5.3. Accuracy Standard for Each Model

●Accuracies of models SR, SSR, HSR, SHS, NR/NRS, SNR/SNS, HRW, SHW, SRG, SRN and NSR-TBC are categorized into Normal grade (no symbol), High-accuracy grade (H), Precision grade (P), Super-precision grade (SP) and Ultra-super-precision grade (UP) by model numbers, as indicated in Table 2.

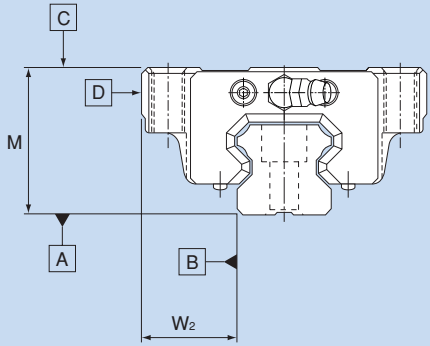

Fig. 3

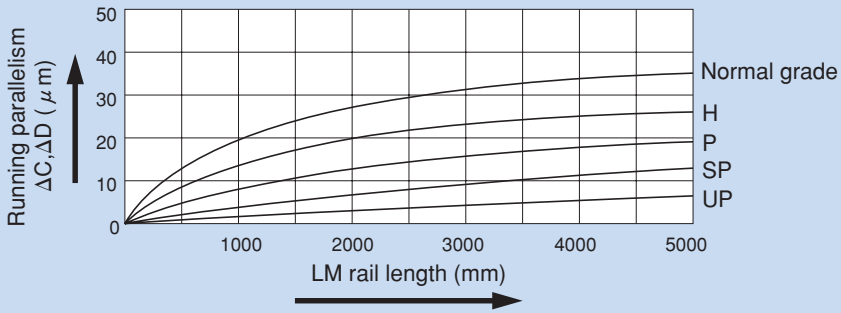

Fig. 4 LM Rail Length and Running Parallelism

Table 2 Accuracy Standards for Models SR, SSR, HSR, SHS, NR/NRS, SNR/SNS, HRW, SHW, SRG, SRN and NSR-TBC

Unit: mm

Model No.	Accuracy standard	Normal grade	High-accuracy grade	Precision grade	Super-precision grade	Ultra-super precision grade
	Item	No symbol	H	P	SP	UP
8 10 12 14	Dimensional tolerance for height M	± 0.08	± 0.04	± 0.02	± 0.01	———
	Difference in height M	0.015	0.007	0.005	0.003	———
	Dimensional tolerance for width W_2	± 0.05	± 0.025	± 0.015	± 0.01	———
	Difference in width W_2	0.02	0.01	0.007	0.005	———
	Running parallelism of surface C against surface A	ΔC (as shown in Fig. 4)				
	Running parallelism of surface D against surface B	ΔD (as shown in Fig. 4)				
15 17 20 21	Dimensional tolerance for height M	± 0.1	± 0.03	$^{0}_{-0.03}$	$^{0}_{-0.015}$	$^{0}_{-0.008}$
	Difference in height M	0.02	0.01	0.006	0.004	0.003
	Dimensional tolerance for width W_2	± 0.1	± 0.03	$^{0}_{-0.03}$	$^{0}_{-0.015}$	$^{0}_{-0.008}$
	Difference in width W_2	0.02	0.01	0.006	0.004	0.003
	Running parallelism of surface C against surface A	ΔC (as shown in Fig. 4)				
	Running parallelism of surface D against surface B	ΔD (as shown in Fig. 4)				
25 27 30 35	Dimensional tolerance for height M	± 0.1	± 0.04	$^{0}_{-0.04}$	$^{0}_{-0.02}$	$^{0}_{-0.01}$
	Difference in height M	0.02	0.015	0.007	0.005	0.003
	Dimensional tolerance for width W_2	± 0.1	± 0.04	$^{0}_{-0.04}$	$^{0}_{-0.02}$	$^{0}_{-0.01}$
	Difference in width W_2	0.03	0.015	0.007	0.005	0.003
	Running parallelism of surface C against surface A	ΔC (as shown in Fig. 4)				
	Running parallelism of surface D against surface B	ΔD (as shown in Fig. 4)				
40 45 50 55 60	Dimensional tolerance for height M	± 0.1	± 0.05	$^{0}_{-0.05}$	$^{0}_{-0.03}$	$^{0}_{-0.02}$
	Difference in height M	0.03	0.015	0.007	0.005	0.003
	Dimensional tolerance for width W_2	± 0.1	± 0.05	$^{0}_{-0.05}$	$^{0}_{-0.03}$	$^{0}_{-0.02}$
	Difference in width W_2	0.03	0.02	0.01	0.007	0.005
	Running parallelism of surface C against surface A	ΔC (as shown in Fig. 4)				
	Running parallelism of surface D against surface B	ΔD (as shown in Fig. 4)				
65 70 75 85 100 120 150	Dimensional tolerance for height M	± 0.1	± 0.07	$^{0}_{-0.07}$	$^{0}_{-0.05}$	$^{0}_{-0.03}$
	Difference in height M	0.03	0.02	0.01	0.007	0.005
	Dimensional tolerance for width W_2	± 0.1	± 0.07	$^{0}_{-0.07}$	$^{0}_{-0.05}$	$^{0}_{-0.03}$
	Difference in width W_2	0.03	0.025	0.015	0.01	0.007
	Running parallelism of surface C against surface A	ΔC (as shown in Fig. 4)				
	Running parallelism of surface D against surface B	ΔD (as shown in Fig. 4)				

