

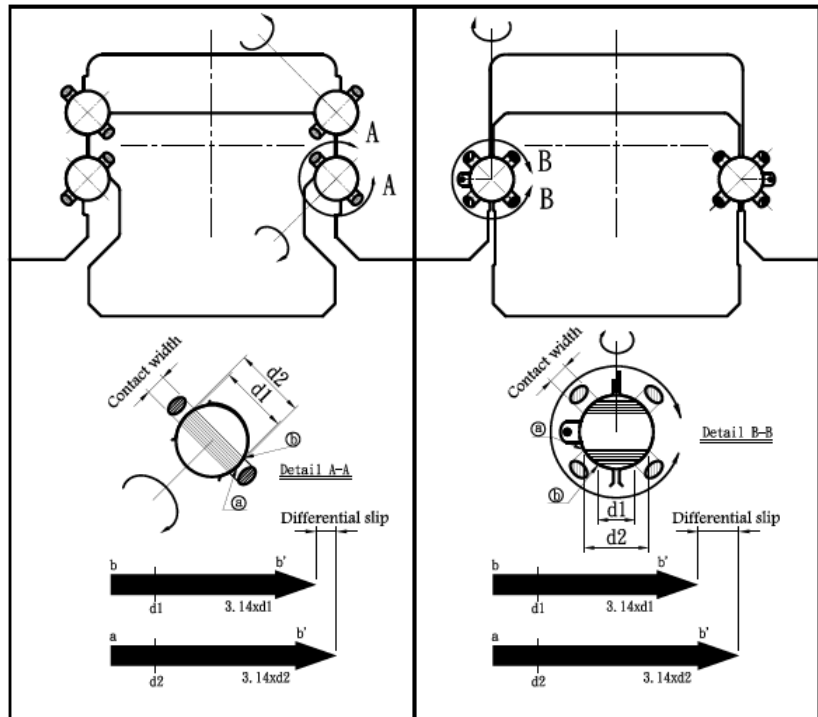
Linear Guide

All technical data friendly supported by TBI Motion

The Characteristics of H&T Linear Guide

The contact table of four-row design with equal load rating and two-row Gothic design.

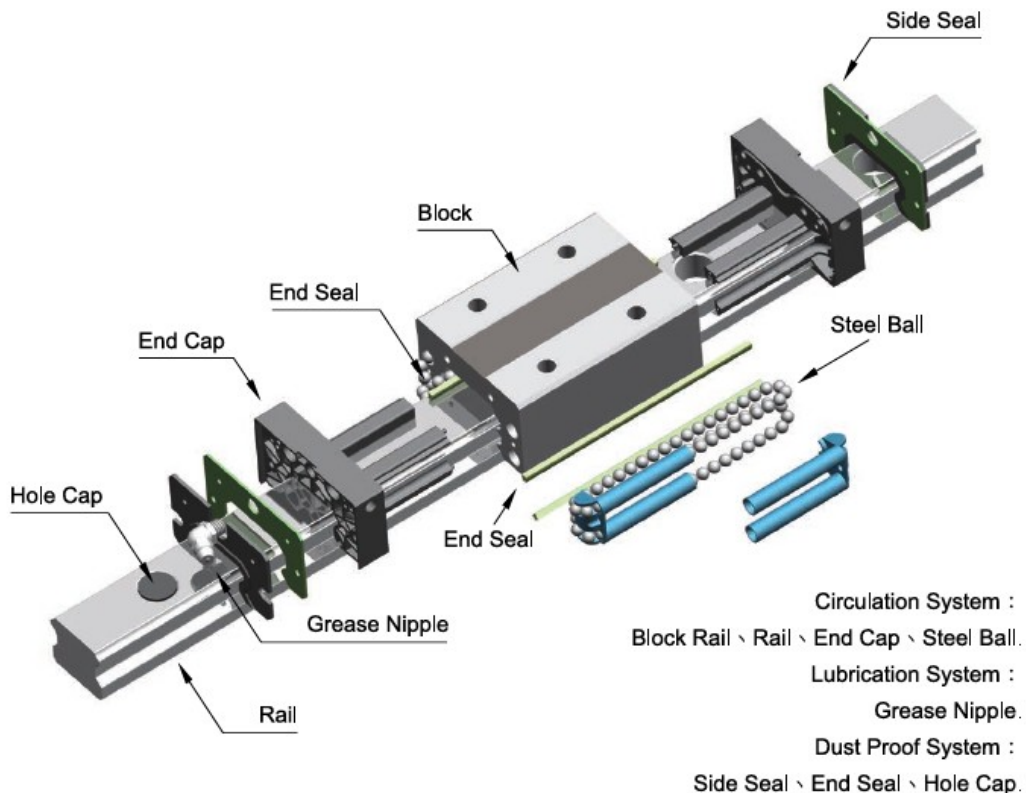
As shown in the diagrams, each time the ball rolls, a slip occurs in an amount equal to the difference between the circumferences of the inner and outer surfaces of the ball in contact with the raceway (πd_1) and (πd_2). (This slip is called the differential slip). When the circumferential difference is too large, a slip occurs when the ball rolls. The friction coefficient between the ball and the raceway is several times greater when slip occurs than when there is no slip and frictional resistance increases substantially. Even under a preload or regular load, the ball and raceway contact one another at two points in the loading direction, as shown. Thus the difference between d_1 and d_2 can be small, as can the differential slip. This design gives rise to a smooth rolling motion.



Four-Row Equal Load Rating Design

Two-Row Gothic Design

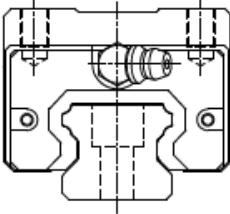
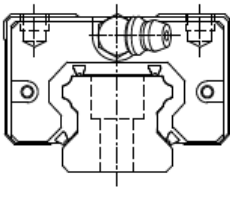
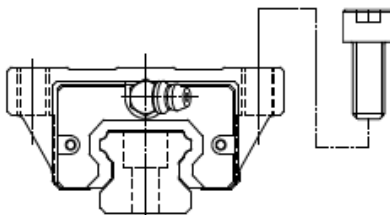
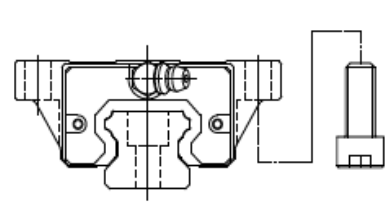
The Structure of TR-Series



