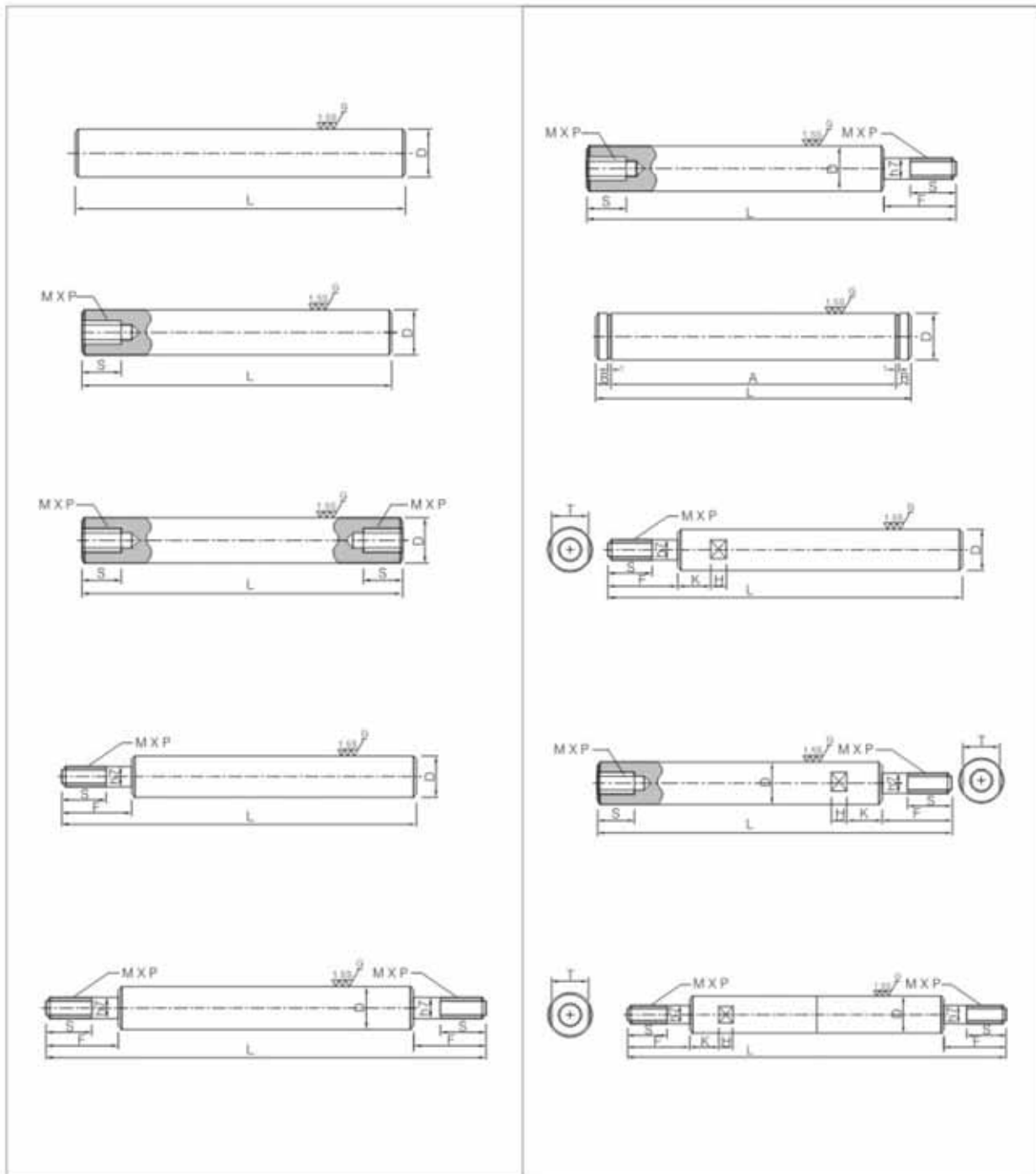


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| Type | Operating conditions | Type | Operating conditions |
|------|---|------|---|
| 1 |  $P1 = \frac{1}{4}W + \frac{x0}{2X}W + \frac{y0}{2Y}W$ $P2 = \frac{1}{4}W - \frac{x0}{2X}W + \frac{y0}{2Y}W$ $P3 = \frac{1}{4}W + \frac{x0}{2X}W - \frac{y0}{2Y}W$ $P4 = \frac{1}{4}W - \frac{x0}{2X}W - \frac{y0}{2Y}W$ | 3 |  $P1 = P2 = P3 = P4 = \frac{l1}{2X}W$ $P1s = P3s = \frac{1}{4}W + \frac{y0}{2X}W$ $P2s = P4s = \frac{1}{4}W - \frac{y0}{2X}W$ |
| 2 |  $P1 = P2 = P3 = P4 = \frac{l1}{2X}W$ $P1s = P2s = P3s = P4s = \frac{y0}{2X}W$ | 4 |  $P1 = P3 = \frac{1}{4}W \left(1 + \frac{2V1 \cdot l1}{g \cdot l1 X} \right)$ $P2 = P4 = \frac{1}{4}W \left(1 - \frac{2V1 \cdot l1}{g \cdot l1 X} \right)$ $P1s = P3s = \frac{1}{4}W \left(1 - \frac{2V1 \cdot l1}{g \cdot l1 X} \right)$ $P2s = P4s = \frac{1}{4}W \left(1 + \frac{2V1 \cdot l1}{g \cdot l1 X} \right)$ $P1 = P2 = P3 = P4 = \frac{1}{4}W$ <p>$g = 9.8 \times 10^3 \text{ mm/sec}^2$</p> |



Load Rating

Basic Dynamic Load Rating (c)

This term is arrived at based on an evaluation of a number of identical linear systems individually run in the same conditions, if 90% of them can run with the load (with a constant value in a constant direction) for a distance of 50 km without damage caused by rolling fatigue. This is the basis of the rating.

Allowable Static Moment (M)

This term defines the allowable limit value of static moment load, with reference to the amount of permanent deformation similar to that used for evaluation of basic rated load (C_0).

Static Safety Factor (fs)

This factor is used based on the application condition as shown in Table 1.

Rating Life

Rating Life of the Linear System

As long as the linear system reciprocates while being loaded, continuous stress acts on the linear system to cause flaking on the rolling bodies and planes because of material fatigue.

The travelling distance of linear system until the first flaking occurs is called the life of the system. The life of the system varies even for the system of the same dimensions, structure, material, heat treatment and processing method, when used in the same conditions. This variation is brought about from the essential variations in the material fatigue itself, the rating life defined below is used as an index for the life expectancy of the linear system.

Rating Life (L)

Rating life is the total travelling distance that 90% of a group of systems of the same size can reach without causing any flaking when they operate under the same conditions.

The rating life can be obtained from the following equation with the basic dynamic load rating and the load on the linear system:

$$\text{For ball type: } L = \left(\frac{C}{P} \right)^3 \cdot 50 \quad (1)$$

L: Rating life (km) C: Basic dynamic load rating (N)
P: Load (N)

Basic Static Load Rating (C_0)

This term defines a static load such that, at the contacting position where the maximum stress is exercised, the sum of the permanent deformation of the rolling elements and that of the rolling plane is 0.0001 time of the diameter of the rolling elements.

Table 1. Static Safety Factors

| Condition of use | Low limit of fs |
|--|-----------------|
| When the shaft has less deflection and shock | 1 to 2 |
| When elastic deformation should be considered with respect to pinch load | 2 to 4 |
| When the equipment is subject to vibration and impacts | 3 to 5 |

Consideration and influence of vibration impact loads and distribution of load should be taken into account when designing a linear motion system. It is difficult to calculate the actual load. The rating life is also affected by the operating temperature. In these conditions, the expression (1) is arranged as follows:

$$\text{For ball type: } L = \left(\frac{f_H \cdot f_T \cdot f_C \cdot C}{f_W \cdot P} \right)^3 \cdot 50$$

L: Rating life (km) f_H : Hardness factor (See Fig. 1)
C: Basic dynamic load rating (N)
 f_T : Temperature coefficient (See Fig. 2) P: Load (N)
 f_C : Contact coefficient (See Table 2)
 f_W : Load coefficient (See Table 3)

The rating life in hours can be calculated by obtaining the travelling distance per unit time. The rating life in hours can be obtained from the following expression when the stroke length and the number of strokes are constant:

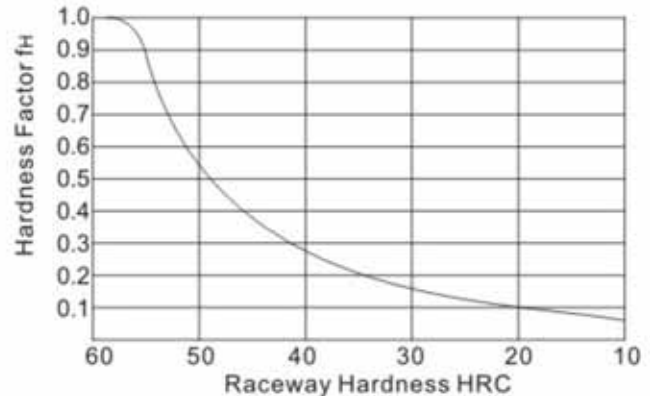
$$L_h = \frac{L \cdot 10^3}{2 \ell_s \cdot n_1 \cdot 60}$$

L_h : Rating life in hours (hr)
 ℓ_s : Stroke length (m)
L: Rating life (km)
 n_1 : No. of strokes per minute (cpm)

Hardness Factor (fH)

The shaft must be sufficiently hardened when a linear bushing is used. If not properly hardened, permissible load is lowered and the life of the bushing will be shortened.

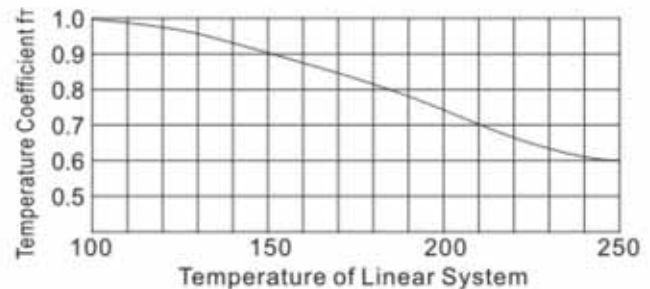
Fig. 1 Hardness Factor



Temperature Coefficient (fT)

If the temperature of the linear system exceeds 100°C, hardness of the linear system and the shaft lowers to decrease the permissible load compared to that of the linear system used at room temperature. As a result, the abnormal temperature rise shortens the rating life.

Fig. 2 Temperature Coefficient



Contact Coefficient (fc)

Generally two or more linear bushing are used on one shaft. Thus, the load on each linear system differs depending on each processing accuracy. Because the linear bushings are not loaded equally, the number of linear bushing per shaft changes the permissible load of the system.

Table 2 Contact Coefficient

| Number of linear systems per shaft | Contact coefficient fc |
|------------------------------------|------------------------|
| 1 | 1.00 |
| 2 | 0.81 |
| 3 | 0.72 |
| 4 | 0.66 |
| 5 | 0.61 |

Load Coefficient (fw)

When calculating the load on the linear system, it is necessary to accurately obtain object weight, inertial force based on motion speed, moment load, and each transition as time passes. However, it is difficult to calculate those values accurately because reciprocating motion involves the repetition of start and stop as well as vibration and impact. A more practical approach is to obtain the load coefficient by taking the actual operating conditions into account.

Table 3 Load Coefficient

| Operating Conditions | Fw |
|--|------------|
| Operation at low speed (15m/min. or less) without impulsive shock from outside | 1.0 to 1.5 |
| Operation at intermediate speed (60m/min. or less) without impulsive shock | 1.5 to 2.0 |
| Operation at high speed (over 60m/min.) With impulsive shock from outside | 2.0 to 3.5 |

Frictional Resistance

The static frictional resistance of the NTN linear system is so low as to be only slightly different from the kinetic frictional resistance, enabling smooth linear movement from low to high speeds. In general, the frictional resistance is expressed by the following equation.

$$F = \mu \cdot W + f$$

F: Frictional resistance μ : Coefficient of friction
W: Load weight f: Sealing resistance

The frictional resistance of each NTN linear system depends on the model, load weight, speed, and lubricant. The sealing resistance depends on the lip interference and lubricant,

The frictional resistance of each NTN linear system depends on the model, load weight, speed, and lubricant. The sealing resistance depends on the lip interference and lubricant, regardless of the load weight. The sealing resistance of one linear system is about 200 to 500 gf. The coefficient of friction depends on the load weight moment load, and preload. Table 6 shows the coefficient of kinetic friction of each type of linear system which has been installed and lubricated properly and applied with normal load ($p/c=0.2$)

Table 5 Coefficient of Linear System Friction (μ)

| Linear System Type | Models | Coefficient of Friction (μ) |
|--------------------|----------|-----------------------------------|
| Linear Bushing | LM KB SW | 0.002 to 0.003 |

Ambient Working Temperature

The ambient working temperature range for each NTN linear system depends on the model. Consult NTN on use outside the recommended temperature range.

Temperature conversion equation

$$C = \frac{5}{9} (F - 32)$$

$$F = 32 + \frac{9}{5} C$$

Table 6 Ambient Working Temperature

| Linear System Type | Models | Ambient Working Temperature |
|--------------------|----------------------|-----------------------------|
| Linear Bushing | LM KB SW | -20 to 80 °C |
| Linear Bushing | LM(m) KB(m) SW(m) | -20 to 120 °C |

Lubrication and Dust Prevention

Using NTN linear system without lubrication increases the abrasion of the rolling elements, shortening the life span. The NTN linear systems therefore require appropriate lubrication. For lubrication NTN recommends turbine oil conforming to ISO Standards G32 to G68 or lithium base soap grease NO.2. Some NTN linear systems are sealed to block dust out and seal lubricant in. If used in a harsh or corrosive environment, however, apply a protective cover to the part involving linear motion.

Tolerance

Note that precision of inscribed circle diameters and outside diameters for the clearance adjustable type (...-AJ) and the open type (...-OP) indicates the value obtained before the corresponding type is subjected to cutting process.

Load Rating and life Expectancy

The lift (L) of a linear bushing can be obtained from the following equation with the basic dynamic load rating and the load applied to the bush:

$$L = \left(\frac{f_H \cdot f_T \cdot f_C}{f_W} \cdot \frac{C}{P} \right)^3 \cdot 50 \quad (1)$$

L: Rated life(km)
 C: Basic dynamic load rating(N)
 P: Working load(N)
 f_W: Load coefficient
 f_H: Hardness factor(See page5)
 f_T: Temperature coefficient(See page5)
 f_C: Contact coefficient(See page5)

The lifespan (L_n) of a linear bushing in hours can be obtained by calculating the traveling distance per unit time.

The lifespan can be obtained from the following equation if the stroke length and the number of strokes are constant:

$$L_h = \left(\frac{L \cdot 10^3}{2 \cdot s \cdot n_1 \cdot 60} \right) \quad (2)$$

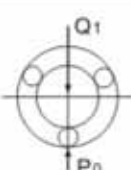
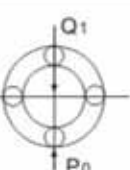
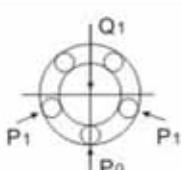
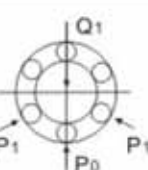
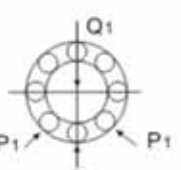
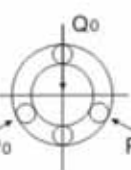
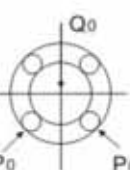
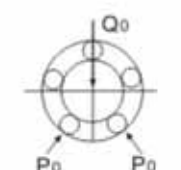
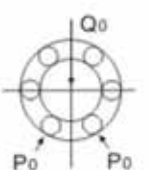
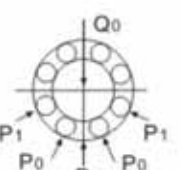
L_h: Lifespan(hr)
 L: Rated life(km)
 S: Stroke length(m)
 n₁: Number of strokes per minute(cpm)

Relation between ball Circuits and load rating

The NTN linear bushing includes ball circuits that are spaced equally and circumferentially. The load rating varies according to the loaded position on the circumference.

The value the dimension table indicates the load rating when the load is placed on top of one ball circuit. If the NTN linear bushing is used while two ball circuits loaded uniformly, the load rating will be greater. The following table shows the values by the number of ball circuits in such cases.

Table1

| Number of rows Row position load ratio | 3 | 4 | 5 | 6 | 8 |
|--|--|---|---|---|---|
| Row position |  $Q_1 = P_0$ |  $Q_1 = P_0$ |  $Q_1 = 1.106P_0$ |  $Q_1 = 1.354P_0$ |  $Q_1 = 1.841P_0$ |
| Row position |  $Q_0 = P_0$ |  $Q_0 = 1.414P_0$ |  $Q_0 = 1.618P_0$ |  $Q_0 = 1.732P_0$ |  $Q_0 = 2.052P_0$ |
| load ratio | $Q_0/Q_1 = 1$ | $Q_0/Q_1 = 1.414$ | $Q_0/Q_1 = 1.463$ | $Q_0/Q_1 = 1.280$ | $Q_0/Q_1 = 1.115$ |

Sample Calculations

1. Obtaining the rated life L and lifespan L_h of the NTN linear bushing used in following conditions:

| | |
|-------------------------------|-------|
| Linear bushing : | LM 20 |
| Stroke length: | 50mm |
| Number of strokes per minute: | 50cpm |
| Load per bush: | 490N |

The basic dynamic load rating of the linear bushing is 882N from the dimension table. From equation (1), therefore, the rated life L is obtained as follows:

$$L = \left(\frac{f_H \cdot f_T \cdot f_C}{f_W} \cdot \frac{C}{P} \right)^3 \cdot 50 \quad F_H = F_T = F_C = F_W = 1.0$$

$$= \left(\frac{882}{490} \right)^3 \cdot 50 = 292 \text{ km}$$

From equation (2), the lifespan L_h is obtained as follows:

$$L_h = \frac{L \times 10^3}{2 \times e_s \times n_l \times 60} = \frac{292 \times 10^3}{2 \times 0.05 \times 50 \times 60} = 973 \text{ hr}$$

2. Selecting the linear bushing type satisfying the following conditions:

| | |
|--------------------------------|----------|
| Number of linear bushing used: | 4 |
| Stroke length: | 1m |
| Traveling speed: | 10m/min |
| Number of strokes per minute: | 5cpm |
| Lifespan: | 10,000hr |
| Total load: | 980N |

From equation (2), the travelling distance within the lifespan is obtained as follows:

$$L = 2 \times \ell_s \times n_l \times 60 \times L_h = 6,000 \text{ km}$$

From equation (2), the basic dynamic load rating is obtained as follows:

$$C = \sqrt[3]{\frac{882}{490} \cdot \left(\frac{f_W}{f_H \cdot f_T \cdot f_C} \right) \cdot P} = 1492 \text{ N}$$

Assume the following with a pair of shafts each with two linear bushing:

$$F_C = 0.81, f_W = f_T = f_H = 1$$

As a result, LM30 is selected from the dimension table as the NTN linear bushing type satisfying the value of C

Clearance and Fit

When a standard-type NTN linear bushing is used with a shaft, inadequate clearance, adjustment may cause early bush failure and/or poor, rough travelling. The clearance adjusted when assembled in the housing which can control the outside cylinder diameter. However, too much clearance adjustment increases the deformation

of the outside cylinder, to affect its precision and life. Therefore, the appropriate clearance between the bush and shaft, and clearance between the bush and housing are required according to the application. Table 2 shows recommended fit of the bush:

| Division Model | | Shaft | | Housing | |
|-------------------|------------|------------|--------------|-----------|-----------|
| | | Normal fit | Transitional | Loose fit | Tight fit |
| LM SM | High class | g6 | h6 | H7 | J7 |
| KB | High class | h6 | j6 | H7 | J7 |

Note: The clearance may be zero or negative. Please attention the movement

Shaft and Housing

To optimize performance of the NTN linear bushing high precision of the shaft and housing is required.

1. Shaft

The rolling balls in the NTN linear bushing are in point contact with the shaft surface. Therefore, the shaft dimensions, tolerance, surface finish, and hardness greatly affect the travelling performance of the bush. The shaft should be manufactured with due attention to the following points:

- 1) Since the surface finish critically affects smooth rolling of balls; grind the shaft at 1.5S or better
- 2) The nest hardness of the shaft is HRC 60 to 64. Hardness less than HRC 60 decreases the life considerably, and hence reduces the permissible load. On the other hand, hardness over HRC 64 accelerates ball wear.
- 3) The shaft diameter for the clearance adjustable linear bush and open linear bush should as much as possible be of the lower value of the inscribed circle diameter in the

specification table. Do not set the shaft diameter to the upper value.

- 4) Zero clearance or negative clearance increases the frictional resistance slightly. If the negative clearance is too tight, the deformation of the outside cylinder will become larger, to shorten the bush life.

2. Housing

There is a wide range of housing differing in design, machining and mounting. For the fitness and shapes of housings, see Table 2 and the following section on mounting.

Mounting

When inserting the linear bush into the housing, do not hit the linear bush on the side ring holding the retainer but apply the cylinder circumference with a proper jig and push the linear bush into the housing by hand or lightly knock it in. (See Fig. 1)

In inserting the shaft after mounting the bush, be careful not to shock the balls. Note that if two shafts are used in parallel, the parallelism is the most important factor to assure the smooth linear movement. Take care setting the shafts.

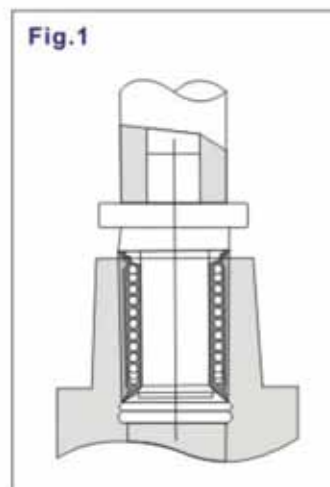


Fig. 1

Examples of Mounting

The popular way to mount a linear bush is to operate it with an appropriate interference. It is recommended, however, to make a loose fit in principle because otherwise precision is apt to be minimized. The following examples (Figs.2 to 6) show assembling of the inserted bush in terms of designing and mounting, for reference.

Fig.2

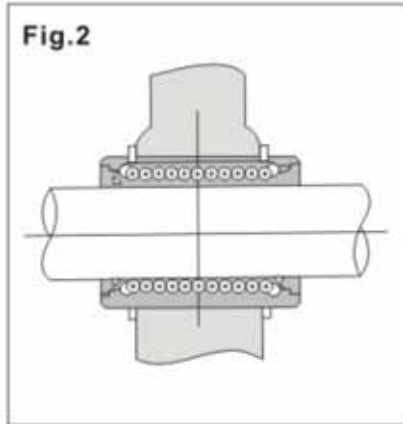


Fig.4

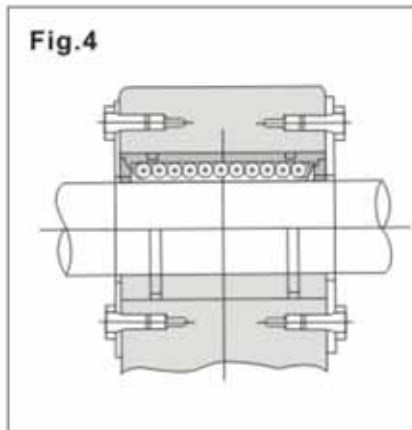


Fig.3

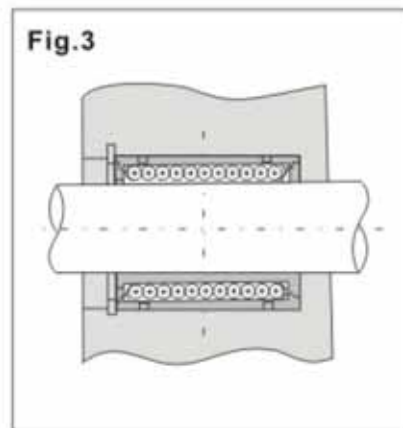


Fig.5

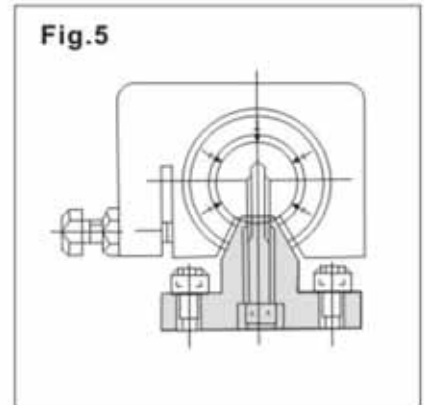
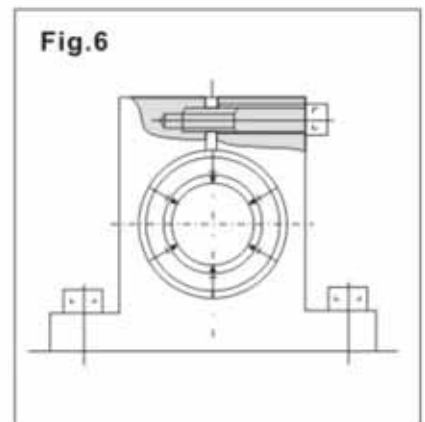


Fig.6

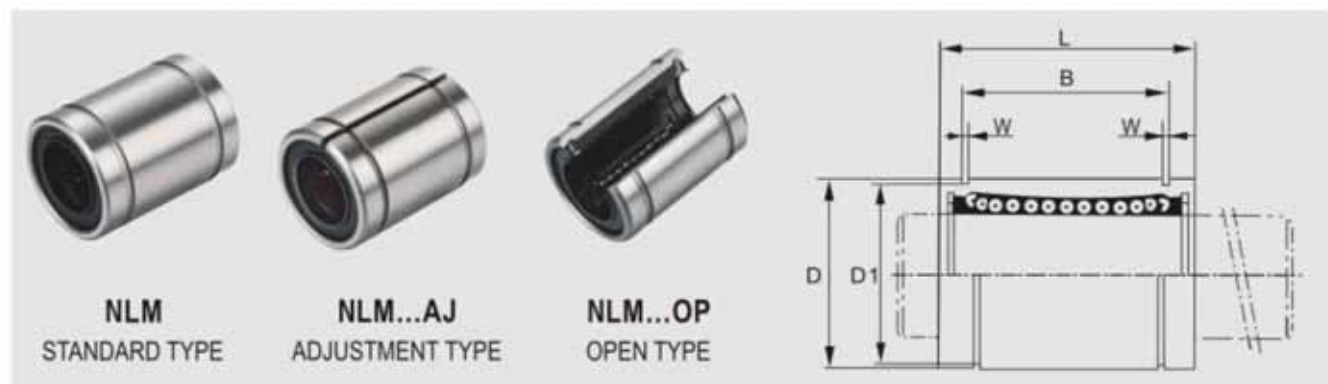




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NLM Linear bearing
Asia series

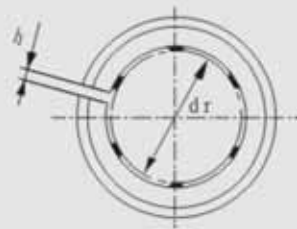


| MODEL NO. | NUMBER OF BALL ROWS | MODEL NO. | NUMBER OF BALL ROWS | MODEL NO. | NUMBER OF BALL ROWS | MAIN DIMENSIONS | | | | | |
|-----------|---------------------|-----------|---------------------|-----------|---------------------|---------------------------|--|----------------|--|--------|---|
| | | | | | | INSCRIBED CIRCLE DIAMETER | | OUTER DIAMETER | | LENGTH | |
| | | | | | | dr | TOLERANCE | D | TOLERANCE | L | TOLERANCE |
| NLM3 | 4 | | | | | 3 | $0 \begin{smallmatrix} -0.008 \end{smallmatrix}$ | 7 | $0 \begin{smallmatrix} -0.009 \end{smallmatrix}$ | 10 | $0 \begin{smallmatrix} -0.12 \end{smallmatrix}$ |
| NLM4 | 4 | | | | | 4 | | 8 | | 12 | |
| NLM5 | 4 | | | | | 5 | | 10 | | 15 | |
| NLM6 | 4 | NLM6AJ | 4 | | | 6 | $0 \begin{smallmatrix} -0.009 \end{smallmatrix}$ | 12 | $0 \begin{smallmatrix} -0.011 \end{smallmatrix}$ | 19 | $0 \begin{smallmatrix} -0.20 \end{smallmatrix}$ |
| NLM8S | 4 | NLM8SAJ | 4 | | | 8 | | 15 | | 17 | |
| NLM8 | 4 | NLM8AJ | 4 | | | 8 | | 15 | | 24 | |
| NLM10 | 4 | NLM10AJ | 4 | NLM10OP | 3 | 10 | | 19 | $0 \begin{smallmatrix} -0.013 \end{smallmatrix}$ | 29 | |
| NLM12 | 4 | NLM12AJ | 4 | NLM12OP | 3 | 12 | | 21 | | 30 | |
| NLM13 | 4 | NLM13AJ | 4 | NLM13OP | 3 | 13 | | 23 | | 32 | |
| NLM16 | 5 | NLM16AJ | 5 | NLM16OP | 4 | 16 | | 28 | | 37 | |
| NLM20 | 5 | NLM20AJ | 5 | NLM20OP | 4 | 20 | $0 \begin{smallmatrix} -0.010 \end{smallmatrix}$ | 32 | $0 \begin{smallmatrix} -0.016 \end{smallmatrix}$ | 42 | $0 \begin{smallmatrix} -0.30 \end{smallmatrix}$ |
| NLM25 | 6 | NLM25AJ | 6 | NLM25OP | 5 | 25 | | 40 | | 59 | |
| NLM30 | 6 | NLM30AJ | 6 | NLM30OP | 5 | 30 | | 45 | | 64 | |
| NLM35 | 6 | NLM35AJ | 6 | NLM35OP | 5 | 35 | $0 \begin{smallmatrix} -0.012 \end{smallmatrix}$ | 52 | $0 \begin{smallmatrix} -0.019 \end{smallmatrix}$ | 70 | |
| NLM40 | 6 | NLM40AJ | 6 | NLM40OP | 5 | 40 | | 60 | | 80 | |
| NLM50 | 6 | NLM50AJ | 6 | NLM50OP | 5 | 50 | | 80 | | 100 | |
| NLM60 | 6 | NLM60AJ | 6 | NLM60OP | 5 | 60 | $0 \begin{smallmatrix} -0.015 \end{smallmatrix}$ | 90 | $0 \begin{smallmatrix} -0.022 \end{smallmatrix}$ | 110 | |

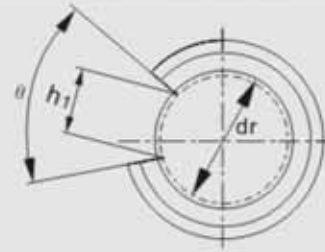
Annotate: POM retainer, Steel retainer, stainless steel type, oilless series is the same.



