# Selecting a Type

### Types of LM Guides

THK offers a wide array of types and dimensions with LM Guides as standard so that you can select the optimal product for any application. With the unit structure of each model, you can easily obtain high running accuracy with no clearance simply by mounting the product on a plane surface with bolts. We have a proven track record and know-how in extensive applications with LM Guides.

		Туре		Specification	Load	Basic load rating (kN)	
	Classification			Table	capacity diagram	Basic dynamic load rating	Basic static load rating
			SSR-XW	▶⊠1-110		14.7 to 64.6	16.5 to 71.6
	Caged Ball LM Guide	التحتا	SSR-XV	▶⊠1-112		9.1 to 21.7	9.7 to 22.5
		<u>N</u>	SSR-XTB	▶⊠1-114		14.7 to 31.5	16.5 to 36.4
			SR-W	▶⊠1-212		13.8 to 411	20.5 to 537
			SR-M1W	▶⊠1-356		13.8 to 60.4	20.5 to 81.8
		التحتا	SR-V	▶⊠1-212	Ŧ	9.1 to 40.9	11.7 to 46.7
	Full-Complement Ball		SR-M1V	▶⊠1-356	→☆←	9.1 to 40.9	11.7 to 46.7
	EM Guides		SR-TB	▶⊠1-214	1	13.8 to 136	20.5 to 179
			SR-M1TB	▶⊠1-358		13.8 to 60.4	20.5 to 81.8
þ			SR-SB	▶⊠1-214		9.1 to 40.9	11.7 to 46.7
ial typ			SR- M1SB	▶⊠1-358		9.1 to 40.9	11.7 to 46.7
Rad			SR-MSV	▶⊠1-390		_	—
	for Special Environ- ments		SR-MSW	▶⊠1-390		_	_
			SVR-C	▶⊠1-128		48 to 260	68 to 328
		" - "	SVR-LC	▶⊠1-128		57 to 340	86 to 481
			SVR-R	▶⊠1-124		48 to 260	68 to 328
	Caged Ball LM Guides	التصتال	SVR-LR	▶⊠1-124	Ŧ	57 to 340	86 to 481
	for Machine Tools high-rigidity model for ultra-heavy loads	Ţ	SVR-CH	▶⊠1-134	→☆←	90 to 177	115 to 238
		N,	SVR-LCH	▶⊠1-134	T	108 to 214	159 to 312
			SVR-RH	▶⊠1-132		90 to 177	115 to 238
			SVR-LRH	▶⊠1-132		108 to 214	159 to 312

External dimensions (mm)				
Height	Width	Features	Major application	
24 to 48	34 to 70	Long service life, long-term      maintenance-free operation     Thin, compact design, large     radial load capacity	<ul> <li>Surface grinder table</li> <li>Tool grinder table</li> </ul>	
24 to 33	34 to 48	Low dust generation, low noise, Superb in planar running accuracy acceptable running sound Superb capability of Superb high sorbing mounting error	<ul> <li>Electric discharge machine</li> <li>Printed circuit board drilling machine</li> </ul>	
24 to 33	52 to 73	Smooth motion in all mounting orientations     Stainless steel type also available as standard	<ul> <li>Chip mounter</li> <li>High-speed transfer</li> </ul>	
24 to 135	34 to 250		<ul><li>equipment</li><li>Traveling unit of robots</li><li>Machining center</li></ul>	
24 to 48	34 to 70		<ul><li>NC lathe</li><li>Five axis milling machine</li></ul>	
24 to 48	34 to 70	Thin, compact design, large radial load capacity	<ul> <li>Conveyance system</li> <li>Mold guide of pressing machines</li> </ul>	
24 to 48	34 to 70	<ul> <li>Superb in planar running accuracy</li> <li>Superb capability of absorbing mounting error</li> </ul>	<ul> <li>Inspection equipment</li> <li>Testing machine</li> </ul>	
24 to 68	52 to 140	<ul> <li>Stainless steel type also available as standard</li> <li>Type M1, achieving max service temperature of 150°C, also available</li> </ul>	<ul> <li>Food-related machine</li> <li>Medical equipment</li> <li>3D measuring instrument</li> <li>Packaging machine</li> <li>Injection molding machine</li> <li>Woodworking machine</li> <li>Ultra precision table</li> <li>Semiconductor/liquid crystal manufacturing equipment</li> </ul>	
24 to 48	52 to 100			
24 to 48	52 to 100			
24 to 48	52 to 100			
24 to 28	34 to 42	<ul> <li>Minimum generation of outgases (water, organic matter)</li> <li>Small amount of particles generated</li> </ul>	<ul><li>Photolithography machine</li><li>Organic EL display</li></ul>	
24 to 28	34 to 42	<ul> <li>Can be used at high temperature (up to 150°C)</li> </ul>	<ul><li>manufacturing machine</li><li>lon implantation equipment</li></ul>	
31 to 75	72 to 170	<ul> <li>Long service life, long-term maintenance-free operation</li> <li>Low dust generation, low noise, acceptable running sound</li> </ul>	<ul> <li>Machining center</li> </ul>	
31 to 75	72 to 170	<ul> <li>Superbly high speed</li> <li>Smooth motion in all mounting orientations</li> <li>Ultra-heavy load capacity optimal for machine tools</li> </ul>	<ul> <li>NC lathe</li> <li>Grinding machine</li> <li>Five axis milling</li> </ul>	
31 to 75	50 to 126	<ul> <li>Thin, compact design, large radial load capacity</li> <li>High vibration resistance and impact resistance due to</li> </ul>	machine • Jig borer	
31 to 75	50 to 126	<ul><li>improved damping characteristics</li><li>Superb in planar running accuracy</li></ul>	<ul><li>Drilling machine</li><li>NC milling machine</li></ul>	
48 to 70	100 to 140	Long service life, long-term High vibration resistance maintenance-free operation and impact resistance Low dust generation, low noise, due to improved damping	<ul> <li>Horizontal milling machine</li> <li>Mold processing</li> </ul>	
48 to 70	100 to 140	acceptable running sound Superbly high speed Smooth motion in all mount-	<ul> <li>Graphite working machine</li> </ul>	
55 to 80	70 to 100	<ul> <li>ing orientations</li> <li>Ultra-heavy load capacity</li> <li>Has dimensions almost the same as that of the full-ball</li> </ul>	<ul> <li>Electric discharge machine</li> <li>Wire-cut electric</li> </ul>	
55 to 80	70 to 100	<ul> <li>optimal for machine tools</li> <li>Large radial load capacity</li> <li>type LM Guide model HSR, which is practically a global standard size</li> </ul>	discharge machine	