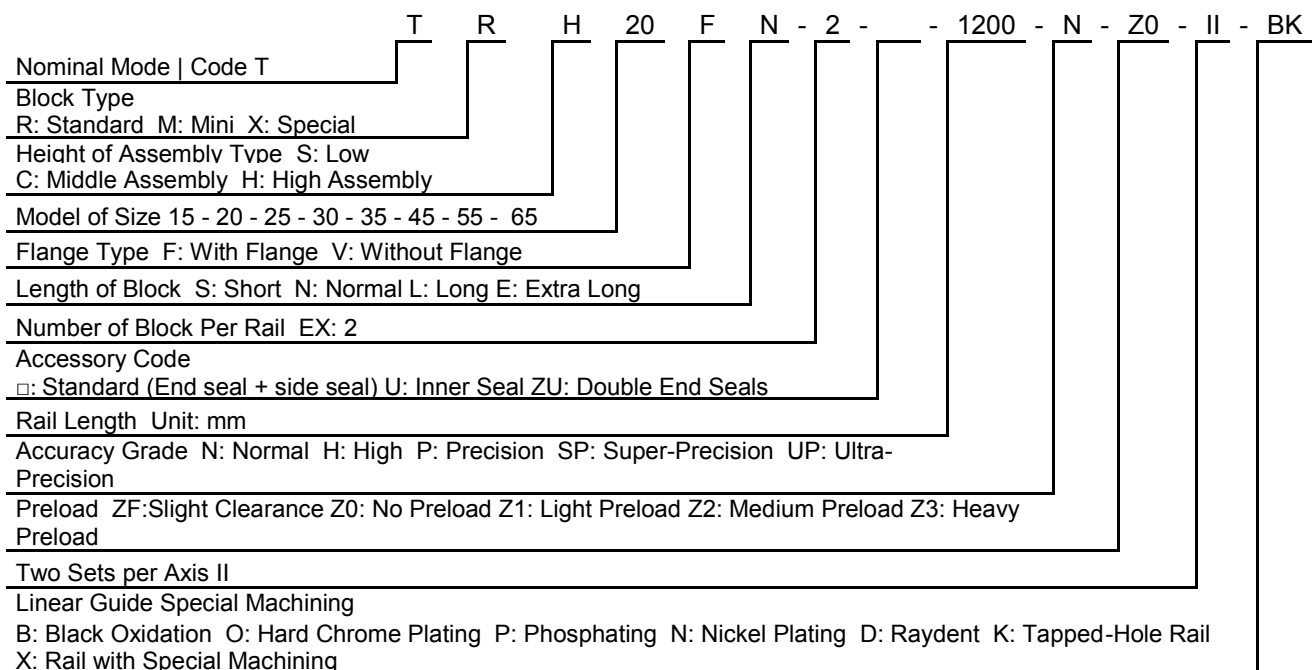
TR-Series

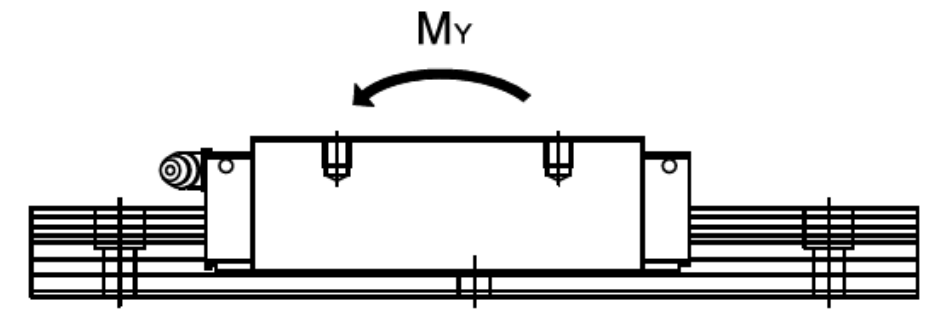
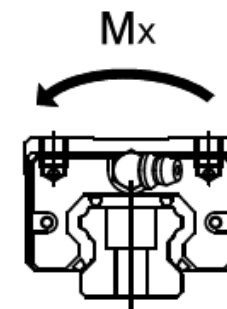
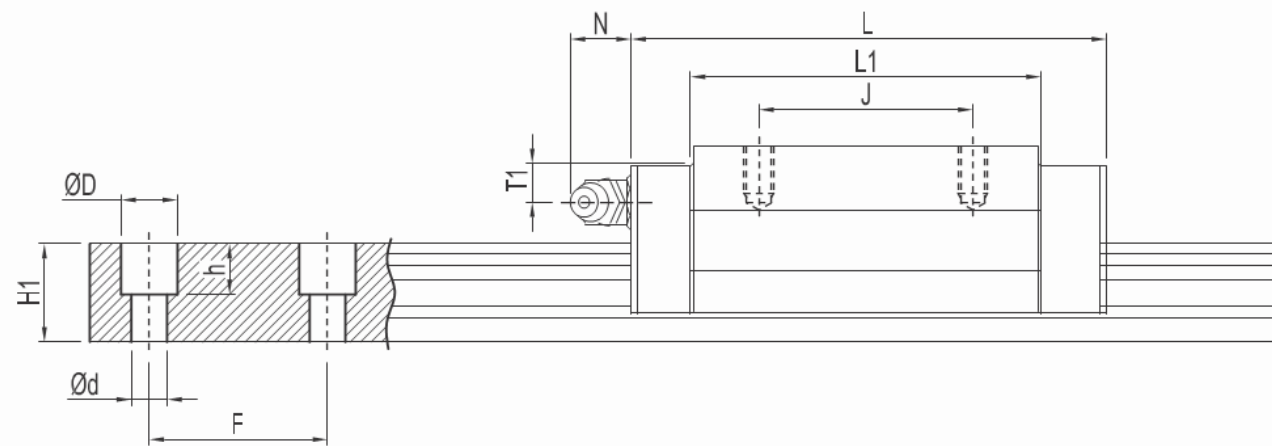
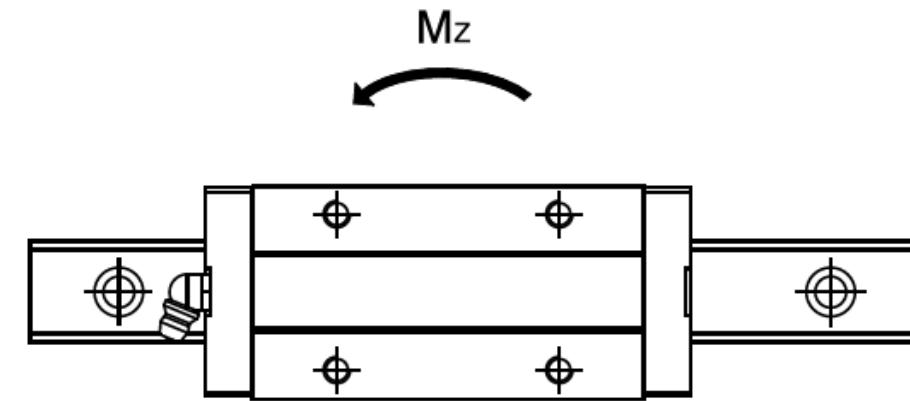
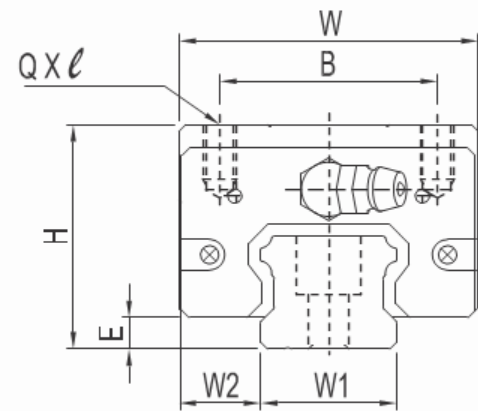
(Block Types)

H&T offers flange and square types of flange. The assembly height and category lists as below:

Type	Model	Shape	Height	Rail Length	Main Application
Square	TRH-V TRH-C		28 ↓ 90	100 ↓ 4000	<ul style="list-style-type: none"> • Machine Centers • NC Lathes • Food Machines • Grinding Machines • CNC Machines • Heavy Cutting Machines • Punching Machines • Injection Molding Machines • Automation Equipment • Transportation Equipment • Sealing Machines
	TRS-V		24 ↓ 60	100 ↓ 4000	
Flange	TRH-F		24 ↓ 90	100 ↓ 4000	
	TRS-F		24 ↓ 60	100 ↓ 4000	