Note: For models SRG and SRN, only precision or higher grades apply (normal or high-accuracy grades are not available).

●Accuracies of model HCR are categorized into normal and high-accuracy grades by model number as indicated in Table 3.

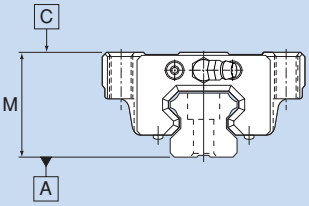

Fig. 5

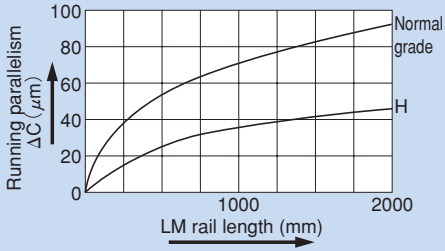

Fig. 6 LM Rail Length and Running Parallelism

Table 3 Accuracy Standard for Model HCR

Unit: mm

Model No.	Accuracy standard	Normal grade	High-accuracy grade
	Item	No symbol	H
12 15 25 35	Dimensional tolerance for height M	± 0.2	± 0.2
	Difference in height M	0.05	0.03
	Running parallelism of surface Ⓒ against surface Ⓐ	ΔC (as shown in Fig. 6)	
45 65	Dimensional tolerance for height M	± 0.2	± 0.2
	Difference in height M	0.06	0.04
	Running parallelism of surface Ⓒ against surface Ⓐ	ΔC (as shown in Fig. 6)	

●Accuracies of model JR are defined by model number as indicated in Table 4.

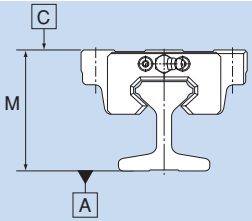

Fig. 7

Table 4 Accuracy Standard for Model JR

Unit: mm

Model No.	Accuracy standard	Normal grade
	Item	No symbol
25 35	Dimensional tolerance for height M	0.05
	Running parallelism of surface Ⓒ against surface Ⓐ	ΔC (as shown in Fig. 8)
45 55	Dimensional tolerance for height M	0.06
	Running parallelism of surface Ⓒ against surface Ⓐ	ΔC (as shown in Fig. 8)

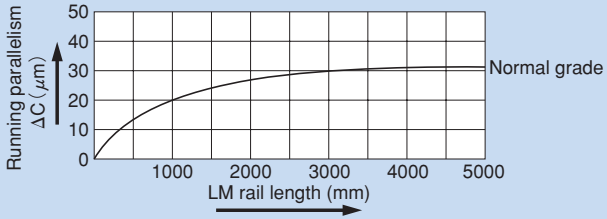

Fig. 8 LM Rail Length and Running Parallelism

●Accuracies of model CSR are categorized into precision, super-precision and ultra-precision grades by model number as indicated in Table 5.