		Туре		Specification	Load	Basic load rating (kN)	
	Classification			Table	capacity diagram	Basic dynamic load rating	Basic static load rating
			NR-A	▶⊠1-228		33 to 479	84.6 to 1040
	Full-Complement	$\mathbb{U}^{\mathbb{V}}$	NR-LA	▶⊠1-228		44 to 599	113 to 1300
Type	Ball LM Guides	£	NR-B	▶⊠1-232	<b>↓</b>	33 to 479	84.6 to 1040
Radial Type	for Machine Tools high-rigidity model	10-7	NR-LB	▶⊠1-232	→Ľĭ← ↑	44 to 599	113 to 1300
	for ultra-heavy loads	I	NR-R	▶⊠1-224	•	33 to 479	84.6 to 1040
			NR-LR	▶⊠1-224		44 to 599	113 to 1300
		<u> </u>	SVS-C	▶⊠1-130		37 to 199	52 to 251
			SVS-LC	▶⊠1-130		44 to 261	66 to 368
			SVS-R	▶⊠1-126		37 to 199	52 to 251
/ type	Caged Ball LM Guides for Machine Tools high-rigidity model for ultra-heavy loads	تصال	SVS-LR	▶⊠1-126	_ <b>↓</b>	44 to 261	66 to 368
4-way		Vr	SVS-CH	▶⊠1-134	→ <u>`_</u> `+	69 to 136	88 to 182
		Noi	SVS-LCH	▶⊠1-134		83 to 164	122 to 239
			SVS-RH	▶⊠1-132		69 to 136	88 to 182
		ΥG	SVS-LRH	▶⊠1-132		83 to 164	122 to 239

#### Selecting a Type

External dimensions (mm)				
Height	Width	Features	Major application	
31 to 105	72 to 260			
31 to 105	72 to 260			
31 to 105	72 to 260	<ul> <li>Ultra-heavy load capacity optimal for machine tools</li> <li>High vibration resistance and impact resistance due to improved damping characteristics</li> </ul>		
31 to 105	72 to 260	Thin, compact design, large radial load capacity     Superb in planar running accuracy	<ul> <li>Machining center</li> <li>NC lathe</li> <li>Grinding machine</li> <li>Five axis milling machine</li> <li>Jig borer</li> <li>Dirlling machine</li> <li>NC milling machine</li> <li>Horizontal milling</li> </ul>	
31 to 105	50 to 200			
31 to 105	50 to 200			
31 to 75	72 to 170	<ul> <li>Long service life, long-term maintenance-free operation</li> <li>Low dust generation, low noise, acceptable running sound</li> </ul>		
31 to 75	72 to 170	Superbly high speed     Smooth motion in all mounting orientations	<ul> <li>machine</li> <li>Mold processing machine</li> </ul>	
31 to 75	50 to 126	Ultra-heavy load capacity optimal for machine tools     Low profile, compact 4-way type     High vibration resistance and impact resistance due to	Graphite working machine	
 31 to 75	50 to 126	<ul> <li>Fight vibration resistance and impact resistance due to improved damping characteristics</li> </ul>	Electric discharge machine     Wire-cut electric	
 48 to 70	100 to 140	Long service life, long-term maintenance-free operation Low dust generation, low High vibration resistance and impact resistance	<ul> <li>Wire-cut electric discharge machine</li> </ul>	
48 to 70	100 to 140	noise, acceptable running due to improved damping characteristics		
55 to 80	70 to 100	<ul> <li>Superbly high speed</li> <li>Smooth motion in all mounting orientations</li> <li>Has dimensions almost the same as that of the full-ball type LM Guide model HSR,</li> </ul>		
 55 to 80	70 to 100	optimal for machine tools standard size		