NLM
STANDARD TYPE



NLM...AJ
ADJUSTMENT TYPE



NLM...OP
OPEN TYPE

| MAIN DIMENSIONS | | | | | | | ECCEN- TIRICITY (MAX.) | BASIC LOAD RATING | | WEIGHT (g) | | |
|-------------------------|------------|------------|------|------|-----|-----|------------------------------|-------------------|-------------------|------------|------|------|
| OUTER LOCKING GROOVE | | | W | h | h1 | θ | | DYNAMIC C(kgf) | STATIC Co(kgf) | | | |
| B | TOLERANCE | D1 | | | | | | | | | | |
| | | | | | | | 0.008 | 7 | 11 | | | |
| | | | | | | | | 9 | 13 | 3 | | |
| 10.2 | 0 -0.20 | 9.6 | 1.1 | | | | | 17 | 21 | 4 | | |
| 13.5 | | 11.5 | 1.1 | 1 | | | 21 | 27 | 6 | 6 | | |
| 11.5 | | 14.3 | 1.1 | 1 | | | 18 | 23 | 9 | | | |
| 17.5 | | 14.3 | 1.1 | 1 | | | 27 | 41 | 14 | 14 | | |
| 22 | | 18 | 1.3 | 1 | 6.8 | 80° | 38 | 56 | 28 | 27 | | |
| 23 | | 20 | 1.3 | 1.5 | 8 | 80° | 42 | 61 | 32 | 31 | 24 | |
| 23 | | 22 | 1.3 | 1.5 | 9 | 80° | 52 | 79 | 38 | 39 | 32 | |
| 26.5 | | 27 | 1.6 | 1.5 | 11 | 80° | 79 | 120 | 74 | 73 | 58 | |
| 30.5 | | 30.5 | 1.6 | 1.5 | 11 | 60° | 88 | 140 | 80 | 80 | 72 | |
| 41 | | 0 -0.30 | 38 | 1.85 | 2 | 12 | 50° | 0.015 | 100 | 160 | 206 | 205 |
| 44.5 | 43 | | 1.85 | 2.5 | 15 | 50° | 160 | | 220 | 240 | 230 | 196 |
| 49.5 | 49 | | 2.1 | 2.5 | 17 | 50° | 170 | | 320 | 370 | 366 | 320 |
| 60.5 | 57 | | 2.1 | 3 | 20 | 50° | 0.020 | 220 | 410 | 589 | 549 | 464 |
| 74 | 76.5 | | 2.6 | 3 | 25 | 50° | | 390 | 810 | 1480 | 1440 | 1180 |
| 85 | 86.5 | | 3.15 | 3 | 30 | 50° | | 480 | 1020 | 1750 | 1740 | 1700 |

NKB Linear bearing
Europe series

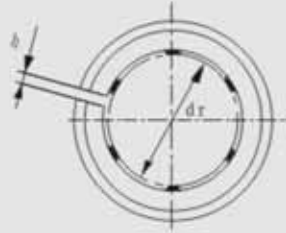


| MODEL NO. | NUMBER OF BALL ROWS | MODEL NO. | NUMBER OF BALL ROWS | MODEL NO. | NUMBER OF BALL ROWS | MAIN DIMENSIONS | | | | | |
|-----------|---------------------|-----------|---------------------|-----------|---------------------|---------------------------|------------------|----------------|-------------|--------|------------|
| | | | | | | INSCRIBED CIRCLE DIAMETER | | OUTER DIAMETER | | LENGTH | |
| | | | | | | dr | TOLERANCE | D | TOLERANCE | L | TOLERANCE |
| NKB3 | 4 | | | | | 3 | +0.008 0 | 7 | 0 -0.008 | 10 | 0 -0.12 |
| NKB4 | 4 | | | | | 4 | | 8 | | 12 | |
| NKB5 | 4 | NKB5AJ | 4 | | | 5 | | 12 | | 22 | 0 -0.20 |
| NKB8 | 4 | NKB8AJ | 4 | | | 8 | | 16 | 0 -0.009 | 25 | |
| NKB10 | 4 | NKB10AJ | 4 | NKB10OP | 3 | 10 | | 19 | | 29 | |
| NKB12 | 4 | NKB12AJ | 4 | NKB12OP | 3 | 12 | +0.009 -0.001 | 22 | | 32 | |
| NKB16 | 5 | NKB16AJ | 5 | NKB16OP | 4 | 16 | | 26 | 0 -0.011 | 36 | 0 -0.30 |
| NKB20 | 5 | NKB20AJ | 5 | NKB20OP | 4 | 20 | | 32 | | 45 | |
| NKB25 | 6 | NKB25AJ | 6 | NKB25OP | 5 | 25 | +0.011 -0.001 | 40 | | 58 | |
| NKB30 | 6 | NKB30AJ | 6 | NKB30OP | 5 | 30 | | 47 | 0 -0.013 | 68 | |
| NKB40 | 6 | NKB40AJ | 6 | NKB40OP | 5 | 40 | +0.013 -0.002 | 62 | | 80 | |
| NKB50 | 6 | NKB50AJ | 6 | NKB50OP | 5 | 50 | | 75 | | 100 | |
| NKB60 | 6 | NKB60AJ | 6 | NKB60OP | 5 | 60 | | 90 | 0 -0.015 | 125 | 0 -0.40 |

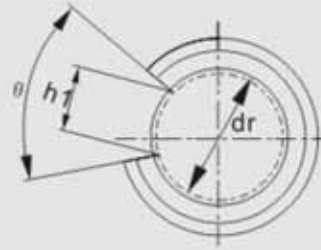
Annotate: POM retainer, Steel retainer, stainless steel type, oilless series is the same.



NKB
STANDARD TYPE



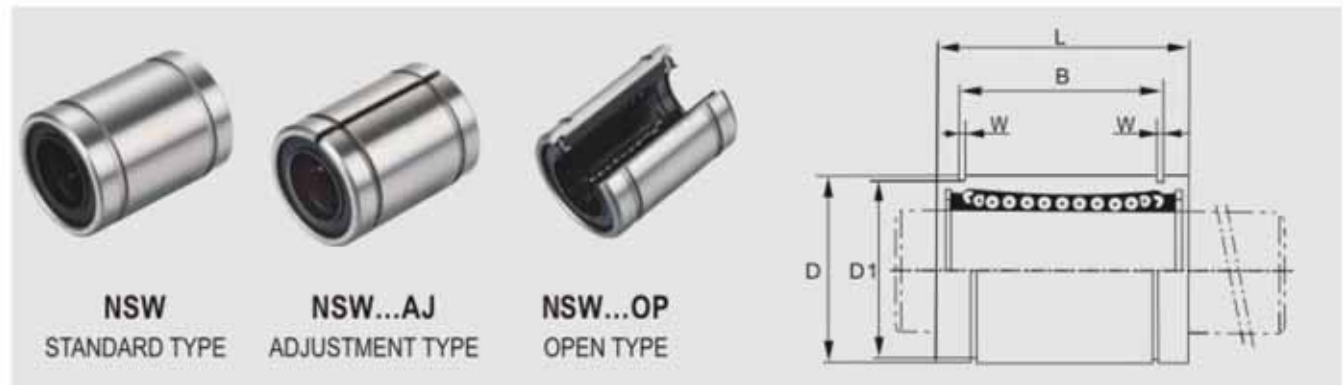
NKB...AJ
ADJUSTMENT TYPE



NKB...OP
OPEN TYPE

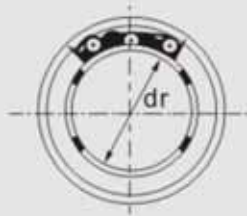
| MAIN DIMENSIONS | | | | | | | ECCEN- TIRICITY (MAX.) | BASIC LOAD RATING | | WEIGHT (g) | | |
|-------------------------|------------|------|------|-----|------|-----|------------------------------|-------------------|-------------------|------------|------|------|
| OUTER LOCKING GROOVE | | | W | h | h1 | θ | | DYNAMIC C(kgf) | STATIC Co(kgf) | | | |
| B | TOLERANCE | D1 | | | | | | | | | | |
| | | | | | | | 0.010 | 7 | 11 | | | |
| | | | | | | | | 9 | 13 | | | |
| 14.5 | 0 -0.20 | 11.5 | 1.1 | 1 | | | 0.012 | 21 | 27 | 14 | | |
| 16.5 | | 15.2 | 1.1 | 1 | | | | 27 | 41 | 20 | 20 | |
| 22 | | 18 | 1.3 | 1.5 | 6.8 | 80° | | 38 | 47 | 30 | 29 | 22.5 |
| 22.9 | | 21 | 1.3 | 1.5 | 7.5 | 78° | | 52 | 79 | 40 | 39 | 35 |
| 24.9 | | 24.9 | 1.3 | 1.5 | 10 | 78° | | 59 | 91 | 50 | 49 | 38 |
| 31.5 | | 30.3 | 1.6 | 2 | 10 | 60° | | 88 | 140 | 90 | 88 | 72 |
| 44.1 | 0 -0.30 | 37.5 | 1.85 | 2 | 12.5 | 60° | 0.015 | 100 | 160 | 207 | 205 | 173 |
| 52.1 | | 44.5 | 1.85 | 2 | 12.5 | 50° | | 160 | 280 | 320 | 319 | 267 |
| 60.6 | | 59 | 2.15 | 3 | 16.8 | 50° | 0.017 | 220 | 400 | 674 | 650 | 558 |
| 77.6 | | 72 | 2.65 | 3 | 21 | 50° | | 390 | 810 | 1170 | 1160 | 990 |
| 101.7 | 0 -0.40 | 86.5 | 3.15 | 3 | 27.2 | 54° | 0.020 | 480 | 1020 | 1950 | 1910 | 1700 |

NSW Linear bearing
Inch system series

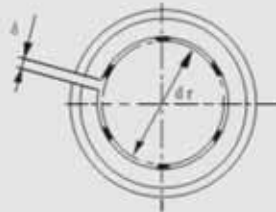


| MODEL NO. | NUMBER OF BALL ROWS | MODEL NO. | NUMBER OF BALL ROWS | MODEL NO. | NUMBER OF BALL ROWS | MAIN DIMENSIONS | | | | | |
|-----------|---------------------|-----------|---------------------|-----------|---------------------|---------------------------|-------------|-------------------|-------------|------------------|------------|
| | | | | | | INSCRIBED CIRCLE DIAMETER | | OUTER DIAMETER | | LENGTH | |
| | | | | | | dr | TOLERANCE | D | TOLERANCE | L | TOLERANCE |
| NSW4 | 4 | NSW4AJ | 4 | | | 1/4" 6.35 | 0 -0.009 | 0.5" 12.7 | 0 -0.011 | 0.75" 19.05 | 0 -0.20 |
| NSW6 | 4 | NSW6AJ | 4 | | | 3/8" 9.525 | | 0.625" 15.875 | 0 -0.013 | 0.875" 22.225 | |
| NSW8 | 4 | NSW8AJ | 4 | NSW8OP | 3 | 1/2" 12.7 | | 0.875" 22.225 | | 1.25" 31.75 | |
| NSW10 | 5 | NSW10AJ | 5 | NSW10OP | 4 | 5/8" 15.875 | | 1.125" 28.575 | | 1.5" 38.1 | |
| NSW12 | 5 | NSW12AJ | 5 | NSW12OP | 4 | 3/4" 19.05 | 0 -0.010 | 1.25" 31.75 | 0 -0.016 | 1.625" 41.275 | 0 -0.30 |
| NSW16 | 6 | NSW16AJ | 6 | NSW16OP | 5 | 1" 25.4 | | 1.5625" 39.688 | | 2.25" 57.15 | |
| NSW20 | 6 | NSW20AJ | 6 | NSW20OP | 5 | 1-1/4" 31.75 | 0 -0.012 | 2" 50.8 | 0 -0.019 | 2.625" 66.675 | |
| NSW24 | 6 | NSW24AJ | 6 | NSW24OP | 5 | 1-1/2" 38.1 | | 2.375" 60.325 | | 3" 76.2 | |
| NSW32 | 6 | NSW32AJ | 6 | NSW32OP | 5 | 2" 50.8 | | 3" 76.2 | 0 -0.022 | 4" 101.6 | |

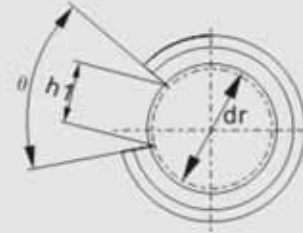
Annotate: NSW16 steel retainer the number of ball rows is 5, POM retainer the number of ball rows is 6.
 NSW16AJ steel retainer the number of ball rows is 5, POM retainer the number of ball rows is 6.
 NSW16AJ steel retainer the number of ball rows is 4, POM retainer the number of ball rows is 5.



NSW
STANDARD TYPE



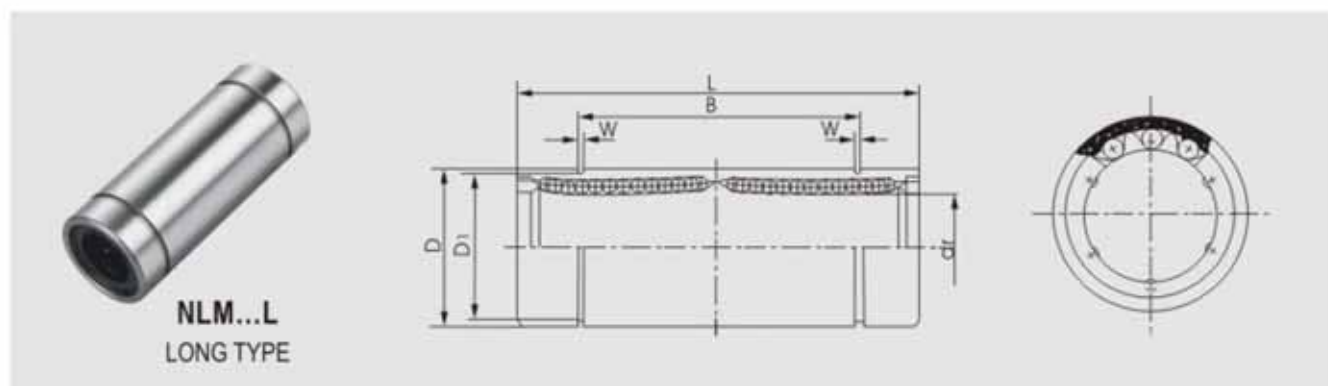
NSW...AJ
ADJUSTMENT TYPE



NSW...OP
OPEN TYPE

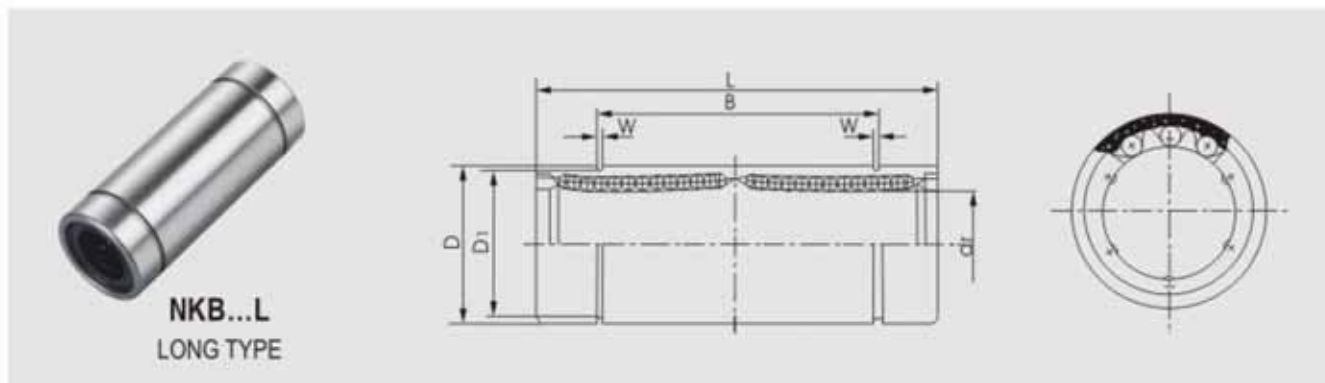
| MAIN DIMENSIONS | | | | | | | ECCEN- TRICITY (MAX.) | BASIC LOAD RATING | | WEIGHT (g) | | |
|-------------------------|------------|-------------------|-------------------|------------------|--------------------|------------|-----------------------------|-------------------|-------------------|------------|-----|-------|
| OUTER LOCKING GROOVE | | | W | h | h1 | θ | | DYNAMIC C(kgf) | STATIC Co(kgf) | | | |
| B | TOLERANCE | D1 | | | | | | | | | | |
| 0.511" 12.98 | 0 -0.20 | 0.4687" 11.906 | 0.039" 0.992 | 0.04" 1 | | | 0.012 | 21 | 27 | 64 | | |
| 0.6385" 16.15 | | 0.588" 14.935 | 0.039" 0.992 | 0.04" 1 | | | | 23 | 32 | 14 | | |
| 0.9625" 24.46 | | 0.8209" 20.853 | 0.0459" 1.168 | 0.06" 1.5 | 0.34" 7.9375 | 80° | | 52 | 80 | 40 | | 25 |
| 1.1039" 28.04 | | 1.059" 26.899 | 0.0559" 1.422 | 0.06" 1.5 | 0.375" 9.525 | 80° | | 79 | 120 | 76 | | |
| 1.1657" 29.61 | 0 -0.30 | 1.176" 29.87 | 0.0559" 1.422 | 0.06" 1.5 | 0.4375" 11.1125 | 60° | 0.015 | 88 | 140 | 90 | | 70 |
| 1.7547" 44.57 | | 1.4687" 37.306 | 0.0679" 1.727 | 0.06" 1.5 | 0.5625" 14.2875 | 50° | | 100 | 160 | 206 | | 167.5 |
| 2.0047" 50.92 | | 1.8859" 47.904 | 0.0679" 1.727 | 0.10" 2.54 | 0.625" 15.875 | 50° | 0.020 | 160 | 280 | 370 | | 304 |
| 2.4118" 61.26 | | 2.2389" 56.87 | 0.859" 2.184 | 0.12" 3 | 0.75" 19.05 | 50° | | 220 | 410 | 584 | | 490 |
| 3.1917" 81.07 | | | 2.8379" 72.085 | 0.1029" 2.616 | 0.12" 3 | 1" 25.4 | 50° | 0.025 | 390 | 810 | 600 | |

NLM Long type linear bearing
Asia series



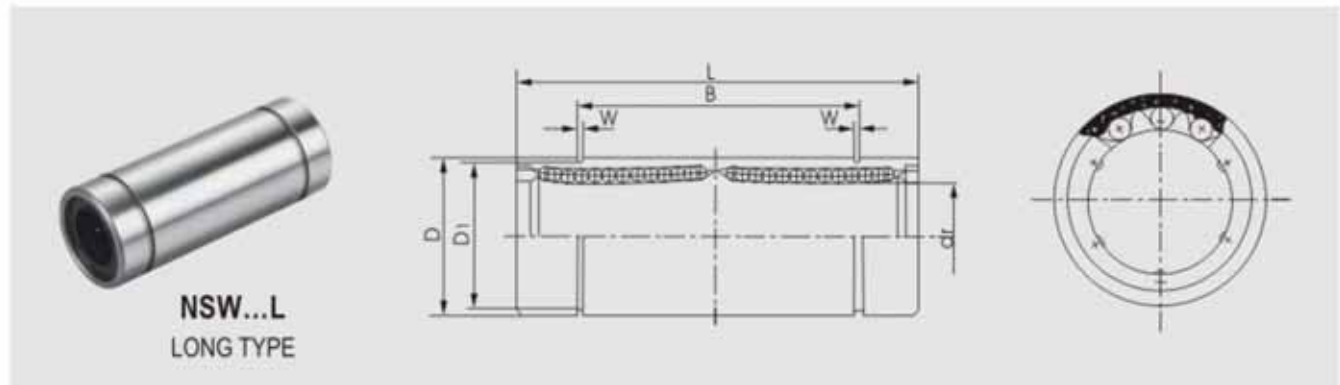
| MODEL NO. | NUMBER OF BALL ROWS | MAIN DIMENSIONS | | | | | | | | | | ECCEN- TRICITY (MAX.) | BASIC LOAD RATING | | WEIGHT (g) |
|-----------|---------------------|---------------------------------|-------------|-------------------|-------------|--------------|------------|-------------------------|------------|------|------|-----------------------------|-------------------|-------------------|---------------|
| | | INSCRIBED CIRCLE DIAMETER | | OUTER DIAMETER | | LENGTH | | OUTER LOCKING GROOVE | | | W | | DYNAMIC C(kgf) | STATIC Co(kgf) | |
| | | dr | TOLERANCE | D | TOLERANCE | L | TOLERANCE | B | TOLERANCE | D1 | | | | | |
| NLM6L | 4 | 6 | 0 -0.010 | 12 | 0 -0.013 | 35 | 0 -0.30 | 27 | 0 -0.30 | 11.5 | 1.1 | 0.015 | 33 | 54 | 14 |
| NLM8L | 4 | 8 | | 15 | 45 | 35 | | 14.3 | | 1.1 | 44 | | 80 | 26 | |
| NLM10L | 4 | 10 | | 19 | 55 | 44 | | 18 | | 1.3 | 60 | | 112 | 55 | |
| NLM12L | 4 | 12 | | 21 | 57 | 46 | | 20 | | 1.3 | 83 | | 160 | 58 | |
| NLM13L | 4 | 13 | | 23 | 61 | 46 | | 22 | | 1.3 | 83 | | 160 | 77 | |
| NLM16L | 5 | 16 | | 28 | | 70 | | 53 | | 27 | 1.6 | | 126 | 240 | 147 |
| NLM20L | 5 | 20 | 0 -0.012 | 32 | 0 -0.019 | 80 | | 61 | | 30.5 | 1.6 | 0.020 | 143 | 280 | 171 |
| NLM25L | 6 | 25 | | 40 | | 112 | | 82 | | 38 | 1.85 | | 159 | 320 | 400 |
| NLM30L | 6 | 30 | | 45 | | 123 | | 89 | | 43 | 1.85 | | 254 | 560 | 472 |
| NLM35L | 6 | 35 | 0 -0.015 | 52 | 0 -0.022 | 135 | 0 -0.40 | 99 | 0 -0.40 | 49 | 2.1 | 0.025 | 270 | 640 | 708 |
| NLM40L | 6 | 40 | | 60 | | 151 (154) | | 121 | | 57 | 2.1 | | 350 | 820 | 1090 |
| NLM50L | 6 | 50 | | 80 | | 192 | | 148 | | 76.5 | 2.6 | | 620 | 1622 | 2800 |
| NLM60L | 6 | 60 | 0 -0.020 | 90 | 0 -0.025 | 209 | | 170 | | 86.5 | 3.15 | | 770 | 2040 | 3800 |

NKB Long type linear bearing Europe series



| MODEL NO. | NUMBER OF BALL ROWS | MAIN DIMENSIONS | | | | | | | | | | ECCEN- TRICITY (MAX.) | BASIC LOAD RATING | | WEIGHT (g) |
|-----------|---------------------|---------------------------------|------------------|-------------------|-------------|--------|------------|-------------------------|------------|------|------|-----------------------------|--------------------|--------------------|---------------|
| | | INSCRIBED CIRCLE DIAMETER | | OUTER DIAMETER | | LENGTH | | OUTER LOCKING GROOVE | | | W | | DYNAMIC C (kgf) | STATIC Co (kgf) | |
| | | dr | TOLERANCE | D | TOLERANCE | L | TOLERANCE | B | TOLERANCE | D1 | | | | | |
| NKB8L | 4 | 8 | +0.009 -0.001 | 16 | 0 -0.009 | 46 | 0 -0.30 | 33 | 0 -0.30 | 15.2 | 1.1 | 0.015 | 43 | 82 | 36 |
| NKB10L | 4 | 10 | | 19 | 0 -0.011 | 55 | | 44 | | 18 | 1.3 | | 60 | 112 | 59 |
| NKB12L | 4 | 12 | | 22 | | 61 | | 45.8 | | 21 | 1.3 | | 83 | 160 | 78 |
| NKB16L | 5 | 16 | +0.011 -0.001 | 26 | 0 -0.013 | 68 | 0 -0.40 | 49.8 | 0 -0.40 | 24.9 | 1.3 | | 0.017 | 94 | 182 |
| NKB20L | 5 | 20 | | 32 | | 80 | | 61 | | 30.5 | 1.6 | 140 | | 280 | 169 |
| NKB25L | 6 | 25 | +0.013 -0.002 | 40 | 0 -0.015 | 112 | 0 -0.40 | 82 | 0 -0.40 | 38 | 1.85 | 0.020 | | 160 | 320 |
| NKB30L | 6 | 30 | | 47 | | 123 | | 104.2 | | 44.5 | 1.85 | | 255 | 560 | 586 |
| NKB40L | 6 | 40 | +0.016 -0.004 | 62 | 0 -0.020 | 151 | 0 -0.40 | 121.2 | 0 -0.40 | 59 | 2.15 | | 0.025 | 350 | 820 |
| NKB50L | 6 | 50 | | 75 | | 192 | | 155.2 | | 72 | 2.65 | 620 | | 1622 | 2500 |
| NKB60L | 6 | 60 | | 90 | | 209 | | 170 | | 86.5 | 3.15 | 770 | | 2040 | 3700 |

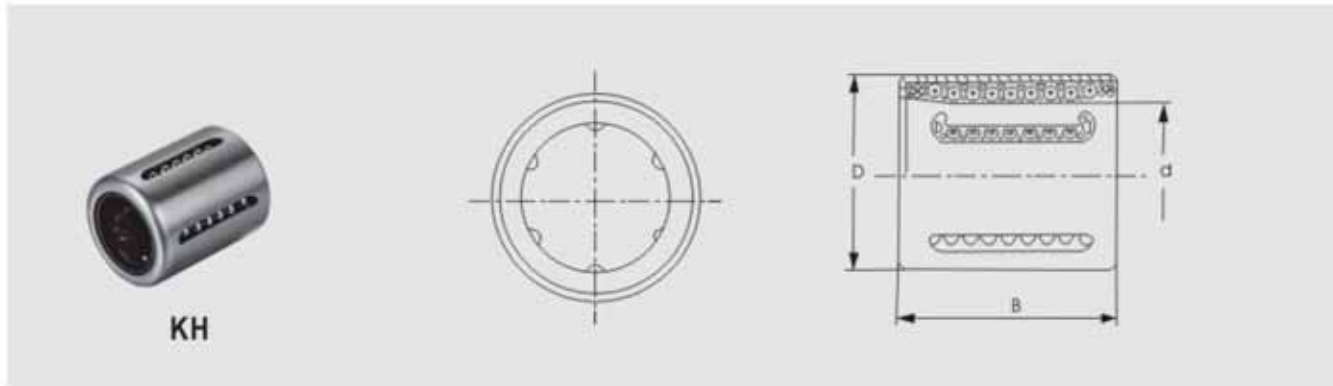
NSW Long type linear bearing
Inch system series



| MODEL NO. | NUMBER OF BALL ROWS | MAIN DIMENSIONS | | | | | | | | | | ECCEN- TRICITY (MAX.) | BASIC LOAD RATING | | WEIGHT (g) |
|-----------|---------------------|------------------------------|-------------|-------------------|-------------|--------------------|--------------------|----------------------|------------------|-------------------|------------------|-----------------------------|-------------------|-------------------|---------------|
| | | INSCRIBED CIRCLE DIAMETER | | OUTER DIAMETER | | LENGTH | | OUTER LOCKING GROOVE | | | W | | DYNAMIC C(kgf) | STATIC Co(kgf) | |
| | | dr | TOLERANCE | D | TOLERANCE | L | TOLERANCE | B | TOLERANCE | D1 | | | | | |
| NSW4L | 3 | 1/4" 6.35 | 0 -0.011 | 0.5" 12.7 | 0 -0.013 | 1.375" 34.925 | 0 -0.30 | 1.022" 25.959 | 0 -0.30 | 0.4687" 11.906 | 0.039" 0.992 | 0.015 | 33 | 54 | 14 |
| NSW6L | 4 | 3/8" 9.525 | | 0.625" 15.875 | | 1.5938" 40.481 | | 1.2716" 32.298 | | 0.588" 14.935 | 0.039" 0.992 | | 36 | 64 | 30 |
| NSW8L | 4 | 1/2" 12.7 | | 0.875" 22.225 | 0 -0.016 | 2.375" 60.325 | | 1.925" 48.895 | | 0.8209" 20.853 | 0.0459" 1.168 | | 83 | 160 | 82 |
| NSW10L | 4 | 5/8" 15.875 | | 1.125" 28.575 | | 2.8125" 71.438 | | 2.2079" 56.08 | | 1.059" 26.899 | 0.0559" 1.422 | | 126 | 240 | 156 |
| NSW12L | 5 | 3/4" 19.05 | 0 -0.012 | 1.25" 31.75 | 0 -0.019 | 3.0937" 78.581 | 0 -0.40 | 2.3314" 59.218 | 0 -0.40 | 1.176" 29.87 | 0.0559" 1.422 | 0.020 | 140 | 280 | 184 |
| NSW16L | 6 | 1" 25.4 | | 1.5625" 39.688 | | 4.2813" 108.744 | | 3.5094" 89.139 | | 1.4687" 37.306 | 0.0679" 1.727 | | 160 | 320 | 418 |
| NSW20L | 6 | 1-1/4" 31.75 | 0 -0.015 | 2" 50.8 | 0 -0.022 | 5" 127 | | 4.0094" 101.839 | | 1.8859" 47.904 | 0.0679" 1.727 | 0.025 | 255 | 360 | 746 |
| NSW24L | 6 | 1-1/2" 38.1 | | 2.375" 60.325 | | 5.6875" 144.463 | | 4.8236" 122.519 | | 2.2389" 56.87 | 0.859" 2.184 | | 350 | 820 | |
| NSW32L | 6 | 2" 50.8 | | 3" 76.2 | 0 -0.025 | 7.75" 196.85 | 6.3834" 162.138 | 2.8379" 72.085 | 0.1029" 2.616 | 0.030 | 620 | 1622 | 1206 | | |

Annotate: NSW16L steel retainer the number of ball rows is 5, POM retainer the number of ball rows is 6.

KH Mini (pressing bush) linear bearing



| MODEL NO. | NUMBER OF BALL ROWS | MAIN DIMENSIONS | | | BASIC LOAD RATING | | WEIGHT(g) |
|-----------|---------------------|-----------------|----|----|-------------------|----------------|-----------|
| | | | | | DYNAMIC C(kgf) | STATIC Co(kgf) | |
| | | d | D | B | | | |
| KH0824 | 4 | 8 | 15 | 24 | 44 | 29 | 11.3 |
| KH1026 | 4 | 10 | 17 | 26 | 51 | 38 | 14.4 |
| KH1228 | 5 | 12 | 19 | 28 | 63 | 52 | 18.1 |
| KH1428 | 5 | 14 | 21 | 28 | 63 | 52 | 20.6 |
| KH1630 | 5 | 16 | 24 | 30 | 82 | 63 | 27.2 |
| KH2030 | 6 | 20 | 28 | 30 | 97 | 81 | 32.7 |
| KH2540 | 6 | 25 | 35 | 40 | 203 | 170 | 66 |
| KH3050 | 7 | 30 | 40 | 50 | 286 | 276 | 95 |
| KH4060 | 8 | 40 | 52 | 60 | 449 | 454 | 180 |
| KH5070 | 9 | 50 | 62 | 70 | 561 | 643 | 250 |

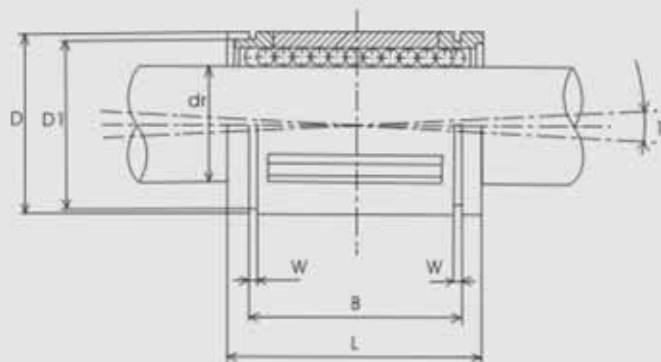
NSLM Super type linear bearing
Asia series



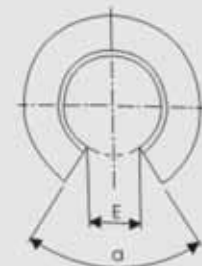
NSLM
STANDARD TYPE



NSLM...OP
OPEN TYPE



NSLM
STANDARD TYPE



NSLM...OP
OPEN TYPE

| MODEL NO. | NUMBER OF BALL ROWS | MODEL NO. | NUMBER OF BALL ROWS | MAIN DIMENSIONS | | | | | | | | BASIC LOAD RATING | | WEIGHT (Kg) | |
|-----------|---------------------|-----------|---------------------|-----------------|----|-----|------|------|------|----|----------|-------------------|---------------|-------------|--------|
| | | | | dr | D | L | D1 | B | W | E | α | DYNAMIC C(kg) | STATIC Co(kg) | | |
| NSLM16 | 5 | NSLM16OP | 4 | 16 | 28 | 37 | 27 | 26.5 | 1.6 | 11 | 80° | 153 | 128 | 0.0415 | 0.0345 |
| NSLM20 | 6 | NSLM20OP | 5 | 20 | 32 | 42 | 30.5 | 30.5 | 1.6 | 11 | 60° | 263 | 170 | 0.0655 | 0.055 |
| NSLM25 | 6 | NSLM25OP | 5 | 25 | 40 | 59 | 38 | 41 | 1.85 | 12 | 50° | 388 | 281 | 0.134 | 0.114 |
| NSLM30 | 6 | NSLM30OP | 5 | 30 | 45 | 64 | 43 | 44.5 | 1.85 | 15 | 50° | 481 | 286 | 0.152 | 0.130 |
| NSLM40 | 6 | NSLM40OP | 5 | 40 | 60 | 80 | 57 | 60.5 | 2.1 | 20 | 50° | 663 | 584 | | |
| NSLM50 | 6 | NSLM50OP | 5 | 50 | 80 | 100 | 76.5 | 74 | 2.6 | 25 | 50° | 1169 | 810 | | |

Annotate: NSLM type can crossing-over with LM.
NSLM...OP type can crossing-over with LM...OP.

