

# Deep Groove Ball Bearings

## Deep Groove Ball Bearings



Open type



Shielded type



Sealed type (Non-contact)



Maximum capacity type

## Deep Groove Ball Bearings

Deep groove ball bearings are very widely used. A deep groove is formed on each inner and outer ring of a deep groove ball bearing. Radial load and axial loads in either direction and the resultant forces of these loads can be sustained. These bearings are suitable for high speed operation.

Various types of these bearings exist such as prelubricated bearings, bearings with both sides shielded or sealed and prelubricated, bearings with snap rings and open type bearings. By using these bearings, housings can be easily designed for mounting.

As shown in Table 1, pressed cages are generally used in deep groove ball bearings. However, machined cages are also applied in larger sized bearings used for high speed operation.

Table 1 Standard cages of deep groove ball bearings

Bearing series	Pressed cage	Machined cage
67	6700~6706	—
68	6800~6834	6836~68/600
69	6900~6934	6936~69/500
160	16001~16052	16056~16072
60	6000~6052	6056~6084
62	6200~6244	—
63	6300~6344	—
64	6403~6426	—

## Shielded ball bearings

Shielded ball bearings are deep groove ball bearings having the same boundary dimensions as those of open type bearings. Protection against the penetration of foreign material and the prevention of grease leakage are provided by the steel shield plates of these bearings.

There are two types; one is Type ZZ fitted with shield plates on both sides and the other is Type Z fitted with a plate on one side. Since the shields are non-contact type, friction torque is very low.

## Sealed ball bearings

Like shielded bearings, sealed ball bearings have the same boundary dimensions as those of the open type bearings. Sealed ball bearings also have the function of keeping foreign matter out and grease in with a seal.

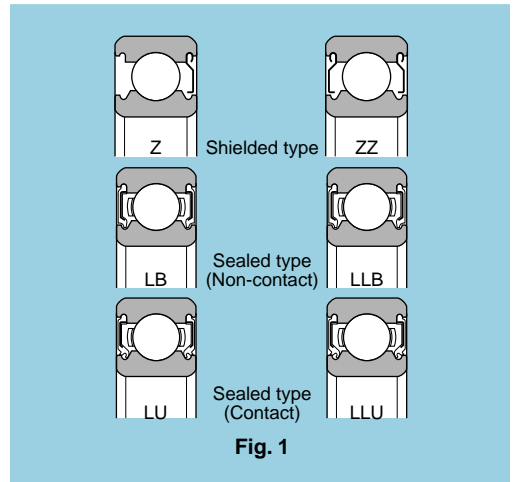
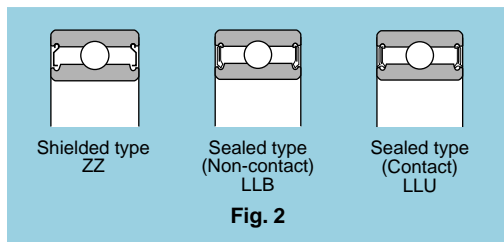


Fig. 1

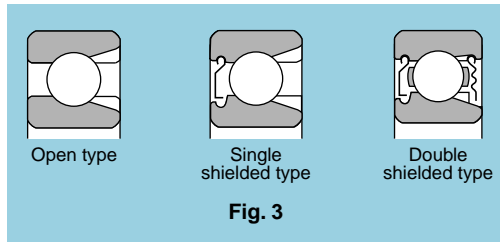
Seals consisting of synthetic rubber molded to a steel plate are incorporated into the outer rings of these ball bearings. There are two types of sealed bearings. One uses contact seals where the inner ring is contacted by the seal and the other is the non-contact seal where the inner ring is not contacted by the seal. The LLU type uses two contact seals, one on each side of the bearings. Similarly the LLB type uses non-contact type seals, one on each side of the bearing. Also, there are the LU and LB types which use a seal only on one side of bearing. Bearings with contact seals have excellent and effective dust proofing functions. Bearings with non-contact seals are suitable for applications requiring low torque operation.

## Cartridge type single row deep groove ball bearings

Cartridge type bearings have the same standard bore and O.D. as deep groove ball bearing, but are as wide as double row ball bearings. They are supplied with two seals and contain a large grease capacity found useful in extremely dirty and dusty conditions.



Pressed cages are used in maximum capacity type ball bearings. These bearing type is available with shields-type (Types Z and ZZ). Note that the filling slot for double shielded (Type ZZ) maximum capacity type ball bearings use a special shield plate to cover the filling slot.



## Maximum capacity type ball bearings

The boundary dimensions of the maximum capacity type ball bearings are the same as those of series 62 and 63 of deep groove ball bearings. In order to assemble the steel balls, filling slots are provided on both inner and outer ring of the bearings. Accordingly, more steel balls are assembled in these bearings than those of series 62 and 63 of deep groove ball bearings or the standard type. Therefore, the dynamic load rating of these bearings becomes 20% to 35% larger than that of standard type.

Due to the filling slot, maximum capacity type bearings are not suitable for applications that employ heavy axial loads. Therefore, it is necessary to use these bearings in cases where there are compound radial and axial loads with radial loads predominate, loads are used or radial loads only.