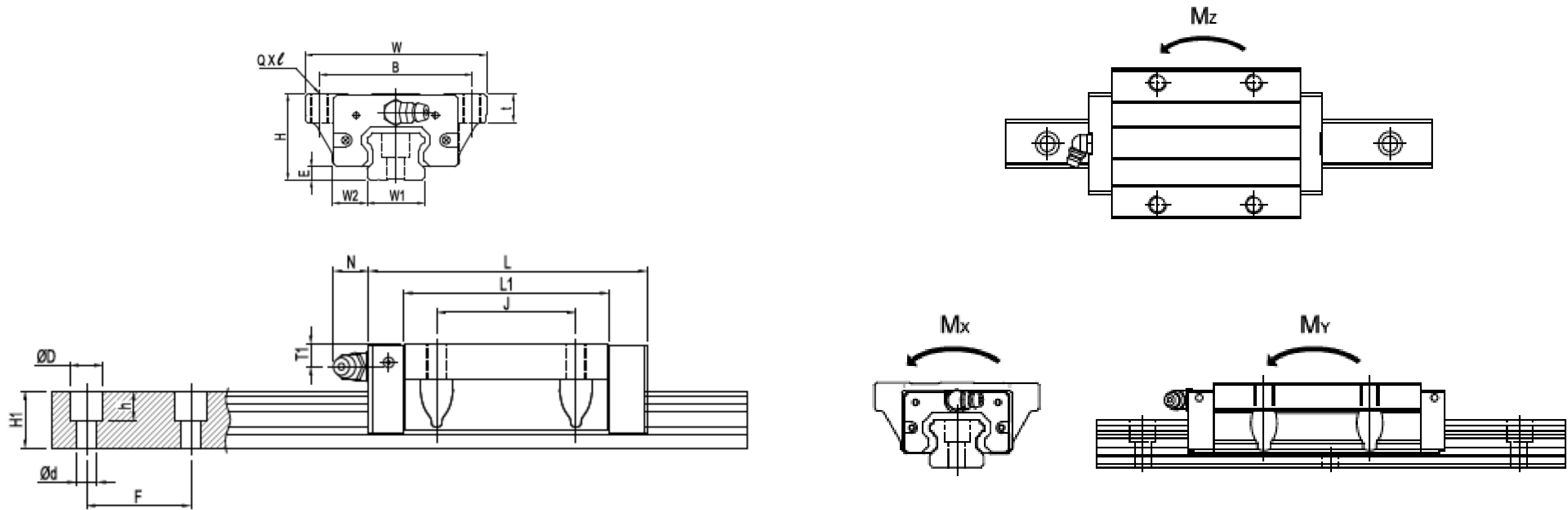
Model Number for TR Rails





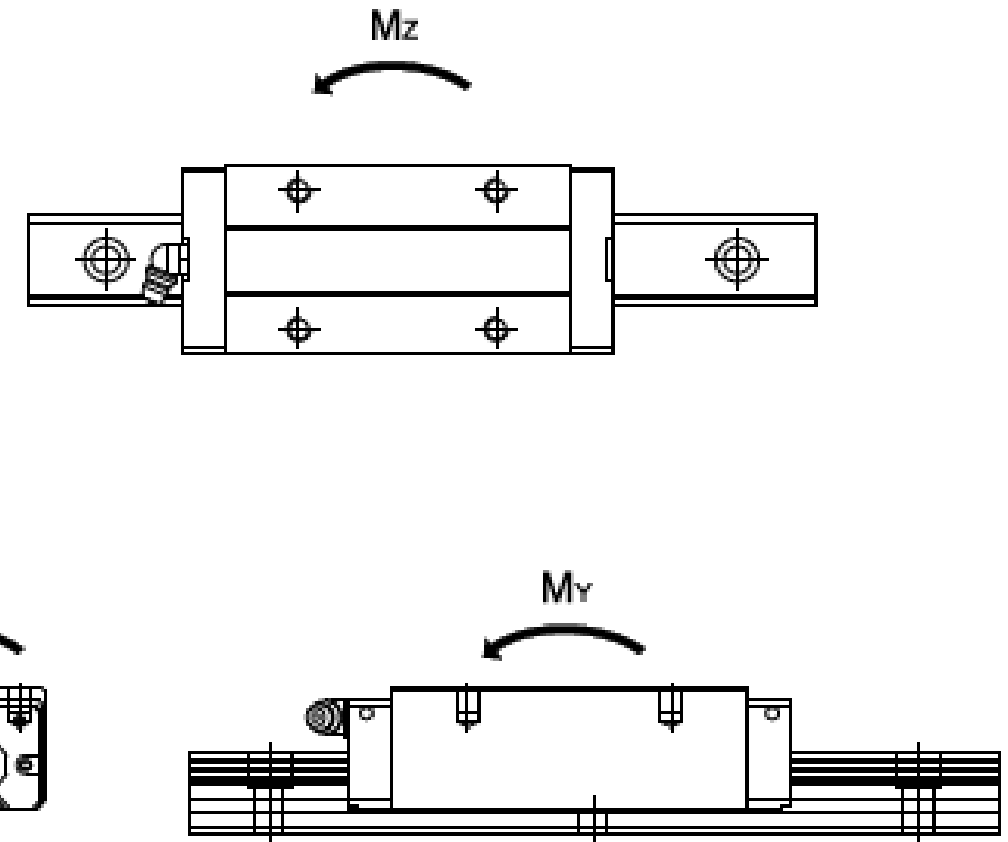
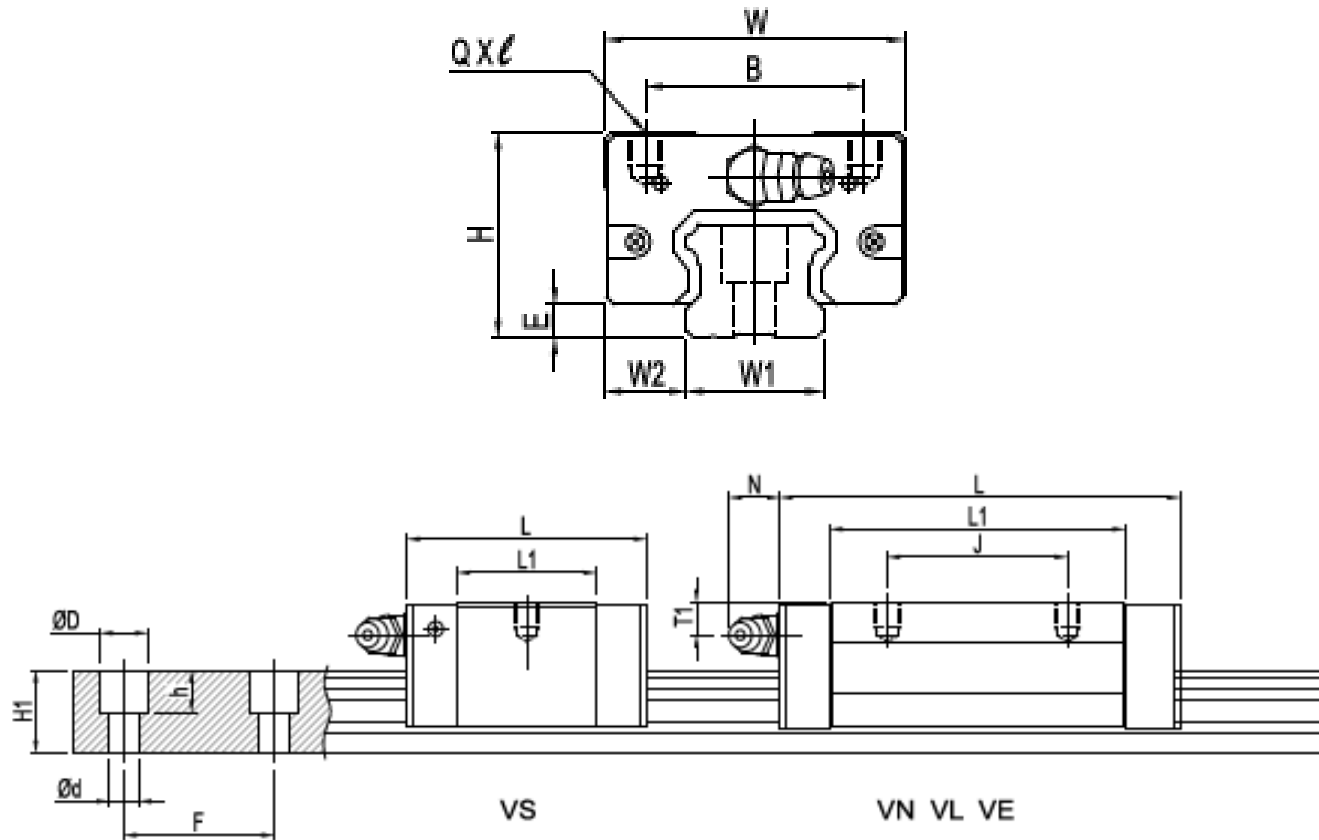
Model No.	Assembly (mm)			Block (mm)									Rail (mm)					
	H	W2	E	W	B	J	L	L1	QXl	T1	Oil Hole	N	W1	H1	ØD	h	Ød	F
TRH15VN	28	9.5	3.2	34	26	26	55.9	39.5	M4X5	9.5	M4X0.7	7	15	13	7.5	6	4.5	60
TRH15VL							64.4	48										
TRH20VN	30	12	4.6	44	32	36	74	54	M5X5	6.5	M6X1	14	20	16.5	9.5	8.5	6	60
TRH20VL							79	59										
TRH20VE							50	98										
TRH25VN	40	12.5	5.8	48	35	35	80	59	M6X8	11.5	M6X1	14	23	20	11	9	7	60
TRH25VL							92	71										
TRH25VE							50	109										
TRH30VL	45	16	7	60	40	40	106	80	M8X10	11	M6X1	14	28	23	14	12	9	80
TRH30VE						60	131	105										
TRH35VL	55	18	7.5	70	50	50	122	93	M8X10	15	M6X1	14	34	26	14	12	9	80
TRH35VE						72	152	123										
TRH45VL	70	20.5	8.9	86	60	60	140	106	M10X15	20.5	PT1/8	12.5	45	32	20	17	14	105
TRH45VE						80	174	140										
TRH55VL	80	23.5	13	100	75	75	162	118	M12X18	21	PT1/8	12.5	53	44	23	20	16	120
TRH55VE						95	200.1	156.1										
TRH65VL	90	31.5	14	126	76	70	197	147	M16X20	19	PT1/8	12.5	63	53	26	22	18	150
TRH65VE						120	256.5	206.5										

Model No.	Rating Load (kgf)		Static permissible moment of load					Weight	
	C	Co	Mx (kgf-mm)	My (kgf-mm)		Mz (kgf-mm)		Block (kg)	Rail (kg/m)
			Single Block	Single Block	Double Block	Single Block	Double Block		
TRH15VN	1206	2206	16,436	14,884	70,960	14,884	70,960	0.13	1.32
TRH15VL	1343	2574	19,175	20,429	95,224	20,429	95,224	0.2	
TRH20VN	2050	3696	37,334	33,268	157,298	33,268	157,298	0.26	2.28
TRH20VL	2125	3891	39,299	36,965	176,924	36,965	176,924	0.29	
TRH20VE	2553	5058	51,089	63,229	284,163	63,229	284,163	0.38	
TRH25VN	2581	4503	52,239	43,407	207,324	43,407	207,324	0.54	3.17
TRH25VL	2875	5254	60,945	59,579	277,678	59,579	277,678	0.55	
TRH25VE	3248	6255	72,554	85,112	391,311	85,112	391,311	0.68	
TRH30VL	4098	7203	100,803	93,100	438,966	93,100	438,966	0.85	4.54
TRH30VE	4791	9004	126,003	147,000	677,068	147,000	677,068	1.12	
TRH35VL	5502	9328	159,512	133,367	656,509	133,367	656,509	1.52	
TRH35VE	6667	12274	209,885	233,977	1,070,533	233,977	1,070,533	2	6.27
TRH45VL	7572	12808	292,657	220,751	1,030,183	220,751	1,030,183	2.7	
TRH45VE	8852	16010	365,821	348,554	1,598,703	348,554	1,598,703	3.58	
TRH55VL	14703	21613	571,342	411,729	2,019,184	411,729	2,019,184	3.60	16.1
TRH55VE	17349	27377	723,699	670,530	3,148,637	670,530	3,148,637	4.70	
TRH65VL	22526	31486	973,074	695,840	3,594,277	695,840	3,594,277	7.76	
TRH65VE	27895	42731	1,320,601	1,307,568	6,312,759	1,307,568	6,312,759	11.15	22.54



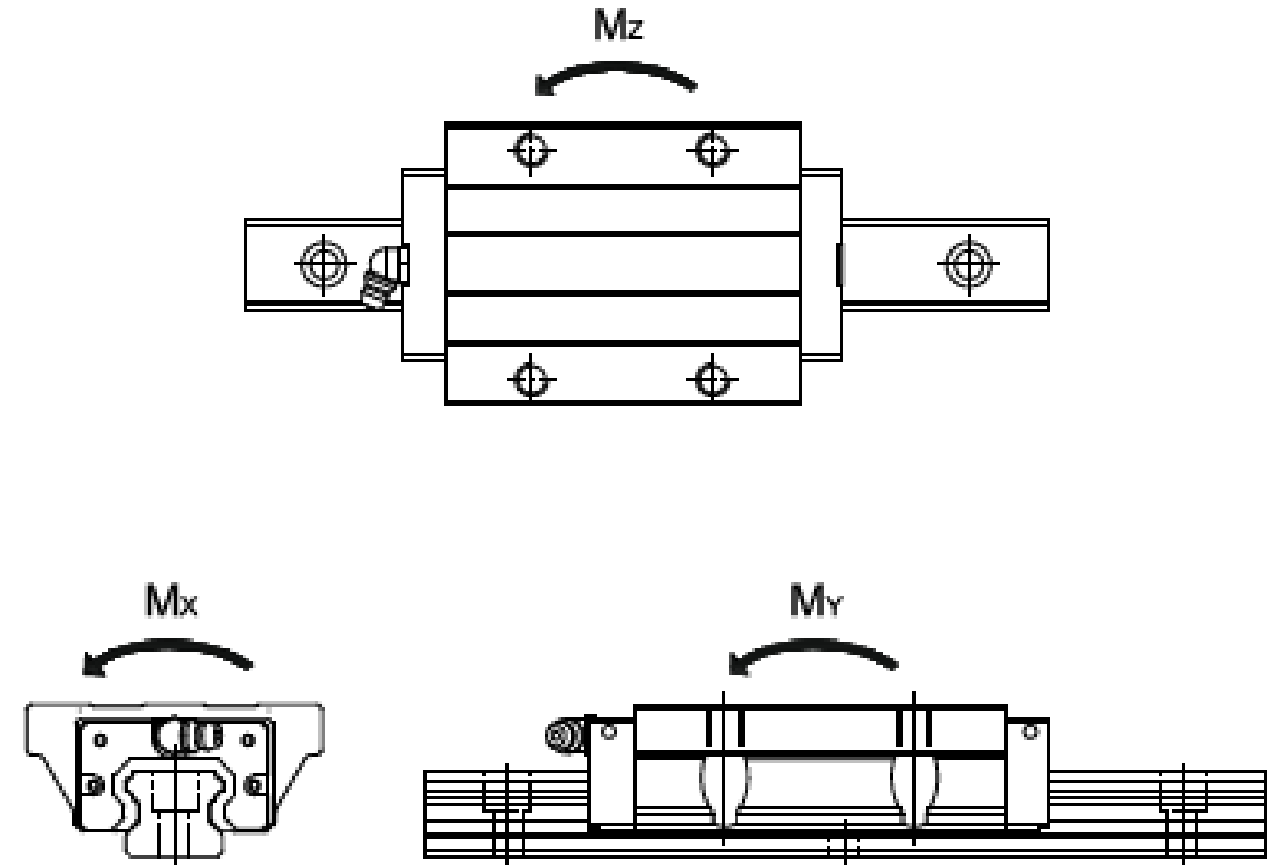
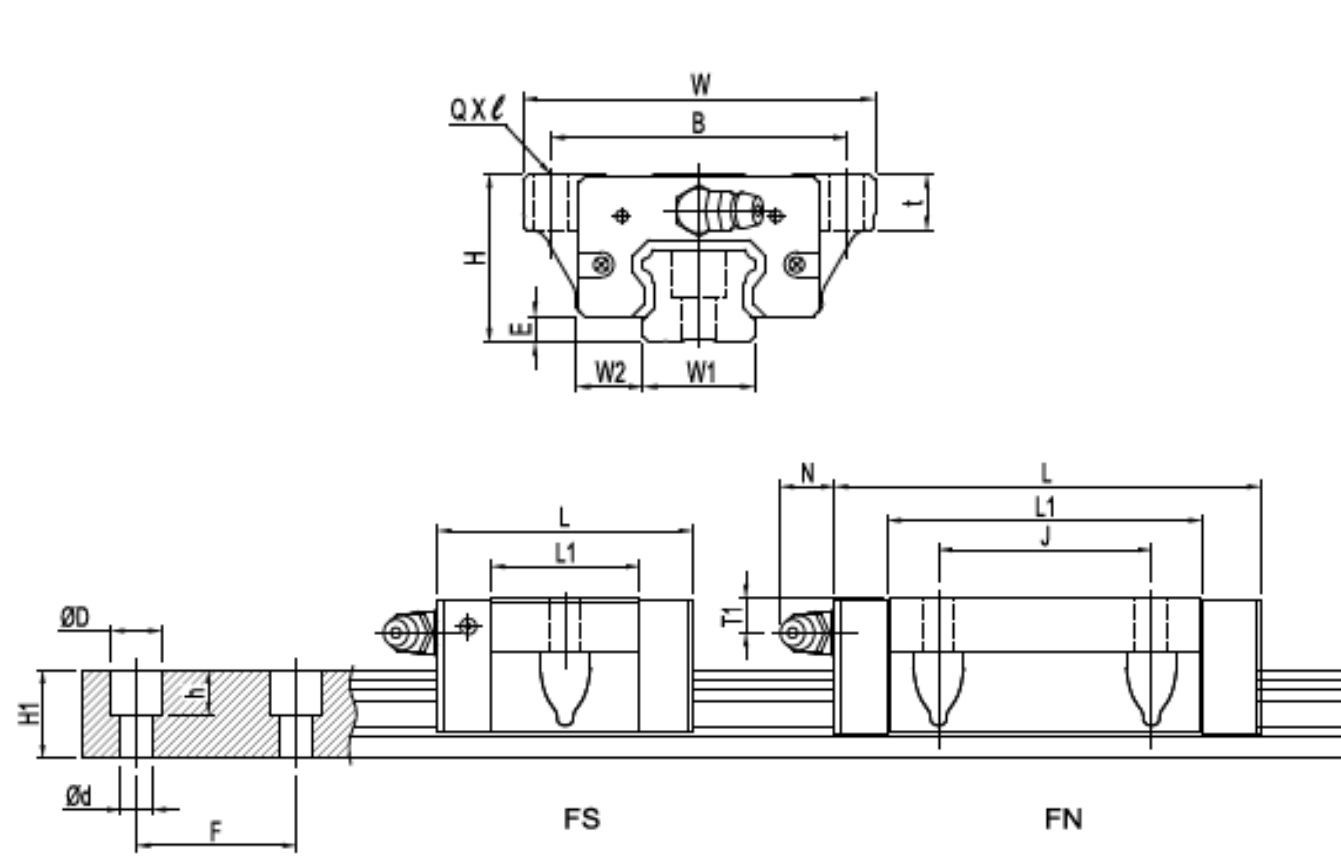
Model No.	Assembly (mm)			Block (mm)										Rail (mm)					
	H	W2	E	W	B	J	t	L	L1	QXl	T1	Oil Hole	N	W1	H1	ØD	h	Ød	F
TRH15FN	24	16	3.2	47	38	30	8	55.9	39.5	M5X8	5.5	M4X0.7	7	15	13	7.5	6	4.5	60
TRH15FL								64.4	48										
TRH20FN	30	21.5	4.6	63	53	40	10	74	54	M6X10	6.5	M6X1	14	20	16.5	9.5	8.5	6	60
TRH20FL								79	59										
TRH20FE								98	78										
TRH25FN	36	23.5	5.8	70	57	45	12	80	59	M8X12	7.5	M6X1	14	23	20	11	9	7	60
TRH25FL								92	71										
TRH25FE								109	88										
TRH30FL	42	31	7	90	72	52	15	106	80	M10X15	8	M6X1	14	28	23	14	12	9	80
TRH30FE								131	105										
TRH35FL	48	33	7.5	100	82	62	15	122	93	M10X15	8	M6X1	14	34	26	14	12	9	80
TRH35FE								152	123										
TRH45FL	60	37.5	8.9	120	100	80	18	140	106	M12X18	10.5	PT1/8	12.5	45	32	20	17	14	105
TRH45FE								174	140										
TRH55FL	70	43.5	13	140	116	95	29	162	118	M14X17	11	PT1/8	12.5	53	44	23	20	16	120
TRH55FE								200.1	156.1										
TRH65FL	90	53.5	14	170	142	110	37	197	147	M16X23	19	PT1/8	12.5	63	53	26	22	18	150
TRH65FE								256.5	206.5										