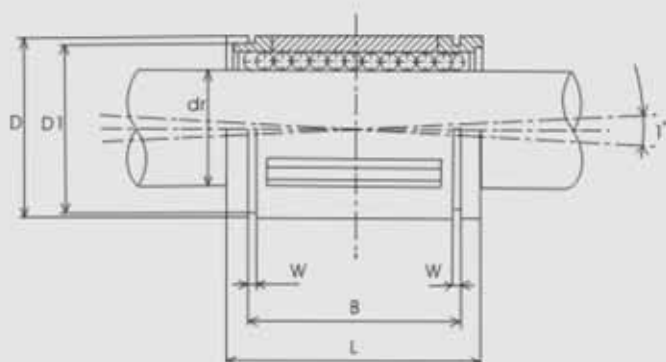
NSKB Super type linear bearing Europe series



NSKB
STANDARD TYPE



NSKB...OP
OPEN TYPE



NSKB
STANDARD TYPE



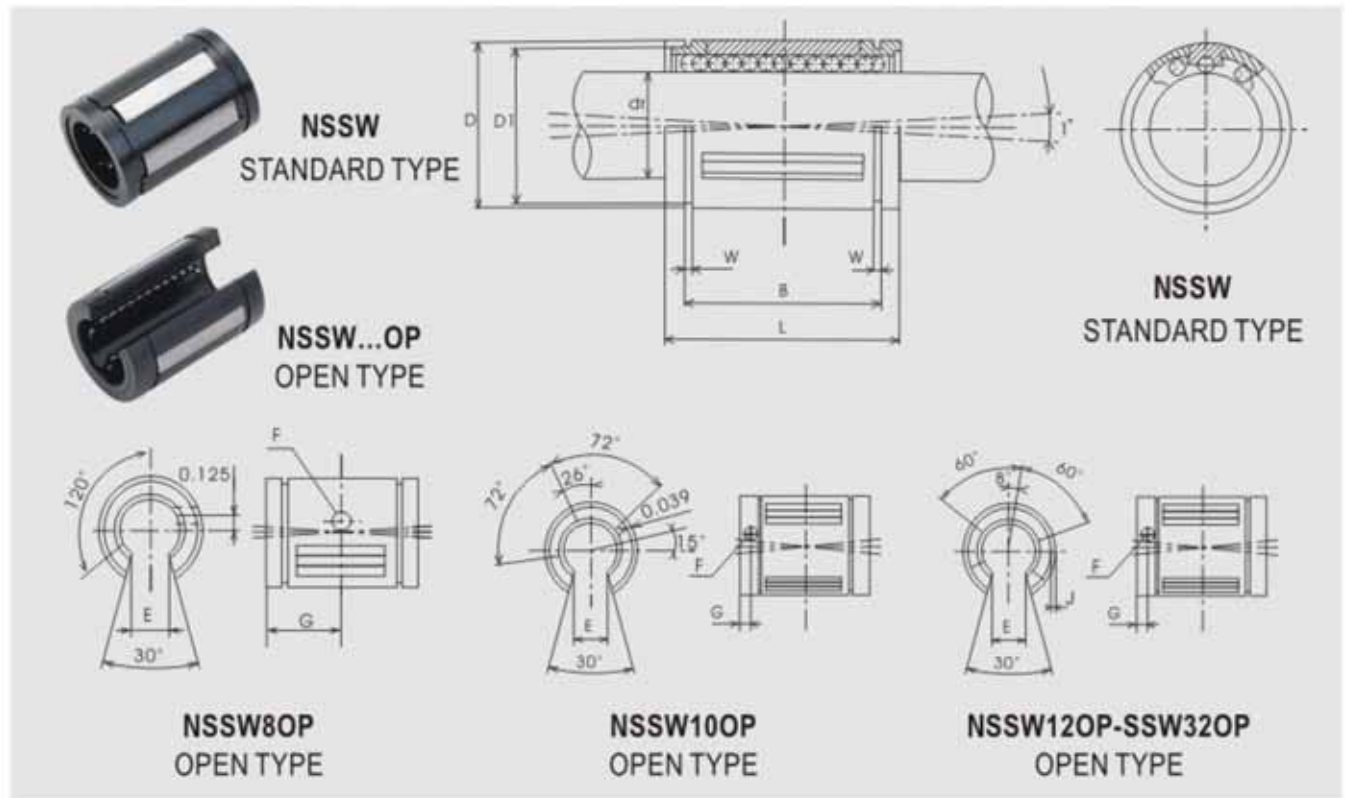
NSKB...OP
OPEN TYPE

| MODEL NO. | NUMBER OF BALL ROWS | MODEL NO. | NUMBER OF BALL ROWS | MAIN DIMENSIONS | | | | | | | | BASIC LOAD RATING | | | | WEIGHT (Kg) | |
|-----------|---------------------|-----------|---------------------|-----------------|----|-----|------|------|------|------|----------|-------------------|----------------|----------------|----------------|-------------|-------|
| | | | | dr | D | L | D1 | B | W | E | α | DYNAMIC C(kgf) | STATIC Co(kgf) | DYNAMIC C(kgf) | STATIC Co(kgf) | | |
| NSKB12 | 5 | | | 12 | 22 | 32 | 21 | 22.7 | 1.35 | | | 126 | 112 | | | 0.021 | |
| NSKB16 | 5 | NSKB16OP | 4 | 16 | 26 | 36 | 24.9 | 24.7 | 1.35 | 9 | 68° | 153 | 128 | 167 | 135 | 0.043 | 0.035 |
| NSKB20 | 6 | NSKB20OP | 5 | 20 | 32 | 45 | 30.3 | 31.3 | 1.65 | 9 | 55° | 263 | 170 | 268 | 176 | 0.058 | 0.048 |
| NSKB25 | 6 | NSKB25OP | 5 | 25 | 40 | 58 | 37.5 | 43.8 | 1.90 | 11.5 | 57° | 388 | 281 | 399 | 291 | 0.123 | 0.103 |
| NSKB30 | 6 | NSKB30OP | 5 | 30 | 47 | 68 | 44.5 | 51.8 | 1.90 | 14 | 57° | 481 | 286 | 495 | 296 | 0.216 | 0.177 |
| NSKB40 | 6 | NSKB40OP | 5 | 40 | 62 | 80 | 59 | 60.4 | 2.20 | 19.5 | 56° | 663 | 584 | 684 | 602 | 0.333 | 0.275 |
| NSKB50 | 6 | NSKB50OP | 5 | 50 | 75 | 100 | 72 | 77.4 | 2.70 | 22.5 | 54° | 1169 | 810 | 1194 | 827 | 0.618 | 0.520 |

Annotate: NSKB type can crossing-over with LM.

NSKB...OP type can crossing-over with KB...OP.

NSSW Super type linear bearing
Inch system series



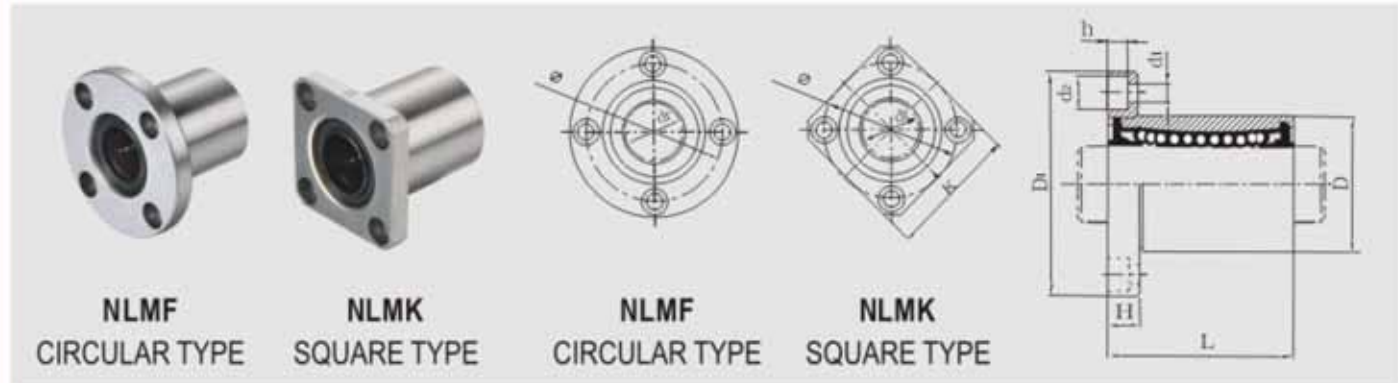
| MODEL NO. | NUMBER OF BALL ROWS | MODEL NO. | NUMBER OF BALL ROWS | MAIN DIMENSIONS | | | | | | | | | | BASIC LOAD RATING | | WEIGHT (Kg) |
|-----------|---------------------|-----------|---------------------|-----------------|-------------------|------------------|-------------------|------------------|------------------|------------------|-----------------|------------------|-----------------|-------------------|---------------|-------------|
| | | | | dr | D | L | D1 | B | W | E | F | G | J | DYNAMIC C(kg) | STATIC Co(kg) | |
| NSSW4 | 4 | — | — | 1/4" 6.35 | 0.5" 12.7 | 0.75" 19.05 | 0.4687" 11.906 | 0.515" 13.081 | 0.039" 0.991 | — | — | — | — | 27 | 36 | 0.005 |
| NSSW6 | 6 | — | — | 3/8" 9.525 | 0.625" 15.875 | 0.875" 22.225 | 0.588" 14.935 | 0.703" 17.856 | 0.039" 0.991 | — | — | — | — | 43 | 55 | 0.007 |
| NSSW8 | 4 | NSSW8OP | 4 | 1/2" 12.7 | 0.875" 22.225 | 1.25" 31.75 | 0.8209" 20.85 | 1.032" 26.213 | 0.0459" 1.166 | 0.313" 7.95 | 0.136" 3.45 | 0.625" 15.875 | Thru | 104 | 132 | 0.023 |
| NSSW10 | 5 | NSSW10OP | 4 | 5/8" 15.875 | 1.125" 28.575 | 1.5" 38.1 | 1.059" 26.899 | 1.112" 28.245 | 0.0559" 1.42 | 0.375" 9.525 | 0.105" 2.667 | 0.125" 3.175 | 0.039" 0.991 | 182 | 228 | 0.035 |
| NSSW12 | 5 | NSSW12OP | 5 | 3/4" 19.05 | 1.25" 31.75 | 1.625" 41.275 | 1.176" 29.87 | 1.272" 32.309 | 0.0559" 1.42 | 0.438" 11.125 | 0.136" 3.454 | 0.125" 3.175 | 0.059" 1.499 | 213 | 268 | 0.07 |
| NSSW16 | 6 | NSSW16OP | 5 | 1" 25.4 | 1.5625" 39.688 | 2.25" 57.15 | 1.4687" 37.305 | 1.886" 47.904 | 0.0679" 1.725 | 0.563" 14.3 | 0.136" 3.454 | 0.125" 3.175 | 0.047" 1.194 | 386 | 481 | 0.142 |
| NSSW20 | 6 | NSSW20OP | 5 | 1-1/4" 31.75 | 2" 50.8 | 2.625" 66.675 | 1.8859" 47.9 | 2.011" 51.079 | 0.0679" 1.725 | 0.625" 15.875 | 0.201" 5.105 | 0.1875" 4.763 | 0.09" 2.286 | 558 | 695 | 0.27 |
| NSSW24 | 6 | NSSW24OP | 5 | 1-1/2" 38.1 | 2.375" 60.325 | 3" 76.2 | 2.2389" 56.868 | 2.422" 61.519 | 0.0859" 2.185 | 0.75" 19.05 | 0.201" 5.105 | 0.1875" 4.763 | 0.09" 2.286 | 672 | 840 | 0.371 |
| NSSW32 | 6 | NSSW32OP | 5 | 2" 50.8 | 3" 76.2 | 4" 101.6 | 2.8379" 72.083 | 3.206" 81.432 | 0.1029" 2.614 | 1" 25.4 | 0.265" 6.731 | 0.3125" 7.938 | Thru | 1102 | 1377 | 0.64 |

Annotate: NSSW type can crossing-over with SW.
NSSW...OP type can crossing-over with SW...OP.

NLMF Circular flange type linear bearing

NLMK Square flange type linear bearing

Asia series

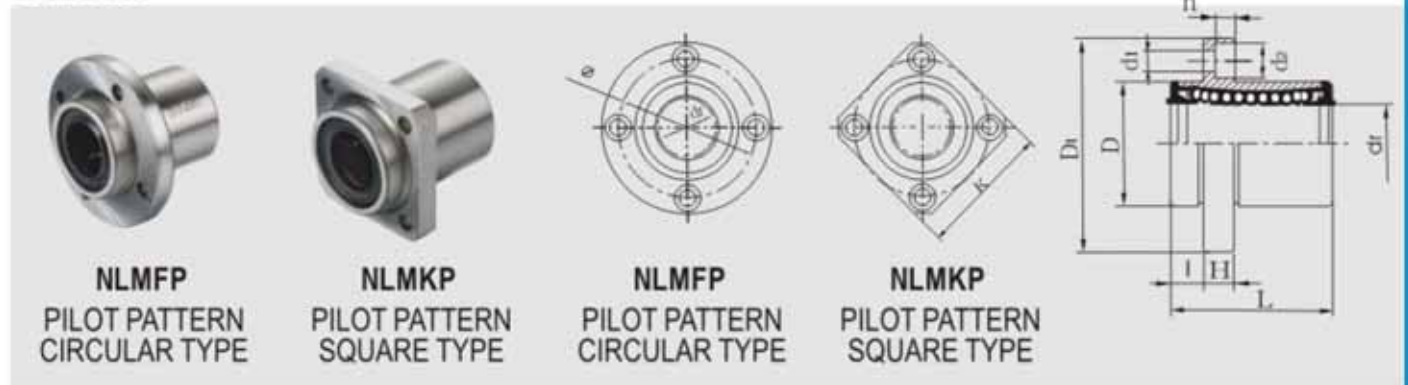


| MODEL NO. | MODEL NO. | NUMBER OF BALL ROWS | MAIN DIMENSIONS | | | | | | | | | | | | | SQUAR- E-NESS | ECCEN- TRICITY (MAX.) | BASIC LOAD RATING | | WEIGHT (Kg) | |
|-----------|-----------|---------------------|---------------------------------|-------------|-------------------|-------------|--------|------------|--------|-------|-----|-----|------------------------|-----|-----|------------------|-----------------------------|----------------------|-------------------|-------------|-------|
| | | | INSCRIBED CIRCLE DIAMETER | | OUTER DIAMETER | | LENGTH | | FLANGE | | | | HOLE FOR ATTACHMENT | | | | | DYNAMIC C(kgf) | STATIC Co(kgf) | | |
| | | | dr | TOLERANCE | D | TOLERANCE | L | TOLERANCE | D1 | K | H | Φ | d1 | d2 | h | | | | | | |
| NLMF6 | NLMK6 | 4 | 6 | 0 -0.009 | 12 | 0 -0.011 | 19 | 0 -0.20 | 28 | 22 | 5 | 20 | 3.5 | 6 | 3.1 | 0.012 | 0.012 | 21 | 27 | 0.022 | 0.017 |
| NLMF8S | NLMK8S | 4 | 8 | | 15 | | 17 | | 32 | 25 | 5 | 24 | 3.5 | 6 | 3.1 | | | 18 | 22 | | |
| NLMF8 | NLMK8 | 4 | 8 | | 15 | | 24 | | 32 | 25 | 5 | 24 | 3.5 | 6 | 3.1 | | | 28 | 40 | 0.035 | 0.027 |
| NLMF10 | NLMK10 | 4 | 10 | | 19 | 0 -0.013 | 29 | | 40 | 30 | 6 | 29 | 4.5 | 7.5 | 4.1 | | | 38 | 56 | 0.066 | 0.047 |
| NLMF12 | NLMK12 | 4 | 12 | | 21 | | 30 | | 42 | 32 | 6 | 32 | 4.5 | 7.5 | 4.1 | | | 52 | 80 | 0.070 | 0.053 |
| NLMF13 | NLMK13 | 4 | 13 | | 23 | | 32 | | 43 | 34 | 6 | 33 | 4.5 | 7.5 | 4.1 | | | 52 | 80 | 0.079 | 0.064 |
| NLMF16 | NLMK16 | 5 | 16 | | 28 | | 37 | | 48 | 37 | 6 | 38 | 4.5 | 7.5 | 4.1 | | | 79 | 120 | 0.122 | 0.102 |
| NLMF20 | NLMK20 | 5 | 20 | 0 -0.010 | 32 | 0 -0.016 | 42 | 0 -0.30 | 54 | 42 | 8 | 43 | 5.5 | 9 | 5.1 | 0.015 | 0.015 | 90 | 140 | 0.163 | 0.12 |
| NLMF25 | NLMK25 | 6 | 25 | | 40 | | 59 | | 62 | 50 | 8 | 51 | 5.5 | 9 | 5.1 | | | 100 | 160 | 0.311 | 0.272 |
| NLMF30 | NLMK30 | 6 | 30 | | 45 | | 64 | | 74 | 58 | 10 | 60 | 6.6 | 11 | 6.1 | | | 160 | 280 | 0.42 | 0.34 |
| NLMF35 | NLMK35 | 6 | 35 | 0 -0.012 | 52 | 0 -0.019 | 70 | | 0.020 | 0.020 | 82 | 64 | 10 | 67 | 6.6 | 11 | 6.1 | 170 | 320 | 0.60 | 0.496 |
| NLMF40 | NLMK40 | 6 | 40 | | 60 | | 80 | | | | 96 | 75 | 13 | 78 | 9 | 14 | 8.1 | 220 | 410 | 0.749 | 0.773 |
| NLMF50 | NLMK50 | 6 | 50 | | 80 | | 100 | | | | 116 | 92 | 13 | 98 | 9 | 14 | 8.1 | 390 | 810 | 1.96 | 1.72 |
| NLMF60 | NLMK60 | 6 | 60 | 0 -0.015 | 90 | 0 -0.022 | 110 | | | | 134 | 106 | 18 | 112 | 11 | 17.5 | 10.8 | 0.025 | 0.025 | 480 | 1020 |

NLMFP Pilot pattern circular flange type linear bearing

NLMKP Pilot pattern square flange type linear bearing

Asia series



| MODEL NO. | MODEL NO. | NUMBER OF BALL ROWS | MAIN DIMENSIONS | | | | | | | | | | | | | | SQUAR- ENESS | ECCEN- TRICITY (MAX.) | BASIC LOAD RATING | | WEIGHT (Kg) | |
|-----------|-----------|---------------------|---------------------------|-------------|----------------|-------------|--------|------------|-------------|--------|----|-----|-----|---------------------|-----|-----|-----------------|--------------------------|-------------------|---------------|-------------|-------|
| | | | INSCRIBED CIRCLE DIAMETER | | OUTER DIAMETER | | LENGTH | | I | FLANGE | | | | HOLE FOR ATTACHMENT | | | | | DYNAMIC C(kg) | STATIC Co(kg) | | |
| | | | dr | TOLERANCE | D | TOLERANCE | L | TOLERANCE | | D1 | K | H | Φ | d1 | d2 | h | | | | | | |
| NLMFP6 | NLMKP6 | 4 | 6 | 0 -0.009 | 12 | 0 -0.013 | 19 | 0 -0.20 | 5 | 28 | 22 | 5 | 20 | 3.5 | 6 | 3.1 | 0.012 | 0.012 | 21 | 27 | 0.022 | 0.017 |
| NLMFP8 | NLMKP8 | 4 | 8 | | 15 | 24 | 5 | | 32 | 25 | 5 | 24 | 3.5 | 6 | 3.1 | 28 | | | 40 | 0.035 | 0.027 | |
| NLMFP10 | NLMKP10 | 4 | 10 | | 19 | 29 | 6 | | 40 | 30 | 6 | 29 | 4.5 | 7.5 | 4.1 | 38 | | | 56 | 0.065 | 0.047 | |
| NLMFP12 | NLMKP12 | 4 | 12 | | 21 | 0 -0.016 | 30 | | 6 | 42 | 32 | 6 | 32 | 4.5 | 7.5 | 4.1 | | | 52 | 80 | 0.072 | 0.053 |
| NLMFP13 | NLMKP13 | 4 | 13 | | 23 | 32 | 6 | | 43 | 34 | 6 | 33 | 4.5 | 7.5 | 4.1 | 52 | | | 80 | 0.079 | 0.064 | |
| NLMFP16 | NLMKP16 | 5 | 16 | | 28 | 37 | 6 | | 48 | 37 | 6 | 38 | 4.5 | 7.5 | 4.1 | 79 | | | 120 | 0.123 | 0.102 | |
| NLMFP20 | NLMKP20 | 5 | 20 | 0 -0.010 | 32 | 0 -0.019 | 42 | 0 -0.30 | 8 | 54 | 42 | 8 | 43 | 5.5 | 9 | 5.1 | 0.015 | 0.015 | 90 | 140 | 0.161 | 0.129 |
| NLMFP25 | NLMKP25 | 6 | 25 | | 40 | | 59 | | 8 | 62 | 50 | 8 | 51 | 5.5 | 9 | 5.1 | | | 100 | 160 | 0.309 | 0.272 |
| NLMFP30 | NLMKP30 | 6 | 30 | | 45 | | 64 | | 10 | 74 | 58 | 10 | 60 | 6.6 | 11 | 6.1 | | | 160 | 280 | 0.42 | 0.34 |
| NLMFP35 | NLMKP35 | 6 | 35 | 0 -0.012 | 52 | 0 -0.022 | 70 | | 10 | 82 | 64 | 10 | 67 | 6.6 | 11 | 6.1 | 0.020 | 0.020 | 170 | 320 | 0.60 | 0.496 |
| NLMFP40 | NLMKP40 | 6 | 40 | | 60 | | 80 | | 13 | 96 | 75 | 13 | 78 | 9 | 14 | 8.1 | | | 220 | 410 | 0.749 | 0.773 |
| NLMFP50 | NLMKP50 | 6 | 50 | | 80 | | 100 | | 13 | 116 | 92 | 13 | 98 | 9 | 14 | 8.1 | | | 390 | 810 | 1.96 | 1.72 |
| NLMFP60 | NLMKP60 | 6 | 60 | | 0 -0.015 | | 90 | | 0 -0.025 | 110 | 18 | 134 | 106 | 18 | 112 | 11 | | | 17.5 | 10.8 | 480 | 1020 |

NLMT Oval flange type linear bearing

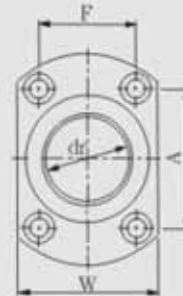
Asia series



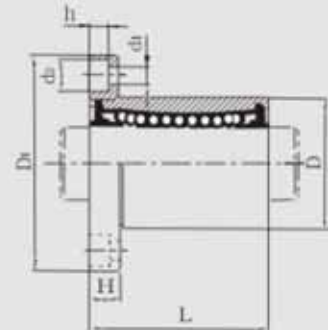
**NLMT
OVAL TYPE**



NLMT6-NLMT13

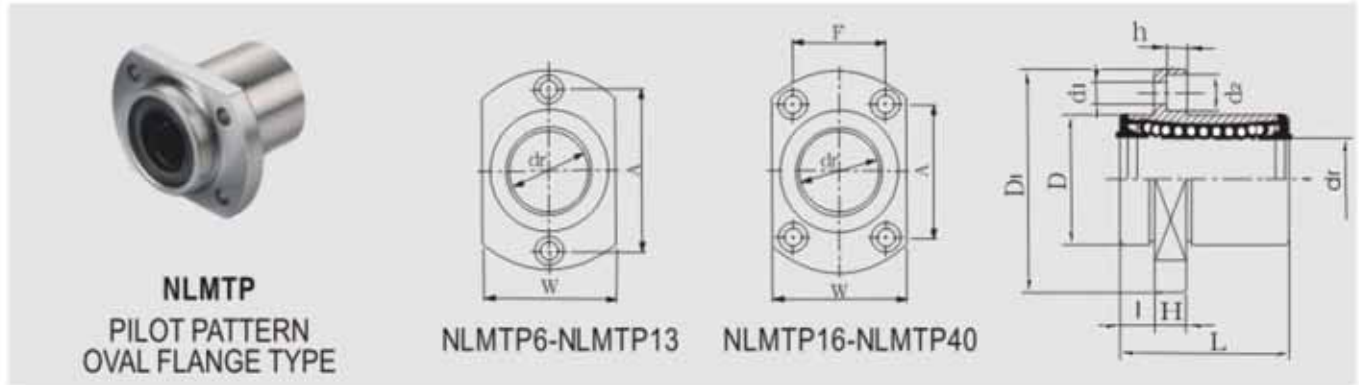


NLMT16-NLMT40



| MODEL NO. | NUMBER OF BALL ROWS | MAIN DIMENSIONS | | | | | | | | | | | | | SQUAR-ENESS | ECCEN-TRICITY (MAX.) | BASIC LOAD RATING | | WEIGHT (Kg) | |
|-----------|---------------------|---------------------------|-------------|----------------|-------------|--------|------------|--------|----|----|----|----|---------------------|-----|-------------|----------------------|-------------------|----------------|-------------|-------|
| | | INSCRIBED CIRCLE DIAMETER | | OUTER DIAMETER | | LENGTH | | FLANGE | | | | | HOLE FOR ATTACHMENT | | | | DYNAMIC Co(kgf) | STATIC Co(kgf) | | |
| | | dr | TOLERANCE | D | TOLERANCE | L | TOLERANCE | D1 | W | H | A | F | d1 | d2 | | | | | | h |
| NLMT6 | 4 | 6 | 0 -0.009 | 12 | 0 -0.011 | 19 | 0 -0.20 | 28 | 18 | 5 | 20 | | 3.5 | 6 | 3.1 | 0.012 | 0.012 | 21 | 27 | 0.019 |
| NLMT8 | 4 | 8 | | 15 | | 24 | | 32 | 21 | 5 | 24 | | 3.5 | 6 | 3.1 | | | 27 | 41 | 0.029 |
| NLMT10 | 4 | 10 | | 19 | | 29 | | 40 | 25 | 6 | 29 | | 4.5 | 7.5 | 4.1 | | | 38 | 56 | 0.054 |
| NLMT12 | 4 | 12 | | 21 | | 30 | | 42 | 27 | 6 | 32 | | 4.5 | 7.5 | 4.1 | | | 42 | 61 | 0.058 |
| NLMT13 | 4 | 13 | | 23 | | 32 | | 43 | 29 | 6 | 33 | | 4.5 | 7.5 | 4.1 | | | 52 | 79 | 0.072 |
| NLMT16 | 5 | 16 | | 28 | | 37 | | 48 | 34 | 6 | 31 | 22 | 4.5 | 7.5 | 4.1 | | | 79 | 120 | 0.109 |
| NLMT20 | 5 | 20 | 0 -0.010 | 32 | 0 -0.016 | 42 | 0 -0.30 | 54 | 38 | 8 | 36 | 24 | 5.5 | 9 | 5.1 | 0.015 | 0.015 | 88 | 140 | 0.135 |
| NLMT25 | 6 | 25 | | 40 | | 59 | | 62 | 46 | 8 | 40 | 32 | 5.5 | 9 | 5.1 | | | 100 | 160 | 0.28 |
| NLMT30 | 6 | 30 | | 45 | | 64 | | 74 | 51 | 10 | 49 | 35 | 6.6 | 11 | 6.1 | | | 160 | 280 | 0.35 |
| NLMT35 | 6 | 35 | 0 -0.012 | 52 | 0 -0.019 | 70 | | 82 | 60 | 10 | 55 | 38 | 6.6 | 11 | 6.1 | 0.020 | 0.020 | 170 | 320 | 0.524 |
| NLMT40 | 6 | 40 | | 60 | | 80 | | 96 | 70 | 13 | 64 | 45 | 9 | 14 | 8.1 | | | 220 | 410 | 0.836 |

NLMTP Pilot pattern oval flange type
Asia series

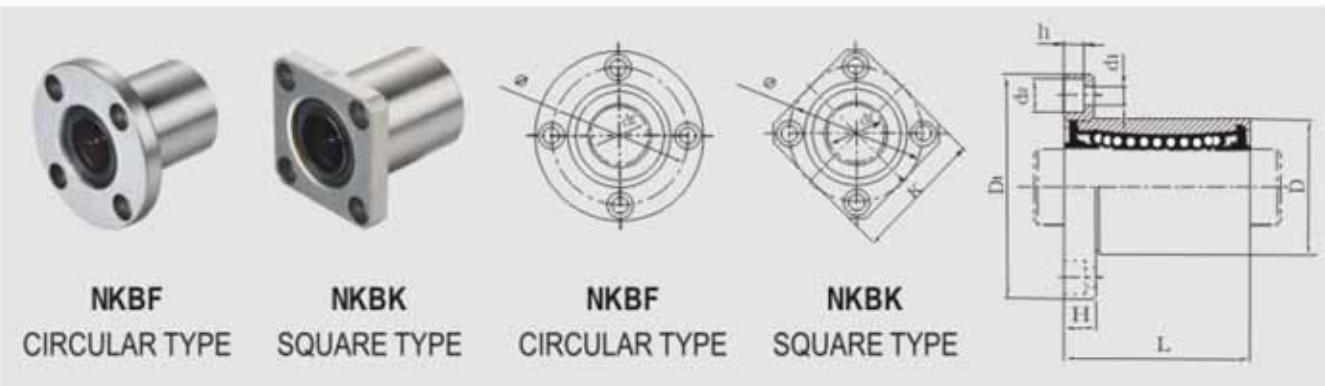


| MODEL NO. | NUMBER OF BALL ROWS | MAIN DIMENSIONS | | | | | | | | | | | | | | | SQUAR-ENESS | ECCEN-TRICITY (MAX.) | BASIC LOAD RATING | | WEIGHT (Kg) |
|-----------|---------------------|---------------------------|-------------|----------------|-------------|--------|------------|----|--------|----|----|----|----|---------------------|-----|-----|-------------|----------------------|-------------------|----------------|-------------|
| | | INSCRIBED CIRCLE DIAMETER | | OUTER DIAMETER | | LENGTH | | I | FLANGE | | | | | HOLE FOR ATTACHMENT | | | | | DYNAMIC C(kgf) | STATIC Co(kgf) | |
| | | dr | TOLERANCE | D | TOLERANCE | L | TOLERANCE | | D1 | W | H | A | F | d1 | d2 | h | | | | | |
| NLMTP6 | 4 | 6 | 0 -0.009 | 12 | 0 -0.013 | 19 | 0 -0.20 | 5 | 28 | 18 | 5 | 20 | | 3.5 | 6 | 3.1 | 0.012 | 0.012 | 21 | 27 | 0.019 |
| NLMTP8 | 4 | 8 | | 15 | | 24 | | 5 | 32 | 21 | 5 | 24 | | 3.5 | 6 | 3.1 | | | 27 | 41 | 0.028 |
| NLMTP10 | 4 | 10 | | 19 | | 29 | | 6 | 40 | 25 | 6 | 29 | | 4.5 | 7.5 | 4.1 | | | 38 | 56 | 0.057 |
| NLMTP12 | 4 | 12 | | 21 | | 30 | | 6 | 42 | 27 | 6 | 32 | | 4.5 | 7.5 | 4.1 | | | 42 | 61 | 0.062 |
| NLMTP13 | 4 | 13 | | 23 | | 32 | | 6 | 43 | 29 | 6 | 33 | | 4.5 | 7.5 | 4.1 | | | 52 | 79 | 0.072 |
| NLMTP16 | 5 | 16 | | 28 | | 37 | | 6 | 48 | 34 | 6 | 31 | 22 | 4.5 | 7.5 | 4.1 | | | 79 | 120 | 0.105 |
| NLMTP20 | 5 | 20 | 0 -0.010 | 32 | 0 -0.019 | 42 | 0 -0.30 | 8 | 54 | 38 | 8 | 36 | 24 | 5.5 | 9 | 5.1 | 0.015 | 0.015 | 88 | 140 | 0.146 |
| NLMTP25 | 6 | 25 | | 40 | | 59 | | 8 | 62 | 46 | 8 | 40 | 32 | 5.5 | 9 | 5.1 | | | 100 | 160 | 0.22 |
| NLMTP30 | 6 | 30 | | 45 | | 64 | | 10 | 74 | 51 | 10 | 49 | 35 | 6.6 | 11 | 6.1 | | | 160 | 280 | 0.37 |
| NLMTP35 | 6 | 35 | 0 -0.012 | 52 | 0 -0.022 | 70 | | 10 | 82 | 60 | 10 | 55 | 38 | 6.6 | 11 | 6.1 | 0.020 | 0.020 | 170 | 320 | 0.52 |
| NLMTP40 | 6 | 40 | | 60 | | 80 | | 13 | 96 | 70 | 13 | 64 | 45 | 9 | 14 | 8.1 | | | 220 | 410 | 0.828 |

