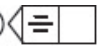
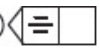
Reference insert page 1-1 for Koyo Ball & Roller Bearings Catalogue
(comparison between JIS B 1514-1:2006 and JIS B 1514-1:2017)

Table 1-1 Comparison table between GPS symbols with descriptions and previous terms for radial bearings.

Nominal dimension [1]	Symbol for characteristic [1]	GPS symbol and specification modifier [2]	Description [3]	Conventional term [4]
B			Nominal inner ring width	Nominal inner ring width
	VBs	LP SR	**Symmetrical rings:** range of two point sizes of inner ring width	Variation of inner ring width
		GN ALS SR 	**Asymmetrical rings:** range of minimum circumscribed sizes of inner ring width, between two opposite lines, obtained from any longitudinal section which includes the inner ring bore axis	
	ΔBs	LP	**Symmetrical rings:** deviation of a two-point size of inner ring width from its nominal size	Deviation of single inner ring width
		GN ALS 	**Asymmetrical rings, upper limit:** deviation of a minimum circumscribed size of inner ring width, between two opposite lines, in any longitudinal section which includes the inner ring bore axis, from its nominal size	
		LP	**Asymmetrical rings, lower limit:** deviation of a two-point size of inner ring width from its nominal size	
C			Nominal outer ring width	Nominal outer ring width
	VCs	LP SR	**Symmetrical rings:** range of two point sizes of outer ring width	Variation of outer ring width
		GN ALS SR 	**Asymmetrical rings:** range of minimum circumscribed sizes of outer ring width, between two opposite lines, obtained from any longitudinal section which includes the outer ring outside axis	
	ΔCs	LP	**Symmetrical rings:** deviation of a two-point size of outer ring width from its nominal size	Deviation of single outer ring width
		GN ALS 	**Asymmetrical rings, upper limit:** deviation of a minimum circumscribed size of outer ring width, between two opposite lines, in any longitudinal section which includes the outer ring outside axis, from its nominal size	
		LP	**Asymmetrical rings, lower limit:** deviation of a two-point size of outer ring width from its nominal size	
C_1			Nominal outer ring flange width	Nominal outer ring flange width
	VC1s	LP SR	Range of two point sizes of outer ring flange width	Variation of outer ring flange width
	ΔC1s	LP	Deviation of a two-point size of outer ring flange width from its nominal size	Deviation of single outer ring flange width
d			Nominal bore diameter of a cylindrical bore or at the theoretical small end of a tapered bore	Nominal bore diameter
	Vdmp	LP SD ACS SR	Range of mid-range sizes (out of two-point sizes) of bore diameter obtained from any cross-section of a cylindrical bore	Variation of mean bore diameter
	Δdmp	LP SD ACS	**Cylindrical bore:** deviation of a mid-range size (out of two-point sizes) of bore diameter in any cross-section from its nominal size	Deviation of mean bore diameter (at the theoretical small end) in a single plane
		LP SD SCS	**Tapered bore:** single plane deviation of a mid-range size (out of two-point sizes) of bore diameter at the theoretical small end from its nominal size	
	Vdsp	LP SR ACS	Range of two-point sizes of bore diameter in any cross-section of a cylindrical or tapered bore	Variation of single bore diameter in a single plane
	Δds	LP	Deviation of a two-point size of the bore diameter from its nominal size	Deviation of a single bore diameter
d_1			Nominal diameter at the theoretical large end of a tapered bore	Nominal diameter at the theoretical large end of a basically tapered bore
	Δd1mp	LP SD SCS	Deviation of a mid-range size (out of two-point sizes) of bore diameter at the theoretical large end of a tapered bore from its nominal size	Deviation of mean bore diameter in a single plane at the theoretical large end of a basically tapered bore

Note 1) Symbols as defined in **JIS B 0124** except for the format used.
Tolerance values associated to characteristics are symbolized by "t" followed by the symbols for the characteristics, for example "t_{VBs}".
2) Symbols as defined in **JIS B 0420-1** and **ISO 1101**. See **JIS B 1514-1**:2017 **Annex D**.
3) Description based on **JIS B 0022**, **JIS B 0420-1** and **ISO 1101**.
4) Terms in **JIS B 1514-1**:2006.

JIS B 1514-1 and JIS B 1514-2 were revised to introduce geometrical product specifications (GPS) in 2017.
So this reference insert page is provided in order to compare the GPS symbols, descriptions and conventional terms.