End bill         Link		Classification	Туре		Specification	Load capacity	Basic load Basic dynamic	rating (kN) Basic static
Perform         Caged Roller LM Guide- super ultra-heavy- load, high rigidity types         SRG-LA, LC         PB1-404           SRG-R, V         PB1-410           SRG-LR, LV         PB1-410           SRG-LR, LV         PB1-410           SRG-LR, LV         PB1-422           SRG-LR, LV         PB1-422           SRG-LR, LV         PB1-422           SRN-C         PB1-422           SRN-LC         PB1-422           SRN-LC         PB1-424           SRN-LC         PB1-424           SRN-LR         PB1-230           NRS-LA         PB1-230           NRS-LB         PB1-234           MRS-R         PB1-234           MRS-R         PB1-234           MRS-LR         PB1-234           MRS-LR         PB1-236           NRS-LR         PB1-236           MRS-LR         PB1-98           SHS-C         PB1-98           SHS-LC         PB1-98				, ypc	Table			
Caged Roller LM Guide- suber ultra-heavy load, high rigidity types         SRG-R, V         ▶ 81-410           SRG-LR, LV         ▶ 81-410           SRN-C         ▶ 81-422           SRN-LC         ▶ 81-422           SRN-LC         ▶ 81-424           SRN-LC         ▶ 81-4230           NRS-LA         ▶ 81-230           NRS-LB         ▶ 81-234           NRS-LR         ▶ 81-226           NRS-LR         ▶ 81-226           NRS-LR         ▶ 81-98           34.5 to 470         79.7 to 920           25.9 to 376         59.8 to 737           34.5 to 470         79.7 to 920 <td></td> <td></td> <td></td> <td>SRG-A, C</td> <td>▶⊠1-404</td> <td></td> <td>11.3 to 131</td> <td>25.8 to 266</td>				SRG-A, C	▶⊠1-404		11.3 to 131	25.8 to 266
Caged Roller LM Guide - super ultra-heavy- load, high rigidity types         SRG-LR, LV         >B1-420         SR-1432         26.7 to 601         63.8 to 1170           SRN-C         >B1-422         SRN-C         >B1-422         SR-100         59.1 to 131         119 to 266           76 to 278         165 to 599         59.1 to 131         119 to 266         76 to 278         165 to 599           SRN-LR         SRN-LR         >B1-424         SRN-LR			Wrr.	SRG-LA, LC	▶⊠1-404		26.7 to 278	63.8 to 599
Alternative         SRN-C         Full-422         59.1 to 131         119 to 266           Super ultra-heavy- load, high rigidity types         SRN-C         Full-422         59.1 to 131         119 to 266           SRN-LC         Full-424         SRN-LC         Full-424         59.1 to 131         119 to 266           SRN-LR         Full-424         SRN-LR         Full-424         76 to 278         165 to 599           Full-Complement LM Guides for Machine Tools high-rigidity model for ultra-heavy loads         NRS-A         Full-230         76 to 276         59.8 to 737           NRS-LB         NRS-LB         Full-226         NRS-LB         State 737         34.5 to 470         79.7 to 920           NRS-LR         NRS-LR         Full-226         NRS-LB         Full-226         14.2 to 205         24.2 to 320           SHS-C         SHS-C         Full-226         14.2 to 205         24.2 to 320         25.9 to 376         59.8 to 737           SHS-LC         Full-98         SHS-V         Full-98         14.2 to 205         24.2 to 320           Caged Ball LM Guide -         SHS-V         Full-100         14.2 to 205         24.2 to 320				SRG-R, V	▶⊠1-410		11.3 to 131	25.8 to 266
Super ultra-heavy- load, high rigidity types         SRN-C         ▶⊠1-422         →         59.1 to 131         119 to 266           SRN-LC         ▶⊠1-422         →         ↑         165 to 599         59.1 to 131         119 to 266           SRN-LC         ▶⊠1-422         SRN-R         ▶⊠1-422         ↑         115 to 601         256 to 1170           SRN-LR         ▶⊠1-422         NRS-A         ▶⊠1-230         115 to 601         256 to 1170           Full-Complement LM Guides for Machine Tools for Machine Tools for ultra-heavy loads         NRS-A         ▶⊠1-234         ↓         115 to 470         79.7 to 920           NRS-LR         ▶⊠1-234         NRS-R         ▶⊠1-234         ↓         ↓         14.2 to 205         24.2 to 320           NRS-LR         ▶Ш-98         SHS-C         ▶Ш-98         14.2 to 205         24.2 to 320           SHS-LC         ▶Ш-98         14.2 to 205         24.2 to 320         14.2 to 205         24.2 to 320			U [[]]	SRG-LR, LV	▶⊠1-410	L	26.7 to 601	63.8 to 1170
Image: style		super ultra-heavy-		SRN-C	▶⊠1-422	<b>→ Č</b> ←	59.1 to 131	119 to 266
Image: state			Nr.	SRN-LC	▶⊠1-422		76 to 278	165 to 599
Image: state of the s				SRN-R	▶⊠1-424		59.1 to 131	119 to 266
Image: book of the second se				SRN-LR	▶⊠1-424		76 to 278	165 to 599
Hore       Full-Complement       NRS-LA       NRS-LA       Maine 1230         Image: Stress of the stress			1 FT	SRW-LR	▶⊠1-432		115 to 601	256 to 1170
Full-Complement LM Guides for Machine Tools high-rigidity model for ultra-heavy loads       NRS-B       NRS-B       25.9 to 376       59.8 to 737         NRS-LB       NRS-LB       NRS-LB       MI-226       34.5 to 470       79.7 to 920         NRS-LR       NRS-LR       MI-226       34.5 to 470       79.7 to 920         SHS-LR       MRS-R       MI-226       14.2 to 205       24.2 to 320         SHS-LC       MI-98       17.2 to 253       31.9 to 408         Caged Ball LM Guide -       SHS-V       MI-100       38.8 to 205       24.2 to 320				NRS-A	▶⊠1-230		25.9 to 376	59.8 to 737
LM Guides for Machine Tools high-rigidity model for ultra-heavy loads       NRS-B       ▶⊡1-234       →       25.9 to 376       59.8 to 737         NRS-LB       NRS-LB       NRS-R       ▶⊡1-226       →       34.5 to 470       79.7 to 920         NRS-LR       NRS-LR       ▶⊡1-226       34.5 to 470       79.7 to 920         SHS-LC       ▶⊡1-98       14.2 to 205       24.2 to 320         Caged Ball LM Guide -       SHS-V       ▶⊡1-100       ↓       14.2 to 205       24.2 to 320			l n r an r	NRS-LA	▶⊠1-230	<b>↓</b>	34.5 to 470	79.7 to 920
Caged Ball       SHS-V       ▶⊠1-98       14.2 to 205       24.2 to 320         Caged Ball       SHS-V       ▶⊠1-98       17.2 to 253       31.9 to 408	0	LM Guides	<u>ба</u>	NRS-B	▶⊠1-234		25.9 to 376	59.8 to 737
Caged Ball       SHS-V       ▶⊠1-98       14.2 to 205       24.2 to 320         Caged Ball       SHS-V       ▶⊠1-98       17.2 to 253       31.9 to 408	d type	for Machine Tools	וייםיטן	NRS-LB	▶⊠1-234	┝╋┟▁╜┯╸	34.5 to 470	79.7 to 920
Caged Ball LM Guide -       SHS-V       ▶⊠1-98       14.2 to 205       24.2 to 320         11.2 to 205       24.2 to 320         11.2 to 205       24.2 to 320         11.2 to 205       24.2 to 320	lal loa			NRS-R	▶⊠1-226		25.9 to 376	59.8 to 737
Caged Ball LM Guide -       SHS-V       ▶⊠1-98       14.2 to 205       24.2 to 320         11.2 to 205       24.2 to 320         11.2 to 205       24.2 to 320         11.2 to 205       24.2 to 320	iy equ			NRS-LR	▶⊠1-226		34.5 to 470	79.7 to 920
Caged Ball LM Guide -     SHS-LC     ▶⊠1-98     17.2 to 253     31.9 to 408	4-wa		Ū	SHS-C	▶⊠1-98		14.2 to 205	24.2 to 320
Caged Ball LM Guide -			لي المحر	SHS-LC	▶⊠1-98		17.2 to 253	31.9 to 408
		LM Guide -		SHS-V	▶⊠1-100	↓ ↓	14.2 to 205	24.2 to 320
rigidity types SHS-LV ► 17.2 to 253 31.9 to 408		heavy-load, high rigidity types		SHS-LV	▶⊠1-100	1	17.2 to 253	31.9 to 408
SHS-R ►∎1-102 14.2 to 128 24.2 to 197				SHS-R	▶⊠1-102		14.2 to 128	24.2 to 197
SHS-LR ► 1-102 36.8 to 161 64.7 to 259				SHS-LR	▶⊠1-102		36.8 to 161	64.7 to 259