NKBF Circular flange type

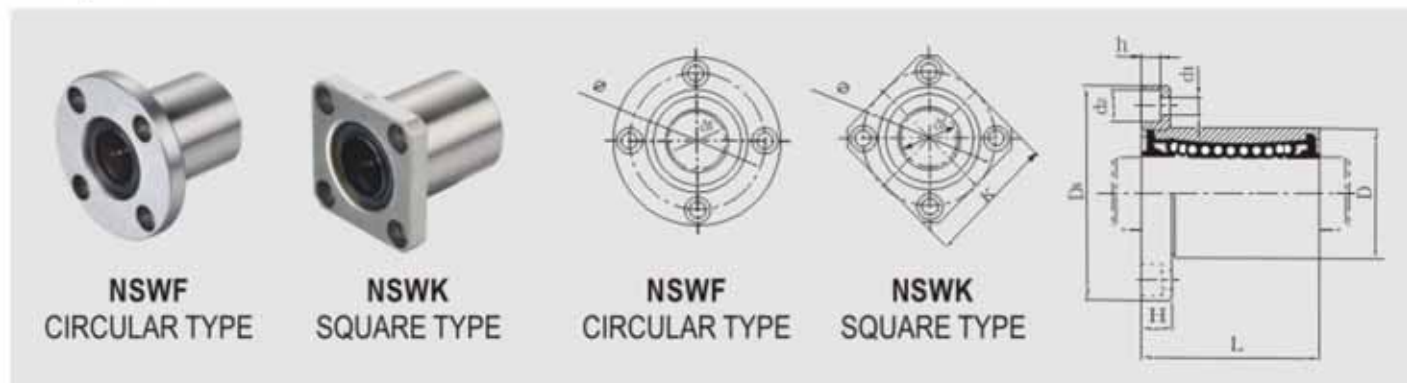
NKBK Square flange type

Europe series



| MODEL NO. | MODEL NO. | NUMBER OF BALL ROWS | MAIN DIMENSIONS | | | | | | | | | | | | | SQUAR-ENESS | ECCEN-TRICITY (MAX.) | BASIC LOAD RATING | | WEIGHT (Kg) | |
|-----------|-----------|---------------------|---------------------------|------------------|----------------|-------------|--------|-------------|------------|-----|-----|----|---------------------|-----|------|-------------|----------------------|-------------------|---------------|-------------|-------|
| | | | INSCRIBED CIRCLE DIAMETER | | OUTER DIAMETER | | LENGTH | | FLANGE | | | | HOLE FOR ATTACHMENT | | | | | DYNAMIC C(kg) | STATIC Co(kg) | | |
| | | | dr | TOLERANCE | D | TOLERANCE | L | TOLERANCE | D1 | K | H | Φ | d1 | d2 | h | | | | | | |
| NKBF5 | NKBK5 | 4 | 5 | +0.008 | 12 | 0 -0.008 | 22 | 0 -0.20 | 28 | 22 | 5 | 20 | 3.5 | 6 | 3.1 | 0.012 | 0.012 | 21 | 27 | | |
| NKBF8 | NKBK8 | 4 | 8 | | 16 | | 25 | | 32 | 25 | 5 | 24 | 3.5 | 6 | 3.1 | | | 27 | 41 | 0.039 | 0.032 |
| NKBF10 | NKBK10 | 4 | 10 | | 19 | | 29 | | 40 | 30 | 6 | 29 | 4.5 | 7.5 | 4.1 | | | 38 | 56 | 0.055 | 0.048 |
| NKBF12 | NKBK12 | 4 | 12 | | 22 | | 32 | | 42 | 32 | 6 | 32 | 4.5 | 7.5 | 4.1 | | | 52 | 80 | 0.079 | 0.062 |
| NKBF16 | NKBK16 | 5 | 16 | +0.009 -0.001 | 26 | 0 -0.009 | 36 | 0 -0.30 | 46 | 35 | 6 | 36 | 4.5 | 7.5 | 4.1 | 0.015 | 0.015 | 59 | 91 | 0.106 | 0.074 |
| NKBF20 | NKBK20 | 5 | 20 | | 32 | | 45 | | 54 | 42 | 8 | 43 | 5.5 | 9 | 5.1 | | | 88 | 140 | 0.171 | 0.137 |
| NKBF25 | NKBK25 | 6 | 25 | +0.011 -0.001 | 40 | 0 -0.011 | 58 | | 62 | 50 | 8 | 51 | 5.5 | 9 | 5.1 | | | 100 | 160 | 0.308 | 0.265 |
| NKBF30 | NKBK30 | 6 | 30 | | 47 | | 68 | | 76 | 60 | 10 | 62 | 6.6 | 11 | 6.1 | | | 160 | 280 | 0.594 | 0.43 |
| NKBF40 | NKBK40 | 6 | 40 | +0.013 -0.002 | 62 | 0 -0.013 | 80 | | 98 | 75 | 13 | 80 | 9 | 14 | 8.1 | 0.017 | 0.017 | 220 | 410 | 1.098 | 0.88 |
| NKBF50 | NKBK50 | 6 | 50 | | 75 | | 100 | | 112 | 88 | 13 | 94 | 9 | 14 | 8.1 | | | 390 | 810 | 1.67 | 1.46 |
| NKBF60 | NKBK60 | 6 | 60 | | 90 | | 125 | 0 -0.015 | 0 -0.40 | 134 | 106 | 18 | 112 | 11 | 17.5 | 10.8 | 0.020 | 0.020 | 480 | 1000 | 3.00 |

NSWF Circular flange type linear bearing
 NSWK Square flange type linear bearing
 Inch system series



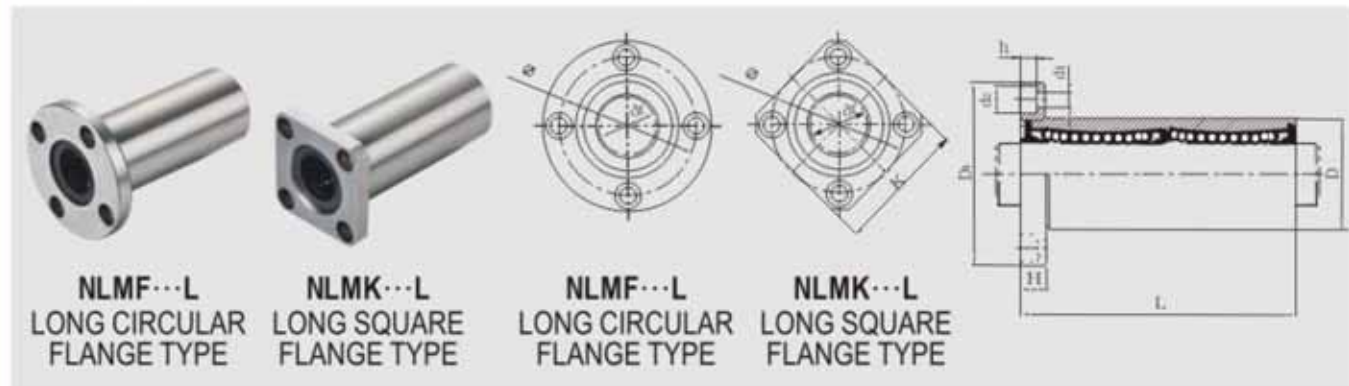
| MODEL NO. | NUMBER OF BALL ROWS | MAIN DIMENSIONS | | | | | | | | | | | | | SQUAREDNESS | ECCENTRICITY (MAX.) | BASIC LOAD RATING | | WEIGHT (Kg) | | |
|------------------|---------------------|---------------------------|-------------|-------------------|------------------|------------------|-------------|-------------------|-------------------|------------------|------------------|---------------------|------------------|------------------|------------------|---------------------|-------------------|---------------|-------------|-------|-------|
| | | INSCRIBED CIRCLE DIAMETER | | OUTER DIAMETER | | LENGTH | | FLANGE | | | | HOLE FOR ATTACHMENT | | | | | DYNAMIC C(kg) | STATIC C0(kg) | K | F | |
| | | dr | TOLERANCE | D | TOLERANCE | L | TOLERANCE | D1 | K | H | Φ | d1 | d2 | h | | | | | | | |
| NSWF4 NSWK4 | 4 | 1/4" 6.35 | 0 -0.009 | 0.5" 12.7 | 0 -0.011 | 0.75" 19.05 | 0 -0.20 | 1.25" 31.75 | 1" 25.4 | 0.219" 5.566 | 0.875" 22.225 | 0.156" 3.969 | 0.25" 6.35 | 0.141" 3.572 | 0.012 | 0.012 | 21 | 27 | 0.0245 | 0.03 | |
| NSWF6 NSWK6 | 4 | 3/8" 9.525 | | 0.625" 15.875 | 0.875" 22.225 | 1.5" 38.1 | | 1.25" 31.75 | 0.25" 6.35 | 1.062" 26.968 | 0.1875" 4.763 | 0.297" 7.541 | 0.172" 4.366 | 23 | | | 32 | 0.0293 | 0.037 | | |
| NSWF8 NSWK8 | 4 | 1/2" 12.7 | | 0.875" 22.225 | 0 -0.013 | 1.25" 31.75 | | 1.75" 44.45 | 1.375" 34.925 | 0.25" 6.35 | 1.312" 33.338 | 0.1875" 4.763 | 0.297" 7.541 | 0.172" 4.366 | | | 52 | 80 | 0.0637 | 0.80 | |
| NSWF10 NSWK10 | 4 | 5/8" 15.875 | | 1.125" 28.575 | 1.5" 38.1 | 2" 50.8 | | 1.5" 38.1 | 0.25" 6.35 | 1.562" 39.688 | 0.1875" 4.763 | 0.297" 7.541 | 0.172" 4.366 | 79 | | | 120 | 0.1055 | 0.127 | | |
| NSWF12 NSWK12 | 4 | 3/4" 19.05 | 0 -0.010 | 1.25" 31.75 | 0 -0.016 | 1.625" 41.275 | 0 -0.30 | 2.1875" 55.563 | 1.6875" 42.863 | 0.3125" 7.938 | 1.718" 43.66 | 0.2187" 5.556 | 0.344" 8.731 | 0.203" 5.159 | 0.015 | 0.015 | 88 | 140 | 0.136 | 0.173 | |
| NSWF16 NSWK16 | 6 | 1" 25.4 | | 1.5625" 39.688 | | 2.25" 57.15 | | 2.5" 63.5 | 2" 50.8 | 0.3125" 7.938 | 2.031" 51.594 | 0.2187" 5.556 | 0.344" 8.731 | 0.203" 5.159 | | | 100 | 160 | 0.263 | 0.303 | |
| NSWF20 NSWK20 | 6 | 1-1/4" 31.75 | -0.012 | 2" 50.8 | 0 -0.019 | 2.625" 66.675 | | 0 -0.30 | 3.125" 79.375 | 2.5" 63.5 | 0.375" 9.525 | 2.5625" 65.088 | 0.2812" 7.144 | 0.406" 10.319 | 0.2656" 6.747 | 0.020 | 0.020 | 160 | 280 | 0.493 | 0.585 |
| NSWF24 NSWK24 | 6 | 1-1/2" 38.1 | | 2.375" 60.325 | | 3" 76.2 | | | 3.75" 95.25 | 3" 76.2 | 0.5" 12.7 | 3.0625" 77.788 | 0.344" 8.731 | 0.5" 12.7 | 0.328" 8.334 | | | 222 | 410 | 0.808 | 0.992 |
| NSWF32 NSWK32 | 6 | 2" 50.8 | | 3" 76.2 | | 0 -0.022 | 4" 101.6 | | 4.375" 111.125 | 3.5" 88.9 | 0.5" 12.7 | 3.6875" 93.662 | 0.344" 8.731 | 0.5" 12.7 | 0.328" 8.334 | | | 390 | 810 | 1.505 | 1.705 |

Annotate: NSWF16L steel retainer the number of ball rows is 5, POM retainer the number of ball rows is 6.

NLMF Long circular flange type linear bearing

NLMK Long square flange type linear bearing

Asia series



| MODEL NO. | MODEL NO. | NUMBER OF BALL ROWS | MAIN DIMENSIONS | | | | | | | | | | | | SQUAR-ENESS | ECCEN-TRICITY (MAX.) | BASIC LOAD RATING | | WEIGHT (Kg) | | | |
|-----------|-----------|---------------------|---------------------------|-------------|----------------|-------------|-------------|------------|--------|-----|-----|-----|---------------------|-----|-------------|----------------------|-------------------|----------------|-------------|-------|-------|-----|
| | | | INSCRIBED CIRCLE DIAMETER | | OUTER DIAMETER | | LENGTH | | FLANGE | | | | HOLE FOR ATTACHMENT | | | | DYNAMIC C(kgf) | STATIC Co(kgf) | F | K | | |
| | | | dr | TOLERANCE | D | TOLERANCE | L | TOLERANCE | D1 | K | H | Φ | d1 | d2 | | | | | | | h | |
| NLMF6L | NLMK6L | 4 | 6 | 0 -0.01 | 12 | 0 -0.013 | 35 | 0 -0.30 | 28 | 22 | 5 | 20 | 3.5 | 6 | 3.1 | 0.015 | 0.015 | 33 | 54 | 0.031 | 0.023 | |
| NLMF8L | NLMK8L | 4 | 8 | | 15 | | 45 | | 32 | 25 | 5 | 24 | 3.5 | 6 | 3.1 | | | 44 | 80 | 0.048 | 0.043 | |
| NLMF10L | NLMK10L | 4 | 10 | | 19 | 55 | 40 | | 30 | 6 | 29 | 4.5 | 7.5 | 4.1 | 60 | | | 112 | 0.089 | 0.074 | | |
| NLMF12L | NLMK12L | 4 | 12 | | 21 | 57 | 42 | | 32 | 6 | 32 | 4.5 | 7.5 | 4.1 | 83 | | | 160 | 0.095 | 0.08 | | |
| NLMF13L | NLMK13L | 4 | 13 | | 23 | 61 | 43 | | 34 | 6 | 33 | 4.5 | 7.5 | 4.1 | 83 | | | 160 | 0.12 | 0.11 | | |
| NLMF16L | NLMK16L | 5 | 16 | | 28 | 70 | 48 | | 37 | 6 | 38 | 4.5 | 7.5 | 4.1 | 126 | | | 240 | 0.19 | 0.157 | | |
| NLMF20L | NLMK20L | 5 | 20 | 0 -0.012 | 32 | 0 -0.019 | 80 | 0 -0.40 | 54 | 42 | 8 | 43 | 5.5 | 9 | 5.1 | 0.020 | 0.020 | 143 | 280 | 0.25 | 0.213 | |
| NLMF25L | NLMK25L | 6 | 25 | | 40 | | 112 | | 62 | 50 | 8 | 51 | 5.5 | 9 | 5.1 | | | 159 | 320 | 0.507 | 0.473 | |
| NLMF30L | NLMK30L | 6 | 30 | | 45 | | 123 | | 74 | 58 | 10 | 60 | 6.6 | 11 | 6.1 | | | 254 | 560 | 0.643 | 0.57 | |
| NLMF35L | NLMK35L | 6 | 35 | 0 -0.015 | 52 | 0 -0.022 | 135 | | 82 | 64 | 10 | 67 | 6.6 | 11 | 6.1 | 0.025 | 0.025 | 270 | 640 | 0.95 | 0.91 | |
| NLMF40L | NLMK40L | 6 | 40 | | 60 | | 151 154 | | 96 | 75 | 13 | 78 | 9 | 14 | 8.1 | | | 350 | 820 | 1.48 | 1.31 | |
| NLMF50L | NLMK50L | 6 | 50 | | 80 | | 192 | | 116 | 92 | 13 | 98 | 9 | 14 | 8.1 | | | 620 | 1622 | 3.79 | 3.10 | |
| NLMF60L | NLMK60L | 6 | 60 | | 90 | | 0 -0.025 | | 209 | 134 | 106 | 18 | 112 | 11 | 17.5 | | | 10.8 | 770 | 2040 | 4.40 | 3.5 |

NLMFP...L Long pilot pattern circular flange type

NLMKP...L Long pilot pattern square flange type

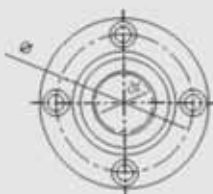
Asia Series



NLMFP...L



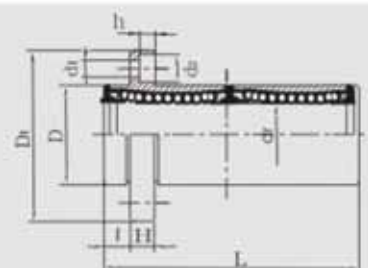
NLMKP...L



NLMFP...L



NLMKP...L



LONG PILOT PATTERN
CIRCULAR FLANGE TYPE

LONG PILOT PATTERN
SQUARE FLANGE TYPE

LONG PILOT PATTERN
CIRCULAR FLANGE TYPE

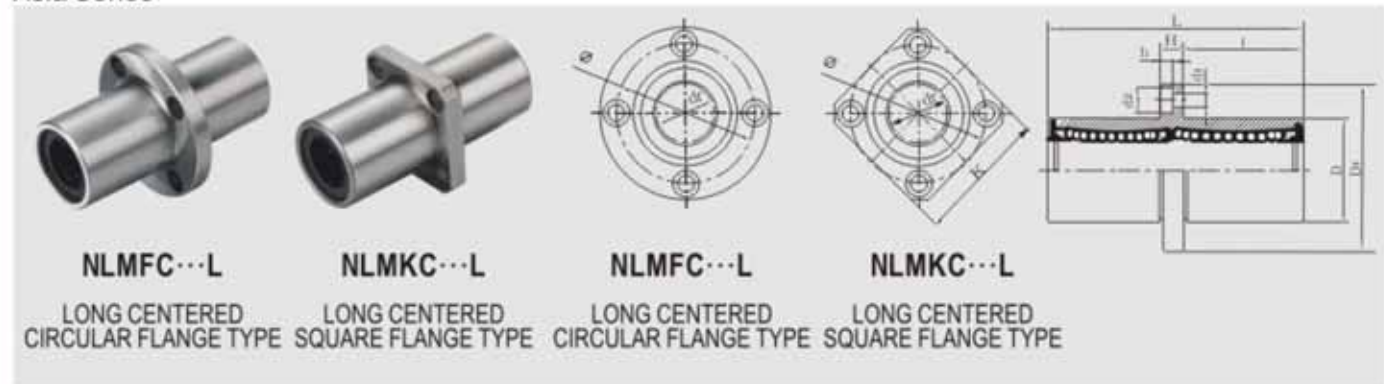
LONG PILOT PATTERN
SQUARE FLANGE TYPE

| MODEL NO. | MODEL NO. | NUMBER OF BALL ROWS | MAIN DIMENSIONS | | | | | | | | | | | | | SQUAR- ENESS | ECCEN- TRICITY (MAX.) | BASIC LOAD RATING | | WEIGHT (Kg) | | |
|-----------|-----------|---------------------|---------------------------------|-------------|-------------------|--------------|-------------|------------|-----|--------|-----|-----|-----|------------------------|-----|-----------------|-----------------------------|----------------------|-------------------|----------------|-------|-------|
| | | | INSCRIBED CIRCLE DIAMETER | | OUTER DIAMETER | | LENGTH | | I | FLANGE | | | | HOLE FOR ATTACHMENT | | | | DYNAMIC C(kgf) | STATIC Co(kgf) | F | K | |
| | | | dr | TOLERANCE | D | TOLERANCE | L | TOLERANCE | | D1 | K | H | Φ | d1 | d2 | h | | | | | | |
| NLMFP6L | NLMKP6L | 4 | 6 | 0 -0.01 | 12 | 0 -0.013 | 35 | 0 -0.30 | 5 | 28 | 22 | 5 | 20 | 3.5 | 6 | 3.1 | 0.015 | 0.015 | 33 | 54 | 0.028 | 0.024 |
| NLMFP8L | NLMKP8L | 4 | 8 | | 15 | 45 | 5 | | 32 | 25 | 5 | 24 | 3.5 | 6 | 3.1 | 44 | | | 80 | 0.045 | 0.042 | |
| NLMFP10L | NLMKP10L | 4 | 10 | | 19 | 55 | 6 | | 40 | 30 | 6 | 29 | 4.5 | 7.5 | 4.1 | 60 | | | 112 | 0.080 | 0.074 | |
| NLMFP12L | NLMKP12L | 4 | 12 | | 21 | 57 | 6 | | 42 | 32 | 6 | 32 | 4.5 | 7.5 | 4.1 | 83 | | | 160 | 0.094 | 0.081 | |
| NLMFP13L | NLMKP13L | 4 | 13 | | 23 | 61 | 6 | | 43 | 34 | 6 | 33 | 4.5 | 7.5 | 4.1 | 83 | | | 160 | 0.119 | 0.104 | |
| NLMFP16L | NLMKP16L | 5 | 16 | | 28 | 70 | 6 | | 48 | 37 | 6 | 38 | 4.5 | 7.5 | 4.1 | 126 | | | 240 | 0.184 | 0.174 | |
| NLMFP20L | NLMKP20L | 5 | 20 | 0 -0.012 | 32 | 0 -0.019 | 80 | 0 -0.40 | 8 | 54 | 42 | 8 | 43 | 5.5 | 9 | 5.1 | 0.020 | 0.020 | 143 | 280 | 0.246 | 0.206 |
| NLMFP25L | NLMKP25L | 6 | 25 | | 40 | 112 | 8 | | 62 | 50 | 8 | 51 | 5.5 | 9 | 5.1 | 159 | | | 320 | 0.500 | 0.463 | |
| NLMFP30L | NLMKP30L | 6 | 30 | | 45 | 123 | 10 | | 74 | 58 | 10 | 60 | 6.6 | 11 | 6.1 | 254 | | | 560 | 0.600 | 0.550 | |
| NLMFP35L | NLMKP35L | 6 | 35 | 0 -0.015 | 52 | 0 -0.022 | 135 | | 10 | 82 | 64 | 10 | 67 | 6.6 | 11 | 6.1 | 0.025 | 0.025 | 270 | 640 | 0.975 | 0.871 |
| NLMFP40L | NLMKP40L | 6 | 40 | | 60 | 151 (154) | 13 | | 96 | 75 | 13 | 78 | 9 | 14 | 8.1 | 350 | | | 820 | 1.500 | 0.360 | |
| NLMFP50L | NLMKP50L | 6 | 50 | | 80 | 192 | 13 | | 116 | 92 | 13 | 98 | 9 | 14 | 8.1 | 620 | | | 1622 | 3.440 | 3.200 | |
| NLMFP60L | NLMKP60L | 6 | 60 | | 0 -0.020 | 90 | 0 -0.025 | | 209 | 18 | 134 | 106 | 18 | 112 | 11 | 17.5 | | | 10.8 | 770 | 2040 | 4.380 |

NLMFC...L Long centered circular flange type

NLMKC...L Long centered square flange type

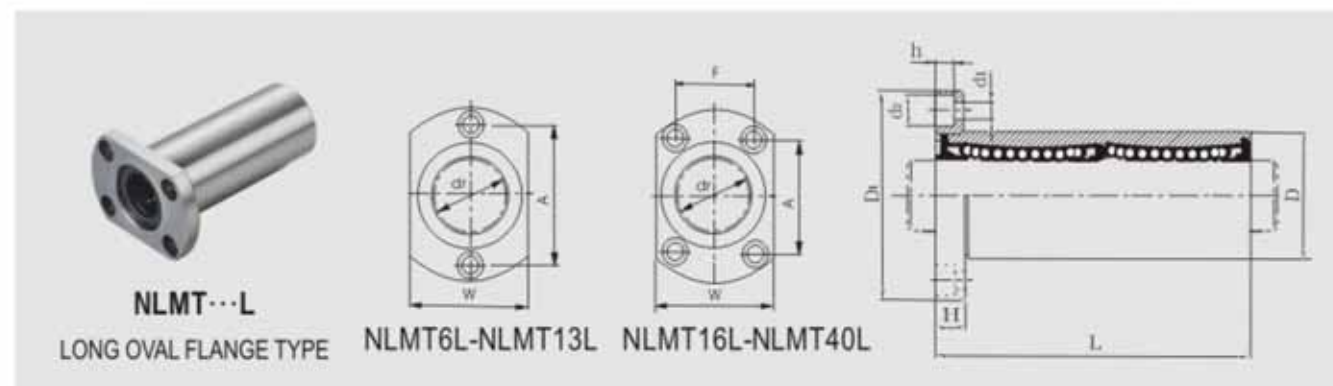
Asia Series



| MODEL NO. | MODEL NO. | NUMBER OF BALL ROWS | MAIN DIMENSIONS | | | | | | | | | | | | | | SQUAR- E- NESS | ECCEN- TRICITY (MAX.) | BASIC LOAD RATING | | WEIGHT (Kg) | | |
|-----------|-----------|---------------------|---------------------------------|-------------|-------------------|-------------|--------------|------------|------------|--------|-----|-----|----|------------------------|-----|------|----------------------|-----------------------------|----------------------|-------------------------------|----------------|-------|------|
| | | | INSCRIBED CIRCLE DIAMETER | | OUTER DIAMETER | | LENGTH | | I | FLANGE | | | | HOLE FOR ATTACHMENT | | | | | DYNAMIC C(kg) | STATIC C ₀ (kg) | F | K | |
| | | | dr | TOLERANCE | D | TOLERANCE | L | TOLERANCE | | D1 | K | H | Φ | d1 | d2 | h | | | | | | | |
| NLMFC8L | NLMKC8L | 4 | 6 | 0 -0.01 | 12 | 0 -0.013 | 35 | 0 -0.30 | 15 | 28 | 22 | 5 | 20 | 3.5 | 6 | 3.1 | 0.015 | 0.015 | 33 | 54 | 0.028 | 0.020 | |
| NLMFC8L | NLMKC8L | 4 | 8 | | 15 | | 45 | | 20 | 32 | 25 | 5 | 24 | 3.5 | 6 | 3.1 | | | 44 | 80 | 0.053 | 0.039 | |
| NLMFC10L | NLMKC10L | 4 | 10 | | 19 | | 55 | | 24.5 | 40 | 30 | 6 | 29 | 4.5 | 7.5 | 4.1 | | | 60 | 112 | 0.086 | 0.073 | |
| NLMFC12L | NLMKC12L | 4 | 12 | | 21 | | 57 | | 25.5 | 42 | 32 | 6 | 32 | 4.5 | 7.5 | 4.1 | | | 83 | 160 | 0.095 | 0.080 | |
| NLMFC13L | NLMKC13L | 4 | 13 | | 23 | | 61 | | 27.5 | 43 | 34 | 6 | 33 | 4.5 | 7.5 | 4.1 | | | 83 | 160 | 0.119 | 0.104 | |
| NLMFC16L | NLMKC16L | 5 | 16 | | 28 | | 70 | | 32 | 48 | 37 | 6 | 38 | 4.5 | 7.5 | 4.1 | | | 126 | 240 | 0.170 | 0.168 | |
| NLMFC20L | NLMKC20L | 5 | 20 | 0 -0.012 | 32 | 0 -0.019 | 80 | 0 -0.40 | 36 | 54 | 42 | 8 | 43 | 5.5 | 9 | 5.1 | 0.020 | 0.020 | 143 | 280 | 0.244 | 0.205 | |
| NLMFC25L | NLMKC25L | 6 | 25 | | 40 | | 112 | | 52 | 62 | 50 | 8 | 51 | 5.5 | 9 | 5.1 | | | 159 | 320 | 0.506 | 0.470 | |
| NLMFC30L | NLMKC30L | 6 | 30 | | 45 | | 123 | | 56.5 | 74 | 58 | 10 | 60 | 6.6 | 11 | 6.1 | | | 254 | 560 | 0.670 | 0.560 | |
| NLMFC35L | NLMKC35L | 6 | 35 | 0 -0.015 | 52 | 0 -0.022 | 135 | | 62.5 | 82 | 64 | 10 | 67 | 6.6 | 11 | 6.1 | 0.025 | 0.025 | 270 | 640 | 0.933 | 0.800 | |
| NLMFC40L | NLMKC40L | 6 | 40 | | 60 | | 151 (154) | | 69 70.5 | 96 | 75 | 13 | 78 | 9 | 14 | 8.1 | | | 350 | 820 | 1.495 | 1.360 | |
| NLMFC50L | NLMKC50L | 6 | 50 | | 80 | | 192 | | 89.5 | 116 | 92 | 13 | 98 | 9 | 14 | 8.1 | | | 620 | 1622 | 3.440 | 3.200 | |
| NLMFC60L | NLMKC60L | 6 | 60 | | 90 | | 0 -0.025 | | 209 | 95.5 | 134 | 106 | 18 | 112 | 11 | 17.5 | | | 11.1 | 0.030 | 0.030 | 770 | 2040 |

NLMT...L Long oval flange type

Asia Series



| MODEL NO. | NUMBER OF BALL ROWS | | MAIN DIMENSIONS | | | | | | | | | | | | | SQUAR-ENESS | ECCEN-TRICITY (MAX.) | BASIC LOAD RATING | | WEIGHT (Kg) | |
|-----------|---------------------|----|---------------------------|-----------|----------------|--------------|------------|-----------|--------|----|----|----|-----|---------------------|-----|-------------|----------------------|-------------------|---------------|-------------|---|
| | | | INSCRIBED CIRCLE DIAMETER | | OUTER DIAMETER | | LENGTH | | FLANGE | | | | | HOLE FOR ATTACHMENT | | | | DYNAMIC Co(kg) | STATIC Co(kg) | | |
| | | | dr | TOLERANCE | D | TOLERANCE | L | TOLERANCE | D1 | W | H | A | F | d1 | d2 | | | | | | h |
| NLMT6L | 4 | 6 | 0 -0.010 | 12 | 0 -0.013 | 35 | 0 -0.30 | 28 | 18 | 5 | 20 | | 3.5 | 6 | 3.1 | 0.015 | 0.015 | 33 | 54 | 0.025 | |
| NLMT8L | 4 | 8 | | 15 | | 45 | | 32 | 21 | 5 | 24 | | 3.5 | 6 | 3.1 | | | 44 | 80 | 0.041 | |
| NLMT10L | 4 | 10 | | 19 | | 55 | | 40 | 25 | 6 | 29 | | 4.5 | 7.5 | 4.1 | | | 67 | 112 | 0.080 | |
| NLMT12L | 4 | 12 | | 21 | | 57 | | 42 | 27 | 6 | 32 | | 4.5 | 7.5 | 4.1 | | | 83 | 160 | 0.087 | |
| NLMT13L | 4 | 13 | | 23 | | 61 | | 43 | 29 | 6 | 33 | | 4.5 | 7.5 | 4.1 | | | 83 | 160 | 0.107 | |
| NLMT16L | 5 | 16 | | 28 | | 70 | | 48 | 34 | 6 | 31 | 22 | 4.5 | 7.5 | 4.1 | | | 125 | 240 | 0.171 | |
| NLMT20L | 5 | 20 | 0 -0.012 | 32 | 0 -0.019 | 80 | 0 -0.40 | 54 | 38 | 8 | 36 | 24 | 5.5 | 9 | 5.1 | 0.020 | 0.020 | 143 | 280 | 0.214 | |
| NLMT25L | 6 | 25 | | 40 | | 112 | | 62 | 46 | 8 | 40 | 32 | 5.5 | 9 | 5.1 | | | 159 | 320 | 0.476 | |
| NLMT30L | 6 | 30 | | 45 | | 123 | | 74 | 51 | 10 | 49 | 35 | 6.6 | 11 | 6.1 | | | 254 | 560 | 0.570 | |
| NLMT35L | 6 | 35 | 0 -0.015 | 52 | 0 -0.022 | 135 | | 82 | 60 | 10 | 55 | 38 | 6.6 | 11 | 6.1 | 0.025 | 0.025 | 270 | 640 | 0.874 | |
| NLMT40L | 6 | 40 | | 60 | | 151 (154) | | 96 | 70 | 13 | 64 | 45 | 9 | 14 | 8.1 | | | 350 | 820 | 1.820 | |

NLMTP...L Long pilot pattern oval flange type

Asia Series



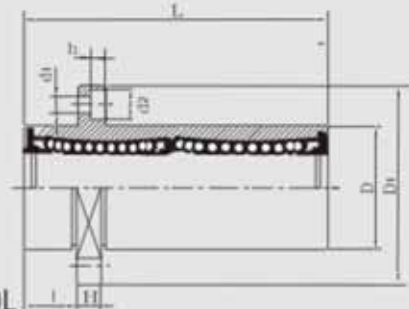
NLMTP...L
LONG PILOT PATTERN
OVAL FLANGE TYPE



NLMTP6L-NLMTP13L

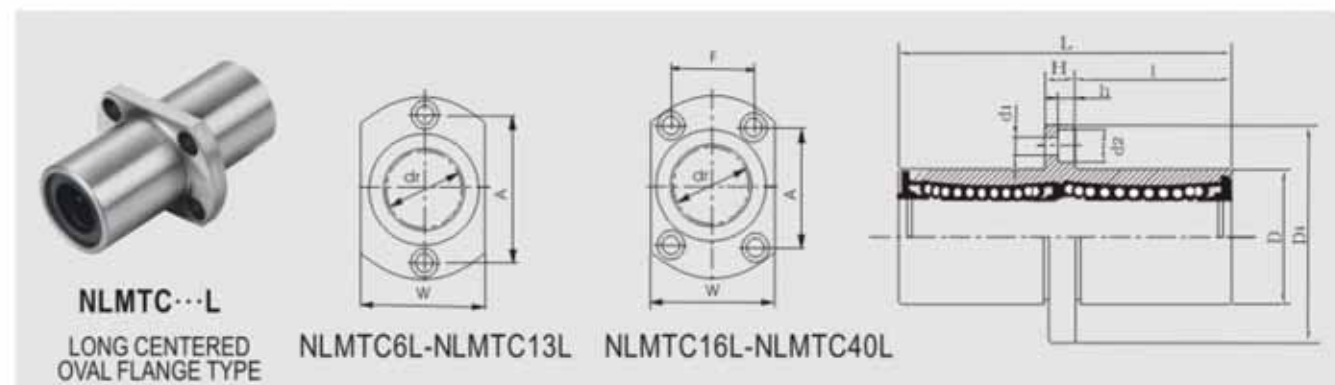


NLMTP16L-NLMTP40L



| MODEL NO. | NUMBER OF BALL ROWS | MAIN DIMENSIONS | | | | | | | | | | | | | | SQUAREDNESS | ECCENTRICITY (MAX.) | BASIC LOAD RATING | | WEIGHT (Kg) | |
|-----------|---------------------|---------------------------|-------------|----------------|-------------|--------------|------------|----|--------|----|----|----|-----|---------------------|-----|-------------|---------------------|-------------------|----------------|-------------|-------|
| | | INSCRIBED CIRCLE DIAMETER | | OUTER DIAMETER | | LENGTH | | I | FLANGE | | | | | HOLE FOR ATTACHMENT | | | | DYNAMIC C (kgf) | STATIC C (kgf) | | |
| | | dr | TOLERANCE | D | TOLERANCE | L | TOLERANCE | | D1 | W | H | A | F | d1 | d2 | | | | | | h |
| NLMTP6L | 4 | 6 | 0 -0.010 | 12 | 0 -0.013 | 35 | ± 0.30 | 5 | 28 | 18 | 5 | 20 | | 3.5 | 6 | 3.1 | 0.015 | 0.015 | 33 | 54 | 0.024 |
| NLMTP8L | 4 | 8 | | 15 | | 45 | | 5 | 32 | 21 | 5 | 24 | | 3.5 | 6 | 3.1 | | | 44 | 80 | 0.041 |
| NLMTP10L | 4 | 10 | | 19 | | 55 | | 6 | 40 | 25 | 6 | 29 | | 4.5 | 7.5 | 4.1 | | | 60 | 112 | 0.077 |
| NLMTP12L | 4 | 12 | | 21 | 57 | 0 -0.30 | 6 | 42 | 27 | 6 | 32 | | 4.5 | 7.5 | 4.1 | 67 | | | 122 | 0.084 | |
| NLMTP13L | 4 | 13 | | 23 | 61 | | 6 | 43 | 29 | 6 | 33 | | 4.5 | 7.5 | 4.1 | 83 | | | 160 | 0.144 | |
| NLMTP16L | 5 | 16 | | 28 | 70 | | 6 | 48 | 34 | 6 | 31 | 22 | 4.5 | 7.5 | 4.1 | 125 | | | 240 | 0.171 | |
| NLMTP20L | 5 | 20 | 0 -0.012 | 32 | 0 -0.019 | 80 | 0 -0.40 | 8 | 54 | 38 | 8 | 36 | 24 | 5.5 | 9 | 5.1 | 0.020 | 0.020 | 143 | 280 | 0.211 |
| NLMTP25L | 6 | 25 | | 40 | | 112 | | 8 | 62 | 46 | 8 | 40 | 32 | 5.5 | 9 | 5.1 | | | 159 | 320 | 0.390 |
| NLMTP30L | 6 | 30 | | 45 | | 123 | | 10 | 74 | 51 | 10 | 49 | 35 | 6.6 | 11 | 6.1 | | | 254 | 560 | 0.560 |
| NLMTP35L | 6 | 35 | 0 -0.015 | 52 | 0 -0.022 | 135 | 0 -0.40 | 10 | 82 | 60 | 10 | 55 | 38 | 6.6 | 11 | 6.1 | 0.025 | 0.025 | 270 | 640 | 0.870 |
| NLMTP40L | 6 | 40 | | 60 | | 151 (154) | | 13 | 96 | 70 | 13 | 64 | 45 | 9 | 14 | 8.1 | | | 350 | 820 | 1.380 |