Model No.	Rating Load (kgf)		Static permissible moment of load					Weight	
			Mx (kgf-mm)		My(kgf-mm)		Mz (kgf-mm)		Block (kg)
	C	Co	Single Block	Single Block	Double Block	Single Block	Double Block		
TRH15FN	1206	2206	16,436	14,884	70,960	14,884	70,960	0.17	1.32
TRH15FL	1343	2574	19,175	20,429	95,224	20,429	95,224	0.2	
TRH20FN	2050	3696	37,334	33,268	157,298	33,268	157,298	0.36	2.28
TRH20FL	2125	3891	39,299	36,965	176,924	36,965	176,924	0.4	
TRH20FE	2553	5058	51,089	63,229	284,163	63,229	284,163	0.53	
TRH25FN	2581	4503	52,239	43,407	207,324	43,407	207,324	0.54	3.17
TRH25FL	2875	5254	60,945	59,579	277,678	59,579	277,678	0.62	
TRH25FE	3248	6255	72,554	85,112	391,311	85,112	391,311	0.78	
TRH30FL	4098	7203	100,803	93,100	438,966	93,100	438,966	1.42	4.54
TRH30FE	4791	9004	126,003	147,000	677,068	147,000	677,068	1.77	
TRH35FL	5502	9328	159,512	133,367	656,509	133,367	656,509	1.58	6.27
TRH35FE	6667	12274	209,885	233,977	1,070,533	233,977	1,070,533	2.11	
TRH45FL	7572	12808	292,657	220,751	1,030,183	220,751	1,030,183	2.66	10.4
TRH45FE	8852	16010	365,821	348,554	1,598,703	348,554	1,598,703	3.55	
TRH55FL	14703	21613	571,342	411,729	2,019,184	411,729	2,019,184	3.62	16.1
TRH55FE	17349	27377	723,699	670,530	3,148,637	670,530	3,148,637	4.71	
TRH65FL	22526	31486	973,074	695,840	3,594,277	695,840	3,594,277	7.96	22.54
TRH65FE	27895	42731	1,320,601	1,307,568	6,312,759	1,307,568	6,312,759	11.35	



Model No.	Assembly (mm)			Block (mm)									Rail (mm)					
	H	W2	E	W	B	J	L	L1	QXl	T1	Oil Hole	N	W1	H1	ØD	h	Ød	F
TRS15VS	24	9.5	3.2	34	26	26	55.9	39.5	M4X5	5.5	M4X0.7	7	15	13	7.5	6	4.5	60
TRS15VN							64.4	48										
TRS20VS	28	11	4.6	42	32	36	74	54	M5X5	4.5	M6X1	14	20	16.5	9.5	8.5	6	60
TRS25VN							79	59										
TRS25VS	33	12.5	5.8	48	35	35	80	59	M6X8	4.5	M6X1	14	23	20	11	9	7	60
TRS25VN							92	71										
TRS30VS	42	16	7	60	40	40	106	80	M8X8	8	M6X1	14	28	23	14	12	9	80
TRS30VN						60	131	105										
TRS30VL																		
TRS35VS	48	18	7.5	70	50	50	122	93	M8X8	8	M6X1	14	34	26	14	12	9	80
TRS35VN						72	152	123										
TRS35VL																		
TRS45VN	60	20.5	8.9	86	60	60	140	106	M10X15	10.5	PT1/8	12.5	45	32	20	17	14	105
TRS45VL						80	174	140										
TRS45VE																		

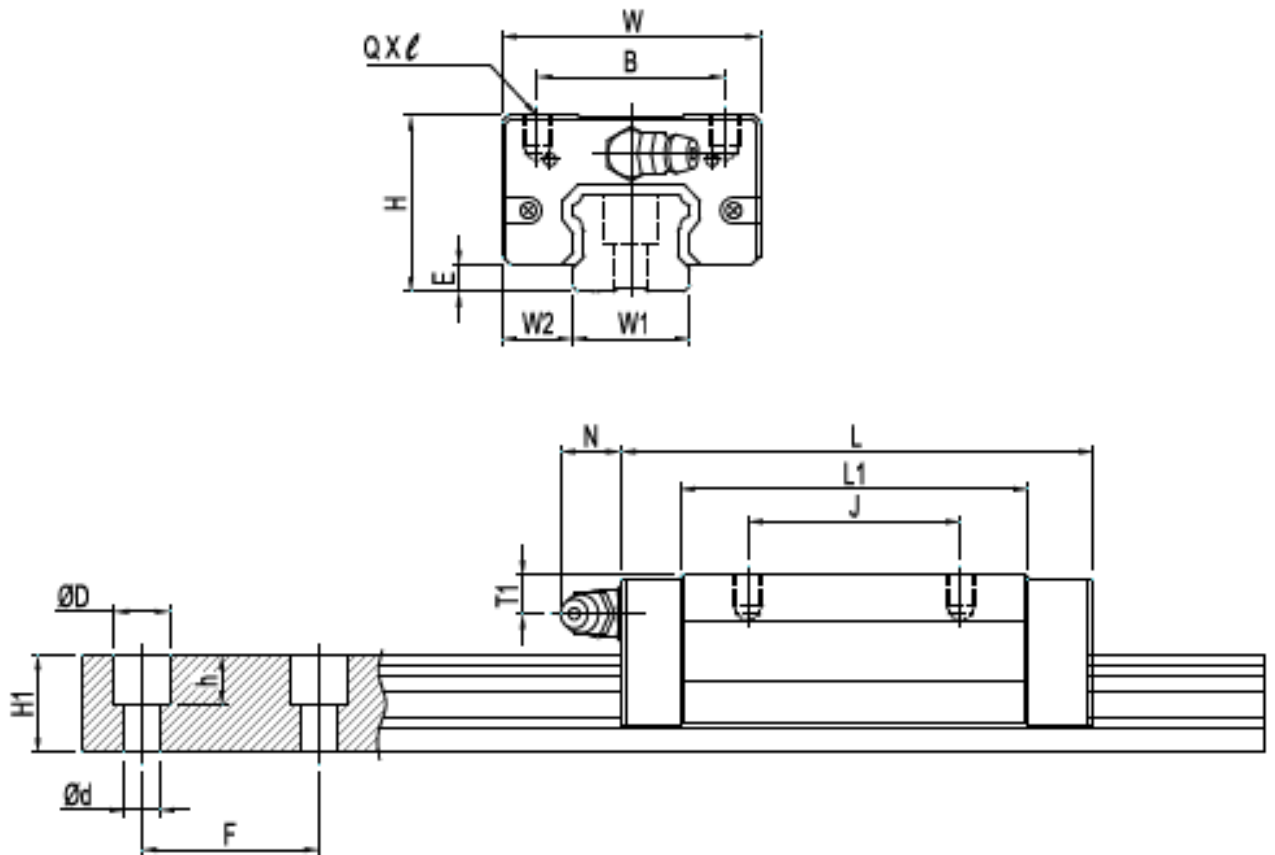
Model No.	Rating Load (kgf)		Static permissible moment of load					Weight	
			Mx (kgf-mm)		My (kgf-mm)		Mz (kgf-mm)		Block (kg)
	C	Co	Single Block	Single Block	Double Block	Single Block	Double Block		
TRS15VS	908	1471	10,957	6,420	33,531	6,420	33,531	0.07	1.32
TRS15VN	1206	2206	16,436	14,884	70,960	14,884	70,960	0.13	
TRS20VS	1398	2140	21,615	10,700	59,798	10,700	59,798	0.11	2.28
TRS25VN	1896	3307	33,404	26,459	129,998	26,459	129,998	0.18	
TRS25VS	1943	3002	34,826	18,725	97,890	18,725	97,890	0.18	3.17
TRS25VN	2581	4503	52,239	43,407	207,324	43,407	207,324	0.3	
TRS30VS	2697	3962	55,442	26,950	154,224	26,950	154,224	0.37	4.54
TRS30VN	3807	6483	90,722	74,950	355,321	74,950	355,321	0.65	
TRS30VL	4098	7203	100,803	93,100	438,966	93,100	438,966	0.74	
TRS35VS	3753	5401	92,349	42,896	235,304	42,896	235,304	0.57	6.27
TRS35VN	5090	8346	142,722	106,070	519,799	106,070	519,799	0.98	
TRS35VL	5502	9328	159,512	133,367	656,509	133,367	656,509	1.16	
TRS45VN	6758	10887	248,758	158,011	782,271	158,011	782,271	1.71	10.4
TRS45VL	7572	12808	292,657	220,751	1,030,183	220,751	1,030,183	1.99	
TRS45VE	8852	16010	365,821	348,554	1,598,703	348,554	1,598,703	2.64	