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External dim	ensions (mm)	E. M. M.	Major application	
Height	Width	Features	Major application	
24 to 70	47 to 140			
30 to 120	63 to 250	<ul> <li>Long service life, long-term maintenance-free operation</li> <li>Low noise, acceptable running sound</li> <li>Superbly high speed</li> </ul>		
24 to 80	34 to 100	<ul> <li>Smooth motion due to prevention of rollers from skewing</li> <li>Ultra-heavy load capacity optimal for machine tools</li> </ul>		
30 to 90	44 to 126			
44 to 63	100 to 140		<ul> <li>Machining center</li> <li>NC lathe</li> <li>Grinding machine</li> </ul>	
44 to 75	100 to 170	<ul> <li>Long service life, long-term maintenance-free operation</li> <li>Low noise, acceptable running sound</li> </ul>	<ul> <li>Five axis milling machine</li> </ul>	
44 to 63	70 to 100	<ul> <li>Superbly high speed</li> <li>Smooth motion due to prevention of rollers from skewing</li> </ul>	<ul> <li>Jig borer</li> <li>Drilling machine</li> <li>NC milling machine</li> </ul>	
44 to 75	70 to 126	<ul> <li>Ultra-heavy load capacity optimal for machine tools</li> <li>Low center of gravity, ultra-high rigidity</li> </ul>	<ul> <li>Horizontal milling machine</li> </ul>	
70 to 150	135 to 300		<ul> <li>Mold processing machine</li> <li>Graphite working</li> </ul>	
31 to 105	72 to 260		<ul> <li>machine</li> <li>Electric discharge</li> <li>machine</li> </ul>	
31 to 105	72 to 260		machine • Wire-cut electric discharge machine	
31 to 105	72 to 260	<ul> <li>Ultra-heavy load capacity optimal for machine tools</li> <li>High vibration resistance and impact resistance due to</li> </ul>		
31 to 105	72 to 260	improved damping characteristics Low-Profile compact design, 4-way equal load		
31 to 105	50 to 200			
31 to 105	50 to 200			
24 to 90	47 to 170		<ul> <li>Machining center</li> <li>NC lathe</li> <li>XYZ axes of heavy cutting machine tools</li> <li>Grinding head feeding</li> </ul>	
24 to 90	47 to 170		<ul> <li>axis of grinding machines</li> <li>Components requiring a heavy moment and high accuracy</li> </ul>	
24 to 90	34 to 126	Long service life, long-term maintenance-free operation Low dust generation, low noise, acceptable running sound Superbly high speed Smooth motion in all mounting orientations Heavy load, high rigidity Has dimensions almost the same as that of the full-ball type LM Guide model HSR, which is practically a global standard size Superb capability of absorbing mounting error	Long service life, long-term maintenance-free operation Low dust generation, low noise, acceptable running sound Superbly high speed Smooth motion in all mounting orientations	<ul><li>machine</li><li>Gantry five axis milling machine</li></ul>
24 to 90	34 to 126		<ul> <li>Z axis of electric discharge machines</li> <li>Wire-cut electric discharge machine</li> <li>Car elevator</li> <li>Food-related machine</li> </ul>	
28 to 80	34 to 100		<ul> <li>Testing machine</li> <li>Vehicle doors</li> <li>Printed circuit board drilling machine</li> <li>ATC</li> </ul>	
28 to 80	34 to 100		<ul> <li>Construction equipment</li> <li>Shield machine</li> <li>Semiconductor/liquid crystal manufacturing equipment</li> </ul>	