NLMTC...L Long centered oval flange type
Asia Series

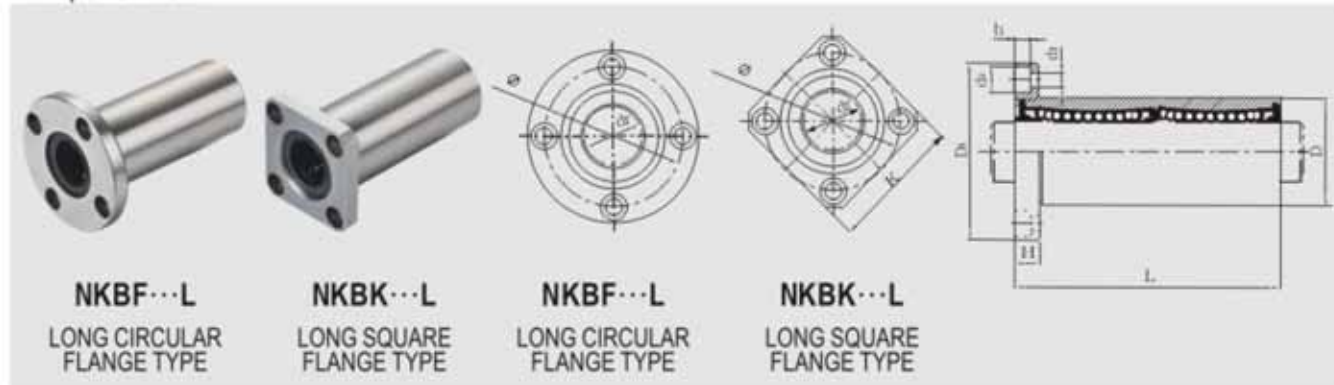


| MODEL NO. | NUMBER OF BALL ROWS | MAIN DIMENSIONS | | | | | | | | | | | | | | SQUAR- ENESS | ECCEN- TRICITY (MAX.) | BASIC LOAD RATING | | WEIGHT (Kg) | |
|-----------|---------------------|---------------------------|-------------|----------------|-------------|--------------|------------|--------------|--------|----|----|----|-----|---------------------|-----|-----------------|--------------------------|-------------------|---------------|-------------|-------|
| | | INSCRIBED CIRCLE DIAMETER | | OUTER DIAMETER | | LENGTH | | I | FLANGE | | | | | HOLE FOR ATTACHMENT | | | | DYNAMIC C(kg) | STATIC C0(kg) | | |
| | | dr | TOLERANCE | D | TOLERANCE | L | TOLERANCE | | D1 | W | H | A | F | d1 | d2 | | | | | | h |
| NLMTC6L | 4 | 6 | 0 -0.010 | 12 | 0 -0.013 | 35 | 0 -0.30 | 15 | 28 | 18 | 5 | 20 | | 3.5 | 6 | 3.1 | 0.015 | 0.015 | 33 | 54 | 0.040 |
| NLMTC8L | 4 | 8 | | 15 | | 45 | | 20 | 32 | 21 | 5 | 24 | | 3.5 | 6 | 3.1 | | | 44 | 80 | 0.062 |
| NLMTC10L | 4 | 10 | | 19 | 0 -0.016 | 55 | | 24.5 | 40 | 25 | 6 | 29 | | 4.5 | 7.5 | 4.1 | | | 60 | 112 | 0.114 |
| NLMTC12L | 4 | 12 | | 21 | | 57 | | 25.5 | 42 | 27 | 6 | 32 | | 4.5 | 7.5 | 4.1 | | | 67 | 122 | 0.124 |
| NLMTC13L | 4 | 13 | | 23 | | 61 | | 27.5 | 43 | 29 | 6 | 33 | | 4.5 | 7.5 | 4.1 | | | 83 | 160 | 0.144 |
| NLMTC16L | 5 | 16 | | 28 | 70 | 32 | | 48 | 34 | 6 | 31 | 22 | 4.5 | 7.5 | 4.1 | 125 | | | 240 | 0.170 | |
| NLMTC20L | 5 | 20 | 0 -0.012 | 32 | 0 -0.019 | 80 | 0 -0.40 | 36 | 54 | 38 | 8 | 36 | 24 | 5.5 | 9 | 5.1 | 0.020 | 0.020 | 143 | 280 | 0.210 |
| NLMTC25L | 6 | 25 | | 40 | | 112 | | 52 | 62 | 46 | 8 | 40 | 32 | 5.5 | 9 | 5.1 | | | 159 | 320 | 0.480 |
| NLMTC30L | 6 | 30 | | 45 | 123 | 56.5 | | 74 | 51 | 10 | 49 | 35 | 6.6 | 11 | 6.1 | 254 | | | 560 | 0.576 | |
| NLMTC35L | 6 | 35 | 0 -0.015 | 52 | 0 -0.022 | 135 | | 62.5 | 82 | 60 | 10 | 55 | 38 | 6.6 | 11 | 6.1 | 0.025 | 0.025 | 270 | 640 | 0.940 |
| NLMTC40L | 6 | 40 | | 60 | | 151 (154) | | 69 (70.5) | 96 | 70 | 13 | 64 | 45 | 9 | 14 | 8.1 | | | 350 | 820 | 1.470 |

NKBF...L Long circular flange type

NKBK...L Long square flange type

Europe Series

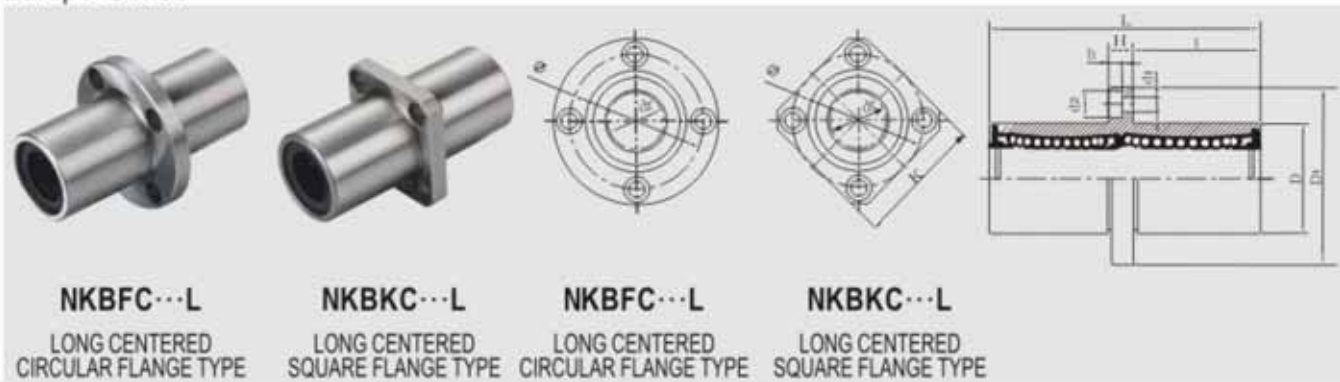


| MODEL NO. | MODEL NO. | NUMBER OF BALL ROWS | MAIN DIMENSIONS | | | | | | | | | | | | | SQUAREDNESS | ECCENTRICITY (MAX.) | BASIC LOAD RATING | | WEIGHT (Kg) | | | |
|-----------|-----------|---------------------|---------------------------|------------------|------------------|-------------|------------|------------|--------|-----|----|-----|---------------------|------|------|-------------|---------------------|-------------------|---------------|-------------|-------|-------|-------|
| | | | INSCRIBED CIRCLE DIAMETER | | OUTER DIAMETER | | LENGTH | | FLANGE | | | | HOLE FOR ATTACHMENT | | | | | DYNAMIC Co(kg) | STATIC Co(kg) | F | K | | |
| | | | dr | TOLERANCE | D | TOLERANCE | L | TOLERANCE | D1 | K | H | φ | d1 | d2 | h | | | | | | | | |
| NKBF8L | NKBK8L | 4 | 8 | +0.009 -0.001 | 16 | 0 -0.009 | 46 | 0 -0.30 | 32 | 25 | 5 | 24 | 3.5 | 6 | 3.1 | 0.015 | 0.015 | 43 | 82 | 0.052 | 0.049 | | |
| NKBF10L | NKBK10L | 4 | 10 | | 19 | 0 -0.011 | 55 | | 40 | 30 | 6 | 29 | 4.5 | 7.5 | 4.1 | | | 60 | 112 | | | | |
| NKBF12L | NKBK12L | 4 | 12 | | 22 | | 61 | | 42 | 32 | 6 | 32 | 4.5 | 7.5 | 4.1 | | | 83 | 160 | 0.117 | 0.098 | | |
| NKBF16L | NKBK16L | 5 | 16 | | +0.011 -0.001 | | 26 | | 68 | 46 | 35 | 6 | 36 | 4.5 | 7.5 | | | 4.1 | 94 | 182 | 0.141 | 0.122 | |
| NKBF20L | NKBK20L | 5 | 20 | +0.013 -0.002 | 32 | 0 -0.013 | 80 | | 54 | 42 | 8 | 43 | 5.5 | 9 | 5.1 | 0.017 | 0.017 | 140 | 280 | 0.248 | 0.215 | | |
| NKBF25L | NKBK25L | 6 | 25 | | 40 | | 112 | 62 | 50 | 8 | 51 | 5.5 | 9 | 5.1 | 160 | | | 320 | 0.510 | 0.500 | | | |
| NKBF30L | NKBK30L | 6 | 30 | | 47 | | 123 | 76 | 60 | 10 | 62 | 6.6 | 11 | 6.1 | 225 | | | 560 | 0.782 | 0.710 | | | |
| NKBF40L | NKBK40L | 6 | 40 | +0.016 -0.004 | 62 | | 0 -0.40 | 151 | 98 | 75 | 13 | 80 | 9 | 14 | 8.1 | 0.02 | 0.02 | 350 | 820 | 1.700 | 1.540 | | |
| NKBF50L | NKBK50L | 6 | 50 | | 75 | 192 | | 112 | 88 | 13 | 94 | 9 | 14 | 8.1 | 620 | | | 1622 | 3.479 | 2.890 | | | |
| NKBF60L | NKBK60L | 6 | 60 | | 90 | 0 -0.020 | | 209 | 134 | 106 | 18 | 112 | 11 | 17.5 | 10.8 | | | 0.025 | 0.025 | 770 | 2040 | 4.330 | 3.920 |

NKBFC...L Long centered circular flange type

NKBKC...L Long centered square flange type

Europe Series

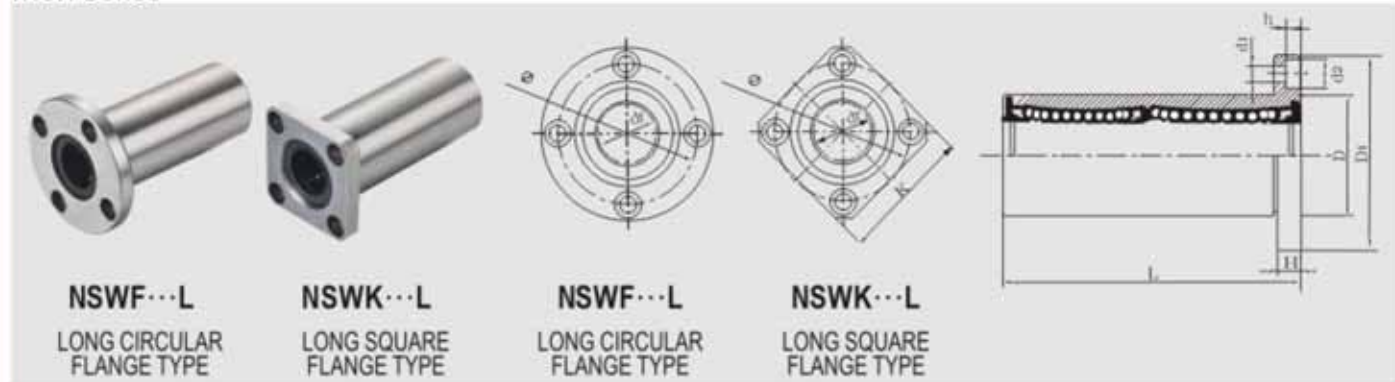


| MODEL NO. | MODEL NO. | NUMBER OF BALL ROWS | MAIN DIMENSIONS | | | | | | | | | | | | | | SOUR- BESS | ECCEN- TRICITY (MAX.) | BASIC LOAD RATING | | WEIGHT (Kg) | | |
|-----------|-----------|---------------------|---------------------------------|------------------|-------------------|-------------|--------|------------|------|--------|----|-----|----|------------------------|------|-------|---------------|-----------------------------|-------------------|-------------------------------|----------------|-------|-------|
| | | | INSCRIBED CIRCLE DIAMETER | | OUTER DIAMETER | | LENGTH | | I | FLANGE | | | | HOLE FOR ATTACHMENT | | | | | DYNAMIC C(kg) | STATIC C ₀ (kg) | F | K | |
| | | | d _r | TOLERANCE | D | TOLERANCE | L | TOLERANCE | | D1 | K | H | φ | d1 | d2 | h | | | | | | | |
| NKBFC8L | NKBKC8L | 4 | 8 | | 16 | 0 -0.009 | 46 | ±0.30 | 20.5 | 32 | 25 | 5 | 24 | 3.5 | 6 | 3.1 | 0.015 | 0.015 | 43 | 82 | 0.052 | 0.049 | |
| NKBFC12L | NKBKC12L | 4 | 12 | +0.009 -0.001 | 22 | | 61 | 0 -0.30 | 27.5 | 42 | 32 | 6 | 32 | 4.5 | 7.5 | 4.1 | | | 83 | 160 | 0.117 | 0.099 | |
| NKBFC16L | NKBKC16L | 5 | 16 | +0.011 -0.001 | 26 | 0 -0.011 | 68 | | 31 | 46 | 35 | 6 | 36 | 4.5 | 7.5 | 4.1 | | | 94 | 182 | 0.146 | 0.121 | |
| NKBFC20L | NKBKC20L | 5 | 20 | | 32 | | 80 | | 36 | 54 | 42 | 8 | 43 | 5.5 | 9 | 5.1 | 140 | 280 | 0.248 | 0.207 | | | |
| NKBFC25L | NKBKC25L | 6 | 25 | +0.013 -0.002 | 40 | 0 -0.013 | 112 | 0 -0.40 | 52 | 62 | 50 | 8 | 51 | 5.5 | 9 | 5.1 | 0.017 | 0.017 | 160 | 320 | 0.570 | 0.469 | |
| NKBFC30L | NKBKC30L | 6 | 30 | | 47 | | 123 | | 56.5 | 76 | 60 | 10 | 62 | 6.6 | 11 | 6.1 | | | 225 | 560 | 0.782 | 0.750 | |
| NKBFC40L | NKBKC40L | 6 | 40 | | 62 | 0 -0.015 | 151 | | 69 | 98 | 75 | 13 | 80 | 9 | 14 | 8.1 | | | 350 | 820 | 1.700 | 1.515 | |
| NKBFC50L | NKBKC50L | 6 | 50 | +0.016 -0.004 | 75 | | 192 | | 89.5 | 112 | 88 | 13 | 94 | 9 | 14 | 8.1 | 0.02 | 0.02 | 620 | 1622 | 3.479 | 2.490 | |
| NKBFC60L | NKBKC60L | 6 | 60 | | 90 | 0 -0.020 | 209 | 95.5 | 134 | 106 | 18 | 112 | 11 | 17.5 | 10.8 | 0.025 | | | 0.025 | 770 | 2040 | 4.336 | 3.920 |

NSWF...L Long circular flange type

NSWK...L Long square flange type

Inch Series



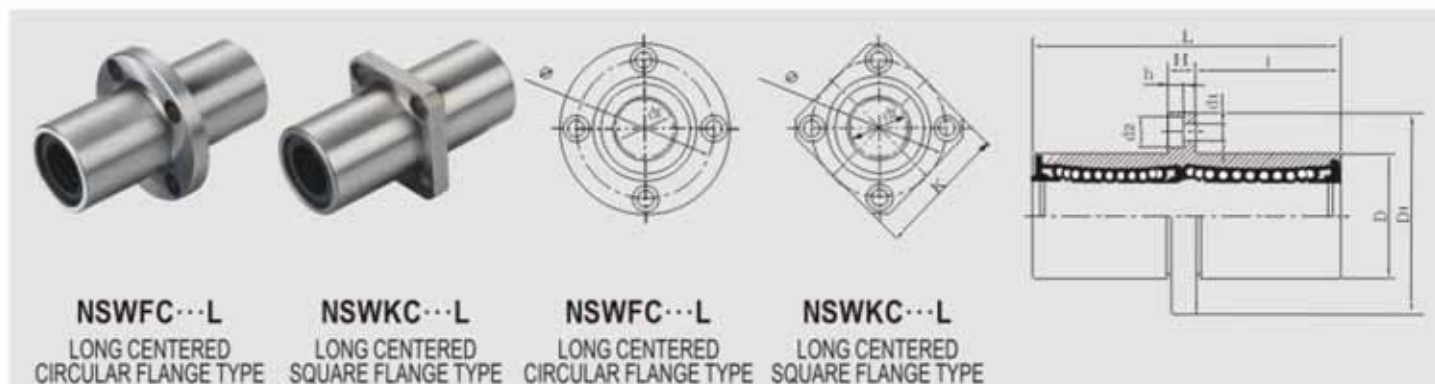
| MODEL NO. | NUMBER OF BALL ROWS | MAIN DIMENSIONS | | | | | | | | | | | | | SQUAREDNESS | ECCENTRICITY (MAX.) | BASIC LOAD RATING | | WEIGHT (Kg) | |
|--------------------|---------------------|---------------------------|------------------|-------------------|--------------------|--------------------|------------|-------------------|-------------------|-------------------|------------------|---------------------|------------------|-----------------|-----------------|---------------------|-------------------|-----------------|-------------|------|
| | | INSCRIBED CIRCLE DIAMETER | | OUTER DIAMETER | | LENGTH | | FLANGE | | | | HOLE FOR ATTACHMENT | | | | | DYNAMIC C (kgf) | STATIC C0 (kgf) | F | K |
| | | d _r | TOLERANCE | D | TOLERANCE | L | TOLERANCE | D1 | K | H | φ | d1 | d2 | h | | | | | | |
| NSWF04L NSWK04L | 4 | 1/4" 6.35 | 0 -0.010 | 0.5" 12.7 | 0 -0.013 | 1.375" 34.925 | ± 0.30 | 1.25" 31.75 | 1" 25.4 | 0.219" 5.556 | 0.875" 22.225 | 0.156" 3.969 | 0.25" 6.35 | 0.141" 3.572 | 0.015 | 0.015 | 33 | 54 | 0.08 | 0.05 |
| NSWF06L NSWK06L | 4 | 3/8" 9.525 | | 0.625" 15.875 | | 1.5938" 40.481 | | 1.5" 38.1 | 1.25" 31.75 | 0.25" 6.35 | 1.062" 26.988 | 0.1875" 4.763 | 0.297" 7.541 | 0.172" 4.366 | | | 36 | 64 | 0.09 | 0.07 |
| NSWF08L NSWK08L | 4 | 1/2" 12.7 | | 0.875" 22.225 | 0 -0.016 | 2.375" 60.325 | 0 -0.30 | 1.75" 44.45 | 1.375" 34.925 | 0.25" 6.35 | 1.312" 33.338 | 0.1875" 4.763 | 0.297" 7.541 | 0.172" 4.366 | | | 83 | 160 | 0.2 | 0.15 |
| NSWF10L NSWK10L | 4 | 5/8" 15.875 | | 1.125" 28.575 | | 2.8125" 71.438 | | 2" 50.8 | 1.5" 38.1 | 0.25" 6.35 | 1.562" 39.688 | 0.1875" 4.763 | 0.297" 7.541 | 0.172" 4.366 | | | 125 | 240 | 0.3 | 0.25 |
| NSWF12L NSWK12L | 4 | 3/4" 19.05 | 0 -0.012 | 1.25" 31.75 | 0 -0.019 | 3.0937" 78.581 | 0 -0.40 | 2.1875" 55.563 | 1.6875" 42.863 | 0.3125" 7.938 | 1.718" 43.66 | 0.2187" 5.556 | 0.344" 8.731 | 0.203" 5.159 | 0.020 | 0.020 | 140 | 280 | 0.4 | 0.35 |
| NSWF16L NSWK16L | 6 | 1" 25.4 | | 1.5625" 39.688 | | 4.2813" 108.744 | | 2.5" 63.5 | 2" 50.8 | 0.3125" 7.938 | 2.031" 51.594 | 0.2187" 5.556 | 0.344" 8.731 | 0.203" 5.159 | | | 160 | 320 | 0.7 | 0.6 |
| NSWF20L NSWK20L | 6 | 1-1/4" 31.75 | 2" 50.8 | 0 -0.022 | 5" 127 | 3.125" 79.375 | | 2.5" 63.5 | 0.375" 9.525 | 2.5625" 65.088 | 0.2812" 7.144 | 0.406" 10.319 | 0.2656" 6.747 | 0.025 | 0.025 | 225 | 560 | 1.25 | 1.15 | |
| NSWF24L NSWK24L | 6 | 1-1/2" 38.1 | 2.375" 60.325 | | 5.6875" 144.463 | 3.75" 95.25 | | 3" 76.2 | 0.5" 12.7 | 3.0625" 77.788 | 0.344" 8.731 | 0.5" 12.7 | 0.328" 8.334 | | | 350 | 820 | 2.5 | 2.0 | |
| NSWF32L NSWK32L | 6 | 2" 50.8 | | 3" 76.2 | 0 -0.025 | 7.75" 196.85 | | | 4.375" 111.125 | 3.5" 88.9 | 0.5" 12.7 | 3.6875" 93.662 | 0.344" 8.731 | 0.5" 12.7 | 0.328" 8.334 | 0.030 | 0.030 | 620 | 1622 | 4 |

Annotate: NSWF16L steel retainer the number of ball rows is 5, POM retainer the number of ball rows is 6.

NSWFC...L Long centered circular flange type

NSWKC...L Long centered square flange type

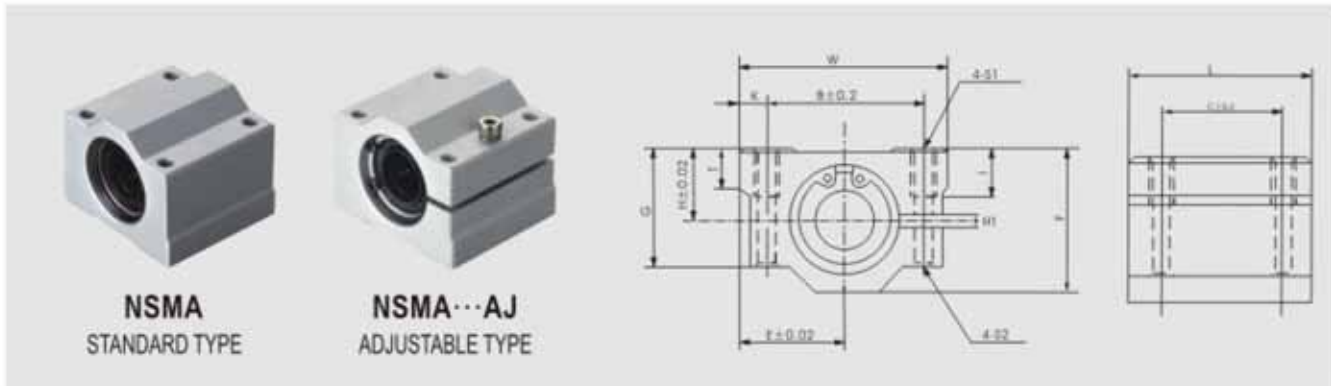
Inch Series



| MODEL NO. | NUMBER OF BALL ROWS | MAIN DIMENSIONS | | | | | | | | | | | | | | SQUAREDNESS | ECCENTRICITY (MAX.) | BASIC LOAD RATING | | WEIGHT (Kg) | |
|----------------------|---------------------|---------------------------|-------------|-------------------|-------------|-------------------|------------|--------------------|-------------------|-------------------|------------------|-------------------|---------------------|------------------|------------------|-----------------|---------------------|-------------------|----------------|-------------|------|
| | | INSCRIBED CIRCLE DIAMETER | | OUTER DIAMETER | | LENGTH | | I | FLANGE | | | | HOLE FOR ATTACHMENT | | | | | DYNAMIC (kgf) | STATIC Co(kgf) | F | K |
| | | dr | TOLERANCE | D | TOLERANCE | L | TOLERANCE | | D1 | K | H | φ | d1 | d2 | h | | | | | | |
| NSWFC04L NSWKC04L | 4 | 1/4" 6.35 | 0 -0.01 | 0.5" 12.7 | 0 -0.013 | 1.375" 34.925 | ± 0.30 | 0.5781" 14.684 | 1.25" 31.75 | 1" 25.4 | 0.2188" 5.556 | 0.875" 22.225 | 0.156" 3.969 | 0.25" 6.35 | 0.141" 3.572 | 0.015 | 0.015 | 33 | 54 | 0.08 | 0.05 |
| NSWFC08L NSWKC08L | 4 | 3/8" 9.525 | | 0.625" 15.875 | | 1.5938" 40.481 | | 0.6719" 17.066 | 1.5" 38.1 | 1.25" 31.75 | 0.25" 6.35 | 1.062" 26.988 | 0.1875" 4.763 | 0.297" 7.541 | 0.172" 4.366 | | | 36 | 64 | 0.09 | 0.07 |
| NSWFC08L NSWKC08L | 4 | 1/2" 12.7 | | 0.875" 22.225 | 0 -0.016 | 2.375" 60.325 | 0 -0.30 | 1.0625" 26.988 | 1.75" 44.45 | 1.375" 34.925 | 0.25" 6.35 | 1.312" 33.338 | 0.1875" 4.763 | 0.297" 7.541 | 0.172" 4.366 | | | 83 | 160 | 0.2 | 0.15 |
| NSWFC10L NSWKC10L | 4 | 5/8" 15.875 | | 1.125" 28.575 | | 2.8125" 71.438 | | 1.2813" 32.544 | 2" 50.8 | 1.5" 38.1 | 0.25" 6.35 | 1.562" 39.688 | 0.1875" 4.763 | 0.297" 7.541 | 0.172" 4.366 | | | 125 | 240 | 0.3 | 0.25 |
| NSWFC12L NSWKC12L | 4 | 3/4" 19.05 | 0 -0.012 | 1.25" 31.75 | 0 -0.019 | 3.0937" 78.581 | 0 -0.40 | 1.3906" 35.322 | 2.1875" 55.563 | 1.6875" 42.863 | 0.3125" 7.938 | 1.718" 43.66 | 0.2187" 5.556 | 0.344" 8.731 | 0.203" 5.159 | 0.020 | 0.020 | 140 | 280 | 0.4 | 0.35 |
| NSWFC16L NSWKC16L | 6 | 1" 25.4 | | 1.5625" 39.688 | | | | 4.2813" 108.744 | 1.9844" 50.403 | 2.5" 63.5 | 2" 50.8 | 0.3125" 7.938 | 2.031" 51.594 | 0.2187" 5.556 | 0.344" 8.731 | | | 0.203" 5.159 | 160 | 320 | 0.7 |
| NSWFC20L NSWKC20L | 6 | 1-1/4" 31.75 | 0 -0.016 | 2" 50.8 | 0 -0.022 | 5" 127 | | 2.3125" 58.738 | 3.125" 79.375 | 2.5" 63.5 | 0.375" 9.525 | 2.5625" 65.088 | 0.2812" 7.144 | 0.406" 10.319 | 0.2656" 6.747 | 0.025 | 0.025 | 225 | 560 | 1.25 | 0.15 |
| NSWFC24L NSWKC24L | 6 | 1-1/2" 38.1 | | 2.375" 60.325 | | | | 5.6875" 144.463 | 2.5938" 65.882 | 3.75" 95.25 | 3" 76.2 | 0.5" 12.7 | 3.0625" 77.788 | 0.344" 8.731 | 0.5" 12.7 | | | 0.328" 8.334 | 350 | 820 | 2.5 |
| NSWFC32L NSWKC32L | 6 | 2" 50.8 | | | 3" 76.2 | 0 -0.025 | | 7.75" 196.85 | 3.625" 92.075 | 4.375" 111.125 | 3.5" 88.9 | 0.5" 12.7 | 3.6875" 93.662 | 0.344" 8.731 | 0.5" 12.7 | 0.328" 8.334 | 0.030 | 0.030 | 620 | 1622 | 4 |

Annotate: NSWKC16L steel retainer the number of ball rows is 5, POM retainer the number of ball rows is 6.