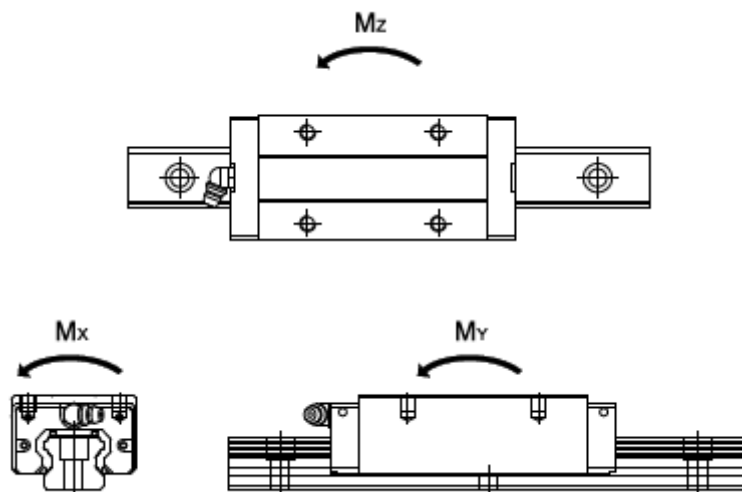
Model No.	Assembly (mm)			Block (mm)									Rail (mm)						
	H	W2	E	W	B	J	t	L	L1	QXℓ	T1	Oil Hole	N	W1	H1	ØD	h	Ød	F
TRS15FS	24	18.5	3.2	52	41	26	7	39.3	22.9	Ø4.5X7	5.5	M4X0.7	7	15	13	7.5	6	4.5	60
TRS15FN								55.9	39.5										
TRS20FS	28	19.5	4.6	59	49	32	9	47.8	27.8	Ø5.5X9	4.5	M6X1	14	20	16.5	9.5	8.5	6	60
TRS20FN								66.7	46.7										
TRS25FS	33	25	5.8	73	60		10	56.2	35.2	Ø7X10	4.5	M6X1	14	23	20	11	9	7	60

Model No.	Rating Load (kgf)		Static permissible moment of load					Weight	
			Mx (kgf-mm)	My(kgf-mm)		Mz (kgf-mm)		Block (kg)	Rail (kg/m)
	C	Co	Single Block	Single Block	Double Block	Single Block	Double Block		
TRS15FS	908	1471	10,957	6,420	33,531	6,420	33,531	0.098	1.32
TRS15FN	1206	2206	16,436	14,884	70,960	14,884	70,960	0.17	
TRS20FS	1398	2140	21,615	10,700	59,798	10,700	59,798	0.15	2.28
TRS20FN	1896	3307	33,404	26,459	126,998	26,459	126,998	0.24	
TRS25FS	1943	3002	34,826	18,725	97,890	18,725	97,890	0.26	2.17

TRC – V Series Dimension Table

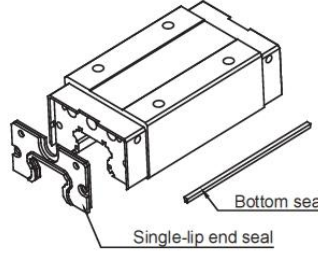
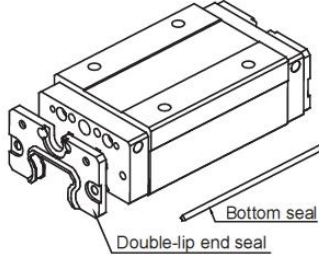
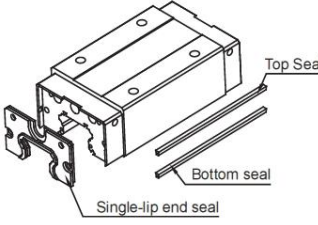
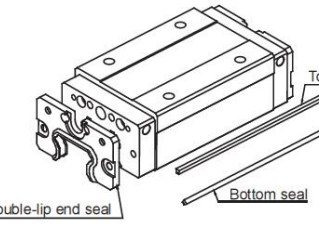
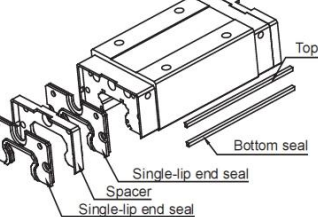
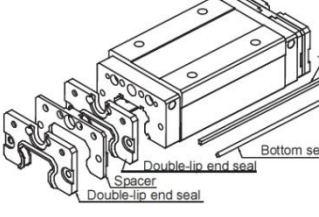
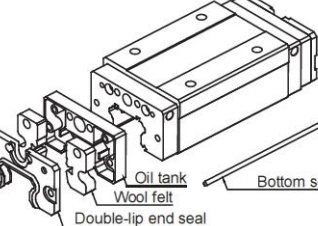
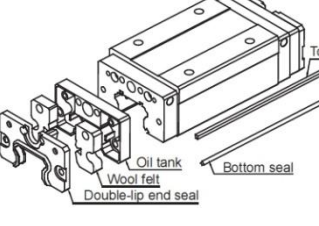
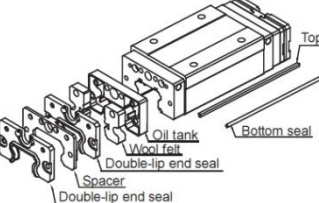


Model No.	Assembly			Block (mm)									Rail (mm)					
	H	W2	E	W	B	J	L	L1	QXℓ	T1	Oil Hole	N	W1	H1	ØD	h	Ød	F
TRC25VL	36	12.5	5.8	48	35	35	92	71	M6X6.5	7.5	M6X1	14	23	20	11	9	7	60
TRC25VE						50	109	88										



Model No.	Rating Load (kgf)		Static permissible moment of load					Weight	
			Mx (kgf-mm)		My(kgf-mm)		Mz (kgf-mm)		Block (kg)
	C	Co	Single Block	Single Block	Double Block	Single Block	Double Block		
TRC25VL	2875	5254	60,945	59,579	277,678	59,579	277,678	0.44	3.17
TRC25VE	3248	6255	72,554	85,112	391,311	85,112	391,311	0.55	

If the following accessories are needed, please add the code followed by the model number.
Special Option: Steel and seal, Steel end cap, Cover Strip, contact Harhues & Teufert GmbH.

No symbol: Standard Protection (End Seals+Bottom Seals) DD(Single-lip end seals+Bottom seals)	XN (Double-lip end seals+Bottom seals)
 <p>Bottom seal Single-lip end seal</p>	 <p>Bottom seal Double-lip end seal</p>
U (End Seals+Bottom Seals+Top seals) DU (Single-lip end seals+Bottom seals+Top seals)	UN (Double-lip end seals+Bottom seals+Top seals)
 <p>Top Seal Bottom seal Single-lip end seal</p>	 <p>Top Seal Bottom seal Double-lip end seal</p>
ZU (Double end seals+Bottom seals+Top seals)	ZN (Two Double-lip end seals+Bottom seals+Top seals)
 <p>Top Seal Bottom seal Single-lip end seal Spacer Single-lip end seal</p>	 <p>Top Seal Bottom seal Double-lip end seal Spacer Double-lip end seal</p>
WW (Double-lip end seals+Bottom seals+Wool felts)	WU (Double-lip end seals+Bottom seals+Top Seals+Wool felts)
 <p>Bottom seal Oil tank Wool felt Double-lip end seal</p>	 <p>Top Seal Bottom seal Oil tank Wool felt Double-lip end seal</p>
End seal and Bottom seal To prevent life reduction caused by iron chips or dust entering the block.	WZ (Two Double-lip end seals+Bottom seals+Top Seals+Wool felts)
Inner Seal Efficiently avoid dust from the surface of rail or tapping hole getting inside the block.	 <p>Top Seal Bottom seal Oil tank Wool felt Double-lip end seal Spacer Double-lip end seal</p>

End seal and Bottom seal

To prevent life reduction caused by iron chips or dust entering the block.

Inner Seal

Efficiently avoid dust from the surface of rail or tapping hole getting inside the block.

Double end seal

Enhances the wiping effect, foreign matter can be completely wiped off.

Double-lip end seals

Double-lip end seal is suitable for environment with high pollution.

Wool felt

Double-lip end seal is suitable for environment with high pollution.

Wool felt lubricates the ball track of the rail to increase the lifetime.