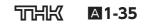
	Classification	Туре		Specification	Load	Basic load	
	Classification			Table	capacity diagram	Basic dynamic load rating	Basic static load rating
			HSR-A	▶⊠1-186		10.9 to 304	15.7 to 355
			HSR-M1A	▶⊠1-342		10.9 to 53.9	15.7 to 70.2
			HSR-LA	▶⊠1-186		23.9 to 367	35.8 to 464
		บเซิ	HSR-M1LA	▶⊠1-342		23.9 to 65	35.8 to 91.7
			HSR-CA	▶⊠1-196		19.8 to 304	27.4 to 355
			HSR-HA	▶⊠1-196		23.9 to 518	35.8 to 728
			HSR-B	▶⊠1-188		10.9 to 304	15.7 to 355
	Full-Complement		HSR-M1B	▶⊠1-344		10.9 to 53.9	15.7 to 70.2
	Ball LM Guide - heavy-load, high		HSR-LB	▶⊠1-188		23.9 to 367	35.8 to 464
	rigidity types	152	HSR-M1LB	▶⊠1-344		23.9 to 65	35.8 to 91.7
			HSR-CB	▶⊠1-198	+ + ↑	19.8 to 304	27.4 to 355
be	4-way equal load type		HSR-HB	▶⊠1-198		23.9 to 518	35.8 to 728
oad ty			HSR-R	▶⊠1-192		1.08 to 304	2.16 to 355
qual I			HSR-M1R	▶⊠1-346		10.9 to 53.9	15.7 to 70.2
vay e			HSR-LR	▶⊠1-192		23.9 to 367	35.8 to 464
4-1			HSR-M1LR	▶⊠1-346		23.9 to 65	35.8 to 91.7
			HSR-HR	▶⊠1-200		441 to 518	540 to 728
	LM Guide for Medium-to-Low Vacuum		HSR-M1VV	▶⊠1-382		10.9	15.7
	Full-ball LM Guide -	Ĩ	HSR-YR	▶⊠1-194		10.9 to 195	15.7 to 228
	side mount types	<u>r</u>	HSR-M1YR	▶⊠1-348		10.9 to 53.9	15.7 to 70.2
		Ng.	JR-A	▶⊠1-310		27.6 to 121	36.4 to 146
	Full-Complement LM Guides - special LM rail types	t <u>z</u> ili	JR-B	▶⊠1-310	→ <u></u> → <u></u> ↑	27.6 to 121	36.4 to 146
		W <sub>T</sub>	JR-R	▶⊠1-310		27.6 to 121	36.4 to 146