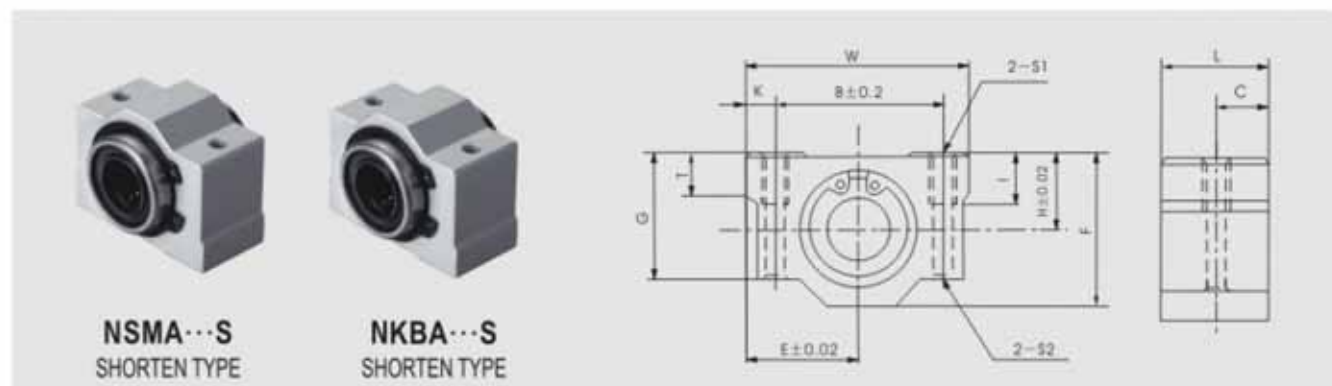
NLM Series case unit



| MODEL NO. | | SHAFT DIAMETER | MAIN DIMENSIONS | | | | | | | MOUNTING DIMENSION | | | | | | WEIGHT (Kg) |
|-----------|----------|----------------|-----------------|----|-----|-----|------|------|----------------|--------------------|----|------|-----|------|----|-------------|
| | | | H | E | W | L | F | G | H ₁ | B | C | K | S1 | S2 | I | |
| NSMA8 | NSMA8AJ | 8 | 11 | 17 | 34 | 30 | 22 | 18 | 1.5 | 24 | 18 | 5 | M4 | 3.4 | 8 | 0.052 |
| NSMA10 | NSMA10AJ | 10 | 13 | 20 | 40 | 35 | 26 | 21 | 1.5 | 28 | 21 | 6 | M5 | 4.3 | 12 | 0.092 |
| NSMA12 | NSMA12AJ | 12 | 15 | 21 | 42 | 36 | 28 | 24 | 1.5 | 30.5 | 26 | 5.75 | M5 | 4.3 | 12 | 0.102 |
| NSMA13 | NSMA13AJ | 13 | 15 | 22 | 44 | 39 | 30 | 24.5 | 1.5 | 33 | 26 | 5.5 | M5 | 4.3 | 12 | 0.120 |
| NSMA16 | NSMA16AJ | 16 | 19 | 25 | 50 | 44 | 38.5 | 32.5 | 2 | 36 | 34 | 7 | M5 | 4.3 | 12 | 0.200 |
| NSMA20 | NSMA20AJ | 20 | 21 | 27 | 54 | 50 | 41 | 35 | 2 | 40 | 40 | 7 | M6 | 5.2 | 12 | 0.255 |
| NSMA25 | NSMA25AJ | 25 | 26 | 38 | 76 | 67 | 51.5 | 42 | 2 | 54 | 50 | 11 | M8 | 7 | 18 | 0.600 |
| NSMA30 | NSMA30AJ | 30 | 30 | 39 | 78 | 72 | 59.5 | 49 | 2 | 58 | 58 | 10 | M8 | 7 | 18 | 0.735 |
| NSMA35 | NSMA35AJ | 35 | 34 | 45 | 90 | 80 | 68 | 54 | 2 | 70 | 60 | 10 | M8 | 7 | 18 | 1.100 |
| NSMA40 | NSMA40AJ | 40 | 40 | 51 | 102 | 90 | 78 | 62 | 2 | 80 | 60 | 11 | M10 | 8.7 | 25 | 1.590 |
| NSMA50 | NSMA50AJ | 50 | 52 | 61 | 122 | 110 | 102 | 80 | 2 | 100 | 80 | 11 | M10 | 8.7 | 25 | 3.340 |
| NSMA60 | NSMA60AJ | 60 | 58 | 66 | 132 | 122 | 114 | 94 | 2 | 108 | 90 | 12 | M12 | 10.7 | 25 | 4.720 |

Annotate: NSMA use the LM series bearing
 NSMA...AJ use the LM...AJ series bearing

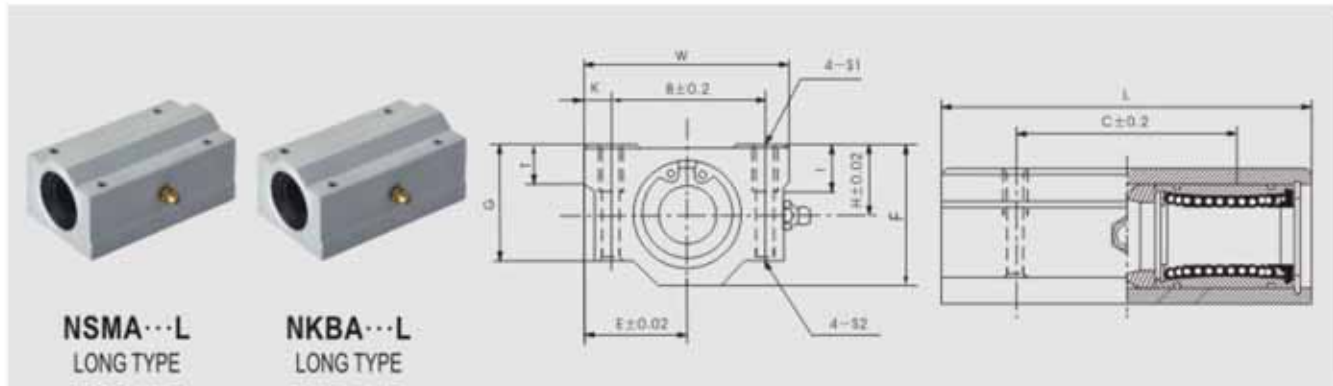
NLM/KB Series case unit



| MODEL NO. | | SHAFT DIAMETER | MAIN DIMENSIONS | | | | | | | | MOUNTING DIMENSION | | | | | | | | WEIGHT (Kg) | |
|-----------|---------|-------------------|-----------------|----|-----|------|------|------|------|----|--------------------|-------|-------|------|-----|-----|----|-------|----------------|--|
| | | | H | E | W | L | | F | G | T | B | C | | K | S1 | S2 | I | | | |
| | | | | | | SMAS | KBAS | | | | | SMAS | KBAS | | | | | | | |
| NSMA8S | NKBA8S | 8 | 11 | 17 | 34 | 15.5 | 14.5 | 22 | 18 | 6 | 24 | 7.75 | 7.25 | 5 | M4 | 3.4 | 8 | 0.027 | 0.025 | |
| NSMA10S | NKBA10S | 10 | 13 | 20 | 40 | 20 | 20 | 26 | 21 | 8 | 28 | 10 | 10 | 6 | M5 | 4.3 | 12 | 0.053 | 0.053 | |
| NSMA12S | | 12 | 15 | 21 | 42 | 21 | | 28 | 24 | 8 | 30.5 | 10.5 | | 5.75 | M5 | 4.3 | 12 | 0.060 | | |
| NSMA13S | NKBA12S | 13 | 15 | 22 | 44 | 20.6 | 20.9 | 30 | 24.5 | 8 | 33 | 10.3 | 10.45 | 5.5 | M5 | 4.3 | 12 | 0.064 | 0.065 | |
| NSMA16S | NKBA16S | 16 | 19 | 25 | 50 | 24.1 | 22.5 | 38.5 | 32.5 | 9 | 36 | 12.05 | 11.25 | 7 | M5 | 4.3 | 12 | 0.110 | 0.100 | |
| NSMA20S | NKBA20S | 20 | 21 | 27 | 54 | 28.1 | 29.1 | 41 | 35 | 11 | 40 | 14.05 | 14.55 | 7 | M6 | 5.2 | 12 | 0.144 | 0.148 | |
| NSMA25S | NKBA25S | 25 | 26 | 38 | 76 | 38 | 41.1 | 51.5 | 42 | 12 | 54 | 19 | 20.55 | 11 | M8 | 7 | 18 | 0.340 | 0.368 | |
| NSMA30S | NKBA30S | 30 | 30 | 39 | 78 | 41.5 | 49.1 | 59.5 | 49 | 15 | 58 | 20.75 | 24.55 | 10 | M8 | 7 | 18 | 0.424 | 0.500 | |
| NSMA35S | | 35 | 34 | 45 | 90 | 45.5 | | 68 | 54 | 18 | 70 | 22.75 | | 10 | M8 | 7 | 18 | 0.626 | | |
| NSMA40S | NKBA40S | 40 | 40 | 51 | 102 | 56.5 | 56.6 | 78 | 62 | 20 | 80 | 28.25 | 28.3 | 11 | M10 | 8.7 | 25 | 1.000 | 1.000 | |
| NSMA50S | NKBA50S | 50 | 52 | 61 | 122 | 69 | 72.6 | 102 | 80 | 25 | 100 | 34.5 | 36.3 | 11 | M10 | 8.7 | 25 | 2.100 | 2.205 | |

Annotate: NSMA...S use the LM series bearing
NKBA...S use the KB series bearing

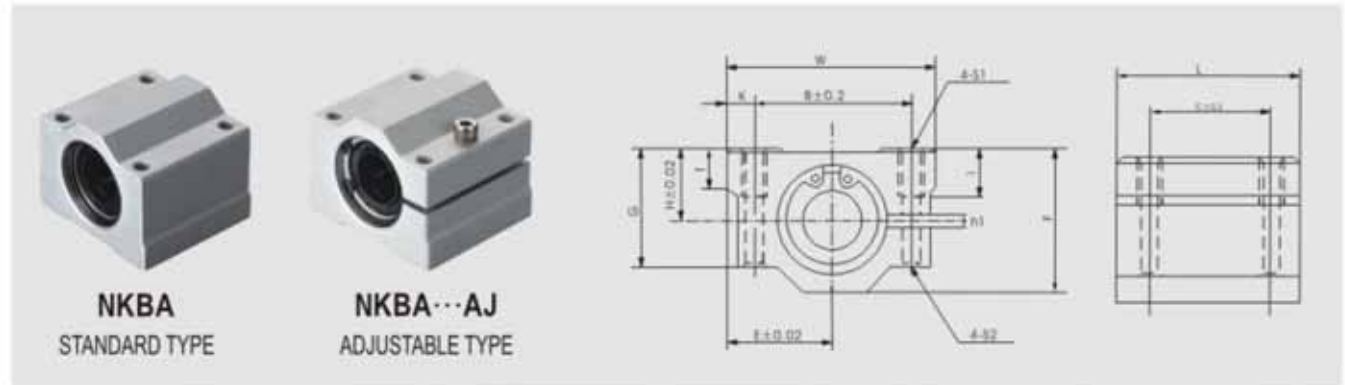
NLM/KB Series case unit



| MODEL NO. | | SHAFT DIAMETER | MAIN DIMENSIONS | | | | | | | | MOUNTING DIMENSION | | | | | | | WEIGHT (Kg) | |
|-----------|---------|----------------|-----------------|----|-----|------|------|------|------|----|--------------------|------|------|------|-----|-----|----|-------------|-------|
| | | | H | E | W | L | | F | G | T | B | C | | K | S1 | S2 | I | | |
| | | | | | | SMAL | KBAL | | | | | SMAL | KBAL | | | | | | |
| NSMA8L | NKBA8L | 8 | 11 | 17 | 34 | 58 | 58 | 22 | 18 | 6 | 24 | 42 | 42 | 5 | M4 | 3.4 | 8 | 0.100 | 0.100 |
| NSMA10L | NKBA10L | 10 | 13 | 20 | 40 | 68 | 68 | 26 | 21 | 8 | 28 | 46 | 46 | 6 | M5 | 4.3 | 12 | 0.180 | 0.180 |
| NSMA12L | | 12 | 15 | 21 | 42 | 70 | | 28 | 24 | 8 | 30.5 | 50 | | 5.75 | M5 | 4.3 | 12 | 0.200 | |
| NSMA13L | NKBA12L | 13(12) | 15 | 22 | 44 | 75 | 77 | 30 | 24.5 | 8 | 33 | 50 | 64 | 5.5 | M5 | 4.3 | 12 | 0.230 | 0.237 |
| NSMA16L | NKBA16L | 16 | 19 | 25 | 50 | 85 | 89 | 38.5 | 32.5 | 9 | 36 | 60 | 79 | 7 | M5 | 4.3 | 12 | 0.390 | 0.405 |
| NSMA20L | NKBA20L | 20 | 21 | 27 | 54 | 96 | 100 | 41 | 35 | 11 | 40 | 70 | 90 | 7 | M6 | 5.2 | 12 | 0.490 | 0.510 |
| NSMA25L | NKBA25L | 25 | 26 | 38 | 76 | 130 | 136 | 51.5 | 42 | 12 | 54 | 100 | 119 | 11 | M8 | 7 | 18 | 1.165 | 1.220 |
| NSMA30L | NKBA30L | 30 | 30 | 39 | 78 | 140 | 154 | 59.5 | 49 | 15 | 58 | 110 | 132 | 10 | M8 | 7 | 18 | 1.430 | 1.580 |
| NSMA35L | | 35 | 34 | 45 | 90 | 155 | | 68 | 54 | 18 | 70 | 120 | | 10 | M8 | 7 | 18 | 2.130 | |
| NSMA40L | NKBA40L | 40 | 40 | 51 | 102 | 175 | 180 | 78 | 62 | 20 | 80 | 140 | 150 | 11 | M10 | 8.7 | 25 | 3.090 | 3.180 |
| NSMA50L | NKBA50L | 50 | 52 | 61 | 122 | 215 | 230 | 102 | 80 | 25 | 100 | 160 | 200 | 11 | M10 | 8.7 | 25 | 6.530 | 6.990 |

Annotate: NSMA...L use the LM series bearing
NKBA...L use the KB series bearing

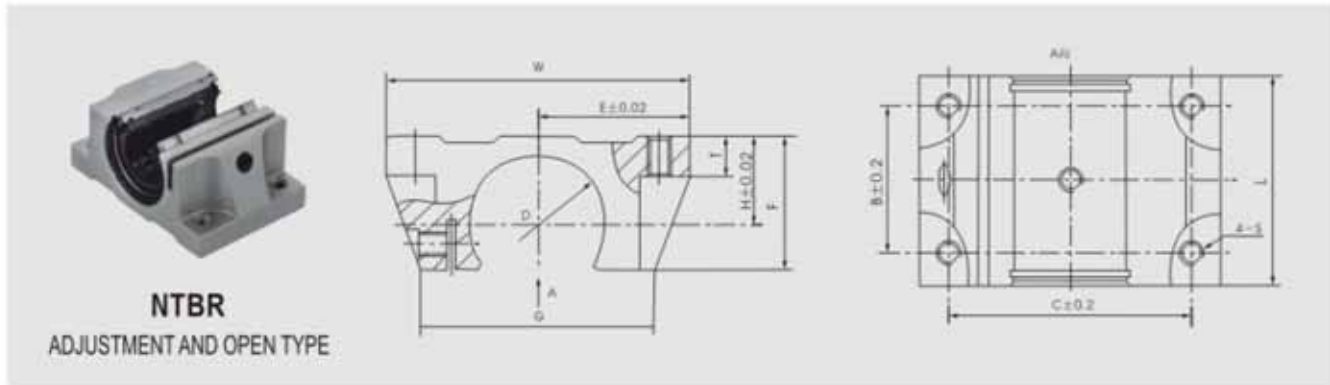
NKB Series case unit



| MODEL NO. | | SHAFT DIAMETER | MAIN DIMENSIONS | | | | | | | | MOUNTING DIMENSION | | | | | | WEIGHT (Kg) |
|-----------|----------|----------------|-----------------|----|-----|-----|------|------|-----|----|--------------------|----|-----|-----|------|----|-------------|
| | | | H | E | W | L | F | G | h1 | T | B | C | K | S1 | S2 | I | |
| NKBA8 | NKBA8AJ | 8 | 11 | 17 | 34 | 30 | 22 | 18 | 1.5 | 6 | 24 | 18 | 5 | M4 | 3.4 | 8 | 0.052 |
| NKBA10 | NKBA10AJ | 10 | 13 | 20 | 40 | 35 | 26 | 21 | 1.5 | 8 | 28 | 21 | 6 | M5 | 4.3 | 12 | 0.092 |
| NKBA12 | NKBA12AJ | 12 | 15 | 22 | 44 | 39 | 30 | 24.5 | 1.5 | 8 | 33 | 26 | 5.5 | M5 | 4.3 | 12 | 0.120 |
| NKBA16 | NKBA16AJ | 16 | 19 | 25 | 50 | 44 | 38.5 | 32.5 | 2 | 9 | 36 | 34 | 7 | M5 | 4.3 | 12 | 0.200 |
| NKBA20 | NKBA20AJ | 20 | 21 | 27 | 54 | 53 | 41 | 35 | 2 | 11 | 40 | 40 | 7 | M6 | 5.2 | 12 | 0.270 |
| NKBA25 | NKBA25AJ | 25 | 26 | 38 | 76 | 67 | 51.5 | 42 | 2 | 12 | 54 | 50 | 11 | M8 | 7 | 18 | 0.600 |
| NKBA30 | NKBA30AJ | 30 | 30 | 39 | 78 | 76 | 59.5 | 49 | 2 | 15 | 58 | 58 | 10 | M8 | 7 | 18 | 0.776 |
| NKBA40 | NKBA40AJ | 40 | 40 | 51 | 102 | 90 | 78 | 62 | 2 | 20 | 80 | 60 | 11 | M10 | 8.7 | 25 | 1.590 |
| NKBA50 | NKBA50AJ | 50 | 52 | 61 | 122 | 110 | 102 | 80 | 2 | 25 | 100 | 80 | 11 | M10 | 8.7 | 25 | 3.340 |
| NKBA60 | NKBA60AJ | 60 | 58 | 66 | 132 | 137 | 114 | 94 | 2 | 30 | 108 | 90 | 12 | M12 | 10.7 | 25 | 4.800 |

Annotate: NKBA use the KB series bearing
 NKBA...AJ use the KB...AJ series bearing

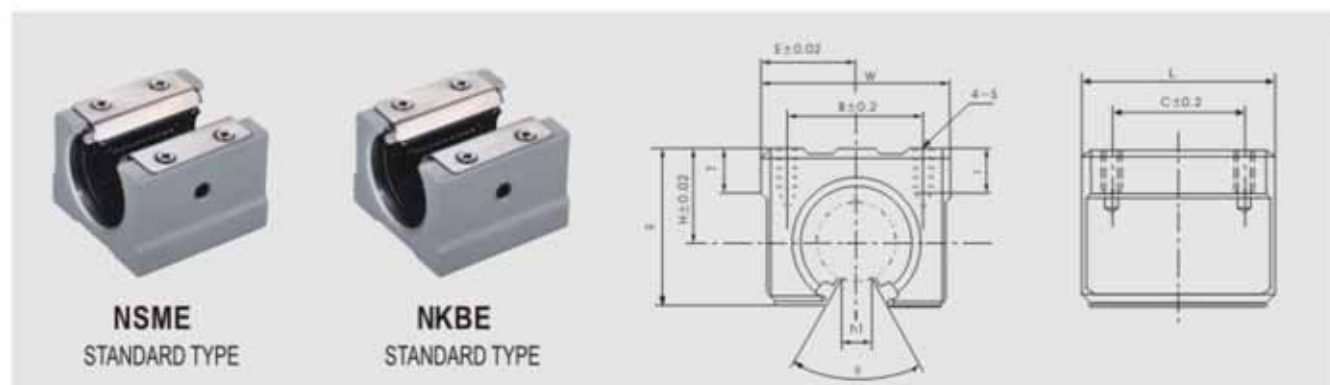
NLM series (or KB series) adjustment and open case unit



| MODEL NO. | D | H | E | T | F | G | W | B | C | L | S | WEIGHT (Kg) |
|-----------|----|-------|------|----|------|------|----|----|----|----|----|-------------|
| NTBR16 | 28 | 17.86 | 31 | 8 | 27 | 48 | 62 | 30 | 50 | 42 | M5 | 0.18 |
| NTBR20 | 32 | 20.99 | 34 | 10 | 31.4 | 52.4 | 68 | 37 | 54 | 51 | M6 | 0.30 |
| NTBR25 | 40 | 28.0 | 41 | 12 | 41 | 61 | 82 | 50 | 65 | 65 | M8 | 0.60 |
| NTBR30 | 45 | 33.48 | 45.5 | 12 | 48 | 65 | 91 | 60 | 75 | 75 | M8 | 0.90 |

Annotate: NTBR use the LM series bearing

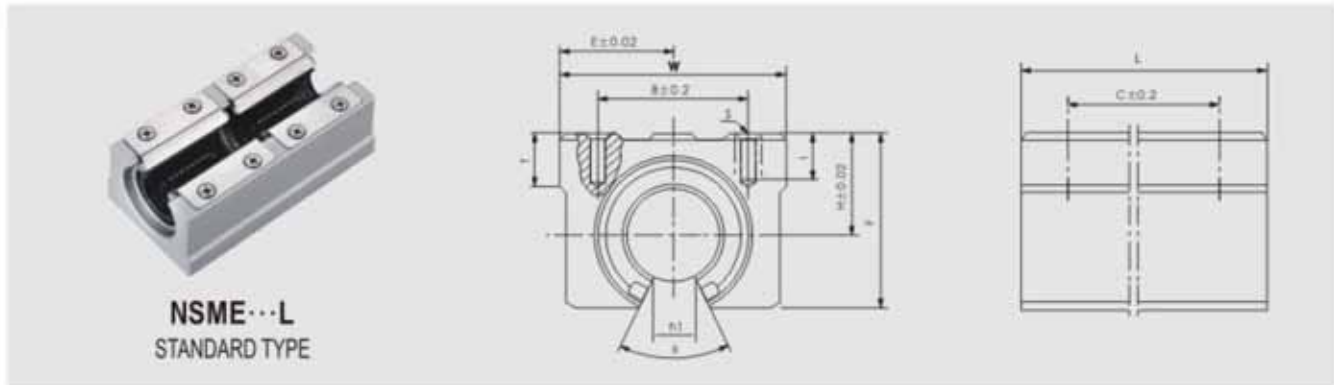
NLM/KB Series open case unit



| MODEL NO. | | SHAFT DIAMETER | MAIN DIMENSIONS | | | | | | | | | | MOUNTING DIMENSION | | | | BASIC LOAD RATING | | WEIGHT (Kg) |
|-----------|--------|----------------|-----------------|------|-----|-----|------|----|------|-----|-----|----|--------------------|-----|----|----------------|-------------------|-------|-------------|
| | | | H | E | W | L | F | T | h1 | θ | | B | C | S | I | DYNAMIC C(kgf) | STATIC Co(kgf) | | |
| | | | | | | | | | | SME | KBE | | | | | | | | |
| NSME10 | NKBE10 | 10 | 15 | 18 | 36 | 32 | 24 | 7 | 6 | 80° | 80° | 25 | 20 | M5 | 10 | 38 | 56 | 0.065 | |
| NSME12 | NKBE12 | 12 | 17 | 20 | 40 | 39 | 27.6 | 8 | 8.5 | 80° | 80° | 28 | 26 | M5 | 10 | 42(52) | 61(79) | 0.100 | |
| NSME13 | | 13 | 17 | 20 | 40 | 39 | 27.6 | 8 | 8.5 | 80° | | 28 | 26 | M5 | 10 | 52 | 80 | 0.100 | |
| NSME16 | NKBE16 | 16 | 20 | 22.5 | 45 | 45 | 33 | 9 | 10 | 80° | 80° | 32 | 30 | M5 | 12 | 59 | 91 | 0.150 | |
| NSME20 | NKBE20 | 20 | 23 | 24 | 48 | 50 | 39 | 11 | 10 | 60° | 60° | 35 | 35 | M6 | 12 | 88 | 140 | 0.200 | |
| NSME25 | NKBE25 | 25 | 27 | 30 | 60 | 65 | 47 | 14 | 11.5 | 50° | 60° | 40 | 40 | M6 | 12 | 100 | 160 | 0.450 | |
| NSME30 | NKBE30 | 30 | 33 | 35 | 70 | 70 | 56 | 15 | 14 | 50° | 60° | 50 | 50 | M8 | 18 | 160 | 280 | 0.630 | |
| NSME35 | | 35 | 37 | 40 | 80 | 80 | 63 | 18 | 16 | 50° | | 55 | 55 | M8 | 18 | 170 | 320 | 0.920 | |
| NSME40 | NKBE40 | 40 | 42 | 45 | 90 | 90 | 72 | 20 | 19 | 50° | 60° | 65 | 65 | M10 | 20 | 220 | 410 | 1.330 | |
| NSME50 | NKBE50 | 50 | 53 | 60 | 120 | 110 | 92 | 25 | 23 | 50° | 60° | 94 | 80 | M10 | 20 | 390 | 810 | 3.000 | |

Annotate: NSME use the LM...OP series bearing
NKBE...AJ use the KB...OP series bearing

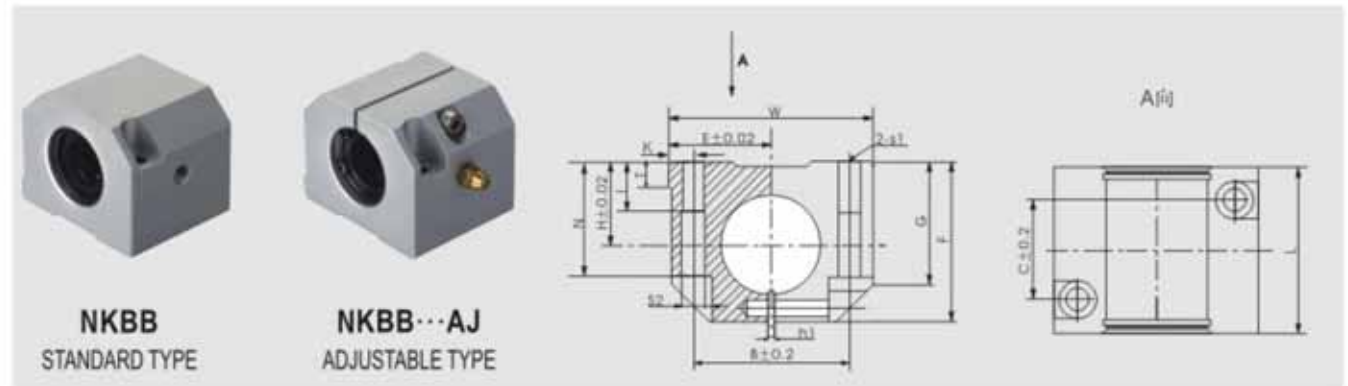
NLM Series long type open case unit



| MODEL NO. | SHAFT DIAMETER | MAIN DIMENSIONS | | | | | | | | MOUNTING DIMENSION | | | | WEIGHT (Kg) |
|-----------|----------------|-----------------|------|----|-----|------|----|------|-----|--------------------|-----|-----|----|-------------|
| | | H | E | W | L | F | T | h1 | θ | B | C | S | I | |
| NSME12L | 12 | 17 | 20 | 40 | 75 | 27.6 | 8 | 8.5 | 80° | 28 | 50 | M5 | 12 | 0.20 |
| NSME13L | 13 | 17 | 20 | 40 | 75 | 27.6 | 8 | 8.5 | 80° | 28 | 50 | M5 | 12 | 0.20 |
| NSME16L | 16 | 20 | 22.5 | 45 | 85 | 33 | 9 | 10 | 80° | 32 | 60 | M5 | 12 | 0.29 |
| NSME20L | 20 | 23 | 24 | 48 | 96 | 39 | 11 | 10 | 60° | 35 | 70 | M6 | 12 | 0.51 |
| NSME25L | 25 | 27 | 30 | 60 | 130 | 47 | 14 | 11.5 | 50° | 40 | 100 | M6 | 12 | 0.98 |
| NSME30L | 30 | 33 | 35 | 70 | 140 | 56 | 15 | 14 | 50° | 50 | 110 | M8 | 18 | 1.45 |
| NSME35L | 35 | 37 | 40 | 80 | 155 | 63 | 18 | 16 | 50° | 55 | 120 | M8 | 18 | 1.80 |
| NSME40L | 40 | 42 | 45 | 90 | 175 | 72 | 20 | 19 | 50° | 65 | 140 | M10 | 20 | 2.48 |

Annotate: NSME...L use two pieces of LM...OP series bearing

NKB Series case unit



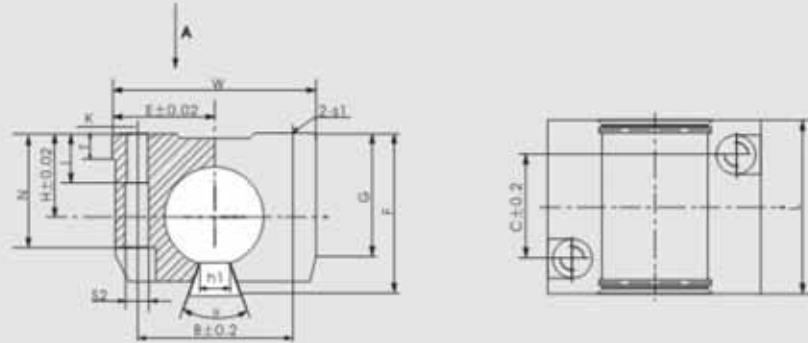
| MODEL NO. | | SHAFT DIAMETER | MAIN DIMENSIONS | | | | | | | | | MOUNTING DIMENSION | | | | | | WEIGHT (Kg) |
|-----------|----------|----------------|-----------------|------|-----|----|----|----|------|----|-----|--------------------|----|-----|------|----|-----|-------------|
| | | | H | E | W | L | F | G | T | N | h1 | B | C | S1 | S2 | I | K | |
| NKBB16 | NKBB16AJ | 16 | 22 | 26.5 | 53 | 43 | 42 | 32 | 7 | 30 | 1.5 | 40 | 26 | M6 | 5.3 | 13 | 6.5 | 0.19 |
| NKBB20 | NKBB20AJ | 20 | 25 | 30 | 60 | 54 | 50 | 39 | 7.5 | 34 | 2 | 45 | 32 | M8 | 6.6 | 18 | 7.5 | 0.31 |
| NKBB25 | NKBB25AJ | 25 | 30 | 39 | 78 | 67 | 60 | 48 | 8.5 | 40 | 2 | 60 | 40 | M10 | 8.4 | 22 | 9 | 0.86 |
| NKBB30 | NKBB30AJ | 30 | 35 | 43.5 | 87 | 79 | 70 | 57 | 9.5 | 48 | 2 | 68 | 45 | M10 | 8.4 | 22 | 9.5 | 0.91 |
| NKBB40 | NKBB40AJ | 40 | 45 | 54 | 108 | 91 | 90 | 60 | 10.5 | 60 | 3 | 86 | 58 | M12 | 10.1 | 26 | 11 | 2.05 |

Annotate: NKBB use the KB series bearing
 NKBB...AJ use the KB...AJ series bearing

NKB Series open case unit



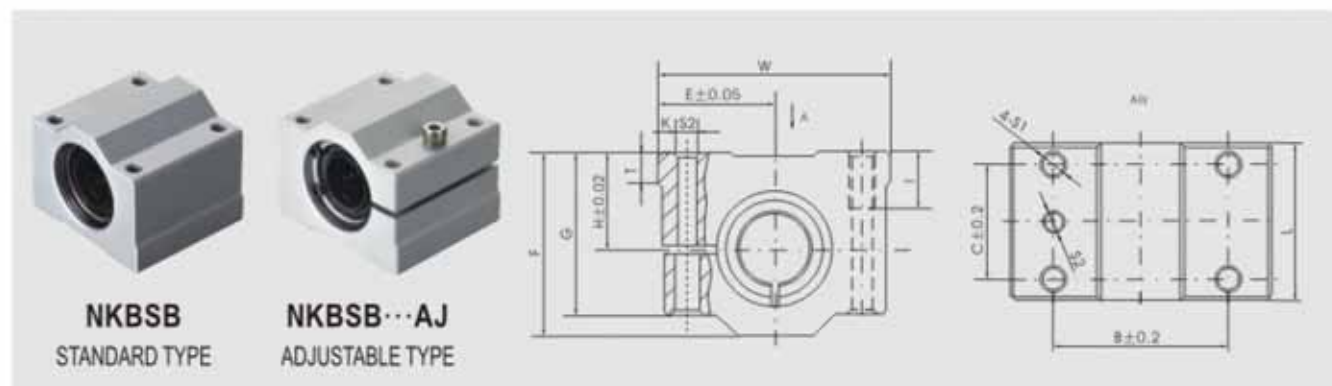
NKBB...OP
OPEN TYPE



| MODEL NO. | SHAFT DIAMETER | MAIN DIMENSIONS | | | | | | | | | | MOUNTING DIMENSION | | | | | | WEIGHT (Kg) |
|-----------|----------------|-----------------|------|-----|----|----|----|------|------|----|-----|--------------------|----|-----|------|----|-----|-------------|
| | | H | E | W | L | F | G | T | h1 | N | θ | B | C | S1 | S2 | I | K | |
| NKBB16 OP | 16 | 22 | 26.5 | 53 | 43 | 35 | 32 | 7 | 17.7 | 27 | 78° | 40 | 26 | M6 | 5.3 | 13 | 6.5 | 0.18 |
| NKBB20 OP | 20 | 25 | 30 | 60 | 54 | 42 | 39 | 7.5 | 17.7 | 32 | 60° | 45 | 32 | M8 | 6.6 | 18 | 7.5 | 0.30 |
| NKBB25 OP | 25 | 30 | 39 | 78 | 67 | 51 | 48 | 8.5 | 21.7 | 39 | 60° | 60 | 40 | M10 | 8.4 | 22 | 9 | 0.84 |
| NKBB30 OP | 30 | 35 | 43.5 | 87 | 79 | 60 | 57 | 9.5 | 21.5 | 48 | 50° | 68 | 45 | M10 | 8.4 | 22 | 9.5 | 0.89 |
| NKBB40 OP | 40 | 45 | 54 | 108 | 91 | 77 | 60 | 10.5 | 29 | 60 | 60° | 86 | 58 | M12 | 10.1 | 26 | 11 | 1.74 |