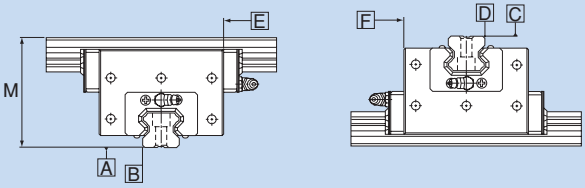

Fig. 9

Table 5 Accuracy Standard for Model CSR

Unit: mm

Model No.	Accuracy standard / Item	Precision grade P	Super-precision grade SP	Ultra-super precision grade UP
15 20	Difference in height M	0.01	0.007	0.005
	Perpendicularity of surface D against surface B	0.005	0.004	0.003
	Running parallelism of surface E against surface B	ΔC (as shown in Fig. 10)		
	Running parallelism of surface F against surface D	ΔD (as shown in Fig. 10)		
25	Difference in height M	0.01	0.007	0.005
	Perpendicularity of surface D against surface B	0.008	0.006	0.004
	Running parallelism of surface E against surface B	ΔC (as shown in Fig. 10)		
	Running parallelism of surface F against surface D	ΔD (as shown in Fig. 10)		
30 35	Difference in height M	0.01	0.007	0.005
	Perpendicularity of surface D against surface B	0.01	0.007	0.005
	Running parallelism of surface E against surface B	ΔC (as shown in Fig. 10)		
	Running parallelism of surface F against surface D	ΔD (as shown in Fig. 10)		
45	Difference in height M	0.012	0.008	0.006
	Perpendicularity of surface D against surface B	0.012	0.008	0.006
	Running parallelism of surface E against surface B	ΔC (as shown in Fig. 10)		
	Running parallelism of surface F against surface D	ΔD (as shown in Fig. 10)		

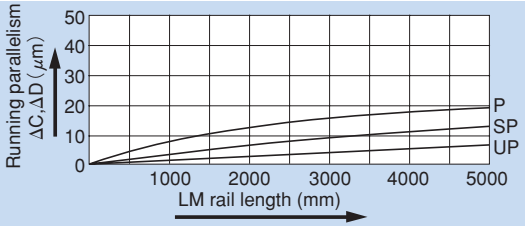

Fig. 10 LM Rail Length and Running Parallelism

●Accuracies of model HR are categorized into normal, high-accuracy, precision, super-precision and ultra-precision grades as indicated in Table 6.

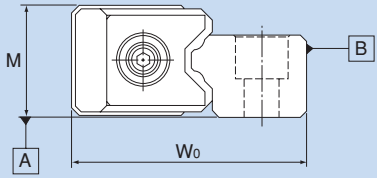

Fig. 11

Table 6 Accuracy Standard for Model HR

Unit: mm

Accuracy standard	Normal grade	High-accuracy grade	Precision grade	Super-precision grade	Ultra-super precision grade
Item	No symbol	H	P	SP	UP
Dimensional tolerance for height M	±0.1	±0.05	±0.025	±0.015	±0.01
Difference in height M*1)	0.03	0.02	0.01	0.005	0.003
Dimensional tolerance for total width W0	±0.1		±0.05		
Difference in total width W0*2)	0.03	0.015	0.01	0.005	0.003
Running parallelism of surface B against surface A	ΔC (as shown in Fig. 12)				

Note 1: Difference in height M applies to a set of LM Guides used on the same plane.
Note 2: Difference in total width W_0 applies to LM blocks used in combination on one LM rail.
Note 3: Dimensional tolerance and difference in total width W_0 for precision and higher grades apply only to the master-rail side among a set of LM Guides. The master rail is imprinted with "KB" following a serial number.

