

Suitability of rolling bearings for industrial applications

Bearing type	Load carrying capability	Misalignment	
		Radial load	Axial load
Deep groove ball bearings	+ ↔ A, B	-	--
Insert bearings	+ ↔ A, B, C	++	--
Angular contact ball bearings, single row	+1) ↔ A, B, C	-	--
matched single row	A, B ↔ C ↔ A, B ↔ C	A, B ↔ C ↔ A, B ↔ C	A, C --, B --
double row	↔ A, B	--	--
four-point contact	+1) ↔	--	--
Self-aligning ball bearings	+ ↔	+++	+2)
Cylindrical roller bearings, with cage	↔ A, B	-	--
full complement, single row	↔ A, B, C, D	-	--
full complement, double row	↔ A, B, C, D	-	--
Needle roller bearings, with steel rings	↔ A, B, C	A, B --, C ++	--
assemblies / drawn cups	↔ A, B, C	-	--
combined bearings	↔ A, B, C	-	--
Tapered roller bearings, single row	+++1) ↔	-	--
matched single row	A, B ↔ C ↔ A, B ↔ C	A --, B ++, C ++	--
double row	↔ A, B	A --, B --	--
Spherical roller bearings	↔	+++	+2)
CARB toroidal roller bearings, with cage	↔	++	-
full complement	↔	++	-
Thrust ball bearings	↔ A, B	--	--
with sphered housing washer	↔ A, B	++	--
Cylindrical roller thrust bearings	↔	--	--
Needle roller thrust bearings	↔	--	--
Spherical roller thrust bearings	+1) ↔	+++	+2)

1) Provided the F_r/F_r ratio requirement is met 2) Reduced misalignment angle – contact SKF 3) Depending on cage and axial load level

Arrangement	Suitable for				Design features							
	Locating	Non-locating	Adjusted	Floating	Long grease life	High speed	Low run-out	High stiffness	Low friction	Integral sealing	Separable ring mounting	Tapered bore
↔	□	✗	✓	A+++ B++	A+++ B+	A+++ B++	+	+++	A✓	✗	✗	✗
↔	↔	✗	✗	+++	++	A, B+ C++	+	++	✓	✗	✗	✓
✗	✗	✓	✗	++	++	+++	++	++	✓	✗	✗	✗
A, B ↔ C ↔	A, B □ C ✗	✗	✗	++	++	+++	++	++	✗	✗	✗	✗
↔	□	✗	✗	++	++	++	++	++	A✓	B✓	✗	✗
↔1)	--	--	--	+	+++	++	++	++	✗	✓	✗	✗
↔	□	✗	✓	+++	++	++	+	+++	✓	✗	✓	✓
✗	■	✗	✗	++	+++	+++	++	+++	✗	✓	✗	✗
A, B ↔ C, D ↔	A, B ■ C, D ✗	✗	A✓ B, C, D ✗	++3)	+++	++	++	+++	✗	✓	✗	✗
←	A, B ←	✗	✓	-	+	+	+++	-	✗	A✗ B✓	✗	✗
B ← C, D ↔	A ■ B ■ C ←	✗	✗	-	+	+	+++	-	D✓	✗	✗	✗
✗	■ ↔	✗	✗	++	++	+	++	+	A✓	✓	✗	✗
A, B ✗ C ←	A, B ■ C ■ ←	✗	✗	++	++	+	++	+	B, C✓	✓	✗	✗
←	✗	✓	✗	+	+	+	++	+	✗	✓	✗	✗
←	✗	✓	✗	+	++	+++	++	+	✗	✓	✗	✗
A, B ↔ C ←	A, B □ C ✗	A, B ✗ C ✓	✗	+	+	++	+++	+	✗	✓	✗	✗
↔	□	✗	✗	+	+	++	+++	+	✓	✓	B✓	✗
↔	□	✗	✓	+	++	+++	++	+	✓	✗	✓	✓
✗	■	✗	✗	+	++	+++	++	+	✗	✗	✓	✓
✗	■	✗	✗	-	+	+++	++	-	✓	✗	✓	✓
A ← B ↔	✗	✗	✗	+	-	++	+	+	✗	✓	✗	✗
A ← B ↔	✗	✗	✗	+	-	+	+	+	✗	✓	✗	✗
←	✗	✗	✗	-	-	+	+++	+	✗	✓	✗	✗
←	✗	✗	✗	-	-	+	+++	+	✗	✓	✗	✗
←	✗	✓	✗	-	+	+	+++	+	✗	✓	✗	✗

B.2 Bearing type and arrangement

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