Annotate: NKBB...OP use the KB...OP series bearing

NKB Series case unit



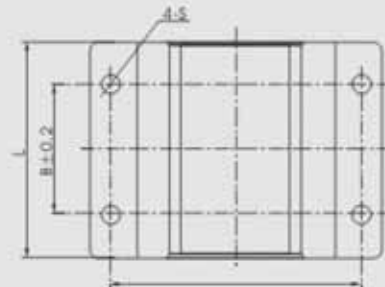
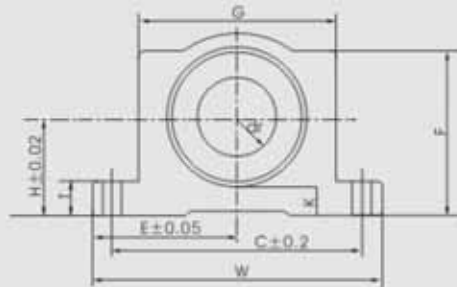
| MODEL NO. | | SHAFT DIAMETER | MAIN DIMENSIONS | | | | | | | MOUNTING DIMENSION | | | | | | WEIGHT (Kg) |
|-----------|-----------|----------------|-----------------|------|-----|----|----|------|-----|--------------------|----|-----|-----|-----|----|-------------|
| | | | H | E | W | L | F | G | T | B | C | K | S1 | S2 | I | |
| NKBSB12 | NKBSB12AJ | 12 | 18 | 21.5 | 43 | 32 | 35 | 31 | 6 | 32 | 23 | 5.5 | M5 | M4 | 11 | 0.095 |
| NKBSB16 | NKBSB16AJ | 16 | 22 | 26.5 | 53 | 36 | 42 | 37 | 7 | 40 | 26 | 6.5 | M6 | M5 | 13 | 0.161 |
| NKBSB20 | NKBSB20AJ | 20 | 25 | 30 | 60 | 45 | 50 | 44 | 7.5 | 45 | 32 | 7.5 | M8 | M6 | 18 | 0.262 |
| NKBSB25 | NKBSB25AJ | 25 | 30 | 39 | 78 | 58 | 60 | 52.5 | 8.5 | 60 | 40 | 9 | M10 | M8 | 22 | 0.487 |
| NKBSB30 | NKBSB30AJ | 30 | 35 | 43.5 | 87 | 68 | 70 | 62 | 9.5 | 68 | 45 | 9.5 | M10 | M8 | 22 | 0.726 |
| NKBSB40 | NKBSB40AJ | 40 | 45 | 54 | 108 | 80 | 90 | 80 | 11 | 86 | 58 | 12 | M12 | M10 | 26 | 1.276 |

Annotate: NKBSB use the KB series bearing
NKBSB...AJ use the KB...AJ series bearing

NSSWA Case unit Inch series



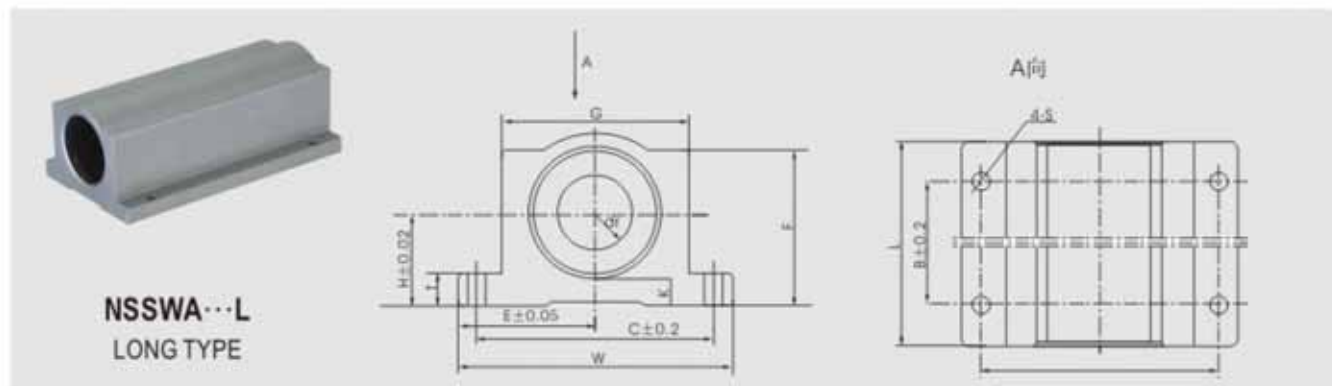
NSSWA
STANDARD TYPE



| MODEL NO. | SHAFT DIAMETER | MAIN DIMENSIONS | | | | | | MOUNTING DIMENSION | | | | | BASIC LOAD RATING | | WEIGHT (Lbs) |
|-----------|----------------|-----------------|-------|-------|-------|-------|-------|--------------------|-------|-------|-------|-------|-------------------|----------------------------|--------------|
| | | H | E | W | L | F | T | G | K | B | C | S1 | DYNAMIC C(kg) | STATIC C ₀ (kg) | |
| NSSWA08 | 0.500 | 0.687 | 1.000 | 2.000 | 1.688 | 1.125 | 0.250 | 1.375 | 0.250 | 1.000 | 1.688 | 0.155 | 104 | 132 | 1.2 |
| NSSWA10 | 0.625 | 0.875 | 1.250 | 2.500 | 1.937 | 1.437 | 0.281 | 1.750 | 0.313 | 1.125 | 2.125 | 0.185 | 182 | 228 | 1.5 |
| NSSWA12 | 0.750 | 0.937 | 1.375 | 2.750 | 2.063 | 1.562 | 0.312 | 1.875 | 0.312 | 1.250 | 2.375 | 0.185 | 213 | 268 | 1.6 |
| NSSWA16 | 1.000 | 1.187 | 1.625 | 3.250 | 2.813 | 1.937 | 0.375 | 2.375 | 0.406 | 1.750 | 2.875 | 0.217 | 386 | 481 | 2.2 |
| NSSWA20 | 1.250 | 1.500 | 2.000 | 4.000 | 3.625 | 2.500 | 0.437 | 3.000 | 0.500 | 2.000 | 3.500 | 0.217 | 558 | 695 | 3.5 |
| NSSWA24 | 1.500 | 1.750 | 2.375 | 4.750 | 4.000 | 2.937 | 0.500 | 3.500 | 0.563 | 2.500 | 4.125 | 0.280 | 672 | 840 | 4.8 |
| NSSWA32 | 2.000 | 2.125 | 3.000 | 6.000 | 5.000 | 3.625 | 0.625 | 4.500 | 0.625 | 3.250 | 5.250 | 0.406 | 1102 | 1377 | 8 |

Annotate: NSSWA use the SSW series bearing
1 Lbs=0.454kg

NSSWA Long type case unit
Inch Series



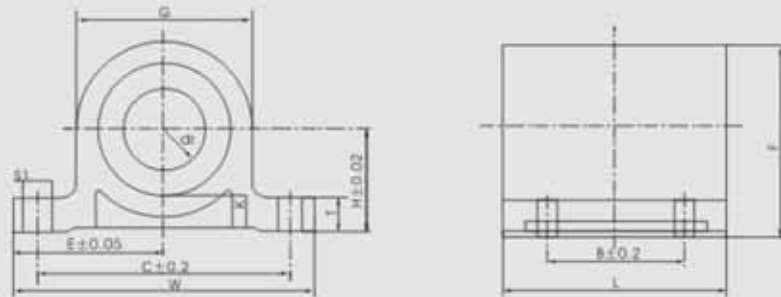
| MODEL NO. | SHAFT DIAMETER | MAIN DIMENSIONS | | | | | | MOUNTING DIMENSION | | | | | BASIC LOAD RATING | | WEIGHT (Lbs) |
|-----------|----------------|-----------------|-------|-------|-------|-------|-------|--------------------|-------|-------|-------|-------|-------------------|--------------|--------------|
| | | H | E | W | L | F | T | G | K | B | C | S1 | DYNAMIC C(kg) | STATIC C(kg) | |
| NSSWA08L | 0.500 | 0.687 | 1.000 | 2.000 | 1.688 | 1.125 | 0.250 | 1.375 | 0.250 | 2.500 | 1.688 | 0.155 | 167 | 264 | 0.4 |
| NSSWA10L | 0.625 | 0.875 | 1.250 | 2.500 | 1.937 | 1.437 | 0.281 | 1.750 | 0.313 | 3.000 | 2.125 | 0.185 | 290 | 454 | 1 |
| NSSWA12L | 0.750 | 0.937 | 1.375 | 2.750 | 2.063 | 1.562 | 0.312 | 1.875 | 0.312 | 3.500 | 2.375 | 0.185 | 340 | 535 | 1.2 |
| NSSWA16L | 1.000 | 1.187 | 1.625 | 3.250 | 2.813 | 1.937 | 0.375 | 2.375 | 0.406 | 4.500 | 2.875 | 0.217 | 617 | 962 | 2.4 |
| NSSWA20L | 1.250 | 1.500 | 2.000 | 4.000 | 3.625 | 2.500 | 0.437 | 3.000 | 0.500 | 5.500 | 3.500 | 0.217 | 894 | 1388 | 5 |
| NSSWA24L | 1.500 | 1.750 | 2.375 | 4.750 | 4.000 | 2.937 | 0.500 | 3.500 | 0.563 | 6.500 | 4.125 | 0.280 | 1077 | 1679 | 7.8 |
| NSSWA32L | 2.000 | 2.125 | 3.000 | 6.000 | 5.000 | 3.625 | 0.625 | 4.500 | 0.625 | 8.250 | 5.250 | 0.406 | 1131 | 1893 | 14.5 |

Annotate: NSSWA...L use two pieces of SSW series bearing
1 Lbs=0.454kg

NSWB Case unit Inch Series



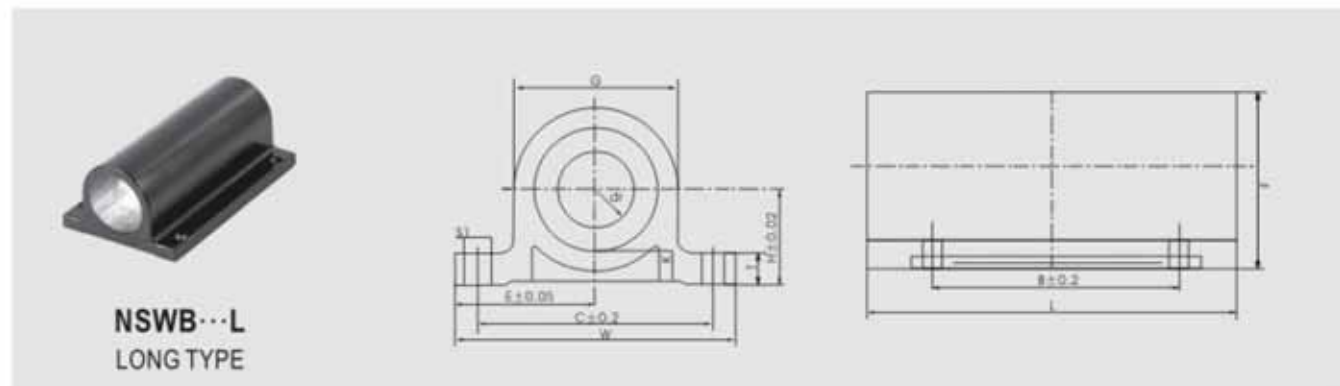
NSWB
STANDARD TYPE



| MODEL NO. | SHAFT DIAMETER | MAIN DIMENSIONS | | | | | | MOUNTING DIMENSION | | | | | WEIGHT (Lbs) |
|-----------|----------------|-----------------|--------|-------|-------|-------|-------|--------------------|--------|-------|-------|-------|--------------|
| | | H | E | W | L | F | T | G | K | B | C | S1 | |
| NSWB08 | 0.500 | 0.687 | 1.000 | 2.000 | 1.688 | 1.252 | 0.257 | 1.130 | 0.250 | 1.000 | 1.688 | 0.155 | 0.058 |
| NSWB12 | 0.750 | 0.937 | 1.375 | 2.750 | 2.063 | 1.749 | 0.312 | 1.624 | 0.312 | 1.250 | 2.375 | 0.187 | 0.136 |
| NSWB16 | 1.000 | 1.187 | 1.625 | 3.250 | 2.813 | 2.187 | 0.375 | 2.000 | 0.406 | 1.750 | 2.875 | 0.219 | 0.264 |
| NSWB20 | 1.250 | 1.500 | 2.000 | 4.000 | 3.625 | 2.843 | 0.468 | 2.624 | 0.500 | 2.000 | 3.500 | 0.219 | 0.585 |
| NSWB24 | 1.500 | 1.750 | 2.375 | 4.750 | 4.000 | 3.250 | 0.501 | 3.000 | 0.563 | 2.500 | 4.125 | 0.282 | 0.765 |
| NSWB32 | 2.000 | 2.125 | 30.000 | 6.000 | 5.000 | 4.062 | 0.625 | 3.874 | 62.520 | 3.250 | 5.250 | 0.407 | 1.578 |

Annotate: NSWB use the SSW series bearing

NSWB Long type case unit
Inch series



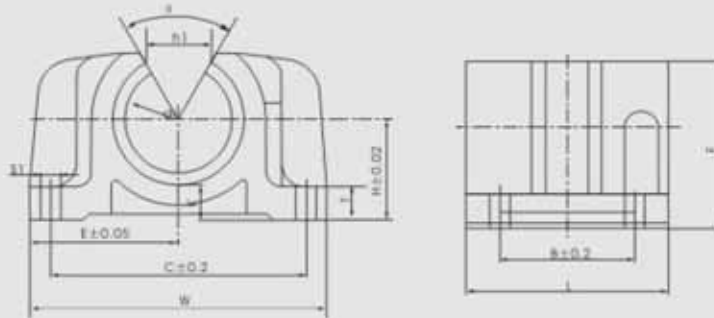
| MODEL NO. | SHAFT DIAMETER | MAIN DIMENSIONS | | | | | | MOUNTING DIMENSION | | | | | WEIGHT (Lbs) |
|-----------|----------------|-----------------|-------|-------|-------|-------|-------|--------------------|-------|-------|-------|-------|--------------|
| | | H | E | W | L | F | T | G | K | B | C | S1 | |
| NSWB08L | 0.500 | 0.687 | 1.000 | 2.000 | 3.500 | 1.252 | 0.257 | 1.130 | 0.250 | 1.000 | 1.688 | 0.156 | 0.116 |
| NSWB12L | 0.750 | 0.937 | 1.375 | 2.750 | 4.500 | 1.749 | 0.312 | 1.624 | 0.312 | 1.250 | 2.375 | 0.187 | 0.292 |
| NSWB16L | 1.000 | 1.187 | 1.625 | 3.250 | 6.000 | 2.187 | 0.375 | 2.000 | 0.406 | 1.750 | 2.875 | 0.219 | 0.57 |
| NSWB20L | 1.250 | 1.500 | 2.000 | 4.000 | 7.500 | 2.843 | 0.468 | 2.624 | 0.500 | 2.000 | 3.500 | 0.219 | 1.155 |
| NSWB24L | 1.500 | 1.750 | 2.375 | 4.750 | 9.000 | 3.250 | 0.501 | 3.000 | 0.563 | 2.500 | 4.125 | 0.282 | 1.688 |

Annotate: NSWB...L use two pieces of SSW series bearing

NSWB Open type case unit Inch series



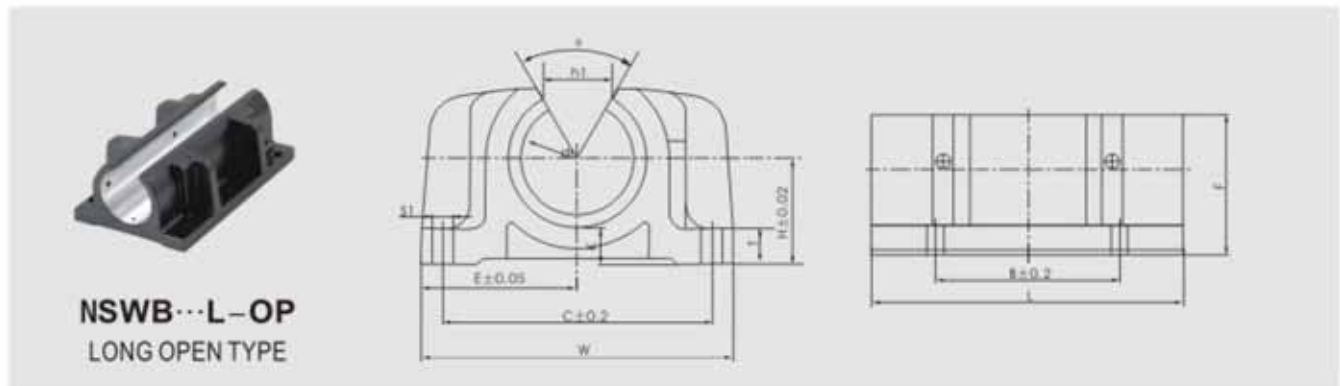
NSWB...OP
OPEN TYPE



| MODEL NO. | SHAFT DIAMETER | MAIN DIMENSIONS | | | | | | | | | MOUNTING DIMENSION | | | WEIGHT (Kg) |
|-----------|----------------|-----------------|-------|-------|-------|-------|-----|-------|-------|-------|--------------------|-------|-------|-------------|
| | | H | E | W | L | F | θ | T | h1 | K | B | C | S1 | |
| NSWB08OP | 0.500 | 0.687 | 1.043 | 2.087 | 1.500 | 1.130 | 60° | 0.257 | 0.419 | 0.250 | 1.000 | 1.688 | 0.156 | 0.06 |
| NSWB12OP | 0.750 | 0.937 | 1.375 | 2.750 | 1.874 | 1.563 | 60° | 0.310 | 0.625 | 0.312 | 1.250 | 2.375 | 0.187 | 0.135 |
| NSWB16OP | 1.000 | 1.187 | 1.625 | 3.250 | 2.625 | 2.000 | 60° | 0.375 | 0.760 | 0.406 | 1.750 | 2.875 | 0.219 | 0.268 |
| NSWB20OP | 1.250 | 1.500 | 2.000 | 4.000 | 3.375 | 2.500 | 60° | 0.468 | 0.953 | 0.500 | 2.000 | 3.500 | 0.219 | 0.536 |
| NSWB24OP | 1.500 | 1.750 | 2.375 | 4.750 | 3.750 | 2.937 | 60° | 0.500 | 1.161 | 0.563 | 2.500 | 4.125 | 0.282 | 0.794 |
| NSWB32OP | 2.000 | 2.125 | 3.000 | 6.000 | 4.750 | 3.625 | 60° | 0.622 | 1.469 | 0.625 | 3.250 | 5.250 | 0.407 | 1.35 |

Annotate: NSWB...OP use the SSW...OP series bearing

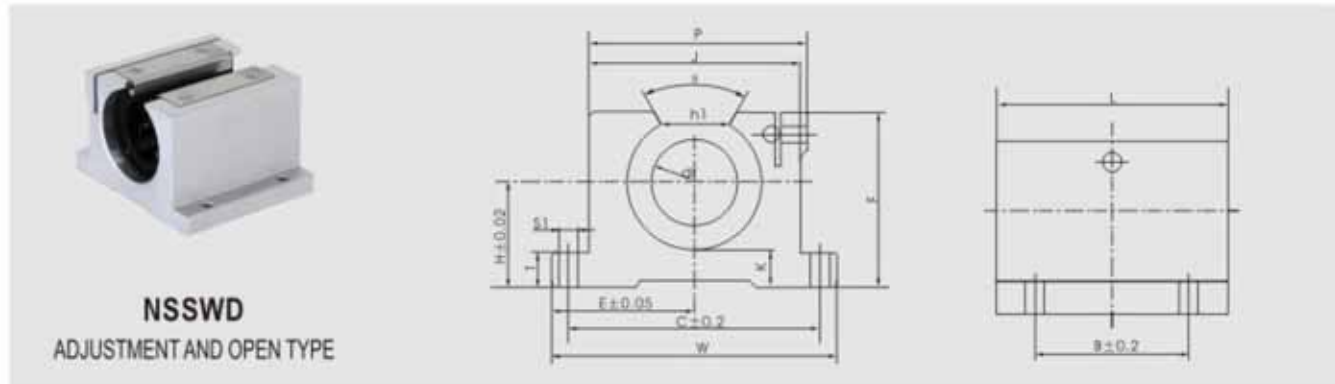
NSWB Long open type case unit
Inch Series



| MODEL NO. | SHAFT DIAMETER | MAIN DIMENSIONS | | | | | | | | | MOUNTING DIMENSION | | | WEIGHT (Kg) |
|-----------|----------------|-----------------|-------|-------|-------|-------|-----|-------|-------|-------|--------------------|-------|-------|-------------|
| | | H | E | W | L | F | θ | T | h1 | K | B | C | S1 | |
| NSWB08LOP | 0.500 | 0.687 | 1.043 | 2.087 | 3.500 | 1.130 | 60° | 0.257 | 0.419 | 0.250 | 2.500 | 1.688 | 0.156 | 0.123 |
| NSWB12LOP | 0.750 | 0.937 | 1.375 | 2.750 | 4.500 | 1.563 | 60° | 0.310 | 0.625 | 0.312 | 3.500 | 2.375 | 0.187 | 0.305 |
| NSWB16LOP | 1.000 | 1.187 | 1.625 | 3.250 | 6.000 | 2.000 | 60° | 0.375 | 0.760 | 0.406 | 4.500 | 2.875 | 0.219 | 0.612 |
| NSWB20LOP | 1.250 | 1.500 | 2.000 | 4.000 | 7.500 | 2.500 | 60° | 0.468 | 0.953 | 0.500 | 5.500 | 3.500 | 0.219 | 1.128 |
| NSWB24LOP | 1.500 | 1.750 | 2.375 | 4.750 | 9.000 | 2.937 | 60° | 0.500 | 1.161 | 0.563 | 6.500 | 4.125 | 0.282 | 1.778 |

Annotate: NSWB...L-OP use the SSW...OP series bearing

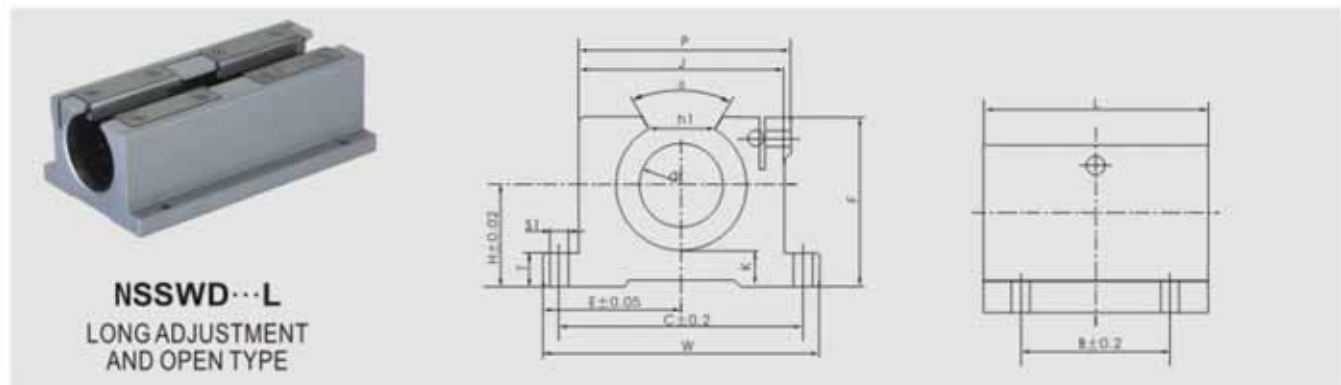
NSWD Adjustment and open case unit Inch Series



| MODEL NO. | SHAFT DIAMETER | MAIN DIMENSIONS | | | | | | | | MOUNTING DIMENSION | | | | | | BASIC LOAD RATING | | WEIGHT (Lbs) |
|-----------|----------------|-----------------|-------|-------|-------|-------|-----|-------|-------|--------------------|-------|-------|-------|-------|-------|-------------------|----------------|--------------|
| | | H | E | W | L | F | θ | T | h1 | K | J | P | B | C | S1 | DYNAMIC C(kgf) | STATIC Co(kgf) | |
| NSSWD08 | 0.500 | 0.687 | 1.043 | 2.087 | 1.500 | 1.122 | 60° | 0.257 | 0.419 | 0.250 | 1.407 | 1.437 | 1.000 | 1.688 | 0.156 | 104 | 132 | 0.188 |
| NSSWD10 | 0.625 | 0.875 | 1.250 | 2.500 | 1.750 | 1.438 | 60° | 0.280 | 0.531 | 0.313 | 1.752 | 1.813 | 1.125 | 2.125 | 0.187 | 182 | 228 | 0.365 |
| NSSWD12 | 0.750 | 0.937 | 1.375 | 2.750 | 1.874 | 1.563 | 60° | 0.310 | 0.625 | 0.312 | 1.906 | 1.968 | 1.250 | 2.375 | 0.187 | 213 | 268 | 0.452 |
| NSSWD16 | 1.000 | 1.187 | 1.625 | 3.250 | 2.625 | 2.000 | 60° | 0.380 | 0.760 | 0.406 | 2.406 | 2.468 | 1.750 | 2.875 | 0.218 | 386 | 481 | 1.01 |
| NSSWD20 | 1.250 | 1.500 | 2.000 | 4.000 | 3.375 | 2.500 | 60° | 0.437 | 0.953 | 0.500 | 3.00 | 3.094 | 2.000 | 3.500 | 0.218 | 558 | 695 | 1.98 |
| NSSWD24 | 1.500 | 1.750 | 2.375 | 4.750 | 3.750 | 2.937 | 60° | 0.500 | 1.187 | 0.563 | 3.500 | 3.562 | 2.500 | 4.125 | 0.281 | 672 | 840 | 2.95 |
| NSSWD32 | 2.000 | 2.125 | 3.000 | 6.000 | 4.750 | 3.620 | 60° | 0.625 | 1.493 | 0.625 | 4.488 | 4.685 | 3.250 | 5.250 | 0.406 | 1102 | 1377 | 5.84 |

Annotate: NSSWD use the SSW...OP series bearing
1 Lbs=0.454kg

NSSWD Long adjustment and open case unit
Inch Series



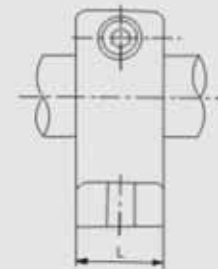
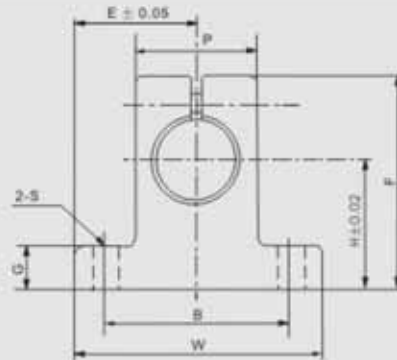
| MODEL NO. | SHAFT DIAMETER | MAIN DIMENSIONS | | | | | | | | MOUNTING DIMENSION | | | | | | BASIC LOAD RATING | | WEIGHT (Lbs) |
|-----------|----------------|-----------------|-------|-------|-------|-------|-----|-------|-------|--------------------|-------|-------|-------|-------|-------|-------------------|----------------|--------------|
| | | H | E | W | L | F | θ | T | h1 | K | J | P | B | C | S1 | DYNAMIC C(kgf) | STATIC Co(kgf) | |
| NSSWD08L | 0.500 | 0.687 | 1.043 | 2.087 | 3.500 | 1.122 | 60° | 0.257 | 0.419 | 0.250 | 1.407 | 1.437 | 2.500 | 1.688 | 0.156 | 167 | 264 | 0.4 |
| NSSWD10L | 0.625 | 0.875 | 1.250 | 2.500 | 4.000 | 1.438 | 60° | 0.280 | 0.531 | 0.313 | 1.752 | 1.813 | 3.000 | 2.125 | 0.187 | 290 | 454 | 0.8 |
| NSSWD12L | 0.750 | 0.937 | 1.375 | 2.750 | 4.500 | 1.563 | 60° | 0.310 | 0.625 | 0.312 | 1.906 | 1.968 | 3.500 | 2.493 | 0.187 | 340 | 535 | 1 |
| NSSWD16L | 1.000 | 1.187 | 1.625 | 3.250 | 6.000 | 2.000 | 60° | 0.380 | 0.760 | 0.406 | 2.406 | 2.468 | 4.500 | 2.875 | 0.218 | 617 | 962 | 2 |
| NSSWD20L | 1.250 | 1.500 | 2.000 | 4.000 | 7.500 | 2.500 | 60° | 0.437 | 0.953 | 0.500 | 3.00 | 3.094 | 5.500 | 3.500 | 0.218 | 894 | 1388 | 4.2 |
| NSSWD24L | 1.500 | 1.750 | 2.375 | 4.750 | 9.000 | 2.937 | 60° | 0.500 | 1.187 | 0.563 | 3.500 | 3.562 | 6.500 | 4.125 | 0.281 | 1077 | 1679 | 6.7 |
| NSSWD32L | 2.000 | 2.125 | 3.000 | 6.000 | 1.000 | 3.620 | 60° | 0.625 | 1.493 | 0.625 | 4.488 | 4.685 | 8.250 | 5.250 | 0.406 | 1131 | 1893 | 12.2 |

Annotate: NSSWD...L use two pieces of SSW...OP series bearing
1 Lbs=0.454kg

NSK Stand-up shaft support

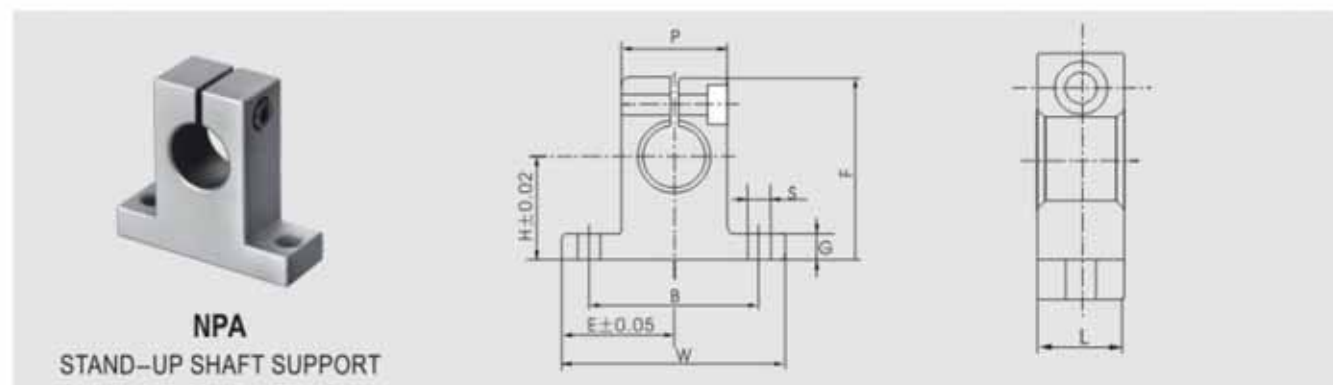


NSK
STAND-UP SHAFT SUPPORT



| MODEL NO. | SHAFT DIAMETER | MAIN DIMENSIONS | | | | | | | | | DESIGNATION OF CLAMPING BOLT | DESIGNATION OF MOUNTING BOLT | WEIGHT (Kg) |
|-----------|----------------|-----------------|----|-----|----|------|----|----|-----|-----|------------------------------|------------------------------|-------------|
| | | H | E | W | L | F | G | P | B | S | | | |
| NSK3 | 3 | 20 | 21 | 42 | 14 | 33 | 6 | 18 | 32 | 5.5 | M4 | M5 | 0.024 |
| NSK4 | 4 | 20 | 21 | 42 | 14 | 33 | 6 | 18 | 32 | 5.5 | M4 | M5 | 0.024 |
| NSK5 | 5 | 20 | 21 | 42 | 14 | 33 | 6 | 18 | 32 | 5.5 | M4 | M5 | 0.024 |
| NSK6 | 6 | 20 | 21 | 42 | 14 | 33 | 6 | 18 | 32 | 5.5 | M4 | M5 | 0.024 |
| NSK8 | 8 | 20 | 21 | 42 | 14 | 33 | 6 | 18 | 32 | 5.5 | M4 | M5 | 0.024 |
| NSK10 | 10 | 20 | 21 | 42 | 14 | 33 | 6 | 18 | 32 | 5.5 | M4 | M5 | 0.024 |
| NSK12 | 12 | 23 | 21 | 42 | 14 | 37.5 | 6 | 20 | 32 | 5.5 | M4 | M5 | 0.030 |
| NSK13 | 13 | 23 | 21 | 42 | 14 | 37.5 | 6 | 20 | 32 | 5.5 | M4 | M5 | 0.030 |
| NSK16 | 16 | 27 | 24 | 48 | 16 | 44 | 8 | 25 | 38 | 5.5 | M4 | M5 | 0.040 |
| NSK20 | 20 | 31 | 30 | 60 | 20 | 51 | 10 | 30 | 45 | 6.6 | M5 | M6 | 0.070 |
| NSK25 | 25 | 35 | 35 | 70 | 24 | 60 | 12 | 38 | 56 | 6.6 | M6 | M6 | 0.130 |
| NSK30 | 30 | 42 | 42 | 84 | 28 | 70 | 12 | 44 | 64 | 9 | M6 | M8 | 0.180 |
| NSK35 | 35 | 50 | 49 | 98 | 32 | 82 | 15 | 50 | 74 | 11 | M8 | M10 | 0.270 |
| NSK40 | 40 | 60 | 57 | 114 | 36 | 96 | 15 | 60 | 90 | 11 | M8 | M10 | 0.420 |
| NSK50 | 50 | 70 | 63 | 126 | 40 | 120 | 18 | 74 | 100 | 14 | M12 | M12 | 0.750 |