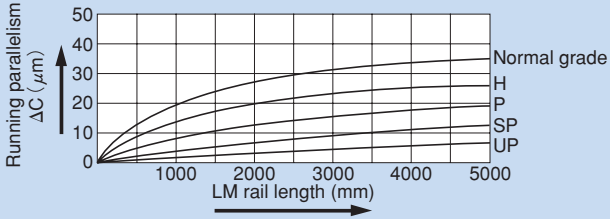

Fig. 12 LM Rail Length and Running Parallelism

●Accuracies of model GSR are categorized into normal, high-accuracy and precision grades by model number as indicated in Table 7.

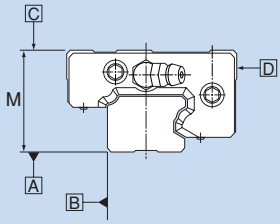

Fig. 13

Table 7 Accuracy Standard for Model GSR

Unit: mm

Model No.	Accuracy standard	Normal grade	High-accuracy grade	Precision grade
	Item	No symbol	H	P
15 20	Dimensional tolerance for height M	± 0.02		
	Running parallelism of surface C against surface A	ΔC (as shown in Fig. 14)		
	Running parallelism of surface D against surface B	ΔD (as shown in Fig. 14)		
25 30 35	Dimensional tolerance for height M	± 0.03		
	Running parallelism of surface C against surface A	ΔC (as shown in Fig. 14)		
	Running parallelism of surface D against surface B	ΔD (as shown in Fig. 14)		

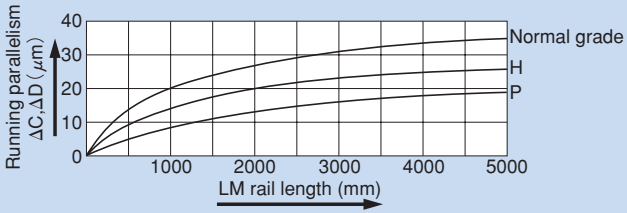

Fig. 14 LM Rail Length and Running Parallelism

●Accuracies of model GSR-R are categorized into normal and high-accuracy grades by model number as indicated in Table 8.

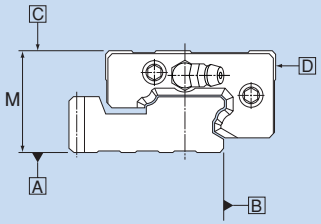

Fig. 15

Table 8 Accuracy Standard for GSR-R

Unit: mm

Model No.	Accuracy standard	Normal grade	High-accuracy grade
	Item	No symbol	H
25 30 35	Dimensional tolerance for height M	± 0.03	
	Running parallelism of surface C against surface A	ΔC (as shown in Fig. 16)	
	Running parallelism of surface D against surface B	ΔD (as shown in Fig. 16)	

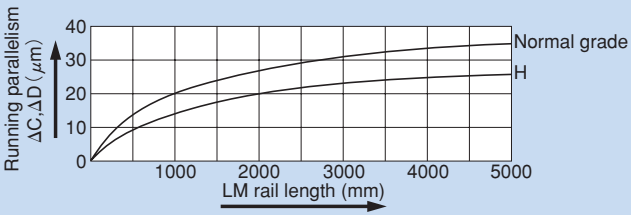

Fig. 16 LM Rail Length and Running Parallelism

●Accuracies of models SRS, RSR, RSR-W, RSR-Z, RSR-WZ, RSH and RSH-Z are categorized into normal, high-accuracy and precision grades by model number as indicated in Table 9.