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Selecting a Type

External dimensions (mm)		E. J. J.	Major application	
Height	Width	Features	Major application	
24 to 110	47 to 215			
24 to 48	47 to 100		<ul> <li>Machining center</li> </ul>	
30 to 110	63 to 215		<ul> <li>NC lathe</li> <li>XYZ axes of heavy cutting ma-</li> </ul>	
30 to 48	63 to 100		chine tools <ul> <li>Grinding head feeding axis</li> </ul>	
30 to 110	63 to 215		of grinding machines • Components requiring a	
30 to 145	63 to 350		heavy moment and high ac- curacy	
24 to 110	47 to 215	- Llows lood high rigidity	<ul><li>NC milling machine</li><li>Horizontal milling machine</li></ul>	
24 to 48	47 to 100	<ul> <li>Heavy load, high rigidity</li> <li>Practically a global standard size</li> <li>Superb capability of absorbing mounting error</li> </ul>	Gantry five axis milling ma- chine	
30 to 110	63 to 215	<ul> <li>Stainless steel type also available as standard</li> <li>Type M1, achieving max service temperature of 150°C, also available</li> </ul>	• Z axis of electric discharge machines	
30 to 48	63 to 100	<ul> <li>Type M2, with high corrosion resistance, also available (Basic dynamic load rating: 2.33 to 5.57 kN)</li> </ul>	Wire-cut electric discharge machine	
30 to 110	63 to 215	(Basic static load rating: 2.03 to 5.16 kN)	<ul> <li>Car elevator</li> <li>Food-related machine</li> <li>Testing machine</li> <li>Vehicle doors</li> </ul>	
30 to 145	63 to 350			
11 to 110	16 to 156		Printed circuit board drilling machine	
28 to 55	34 to 70		<ul><li>ATC</li><li>Construction equipment</li></ul>	
30 to 110	44 to 156		<ul><li>Shield machine</li><li>Semiconductor/liquid crystal</li></ul>	
30 to 55	44 to 70		manufacturing equipment	
120 to 145	250 to 266			
28	34	<ul> <li>Can be used in various environments at atmospheric pressure to vacuum (10<sup>3</sup> [Pa])</li> <li>Allows baking temperature of 200°C* at a maximum</li> <li>If the baking temperature exceeds 100°C, multiply the basic load rating with the temperature coefficient.</li> </ul>	<ul> <li>Medical equipment</li> <li>Semiconductor/liquid crystal manufacturing equipment</li> </ul>	
28 to 90	33.5 to 124.5	<ul> <li>Easy mounting and reduced mounting height when using 2 units opposed to each other</li> <li>Superb capability of absorbing mounting error</li> <li>Stainless steel type also</li> </ul>	machine tools <ul> <li>Z axis of woodworking machines</li> </ul>	
 28 to 55	33.5 to 69.5	since the side faces of the LM block have mounting holes Heavy load, high rigidity available as standard Type M1, achieving max service temperature of 150°C, also available	<ul> <li>Z axis of measuring instruments</li> <li>Components opposed to each other</li> </ul>	
61 to 114	70 to 140		<ul> <li>Automated warehouse</li> <li>Garage</li> <li>Gantry robot</li> <li>FMS traveling rail</li> </ul>	
61 to 114	70 to 140	<ul> <li>Since the central part of the LM rail is thinly structured, the LM Guide is capable of absorbing an error and achieving smooth motion if the parallelism between the two axes is poor</li> <li>Since the LM rail has a highly rigid sectional shape, it can be used as a structural member</li> </ul>	<ul> <li>Welding machine</li> <li>Lifter</li> <li>Crane</li> </ul>	
65 to 124	48 to 100		<ul> <li>Forklift</li> <li>Coating machine</li> <li>Shield machine</li> <li>Stage setting</li> </ul>	

LM Guide



				Specification	Load	Basic load rating (kN)	
	Classification	Туре		Table	capacity diagram	Basic dynamic load rating	Basic static load rating
	Caged Ball Cross LM Guide		SCR	▶⊠1-168	→ ॖ	36.8 to 253	64.7 to 408
	Full-Complement LM Guide orthogonal type		CSR	▶⊠1-296		10.9 to 100	15.7 to 135
	Caged Ball LM Guide -	1 L	SHW-CA	▶⊠1-142		4.31 to 70.2	5.66 to 91.4
ad type	wide, low center of gravity types		SHW-CR, HR	▶⊠1-144	+ <u>+</u> † +	4.31 to 70.2	5.66 to 91.4
y equal lo	Full-Complement Ball LM Guide - wide, low center of gravity types	Kai	HRW-CA	▶⊠1-242		5.53 to 80.3	9.1 to 109
4-wa		1	HRW-CR, LRM	▶⊠1-244		3.29 to 62.4	7.16 to 86.3
	Full-ball Straight - Curved Guide		HMG	▶⊠1-326	→ <u></u> ↑	2.56 to 66.2	Straight sec- tion 4.23 to 66.7 Curved sec- tion 0.44 to 36.2
	Caged Ball LM Guides Finite stroke	, ji	EPF	▶⊠1-176	→ * ↑ *	0.90 to 3.71	1.60 to 5.88
	Full-Complement	<sup>V</sup> IL-DI	HR, HR-T	▶⊠1-264	↓ → \□ □ ← ↑	2.82 to 226	3.48 to 232
Ð	Ball LM Guide - separate types		GSR-T	▶⊠1-276	+ →=:::-	8.42 to 37	9.77 to 39.1
igns		יטיבי	GSR-V	▶⊠1-276	t	6.51 to 15.5	6.77 to 15.2
Interchangeable designs	Full-Complement Ball LM Guides - LM rail-rack intergrated type		GSR-R	▶⊠1-284	↓ +5112+- †	15.5 to 37	15.2 to 39.1