NPA Stand-up shaft support

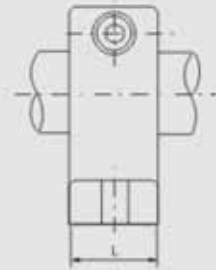
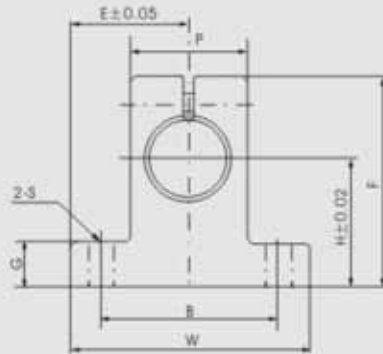


| MODEL NO. | SHAFT DIAMETER | MAIN DIMENSIONS | | | | | | | | | WEIGHT (Kg) |
|-----------|----------------|-----------------|----|-----|----|----|-----|----|----|-----|-------------|
| | | H | E | W | L | F | G | P | B | S | |
| NPA12 | 12 | 20 | 21 | 42 | 12 | 35 | 5.5 | 20 | 32 | 4.3 | 0.021 |
| NPA16 | 16 | 25 | 25 | 50 | 16 | 42 | 6.5 | 26 | 40 | 4.3 | 0.040 |
| NPA20 | 20 | 30 | 30 | 60 | 20 | 50 | 8 | 32 | 45 | 4.3 | 0.075 |
| NPA25 | 25 | 35 | 37 | 74 | 25 | 58 | 9 | 38 | 60 | 5.3 | 0.130 |
| NPA30 | 30 | 40 | 42 | 84 | 28 | 68 | 10 | 45 | 68 | 6.4 | 0.195 |
| NPA40 | 40 | 50 | 54 | 108 | 32 | 86 | 12 | 56 | 86 | 8.4 | 0.380 |

NSK Stand-up shaft support Inch Series

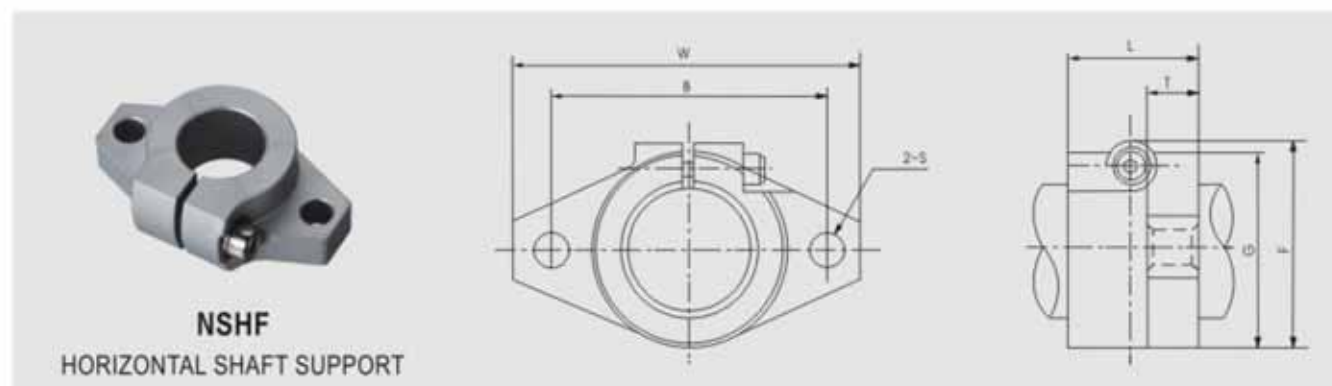


NSKW
STAND-UP SHAFT SUPPORT



| MODEL NO. | SHAFT DIAMETER | MAIN DIMENSIONS | | | | | | | | | WEIGHT (Kg) |
|-----------|----------------|-----------------|---------|--------|--------|--------|-------|--------|--------|--------|-------------|
| | | H | E | W | L | F | G | P | B | S | |
| NSKW04 | 0.25" | 0.6875" | 0.75" | 1.50" | 0.50" | 1.063" | 0.25" | 0.50" | 1.125" | 0.156" | 0.015 |
| NSKW06 | 0.375" | 0.75" | 0.8125" | 1.625" | 0.563" | 1.187" | 0.25" | 0.688" | 1.25" | 0.156" | 0.021 |
| NSKW08 | 0.50" | 1.0" | 1.0" | 2.00" | 0.63" | 1.63" | 0.25" | 0.88" | 1.50" | 0.188" | 0.035 |
| NSKW10 | 0.625" | 1.0" | 1.25" | 2.5" | 0.688" | 1.78" | 0.31" | 1.0" | 1.875" | 0.218" | 0.052 |
| NSKW12 | 0.75" | 1.25" | 1.25" | 2.5" | 0.75" | 2.13" | 0.31" | 1.25" | 2.00" | 0.218" | 0.082 |
| NSKW16 | 1.0" | 1.50" | 1.5315" | 3.063" | 1.0" | 2.56" | 0.38" | 1.50" | 2.5" | 0.281" | 0.145 |
| NSKW20 | 1.25" | 1.75" | 1.875" | 3.75" | 1.13" | 3" | 0.44" | 2.00" | 3" | 0.346" | 0.254 |
| NSKW24 | 1.50" | 2.00" | 2.1875" | 4.375" | 1.25" | 3.5" | 0.50" | 2.25" | 3.5" | 0.346" | 0.362 |
| NSKW32 | 2.00" | 2.5" | 2.75" | 5.5" | 1.50" | 4.5" | 0.63" | 3" | 4.5" | 0.406" | 0.716 |

NSHF Horizontal shaft support



| MODEL NO. | SHAFT DIAMETER | MAIN DIMENSIONS | | | | | | | DESIGNATION OF CLAMPING BOLT | DESIGNATION OF MOUNTING BOLT | WEIGHT (Kg) |
|-----------|----------------|-----------------|----|----|----|----|----|-----|------------------------------|------------------------------|-------------|
| | | W | L | T | F | G | B | S | | | |
| NSHF3 | 3 | 43 | 10 | 5 | 24 | 20 | 32 | 5.5 | M4 | M5 | 0.013 |
| NSHF4 | 4 | 43 | 10 | 5 | 24 | 20 | 32 | 5.5 | M4 | M5 | 0.013 |
| NSHF5 | 5 | 43 | 10 | 5 | 24 | 20 | 32 | 5.5 | M4 | M5 | 0.013 |
| NSHF6 | 6 | 43 | 10 | 5 | 24 | 20 | 32 | 5.5 | M4 | M5 | 0.013 |
| NSHF8 | 8 | 43 | 10 | 5 | 24 | 20 | 32 | 5.5 | M4 | M5 | 0.013 |
| NSHF10 | 10 | 43 | 10 | 5 | 24 | 20 | 32 | 5.5 | M4 | M5 | 0.013 |
| NSHF12 | 12 | 47 | 13 | 7 | 28 | 25 | 36 | 5.5 | M4 | M5 | 0.020 |
| NSHF13 | 13 | 47 | 13 | 7 | 28 | 25 | 36 | 5.5 | M4 | M5 | 0.020 |
| NSHF16 | 16 | 50 | 16 | 8 | 31 | 28 | 40 | 5.5 | M4 | M5 | 0.027 |
| NSHF20 | 20 | 60 | 20 | 8 | 37 | 34 | 48 | 7 | M5 | M6 | 0.040 |
| NSHF25 | 25 | 70 | 25 | 10 | 42 | 40 | 56 | 7 | M5 | M6 | 0.060 |
| NSHF30 | 30 | 80 | 30 | 12 | 50 | 46 | 64 | 9 | M6 | M8 | 0.110 |
| NSHF35 | 35 | 92 | 35 | 14 | 58 | 50 | 72 | 12 | M8 | M10 | 0.380 |
| NSHF40 | 40 | 102 | 40 | 16 | 67 | 56 | 80 | 12 | M10 | M10 | 0.510 |
| NSHF50 | 50 | 122 | 50 | 19 | 83 | 70 | 96 | 14 | M12 | M12 | 0.890 |

LINEAR SHAFT AVAILABILITY

| | Class L series (Carbon Steel - Case hardened) | Class SS Series (Stainless Steel) | CPL Series (Carbon Steel - Case hardened and Chrome Plated) |
|-------------------------|---|---|--|
| Material | Carbon steel (Ck55 or Cf53) | Stainless steel (420C equivalent or X46Cr13) | Carbon steel (Ck55 or Cf53) |
| Surface hardness | Hrc 59 - 65 | Hrc 50 - 55 | Hrc 50 - 55 |
| Case hardened depth | 0.016 to 0.059 inch (Depending on shaft OD) | 0.016 to 0.059 inch (Depending on shaft OD) | Chrome Layer Thickness: 10+/-5 µm |
| Hard Chrome plated | - | - | Hrc 59 - 65 |
| Shaft OD surface finish | 8 Ra Max | 8 Ra Max | 8 Ra Max |
| Straightness | 0.0024-0.0012 in/ per foot | 0.0024-0.0012 in/ per foot | 0.0024-0.0012 in/ per foot |
| Roundness | 0.000157- 0.000276 max | 0.000157- 0.000276 max | 0.000157- 0.000276 max |

Also available upon requested

- Cu-to-length per customer requirements
- Additional machining operations or custom designed shafting can be manufactured per specific customer or application requirements



Class L Series - Carbon Steel

| Nominal Diameter (in) | Basic Part Number | Diameter Tolerance per Class "L" (in) | Weight LB/FT | Max. Length (in) |
|-----------------------|-------------------|---------------------------------------|--------------|------------------|
| 1/4 | L-1/4 | 0.2495/0.2490 | 0.17 | 236 |
| 3/8 | L-3/8 | 0.3745/0.3740 | 0.38 | 236 |
| 1/2 | L-1/2 | 0.4995/0.4990 | 0.66 | 236 |
| 5/8 | L-5/8 | 0.6245/0.6240 | 1.04 | 236 |
| 3/4 | L-3/4 | 0.7495/0.7490 | 1.50 | 236 |
| 1 | L-1 | 0.9995/0.9990 | 2.66 | 236 |
| 1¼ | L-1¼ | 1.12495/1.12490 | 4.17 | 236 |
| 1½ | L-1½ | 1.4994/1.4989 | 6.0 | 236 |
| 2 | L-2 | 1.9994/1.9987 | 10.67 | 236 |

SSL Series - Stainless Steel

| Nominal Diameter (in) | Basic Part Number | Diameter Tolerance per Class "L" (in) | Weight LB/FT | Max. Length (in) |
|-----------------------|-------------------|---------------------------------------|--------------|------------------|
| 1/4 | SSL-1/4 | 0.2495/0.2490 | 0.17 | 236 |
| 3/8 | SSL-3/8 | 0.3745/0.3740 | 0.38 | 236 |
| 1/2 | SSL-1/2 | 0.4995/0.4990 | 0.66 | 236 |
| 5/8 | SSL-5/8 | 0.6245/0.6240 | 1.04 | 236 |
| 3/4 | SSL-3/4 | 0.7495/0.7490 | 1.50 | 236 |
| 1 | SSL-1 | 0.9995/0.9990 | 2.66 | 236 |
| 1¼ | SSL-1¼ | 1.12495/1.12490 | 4.17 | 236 |
| 1½ | SSL-1½ | 1.4994/1.4989 | 6.0 | 236 |
| 2 | SSL-2 | 1.9994/1.9987 | 10.67 | 236 |

CPL Series - Carbon Steel - Chrome Plated

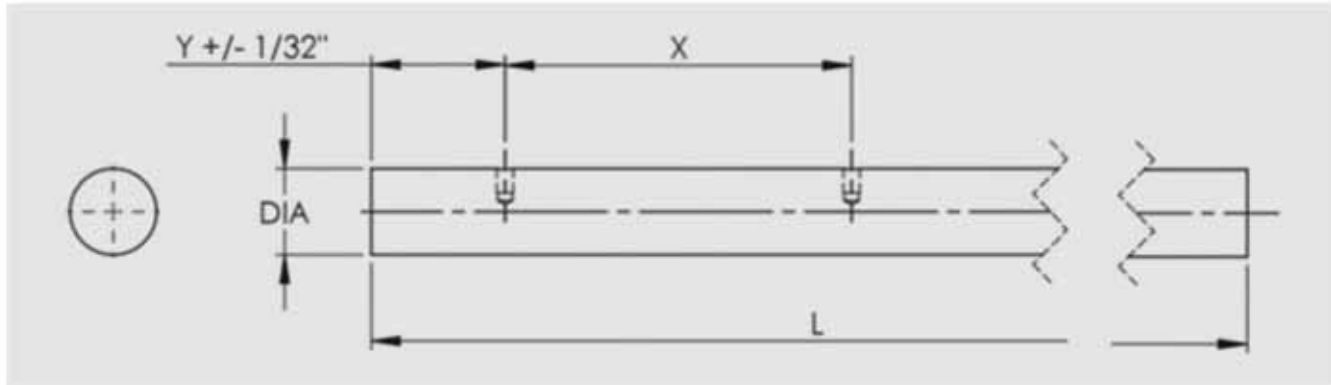
| Nominal Diameter (in) | Basic Part Number | Diameter Tolerance per Class "L" (in) | Weight LB/FT | Max. Length (in) |
|-----------------------|-------------------|---------------------------------------|--------------|------------------|
| 1/4 | CPL-1/4L | 0.2495/0.2490 | 0.17 | 236 |
| 3/8 | CPL-3/8 | 0.3745/0.3740 | 0.38 | 236 |
| 1/2 | CPL-1/2 | 0.4995/0.4990 | 0.66 | 236 |
| 5/8 | CPL-5/8L | 0.6245/0.6240 | 1.04 | 236 |
| 3/4 | CPL-3/4 | 0.7495/0.7490 | 1.50 | 236 |
| 1 | CPL-1 | 0.9995/0.9990 | 2.66 | 236 |
| 1¼ | CPL-1¼ | 1.12495/1.12490 | 4.17 | 236 |
| 1½ | CPL-1½ | 1.4994/1.4989 | 6.0 | 236 |
| 2 | CPL-2 | 1.9994/1.9987 | 10.67 | 236 |

M Series - Carbon Steel

| Nominal Diameter (mm) | Basic Part Number | Diameter Tolerance per iso h6" (mm) | Weight Kg/m | Weight LB/FT | Max. Length (mm) |
|-----------------------|-------------------|-------------------------------------|-------------|--------------|------------------|
| 5 | M-5 | 5.00/4.992 | 0.16 | 0.1076 | 3000 |
| 6 | M-6 | 6.00/5.992 | 0.230 | 0.1546 | 6000 |
| 8 | M-8 | 8.00/7.991 | 0.40 | 0.269 | 6000 |
| 10 | M-10 | 10.00/9.991 | 0.62 | 0.417 | 6000 |
| 12 | M-12 | 12.00/11.989 | 0.89 | 0.598 | 6000 |
| 14 | M-14 | 14.00/13.89 | 1.21 | 0.813 | 6000 |
| 16 | M-16 | 16.00/15.989 | 1.58 | 1.062 | 6000 |
| 20 | M-20 | 20.00/19.987 | 2.47 | 1.660 | 6000 |
| 25 | M-25 | 25.00/24.987 | 3.85 | 2.5882 | 6000 |
| 30 | M-30 | 30.00/29.987 | 5.55 | 3.731 | 6000 |
| 40 | M-40 | 40.00/39.984 | 9.87 | 6.6352 | 6000 |
| 50 | M-50 | 50.00/49.984 | 15.40 | 10.3527 | 6000 |

Note: Also available in Stainless Steel (SS) and Chrome Plated (CP)

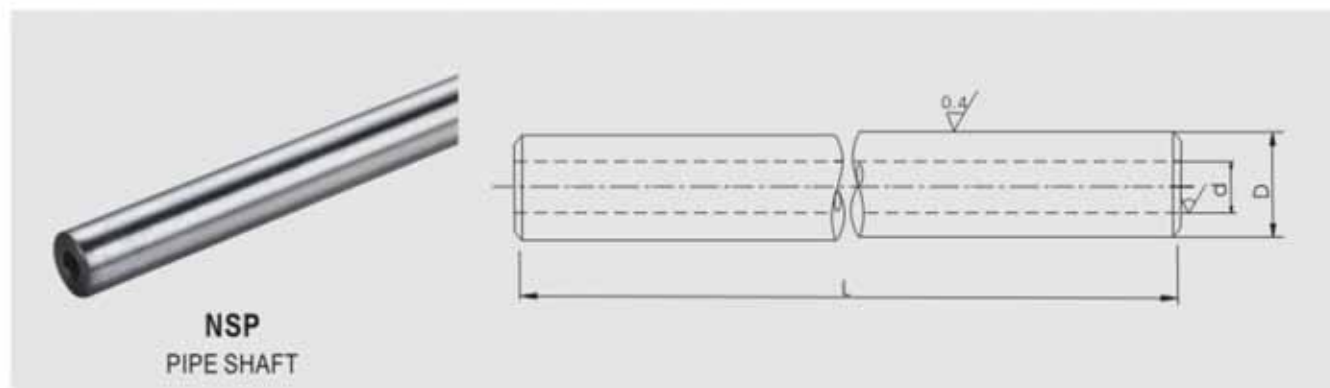
PRE-DRILLED & TAPPED



Please specify distance to first hole, "Y" dimension, with order

| Nominal Diameter (in) | L, SS or CPL Pre drilled | | Hole Spacing | G Standard Thread Size | Length Tolerance (in) | Max Length (in) |
|-----------------------|--------------------------|---------------------|------------------------------------|------------------------|-----------------------|-----------------|
| | Part Number Pre drilled | LPD Tolerance Class | X (inch +/- 1/64) (non-cumulative) | | | |
| 1/2" | 1/2 PDL | 0.4995 0.4990 | 4 | #6-32 | +/- 1/32 | 166 |
| 5/8" | 5/8 PDL | 0.6245 0.6240 | 4 | #8-32 | +/- 1/32 | 178 |
| 3/4" | 3/4 PDL | 0.7495 0.7490 | 6 | #10-32 | +/- 1/32 | 178 |
| 1" | 1 PDL | 0.9995 0.9990 | 6 | 1/4-20 | +/- 1/32 | 178 |
| 1 1/4" | 1 1/4 PDL | 1.2495 1.2490 | 6 | 5/16-18 | +/- 1/32 | 178 |
| 1 1/2" | 1 1/2 PDL | 1.4994 1.4989 | 8 | 3/8-16 | +/- 1/32 | 178 |
| 2" | 2P DL | 1.9994 1.9987 | 8 | 1/2-13 | +/- 1/16 | 178 |

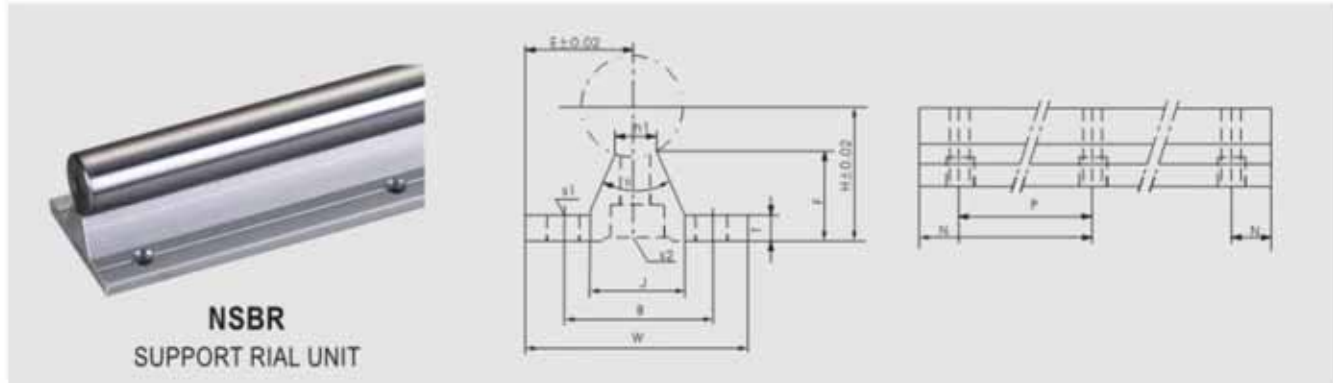
NSP Pipe shaft



| MODEL NO. | OUTER DIAMETER | DIMETER TOLERANCE | | DEPTH OF EFFECTIVE HARDEND LAYER | WEIGHT(Kg/m) |
|-----------|----------------|-------------------|-------------|----------------------------------|--------------|
| | | g6 | h6 | | |
| NSP16 | 16 | -0.006 -0.017 | 0 -0.011 | 0.6~1.2 | 1.23 |
| NSP20 | 20 | -0.007 -0.020 | 0 -0.013 | | 1.26 |
| NSP25 | 25 | | | | 1.68 |
| NSP30 | 30 | | | 0.8~2.0 | 3.97 |
| NSP35 | 35 | -0.009 -0.025 | 0 -0.016 | | 5.44 |
| NSP40 | 40 | | | | 5.37 |
| NSP50 | 50 | | | | 7.42 |

Material: GCr15(SUJ2), rigidity: more than HRC60
(ID have several size. Please affirm first)

NSBR Support rail unit



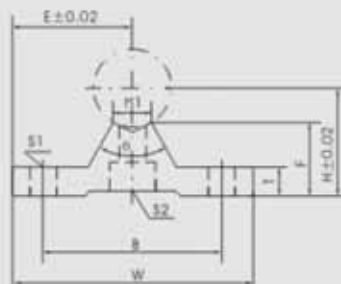
| MODEL NO. | SHAFT DIAMETER | MAIN DIMENSIONS | | | | | | | | MOUNTING DIMENSION | | | | | WEIGHT (Kg) |
|-----------|----------------|-----------------|------|----|------|-----|------|------|-----|--------------------|-----|-----|-----|-----|-------------|
| | | H | E | W | F | T | J | h1 | θ | B | N | P | S1 | S2 | |
| NSBR10 | 10 | 18 | 16 | 32 | 13.5 | 4 | 12.4 | 4.7 | 80° | 22 | 50 | 100 | 4.5 | M4 | 1.2 |
| NSBR12 | 12 | 20.46 | 17 | 34 | 15 | 4.5 | 15 | 6 | 80° | 25 | 50 | 100 | 4.5 | M4 | 1.8 |
| NSBR13 | 13 | 21 | 17 | 34 | 15 | 4.5 | 15 | 6 | 80° | 25 | 50 | 100 | 4.5 | M4 | 2.1 |
| NSBR16 | 16 | 25 | 20 | 40 | 17.8 | 5 | 18.5 | 8 | 80° | 30 | 50 | 150 | 5.5 | M5 | 2.4 |
| NSBR20 | 20 | 27 | 22.5 | 45 | 17.7 | 5 | 19 | 8 | 50° | 30 | 50 | 150 | 5.5 | M6 | 3.3 |
| NSBR25 | 25 | 33 | 27.5 | 55 | 21 | 6 | 21.5 | 8 | 50° | 35 | 100 | 200 | 6.5 | M6 | 5.31 |
| NSBR30 | 30 | 37 | 30 | 60 | 22.8 | 7 | 26.5 | 10.3 | 50° | 40 | | 200 | 6.5 | M8 | 7.83 |
| NSBR35 | 35 | 43 | 32.5 | 65 | 26.5 | 8 | 28 | 13 | 50° | 45 | | 200 | 9 | M8 | 9.88 |
| NSBR40 | 40 | 48 | 37.5 | 75 | 29.4 | 9 | 38 | 15.5 | 50° | 55 | | 300 | 9 | M8 | 13.15 |
| NSBR50 | 50 | 62 | 47.5 | 95 | 38.8 | 11 | 45 | 20 | 50° | 70 | | 300 | 11 | M10 | 20.4 |

Annotate: 1. length can random
2. Mounting hole center distance can make by buyer in denomination of 25mm

NSTBR/NSBR-B Support rail unit



NSTBR/NSBR-B
SUPPORT RAIL UNIT



| MODEL NO. | SHAFT DIAMETER | MAIN DIMENSIONS | | | | | | | MOUNTING DIMENSION | | | | WEIGHT (Kg) |
|-----------|----------------|-----------------|------|----|------|----|------|-----|--------------------|-----|-----|----|-------------|
| | | H | E | W | F | T | h1 | θ | B | P | S1 | S2 | |
| NSTBR16 | 16 | 22.14 | 25 | 50 | 15 | 6 | 8 | 60° | 37 | 150 | 5.5 | M5 | 2.5 |
| NSTBR20 | 20 | 29.01 | 27.5 | 55 | 19.7 | 8 | 8 | 60° | 40 | 150 | 5.5 | M6 | 3.5 |
| NSTBR25 | 25 | 32 | 32.5 | 65 | 20 | 10 | 8 | 60° | 45 | 200 | 6.5 | M6 | 5.5 |
| NSTBR30 | 30 | 36.52 | 37.5 | 75 | 22.3 | 12 | 10.3 | 50° | 55 | 200 | 6.5 | M8 | 8 |
| NSBR16B | 16 | 25 | 20 | 40 | 17.4 | 5 | 7.4 | 50° | 30 | 150 | 5.5 | M5 | 2.4 |
| NSBR20B | 20 | 27 | 22.5 | 45 | 17.4 | 5 | 8 | 50° | 30 | 150 | 5.5 | M6 | 3.3 |
| NSBR25B | 25 | 33 | 27.5 | 55 | 21 | 6 | 10 | 50° | 35 | 200 | 6.5 | M6 | 5.31 |
| NSBR30B | 30 | 37 | 30 | 60 | 22.5 | 7 | 8 | 60° | 40 | 200 | 6.5 | M8 | 7.83 |

Annotate: 1. length can random

2. Mounting hole center distance can make by buyer in denomination of 25mm

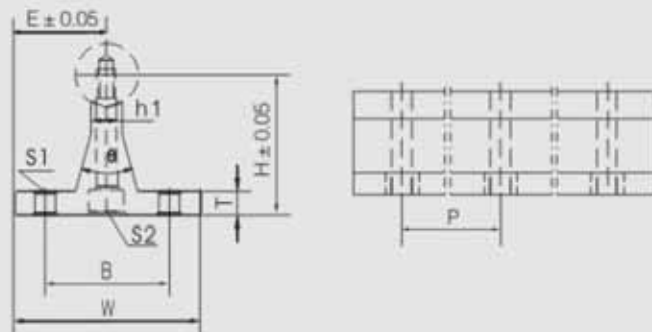
SHAFT SUPPORT ASSEMBLIES

PREDRILLED SHAFT SUPPORT ASSEMBLIES AND RAILS

| SHAFT DIA | SHAFT SUPPORT ASSEMBLY | PREDRILLED SHAFTSUPPORT RAIL | H \pm /.001 | W | h1 | T | B \pm /.005 |
|-----------|------------------------|------------------------------|---------------|-------|-------|------|---------------|
| 1/2 | NSRA-8 | NSR-8-PD | 1.125 | 1-1/2 | 1/4 | 3/16 | 1.000 |
| 5/8 | NSRA-10 | NSR-10-PD | 1.125 | 1-5/8 | 5/16 | 1/4 | 1.125 |
| 3/4 | NSRA-12 | NSR-12-PD | 1.500 | 1-3/4 | 3/8 | 1/4 | 1.250 |
| 1 | NSRA-16 | NSR-16-PD | 1.750 | 2-1/8 | 1/2 | 1/4 | 1.500 |
| 1-1/4 | NSRA-20 | NSR-20-PD | 2.125 | 2-1/2 | 9/16 | 5/16 | 1.875 |
| 1-1/2 | NSRA-24 | NSR-24-PD | 2.500 | 3 | 11/16 | 3/8 | 2.250 |
| 2 | NSRA-32 | NSR-32-PD | 3.250 | 3-3/4 | 7/8 | 1/2 | 2.750 |



NSRA Inch Support Rail Unit



| SHAFT DIA | S1 | S1 | S2 | S2 | E \pm /.001 | X | Y | WEIGHT FT/LBS |
|-----------|------|------|--------------|------|---------------|---|-----|---------------|
| | BOLT | HOLE | SCREW | HOLE | | | | |
| 1/2 | 6 | .169 | 6-32x7/8 | .169 | .750 | 4 | 2 | .6 |
| 5/8 | 8 | .193 | 8-32x7/8 | .193 | .812 | 4 | 2 | .8 |
| 3/4 | 10 | .221 | 10-32x11/4 | .221 | .875 | 6 | 3 | 1.0 |
| 1 | 1/4 | .281 | 1/4-20x11/2 | .281 | 1.062 | 6 | 3 | 1.4 |
| 1-1/4 | 5/16 | .343 | 5/16-18x13/4 | .343 | 1.250 | 6 | 3 | 2.1 |
| 1-1/2 | 5/16 | .343 | 3/8-16x2 | .406 | 1.500 | 8 | 4** | 2.6 |
| 2 | 3/8 | .406 | 1/2-13x21/2 | .531 | .531 | 8 | 4** | 4.2 |

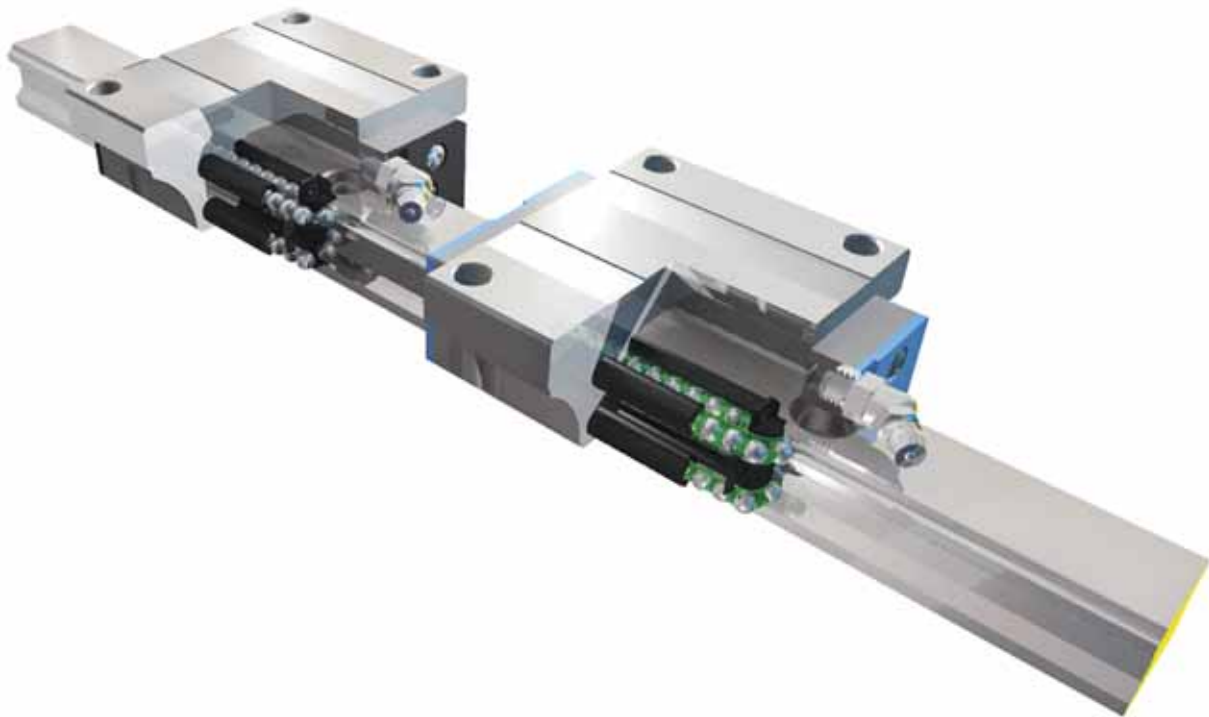
NOTES:

- * (**)NSR-24-PD-36" AND NSR-32-PD-36"(Y=2")
- * MANUFACTURED FROM EXTRUDED 6061-T6 ALUMINUM FOR ENGINEERED PERFORMANCE

Profile Rail

COMMON RAIL DESIGN

One Rail Geometry for All Blocks



The modular structure of our linear guides allows for one type of rail to be used for caged and non-caged carriages, significantly lowering inventory costs.

Linear Actuators

ROD-STYLE

Types of Motors

Stepper Motor

Servo Motor

AC Motor

DC Motor



RODLESS STYLE

Drive Types

Acme Screw

Ball Screw

Rack & Pinion

Linear Motor



Linear Products

Standard Ball Bushing



Self-Aligning Ball Bushing



Self-Aligning Pillow Blocks



Ball Screws



Ball Screw Support Bearings



Shafting

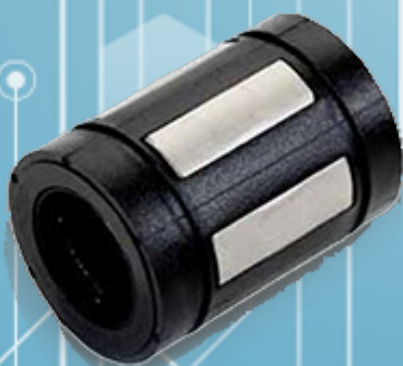
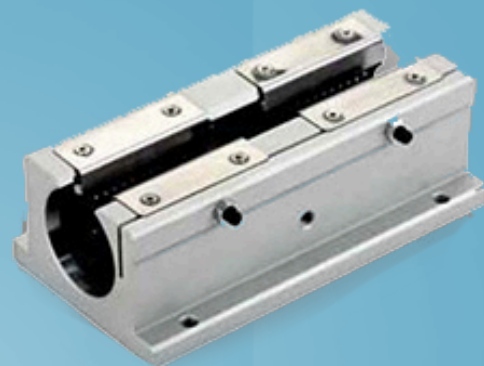
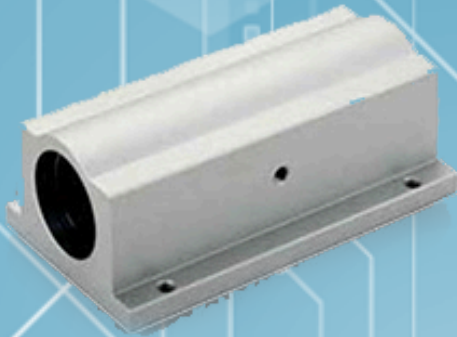




LINEAR BALL BUSHINGS AND SHAFTING



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