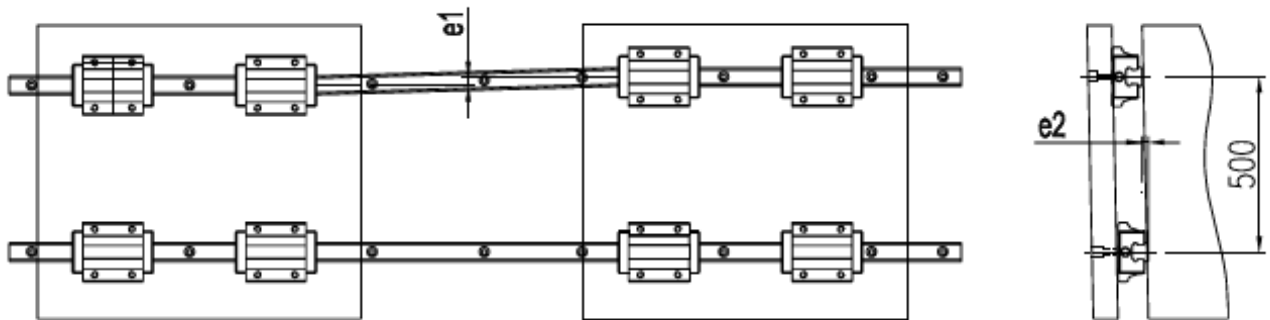
This accessory is suitable for light rating load environment.

Spacer	Thickness (mm)
TR15	4
TR20	4.5
TR25	4.5
TR30	4.5
TR35	5
TR45	6
TR55	6
TR65	8

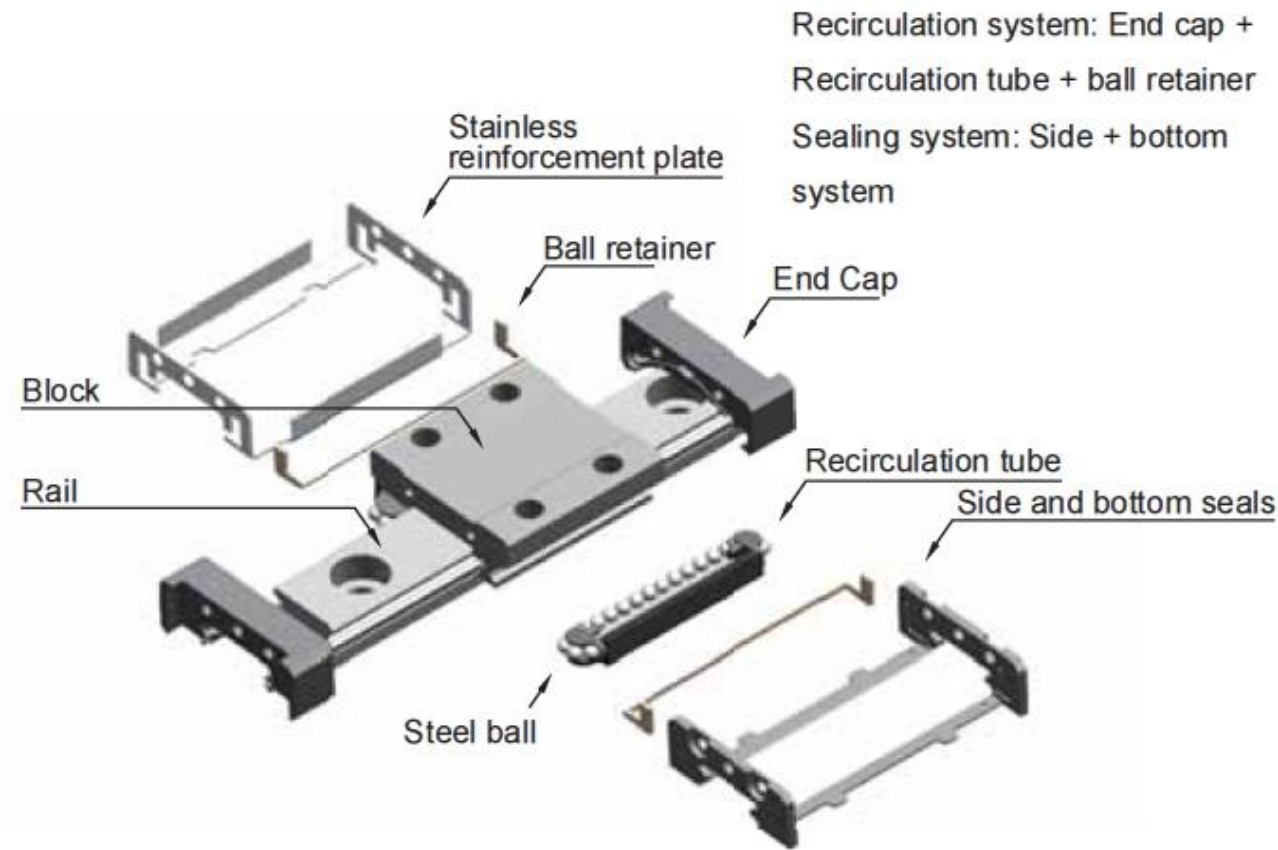
Mounting-Surface Dimensional Tolerance



TR series Linear Guide has a Four-Way Equal-Load design, a slight dimensional error in the mounting surface can be absorbed by the natural self-adjusting capability of the product, thus ensuring smoothly linear motion. In the table below are the dimensional tolerances for the mounting surface of TR Linear Guide.

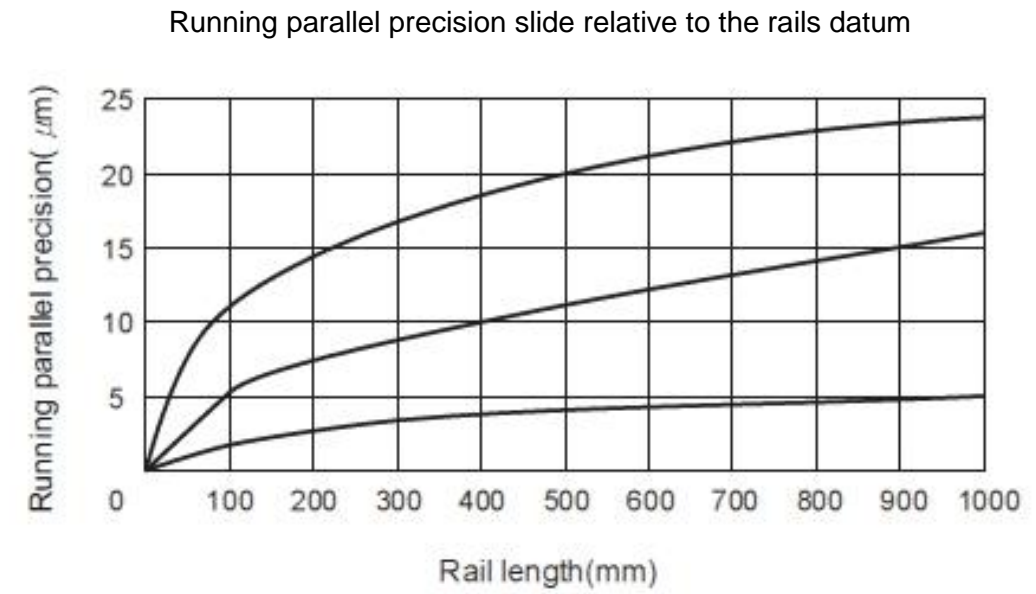


Model No.	Tolerance for Parallelism between two Axes (e1)					Tolerance for Parallelism between two Axes (e2)				
	Z3	Z2	Z1	Z0	ZF	Z3	Z2	Z1	Z0	ZF
TR15			18	25	35			85	130	190
TR20		18	20	25	35		50	85	130	190
TR25	15	20	22	30	42	60	70	85	130	195
TR30	20	27	30	40	55	80	90	110	170	250
TR35	22	30	35	50	68	100	120	150	210	290
TR45	25	35	40	60	85	110	140	170	250	350
TR55	34	45	50	70	98	130	170	210	300	410
TR65	42	55	60	80	105	150	200	250	350	460



Preload

The maximum acceleration of TM-N can reach $V_{max} > 5m/s$, a $max=300m/s$ (60m/s before preload).



Preload

TM Miniature Linear Guide offers three preloading level which are ZF, Z0, Z1. A proper preloading will enhance performance on stiffness, precision, and torsion resistance; however an improper preloading will lower service life and increase friction.

Accuracy

TM Miniature Linear Guide provides P, H, N three accuracy grades for customer to choose.

Accuracy (μm)		Precision P	High H	Normal N
Tolerance of Height H	H	± 10	± 20	± 40
Variation of height with different block on same spot of the rail	ΔH	7	15	25
Tolerance of width W_2	W_2	± 15	± 25	± 40
Variation with width on different block on same spot of the rail	ΔW_2	10	20	30

Preload grade	Pressure	Preload (μm)				Applications
		7	9	12	15	
ZF	Zero Preload	+4 ~ 0	+4 ~ 0	+5 ~ 0	+6 ~ 0	Running smoothly
Z0	Slight Clearance	+2 ~ 0	+2 ~ 0	+2 ~ 0	+3 ~ 0	Precision applications, Running smoothly
Z1	Light Preload	0 ~ -3	0 ~ -4	0 ~ -5	0 ~ -6	High steel, Precision applications, Running smoothly

Permissible Operational Temperature

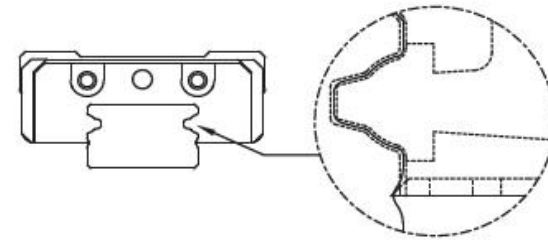
The TM Miniature Linear Guide is sufficient to operate between $-40^{\circ} + 80^{\circ}$. For sudden temperature rise the temperature can reach up to $+100^{\circ}$.

The Characteristics of TM Series

Dust-proof design

The stainless bottom seal is the innovative new design of TBI Motion TM series. It prevents effectively the abnormal chips getting into the ball track from the bottom side of the block and keep the good running performance and extend the life time of the slider because the friction is low by keeping some small backlash between the slider and rail.

Standard end seals provide extreme protection from dust, metal scrapers to maintain long service life and lower maintenance period. Unique low friction seal lips provide best smoothness and lower friction.



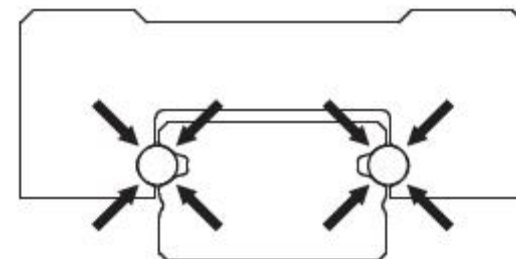
High tensile performance stainless steel reinforcement plate

Dual fully covered stainless steel plates design delivers the best coverage for plastic on each ends. Stainless steel screws are used to strength the rigidity, protection with end cap in order to sustain higher operational speed $V_{max}=5m/s$, $a_{max}=300m/s^2$, When linear block is equipped with reinforcement plates and dust-proof seal, it can also function as scraper.