Selecting a Type

External dimensions (mm)			Major application		
Height	Width	Features	Major application		
70 to 180	88 to 226	<ul> <li>A compact XY structure is allowed due to an XY orthogonal, single-piece LM block</li> <li>Since a saddle-less structure is allowed, the machine can be lightweighted and compactly designed</li> <li>Long service life, long-term maintenance-free operation</li> <li>Low dust generation, low noise, acceptable running sound</li> <li>Superbly high speed</li> </ul>	<ul> <li>Low center of gravity, precision XY table</li> <li>NC lathe</li> <li>Optical measuring instrument</li> <li>Automatic lathe</li> <li>Inspection equipment</li> <li>Cartesian coordinate</li> <li>Wire-cut electric discharge machine</li> <li>Hollow table</li> <li>Printed circuit board assembler</li> <li>Machine tool table</li> <li>Electric discharge machine</li> </ul>		
47 to 118	38.8 to 129.8	<ul> <li>A compact XY structure is allowed due to an XY orthogonal, single-piece LM block</li> <li>Since a saddle-less structure is allowed, the machine can be lightweighted and compactly designed</li> </ul>	Bonding machine machining center		
12 to 50	40 to 162	<ul> <li>Long service life, long-term maintenance-free operation</li> <li>Low dust generation, low noise, acceptable running sound</li> </ul>	Z axis of IC printed     APC     circuit board drilling     Semiconductor/liquid		
12 to 50	30 to 130	<ul> <li>Superbly high speed</li> <li>Smooth motion in all mounting orientations</li> <li>Wide, low center of gravity, space saving structure</li> <li>Stainless steel type also available as standard</li> </ul>	<ul> <li>machine</li> <li>crystal manufacturing</li> <li>Z axis of small electric</li> <li>equipment</li> </ul>		
17 to 60	60 to 200	<ul> <li>4-way equal load, thin and highly rigid</li> <li>Wide, low center of gravity, space action attraction</li> </ul>	Machining center     NC lathe     Robot     Wire-cut electric		
12 to 50	30 to 130	<ul> <li>Stainless steel type also available as standard</li> </ul>	discharge machine		
24 to 90	47 to 170	<ul> <li>Freedom of design</li> <li>Cost reduction through simplified structure</li> </ul>	Large swivel base     Pandulum vehicle for railroad     Medical equipment     Pantagraph     Control unit     Coptical measuring machine     Tool grinder     X-Ray machine     Control unit     Control unit		
8 to 16	17 to 32	<ul> <li>Caged ball effect using a cage</li> <li>Smooth movement with minimal rolling variation</li> <li>4-groove construction in a compact body</li> </ul>	<ul> <li>Semiconductor manufacturing equipment</li> <li>Medical equipment</li> <li>Inspection equipment</li> <li>Industrial machinery</li> </ul>		
8.5 to 60	18 to 125	<ul> <li>Low-Profile high rigidity, space saving structure</li> <li>Interchangeable with Cross-Roller Guide</li> <li>Preload can be adjusted</li> <li>Stainless steel type also available as standard</li> </ul>	<ul> <li>XYZ axes of electric discharge machine</li> <li>Precision table</li> <li>XZ axes of NC lathe</li> <li>Assembly robot</li> <li>Conveyance system</li> <li>Machining center</li> <li>Wire-cut electric discharge machine</li> <li>Tool changer</li> <li>Woodworking machine</li> </ul>		
20 to 38	32 to 68	<ul> <li>LM block and LM rail are both interchangeable</li> <li>Preload can be adjusted</li> </ul>			
20 to 30	32 to 50	<ul> <li>Capable of absorbing vertical level error and horizontal tolerance for parallelism</li> </ul>	Various conveyance systems     Automated warehouse     Automated warehouse     Suida distribution     Suida distres     Suida distribution     Suida distribution     Suida distri		
30 to 38	59.91 to 80.18	<ul> <li>LM rail-rack integrated design eliminates assembly and adjustment work</li> <li>LM rail-rack integrated design enables a space-saving structure to be achieved</li> <li>Capable of supporting long strokes</li> </ul>	ATC     Car washing machine     Door closing device		