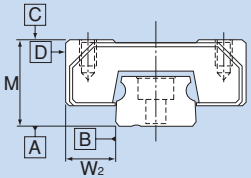

Fig. 17

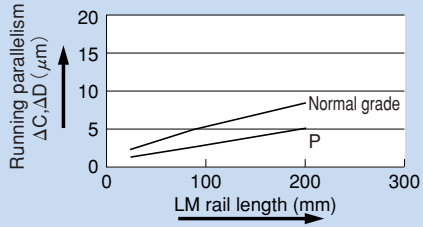

Fig. 18 LM Rail Length and Running Parallelism for Models RSR3 and 5

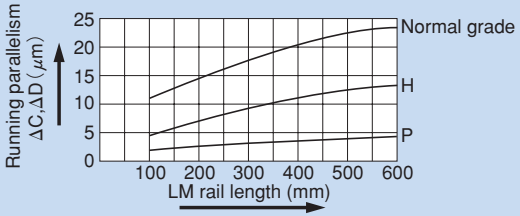

Fig. 19 LM Rail Length and Running Parallelism for Models RSR7 to 25

Table 9 Accuracy Standards for Models SRS, RSR, RSR-W, RSR-Z, RSR-WZ, RSH and RSH-Z Unit: mm

Model No.	Accuracy standard	Normal grade	High-accuracy grade	Precision grade
	Item	No symbol	H	P
3 5	Dimensional tolerance for height M	± 0.03	——	± 0.015
	Difference in height M	0.015	——	0.005
	Dimensional tolerance for width W_2	± 0.03	——	± 0.015
	Difference in width W_2	0.015	——	0.005
	Running parallelism of surface C against surface A	ΔC (as shown in Fig. 18)		
	Running parallelism of surface D against surface B	ΔD (as shown in Fig. 18)		
7 9 12 15 20 25	Dimensional tolerance for height M	± 0.04	± 0.02	± 0.01
	Difference in height M	0.03	0.015	0.007
	Dimensional tolerance for width W_2	± 0.04	± 0.025	± 0.015
	Difference in width W_2	0.03	0.02	0.01
	Running parallelism of surface C against surface A	ΔC (as shown in Fig. 19)		
	Running parallelism of surface D against surface B	ΔD (as shown in Fig. 19)		

●Accuracies of model MX are categorized into normal and precision grades by model number as indicated in Table 10.

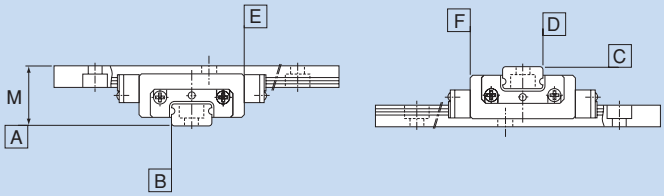

Fig. 20

Table 10 Accuracy Standard for Model MX

Unit: mm

Model No.	Accuracy standard	Normal grade	Precision grade
	Item	No symbol	P
5	Difference in height M	0.015	0.005
	Perpendicularity of surface D against surface B	0.003	0.002
	Running parallelism of surface E against surface B	ΔC (as shown in Fig. 21)	
	Running parallelism of surface F against surface D	ΔD (as shown in Fig. 21)	
7	Difference in height M	0.03	0.007
	Perpendicularity of surface D against surface B	0.01	0.005
	Running parallelism of surface E against surface B	ΔC (as shown in Fig. 22)	
	Running parallelism of surface F against surface D	ΔD (as shown in Fig. 22)	

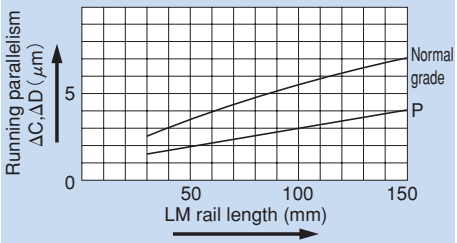

Fig. 21 LM Rail Length and Running Parallelism for Model MX5

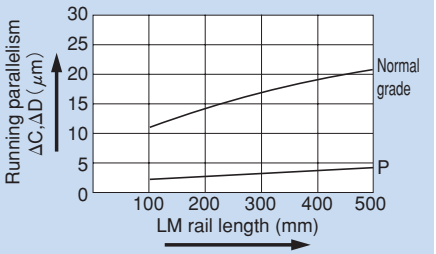

Fig. 22 LM Rail Length and Running Parallelism for Model MX7W