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Nominal dimension [1]	Symbol for characteristic [1]	GPS symbol and specification modifier [2]	Description [3]	Conventional term [4]
D			Nominal outside diameter	Nominal outside diameter
	VDmp	(LP) (SD) ACS (SR)	Range of mid-range sizes (out of two-point sizes) of outside diameter obtained from any cross-section	Variation of mean outside diameter
	ΔDmp	(LP) (SD) ACS	Deviation of a mid-range size (out of two-point sizes) of outside diameter in any cross-section from its nominal size	Deviation of mean outside diameter in a single plane
	VDsp	(LP) (SR) ACS	Range of two-point sizes of outside diameter in any cross-section	Variation of outside diameter in a single plane
	ΔDs	(LP)	Deviation of a two-point size of outside diameter from its nominal size	Deviation of a single outside diameter
D_1			Nominal outside diameter of outer ring flange	Nominal outside diameter of outer ring flange
	ΔD1s	(LP)	Deviation of a two-point size of outside diameter of outer ring flange from its nominal size	Deviation of a single outside diameter of outer ring flange
	Kea	 [5]	Circular radial run-out of outer ring outside surface of assembled bearing with respect to datum, i.e. axis, established from the inner ring bore surface	Radial run-out of outer ring of assembled bearing
	Kia	[5]	Circular radial run-out of inner ring bore of assembled bearing with respect to datum, i.e. axis, established from the outer ring outside surface	Radial run-out of inner ring of assembled bearing
	Sd	[5]	Circular axial run-out of inner ring face with respect to datum, i.e. axis, established from the inner ring bore surface	Perpendicularity of inner ring face with respect to the bore
	SD [6]	⊥	Perpendicularity of outer ring outside surface axis with respect to datum established from the outer ring face	Perpendicularity of outer ring outside surface with respect to the face
	SD1 [6]	⊥	Perpendicularity of outer ring outside surface axis with respect to datum established from the outer ring flange back face	Perpendicularity of outer ring outside surface with respect to the flange back face
	Sea	[5]	Circular axial run-out of outer ring face of assembled bearing with respect to datum, i.e. axis, established from the inner ring bore surface	Axial run-out of outer ring of assembled bearing
	Sea1	[5]	Circular axial run-out of outer ring flange back face of assembled bearing with respect to datum, i.e. axis, established from the inner ring bore surface	Axial run-out of outer ring flange back face of assembled bearing
	Sia	[5]	Circular axial run-out of inner ring face of assembled bearing with respect to datum, i.e. axis, established from the outer ring outside surface	Axial run-out of inner ring of assembled bearing
SL			Taper slope: Taper slope is the difference between nominal diameters at the theoretical large end and small end of a tapered bore ($d_1 - d$)	–
	ΔSL		Deviation of taper slope of a tapered inner ring bore from its nominal size	–
α			Frustum angle of tapered inner ring bore [7]	Angle of taper (half the cone angle) of inner ring bore
T			Nominal assembled bearing width	Nominal assembled bearing width
	ΔTs	(GN) [5]	Deviation of minimum circumscribed size of assembled bearing width from its nominal size	Deviation of the actual (assembled) bearing width
T_1			Nominal effective width of inner subunit assembled with a master outer ring	Nominal effective width of inner subunit
	ΔT1s	(GN) [5]	Deviation of minimum circumscribed size of effective width (inner subunit assembled with a master outer ring) from its nominal size	Deviation of the actual effective width of inner subunit
T_2			Nominal effective width of outer ring assembled with a master inner subunit	Nominal effective width of outer ring
	ΔT2s	(GN) [5]	Deviation of minimum circumscribed size of effective width (outer ring assembled with a master inner subunit) from its nominal size	Deviation of the actual effective width of outer ring

Note 1) Symbols as defined in **JIS B 0124** except for the format used.
Tolerance values associated to characteristics are symbolized by "t" followed by the symbols for the characteristics, for example "t_{VBs}".
2) Symbols as defined in **JIS B 0420-1** and **ISO 1101**. See **JIS B 1514-1**:2017 **Annex D**.
3) Description based on **JIS B 0022**, **JIS B 0420-1** and **ISO 1101**
4) Terms in **JIS B 1514-1**:2006.
5) Symbols for direction of gravity, fixed parts and movable parts, according to **ISO/TS 17863**.
6) Tolerance values have become half the values compared to **JIS B 1514-1**:2006, because SD and SD1 are defined as perpendicularity of outer ring outside surface axis in **JIS B 1514-1**:2017.
7) Definition is changed to frustum angle of tapered inner ring bore in accordance with the description in **ISO 1119**.

