Thrust Bearing Tolerances

Ball and cylindrical roller thrust bearings are generally manufactured to normal (P0) tolerances. Bearings with higher precision, P6 and P5, tolerances can be manufactured at special request. Please contact AST Engineering department for more information.

Below are the normal (P0), P6, and P5 tolerances associated with ball and cylindrical roller thrust bearings

P0 Shaft Washer Tolerances

d (mm)		Δ dmp Δ d2mp (µm)		Vdp Vd2p (µm)	Si Se* (µm)	Δ Hs (µm)		Δ H1s (µm)		Δ H2s (µm)		Δ H3s (µm)	
over	incl.	high	low	max	max	high	low	high	low	high	low	high	low
—	18	0	-8	6	10	+20	-250	+100	-250	+150	-400	+300	-400
18	30	0	-10	8	10	+20	-250	+100	-250	+150	-400	+300	-400
30	50	0	-12	9	10	+20	-250	+100	-250	+150	-400	+300	-400
50	80	0	-15	11	10	+20	-300	+100	-300	+150	-500	+300	-500
80	120	0	-20	15	15	+25	-300	+150	-300	+200	-500	+400	-500
120	180	0	-25	19	15	+25	-400	+150	-400	+200	-600	+400	-600
180	250	0	-30	23	20	+30	-400	+150	-400	+250	-600	+500	-600
250	315	0	-35	26	25	+40	-400	+200	-400	+350	-700	+600	-700
315	400	0	-40	30	30	+40	-500	+200	-500	+350	-700	+600	-700

*Se is identical to Si

P6 Shaft Washer Tolerances

d (mm)		Δ dmp Δ d2mp (µm)		Vdp Vd2p (µm)	Si Se* (µm)	Δ Hs (µm)		Δ H1s (µm)		Δ H2s (µm)		Δ H3s (µm)	
over	incl.	high	low	max	max	high	low	high	low	high	low	high	low
—	18	0	-8	6	5	+20	-250	+100	-250	+150	-400	+300	-400
18	30	0	-10	8	5	+20	-250	+100	-250	+150	-400	+300	-400
30	50	0	-12	9	6	+20	-250	+100	-250	+150	-400	+300	-400
50	80	0	-15	11	7	+20	-300	+100	-300	+150	-500	+300	-500
80	120	0	-20	15	8	+25	-300	+150	-300	+200	-500	+400	-500
120	180	0	-25	19	9	+25	-400	+150	-400	+200	-600	+400	-600
180	250	0	-30	23	10	+30	-400	+150	-400	+250	-600	+500	-600
250	315	0	-35	26	13	+40	-400	+200	-400	+350	-700	+600	-700
315	400	0	-40	30	15	+40	-500	+200	-500	+350	-700	+600	-700

*Se is identical to Si

P5 Shaft Washer Tolerances

d (mm)		Δ dmp Δ d2mp (µm)		Vdp Vd2p (µm)	Si Se* (µm)	Δ Hs (µm)		Δ H1s (µm)		Δ H2s (µm)		Δ H3s (µm)	
over	incl.	high	low	max	max	high	low	high	low	high	low	high	low
—	18	0	-8	6	3	+20	-250	+100	-250	+150	-400	+300	-400
18	30	0	-10	8	3	+20	-250	+100	-250	+150	-400	+300	-400
30	50	0	-12	9	3	+20	-250	+100	-250	+150	-400	+300	-400
50	80	0	-15	11	4	+20	-300	+100	-300	+150	-500	+300	-500
80	120	0	-20	15	4	+25	-300	+150	-300	+200	-500	+400	-500
120	180	0	-25	19	5	+25	-400	+150	-400	+200	-600	+400	-600
180	250	0	-30	23	5	+30	-400	+150	-400	+250	-600	+500	-600
250	315	0	-35	26	7	+40	-400	+200	-400	+350	-700	+600	-700
315	400	0	-40	30	7	+40	-500	+200	-500	+350	-700	+600	-700

*Se is identical to Si

P0, **P6**, and **P5** Tolerances for Housing Washers

D (mm)		Δ Dmp Δ D2mp (µm)		VDp (µm)
over	incl.	high	low	max
—	18	0	-11	8
18	30	0	-13	10
30	50	0	-16	12
50	80	0	-19	14
80	120	0	-22	17
120	180	0	-25	19
180	250	0	-30	23
250	315	0	-35	26
315	400	0	-40	30
400	500	0	-45	34

Symbols:

D – Nominal Housing washer diameter
Δ Dmp – deviation of the mean diameter of housing washer in a single radial plane
VDp – housing washer outside diameter variation in a single radial plane
d – nominal shaft washer bore diameter
Δ dmp – deviation of the mean bore diameter of shaft washer in a single radial plane
Δ d2mp – deviation of the mean bore diameter in a single radial plane for a double direction thrust bearing

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Vdp –bore diameter variation of the shaft washer in a single radial plane for single direction thrust washers
Vd2p – bore diameter variation of the shaft washer in a single radial plane for double direction thrust washers
Si – thickness variation measured from middle of raceway to back seating face of shaft washer
Se – thickness variation measured from middle of raceway to back face of housing washer
Δ Hs –deviation of mounting height of single direction thrust bearings
Δ H1s –deviation of mounting height of thrust ball bearing with sphered housing washer
Δ H2s –deviation of mounting height of double direction thrust bearings
Δ H3s –deviation of mounting height of double direction thrust ball bearing with sphered housing washer

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