High loading and moment capacity performance

TM Miniature Linear Guide series uses two row re-circulating methods with Gothic 45° contact angle on the rail groove to achieve equal load capacity in four directions. Larger steel balls are used to enhance the loading and torsion resistance performance in limited space.



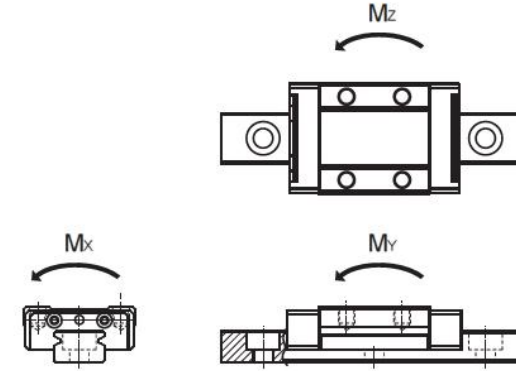
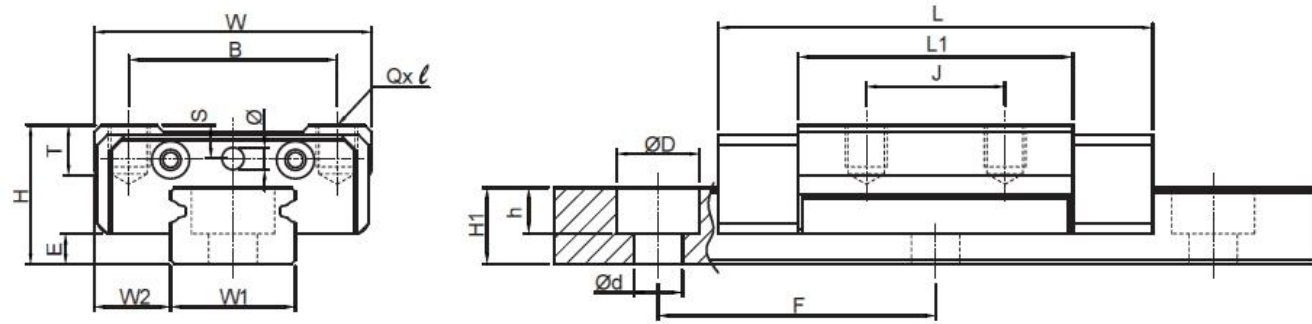
Model Number

Length of Block

Perform joint treatment when required lengths exceed 1300. Please contact Harhues & Teufert for detailed information.

	T M 07 W L A - 2 - - 1000 - N A - Z0 - II - BK
Nominal Model Code	T
Block Type	M : Miniature X : Special (Drawing will be provided for special item in order to distinguish the height of the rail.)
Model of Size	07: 09: 12: 15
Width of Rail	N : Standard W : Wide
Length of Block	N : Standard L : Long
Material	S : Stainless steel A : Alloy steel
Quantity of Block	(Mark 1 when there is only 1 runner block)
Seals Type	□ : Standard (End seal + Side seal)
Rail Length	Unit : mm
Accuracy Grade	N : Normal H : High P : Precision SP : Super-Precision UP : Ultra-Precision
Material	S : Stainless steel A : Alloy steel
Preload	ZF : Slight Clearance Z0 : No Preload Z1 : Light Preload
Two Sets per Axis	(No need to be marked when there is only one rail) II
Linear Guide Special Machining B : Black Oxidation O : Hard Chrome Plating P : Phosphating N : Nickel Plating D : Raydent K : Tapped-Hole Rail X : Rail with Special Machining	

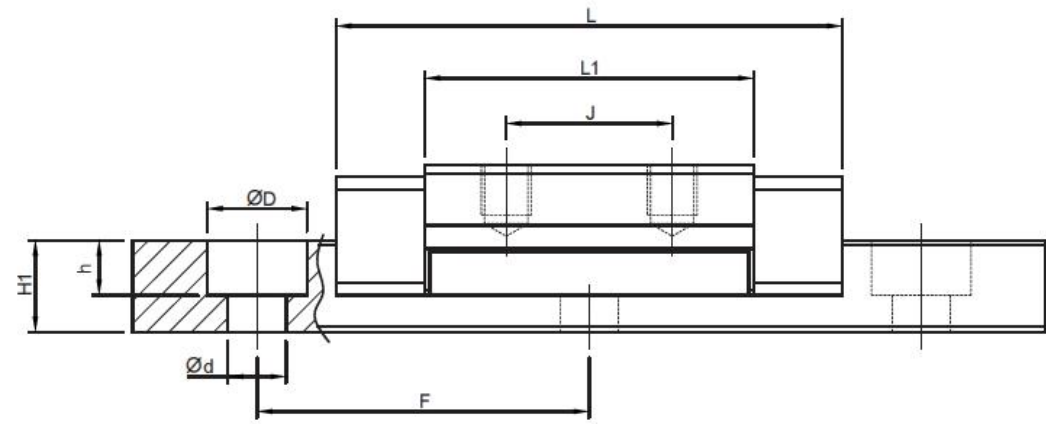
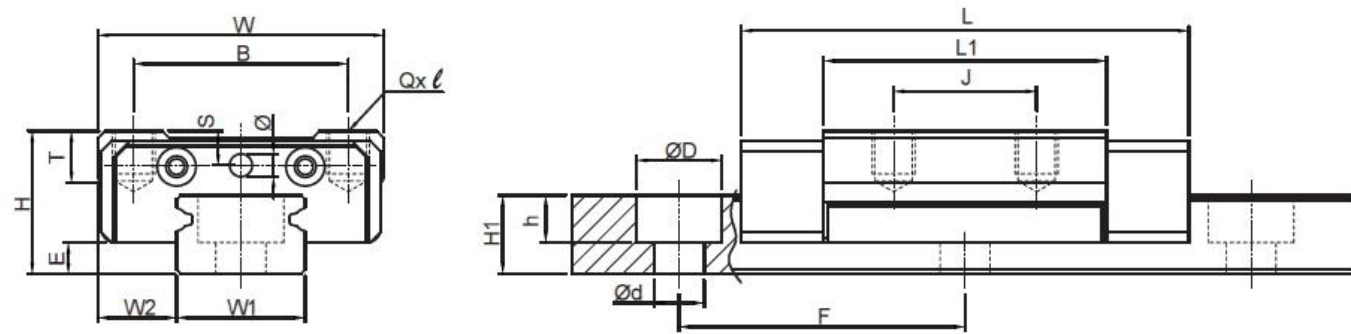
TM-N Specification



Model No.	Assembly (mm)			Block (mm)								Rail (mm)					
	H	W2	E	W	B	J	T	L	L1	QXℓ	Ø	W1	H1	ØD	h	Ød	F
TM07NN	8	5	1.5	17	12	8	2.25	23	12.3	M2x2	1.3	7	4.7	4.2	2.3	2.4	15
TM07NL	8	5	1.5	20	12	13	2.25	31	20.3	M2x2	1.3	7	4.7	4.2	2.3	2.4	15
TM09NN	10	5.5	2.2	27	15	10	3.62	30.5	19.8	M3x3	1.3	9	5.5	6	3.3	3.5	20
TM09NL	10	5.5	2.2	32	15	16	3.62	40.8	30.1	M3x3	1.3	9	5.5	6	3.3	3.5	20
TM12NN	13	7.5	3	17	20	15	4.54	35	20.6	M3x3.5	1.3	12	7.5	6	4.5	3.5	25
TM12NL	13	7.5	3	20	20	20	4.54	47.5	33.1	M3x3.5	1.3	12	7.5	6	4.5	3.5	25
TM15NN	16	8.5	4	27	25	20	5.86	43	27	M3x5	1.3	15	9.5	6	4.5	3.5	40
TM15NL	16	8.5	4	32	25	25	5.86	60	44	M3x5	1.3	15	9.5	6	4.5	3.5	40

Model No.	Rating Load		Static permissible moment of load					Weight	
			Mx(kgf-mm)	My(kgf-mm)		Mz(kgf-mm)		Block (kg)	Rail (kg/m)
	C	Co	Single Block	Single Block	Double Block	Single Block	Double Block		
TM07NN	144	204	745	232	3,234	232	3,234	0.005	0.21
TM07NL	220	374	1,367	849	7,261	849	7,261	0.009	
TM09NN	220	374	1,713	849	7,117	849	7,117	0.013	0.32
TM09NL	299	579	2,648	2,099	14,174	2,099	14,174	0.020	
TM12NN	381	536	3,269	1,094	12,391	1,094	12,391	0.024	0.61
TM12NL	555	919	5,604	3,437	26,857	3,437	26,857	0.039	
TM15NN	581	834	6,336	2,316	23,096	2,316	23,096	0.048	1
TM15NL	860	1,459	11,088	7,527	52,908	7,527	52,908	0.080	

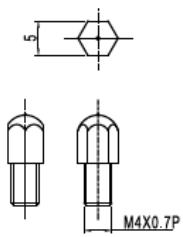
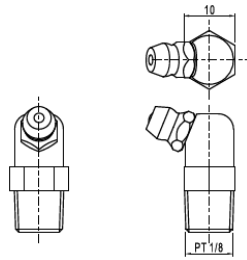
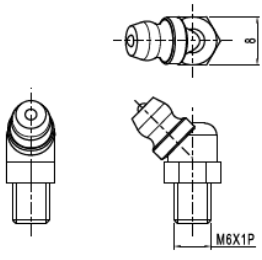
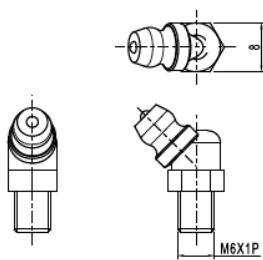
TM-W Specification