Reference insert page 1-2 for Koyo Ball & Roller Bearings Catalogue
(comparison between JIS B 1514-1:2006 and JIS B 1514-1:2017)

Table 1-2 Comparison table between GPS symbols with descriptions and previous terms for thrust bearings.

Nominal dimension [1]	Symbol for characteristic [1]	GPS symbol and specification modifier [2]	Description [3]	Conventional term [4]
d			Nominal bore diameter of shaft washer, single-direction bearing	Nominal bore diameter of shaft washer, single-direction bearing
	Δdmp	LP SD ACS	Deviation of a mid-range size (out of two-point sizes) of shaft washer bore diameter in any cross-section from its nominal size	Deviation of mean bore diameter in a single plane of shaft washer, single-direction bearing
	Vdsp	LP SR ACS	Range of two-point sizes of shaft washer bore diameter in any cross-section	Variation of bore diameter in a single plane of shaft washer, single-direction bearing
d_2			Nominal bore diameter of central shaft washer, double-direction bearing	Nominal bore diameter of central washer, double-direction bearing
	$\Delta d2mp$	LP SD ACS	Deviation of a mid-range size (out of two-point sizes) of central shaft washer bore diameter in any cross-section from its nominal size	Deviation of mean bore diameter in a single plane of central shaft washer, double-direction bearing
	Vd2sp	LP SR ACS	Range of two-point sizes of central shaft washer bore diameter in any cross-section	Variation of bore diameter in a single plane of central shaft washer, double-direction bearing
D			Nominal outside diameter of housing washer	Nominal outside diameter of housing washer
	ΔDmp	LP SD ACS	Deviation of a mid-range size (out of two-point sizes) of housing washer outside diameter in any cross-section from its nominal size	Deviation of mean outside diameter in a single plane of housing washer
	VDsp	LP SR ACS	Range of two-point sizes of housing washer outside diameter in any cross-section	Variation of outside diameter in a single plane of housing washer
T			Nominal assembled bearing height, single-direction bearing	Nominal bearing height, single-direction bearing
	ΔTs	GN [5]	Deviation of minimum circumscribed size of assembled bearing height from its nominal size, single-direction bearing	Deviation of the actual bearing height, single-direction bearing
T_1			Nominal assembled bearing height, double-direction bearing	Nominal bearing height, double-direction bearing
	$\Delta T1s$	GN [5]	Deviation of minimum circumscribed size of assembled bearing height from its nominal size, double-direction bearing	Deviation of the actual bearing height, double-direction bearing
	Se [6]	LP SR	**Thrust cylindrical roller bearings:** range of two-point sizes of thickness between housing washer raceway and the back face	Variation in thickness between housing washer raceway and back face
		LS SN ALS SR ⌖	**Thrust ball bearings:** range of minimum spherical sizes between the raceway and the opposite back face of the housing washer, obtained from any longitudinal section which includes the housing washer outside surface axis	
	Si [6]	LP SR	**Thrust cylindrical roller bearings:** range of two-point sizes of thickness between shaft washer raceway and the back face	Variation in thickness between shaft washer raceway and back face
		LS SN ALS SR ⌖	**Thrust ball bearings:** range of minimum spherical sizes between the raceway and the opposite back face of the shaft washer, obtained from any longitudinal section which includes the shaft washer bore axis	

Note 1) Symbols as defined in **JIS B 0124** except for the format used.
Tolerance values associated to characteristics are symbolized by "t" followed by the symbols for the characteristics, for example "t_{Vdsp}".
2) Symbols as defined in **JIS B 0420-1** and **ISO 1101**. See **JIS B 1514-2**:2017 **Annex D**.
3) Description based on **JIS B 0420-1**
4) Terms in **JIS B 1514-2**:2006.
5) Symbols for direction of gravity, fixed parts and movable parts, according to **ISO/TS 17863**.
6) Applies only to thrust bearings with 90° contact angle and thrust cylindrical roller bearings with 90° contact angle.