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				0	Load	Basic load	rating (kN)
	Classification	Туре		Specification Table	capacity diagram	Basic dynamic load rating	Basic static load rating
			SRS-S			1.09 to 4.5	0.964 to 3.39
		l	SRS-M	▶⊠1-158		0.439 to 16.5	0.468 to 20.2
	Caged Ball		SRS-N		Ļ	0.515 to 9.71	0.586 to 8.55
	LM Guides		SRS-WS			1.38 to 6.64	1.35 to 5.94
		IG	SRS-WM	▶⊠1-160		0.584 to 9.12	0.703 to 8.55
			SRS-WN			0.746 to 12.4	0.996 to 12.1
			RSR-M	▶⊠1-254		0.18 to 8.82	0.27 to 12.7
Sec	Full-Complement		RSR-M1V	▶⊠1-366		1.47 to 8.82	2.25 to 12.7
Miniature types	Ball LM Guides		RSR-N	▶⊠1-254		0.3 to 14.2	0.44 to 20.6
iniatu			RSR-M1N	▶⊠1-366	↓ → ? ? ←	2.6 to 14.2	3.96 to 20.6
Σ	Full-Complement		RSR-WM/WV	▶⊠1-254		0.25 to 6.66	0.47 to 9.8
			RSR-M1WV	▶⊠1-368		2.45 to 6.66	3.92 to 9.8
	Ball LM Guide - wide types	الثيبي	RSR-WN	▶⊠1-254	1	0.39 to 9.91	0.75 to 14.9
			RSR-M1WN	▶⊠1-368		3.52 to 9.91	5.37 to 14.9
	Full Complement Ball LM Guide - orthogonal type	Ţ.	МХ	▶⊠1-302		0.59 to 2.04	1.1 to 3.21
Circular arc types	Full-Complement Ball LM Guides	Ĩ	HCR	▶⊠1-318	→ ٹ ←	4.7 to 141	8.53 to 215
Self-aligning types	Full-Complement Ball LM Guides	NE	NSR-TBC	▶⊠1-332	→ ← ↑	9.41 to 90.8	18.6 to 152

LM Guide

#### **Point of Selection**

Selecting a Type

External dime	ensions (mm)		Major application			
Height	Width	Features				
8 to 16	17 to 32		IC/LSI manufacturing machine     Medical equipment     Electronic components			
6 to 25	17 to 48	<ul> <li>Long service life, long-term maintenance-free operation</li> </ul>				
6 to 16	12 to 32	<ul> <li>Low dust generation, low noise, acceptable running sound</li> <li>Superbly high speed</li> </ul>	<ul> <li>Hard disc drive</li> <li>Slide unit of OA equipment</li> <li>of electron microscope</li> <li>Optical stage</li> <li>Stepper</li> </ul>			
9 to 16	25 to 60	<ul> <li>Superbly high speed</li> <li>Smooth motion in all mounting orientations</li> <li>Stainless steel type also available</li> </ul>	Wafer transfer equipment     Plotting machine     Feed mechanism of IC			
6.5 to 16	17 to 60	<ul><li>as standard</li><li>Lightweight and compact</li></ul>	Printed circuit board assembly table     Inspection equipment			
4 to 25	8 to 46	<ul> <li>Stainless steel type also available</li> </ul>				
10 to 25	20 to 46	<ul> <li>as standard</li> <li>Long type with increased load capacity also offered as standard</li> </ul>	IC/LSI manufacturing machine			
4 to 25	8 to 46	• Type M1, achieving max service	Hard disc drive Slide unit of OA equipment Wafer transfer equipment			
10 to 25	20 to 46	available	<ul> <li>Printed circuit board assembly table</li> <li>Medical equipment</li> </ul>			
4.5 to 16	12 to 60	<ul> <li>Stainless steel type also available</li> </ul>	Electronic components of electron microscope     Optical stage     Stepper     Plotting machine     Feed mechanism of IC bonding machine			
12 to 16	30 to 60	<ul> <li>as standard</li> <li>Long type with increased load capacity also offered as standard</li> </ul>				
4.5 to 16	12 to 60	<ul> <li>Type M1, achieving max service temperature of 150°C, also</li> </ul>	Inspection equipment			
12 to 16	30 to 60	available				
10 to 14.5	15.2 to 30.2	<ul> <li>A compact XY structure is allowed due to an XY orthogonal, single-piece LM block</li> <li>Stainless steel type also available as standard</li> </ul>	<ul> <li>IC/LSI manufacturing machine</li> <li>Inspection equipment</li> <li>Slide unit of OA equipment</li> <li>Wafer transfer equipment</li> <li>Wafer transfer</li> <li>equipment</li> <li>Electronic components of electron microscope</li> <li>Optical stage</li> </ul>			
18 to 90	39 to 170	LM block placed in the loading point • Large circular motion easily achieved				
40 to 105	70 to 175		<ul> <li>XY axes of ordinary industrial machinery</li> <li>Various conveyance systems</li> <li>Automated warehouse</li> <li>Palette changer</li> <li>Automatic coating machine</li> <li>Various welding machines</li> </ul>			