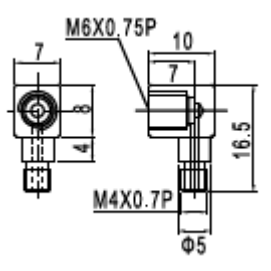
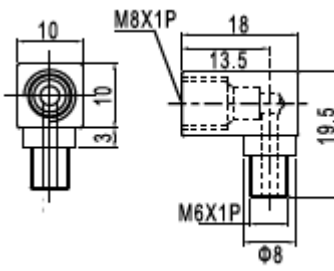
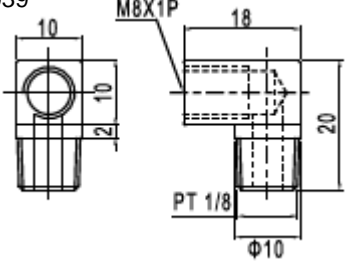
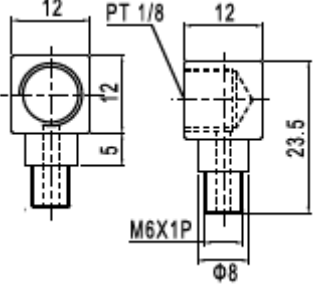
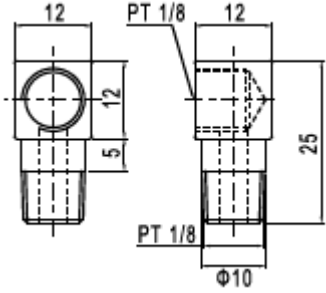
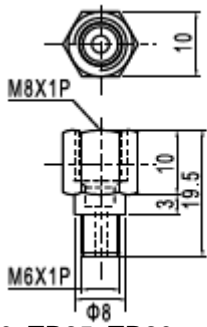
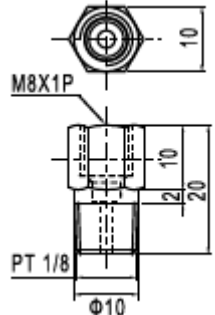
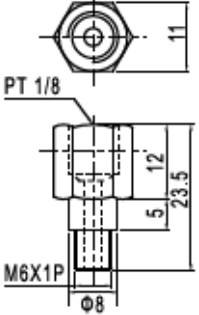
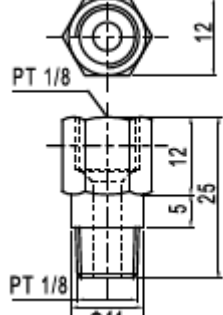
Model No.	Assembly (mm)			Block (mm)								Rail (mm)					
	H	W2	E	W	B	J	T	L	L1	QXℓ	Ø	W1	H1	ØD	h	Ød	F
TM09WN	12	6	3.4	30	23	12	4	39.1	26.7	M3x3	1.3	18	7.3	6	4.5	3.5	30
TM09WL	12	6	3.4	30	23	24	4	50.7	38.3	M3x3	1.3	18	7.3	6	4.5	3.5	30
TM12WN	14	8	3.9	40	28	15	4.5	44.4	29	M3x3.5	1.3	24	8.5	8	4.5	4.5	40
TM12WL	14	8	3.9	40	28	28	4.5	59.4	44	M3x3.5	1.3	24	8.5	8	4.5	4.5	40
TM15WN	16	9	4.1	60	45	20	4.8	55.3	38.5	M4x4.5	1.3	42	9.5	8	4.5	4.5	40
TM15WL	16	9	4.1	60	45	35	4.8	74.4	57.6	M4x4.5	1.3	42	9.5	8	4.5	4.5	40

Model No.	Rating Load		Static permissible moment of load					Weight	
			Mx(kgf-mm)	My(kgf-mm)		Mz(kgf-mm)		Block (kg)	Rail (kg/m)
	C	Co	Single Block	Single Block	Double Block	Single Block	Double Block		
TM09WN	208	368	4,645	1,621	12,205	1,621	12,205	0.03	0.97
TM09WL	260	509	7,123	3,905	23,411	3,905	23,411	0.043	
TM12WN	313	530	10,190	2,864	23,153	2,864	23,153	0.05	1.47
TM12WL	415	796	15,748	7,083	46,164	7,083	46,164	0.076	
TM15WN	517	856	26,387	5,459	42,543	5,459	42,543	0.116	2.85
TM15WL	686	1,283	41,779	14,144	87,256	14,144	87,256	0.175	

Grease Nipples

<p>TR15</p>  <p>Dust Proof Double Sealed Nipple</p> <p>M4X0.7P(SD-020) M4X0.7P(SD-024)</p>	<p>TR45 TR55 TR65</p>  <p>Dust Proof Double Sealed Nipple</p> <p>PT1/8(SD-011) PT1/8(SD-027)</p>
<p>TR20 TR25 TR30</p>  <p>Dust Proof Double Sealed Nipple</p> <p>M6X1P(SD-021) M6X1P(SD-025)</p>	<p>TR35</p>  <p>Dust Proof Double Sealed Nipple</p> <p>M6X1P(SD-021) M6X1P(SD-026)</p>

Type of Lubrication Coupler

<p>SD-037</p> 	<p>SD-038</p> 	<p>SD-039</p> 
<p>TR15</p> <p>SD-029</p> 	<p>TR35, TR30, TR25, TR20</p> <p>SD-040</p> 	<p>TR65, TR55, TR45</p> <p>SD-041</p> 
<p>TR35, TR30, TR25, TR20</p> <p>SD-042</p> 	<p>TR65, TR55, TR45</p> <p>SD-043</p> 	<p>TR35, TR30, TR25, TR20</p> <p>SD-044</p> 

Mounting Location

The standard location of the grease fitting is at both ends of the block, but the nipple can be mounted at each side of block. For lateral installation, we recommend that the nipple be mounted at the non-reference side, otherwise please contact us. It is possible to perform lubrication by using the oil-piping joint.

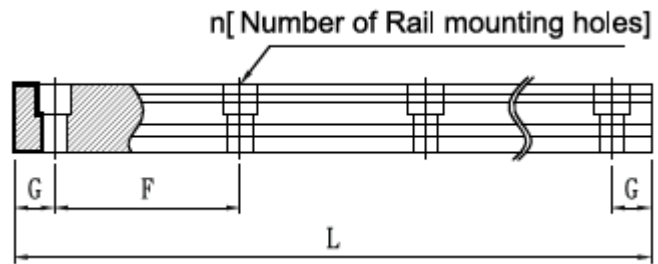
$$L = [n - 1] \cdot F + 2 \cdot G$$

L: Total length of rail (mm)

N: Number of mounting holes

F: Distance between any two holes (mm)

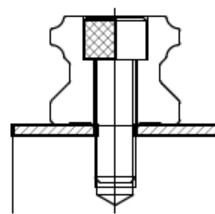
E: Distance from the center of the last hole to the edge (mm)



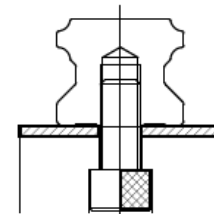
Item	TR15	TR20	TR25	TR30	TR35	TR45	TR55	TR65
F: Pitch	60	60	60	80	80	105	120	150
G: Distance to End	20	20	20	20	20	22.5	30	35
L: Max. Length	4000	4000	4000	4000	4000	4000	4000	4000

Type

Besides the standard top mounting type, Harhues & Teufert also offers bottom mounting type rails.



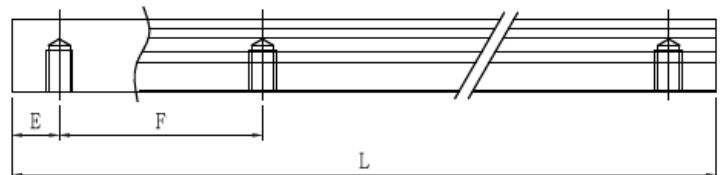
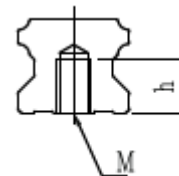
Mounting from Above



Mounting from Below

Rail Size Chart (Unit: mm)

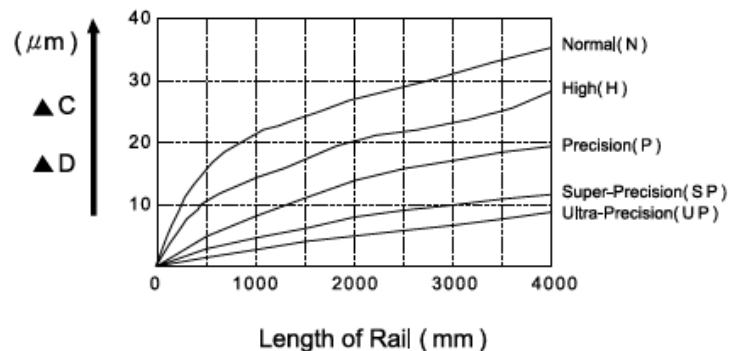
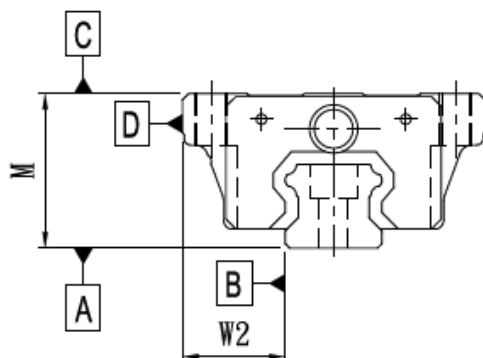
	M	h	E	F
TR15	M5 · 0.8P	8	20	60
TR20	M6 · 1P	10	20	60
TR25	M6 · 1P	12	20	60
TR30	M8 · 1.25P	15	20	80
TR35	M8 · 1.25P	17	20	80
TR45	M12 · 1.75P	24	22.5	105
TR55	M14 · 2P	24	30	120
TR65	M20 · 2.5P	30	35	150



Mounting from below

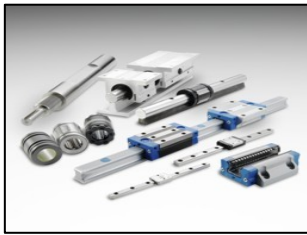
Accuracy Standard

The accuracy standards of TR-Series ranged, from normal, high, precision, super-precision and ultra precision. It allows our user to choose according to the accuracy standards of the equipment-

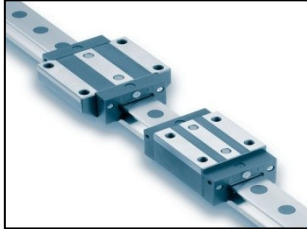


TR Rail Length and Running Accuracy

Catalogs



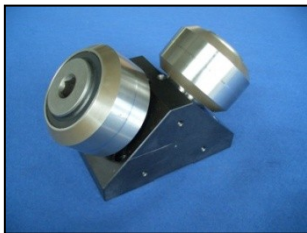
Shaft guidance systems
with linear ball bearings
Shaft and shaft supports
Profile rail guide



Profile rail guides
complete linear units
Portal systems



Ball screw spindles



Guide elements
for maximum
permissible load



Lift cylinder



Dry lubrication
for linear guides

Please request if needed



Linear guides &
Roller bearings
Support and rollers



HT - Handling



Lifting mast systems



Shaft guidance
Linear motion systems



Shaft hub-connection

Catalogues are available as a download.



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