



NITCHI

END CARRIAGES

No. 2



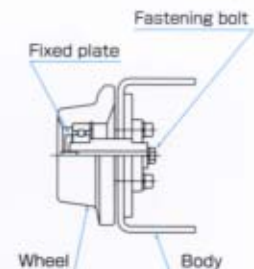
NITCHI CO., LTD.
OSAKA, JAPAN

NITCHI TYPE 4 END CARRIAGES

The NITCHI Type 4 End Carriages make it possible to easily, efficiently and economically manufacture a wide range of industrial type heavy-duty overhead cranes. All NITCHI Type 4 End Carriages are produced at our ultra-modern production facilities while incorporating high quality materials, up-to-the-minute engineering and manufacturing techniques, which are based upon the technology accumulated over our long history as a manufacturer of precision heavy-duty industrial type materials handling equipment.

FEATURES:

1. The ultra-lightweight and durable frames of the NITCHI Type 4 End Carriages are unique designs, and are manufactured with special processes.
2. Each pair of the top running type or the suspension type NITCHI Type 4 End Carriages is made with a symmetrical design for increased stability.
3. The frames of the NITCHI Type 4 End Carriages have "Center-holes" that are to be used as datum points when setting the crane girders.
4. **SECURELY FASTENED WHEELS:**
The securely fastened wheels of the Suspension Type NITCHI Type 4 End Carriages can be detached to simplify installation. The bolt and nut fastening method will keep the wheels securely in position when the NITCHI Type 4 End Carriages are being transported and when the crane is in use. (The bolt and nut fastening method is not used on Model EL40108.)
5. The Motor driven NITCHI Type 4 End Carriages are available in 3 different traveling speeds; High-Speed, Half-Speed and 2-Speed.
6. NITCHI Type 4 End Carriages with polyurethane wheels are available for use in silent environments.
7. A wide variety of economical hand chain operated and push operated NITCHI Type 4 End Carriages are available.
8. The bodies of the NITCHI Type 4 End Carriages have a rust-resisting paint coating for increased protection against rust. (The motors are painted Munsell 8.75R 4/14.)



Determining which NITCHI Type 4 End Carriage to use:

1. The most appropriate NITCHI Type 4 End Carriage for your specific materials handlings application can be determined from the models, rated loads and spans listed in the table on the right-page.
2. Use the following formula to determine the maximum wheel load. Confirm that the calculated value is within the maximum wheel load of the NITCHI Type 4 End Carriage to be used. Always select NITCHI Type 4 End Carriage with a maximum wheel load sufficient for the crane:

$$\text{Maximum wheel load (kg)} = \frac{\text{End Carriage weight (kg)} + \text{Girder weight (kg)}}{\text{Number of wheels}} + \frac{\text{Hoist weight (kg)} + \text{Rated load (kg)}}{\text{Number of wheels} \times 1/2}$$

N.B. Top running type end carriages = 4 wheels
Suspension type end carriages = 8 wheels

3. The size of the crane girder can be determined with the following table:

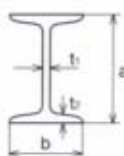
I-Beam Dimensions & Maximum Spans (for Single girder):

I-Beam		Rated load (t)						
a × b × t	Net weight (kg/m)	0.5	1	2	3	5	8	10
125 × 75 × 5.5	16.1	3.6						
150 × 75 × 5.5	17.1	4.2	2.3					
180 × 100 × 6	23.6	6.4	4.0					
200 × 100 × 7	26.0	6.6	4.4	2.3				
250 × 125 × 7.5	38.3	9.8	7.2	4.4	3.0			
250 × 125 × 10	55.5	11.3	8.4	6.2	4.4	2.7		
300 × 150 × 8	48.3	12.5	9.4	6.4	4.4	—		
300 × 150 × 10	65.5		10.4	7.2	5.1	3.1		
300 × 150 × 11.5	76.8		11.3	7.3	5.2	3.2	2.0	1.6
350 × 150 × 9	58.5		11.3	8.1	5.7	3.5	—	—
350 × 150 × 12	87.2			10.1	8.5	5.4	3.4	2.8
400 × 150 × 10	72.0			10.1	7.4	4.6	2.9	—
400 × 150 × 12.5	95.8			11.7	9.6	6.3	4.0	3.2
450 × 175 × 11	91.7			12.3	10.3	6.7	4.3	3.5
450 × 175 × 13	115.0				11.8	8.4	5.5	4.4
600 × 190 × 13	133.0					10.8	7.1	5.8
600 × 190 × 16	176.0						9.6	7.9

Values based on 1/800 deflection.

(Example)

Use I-beam 400 × 150 × 10 for a crane with a 2(t) rated load and a 10(m) span.



Product range:

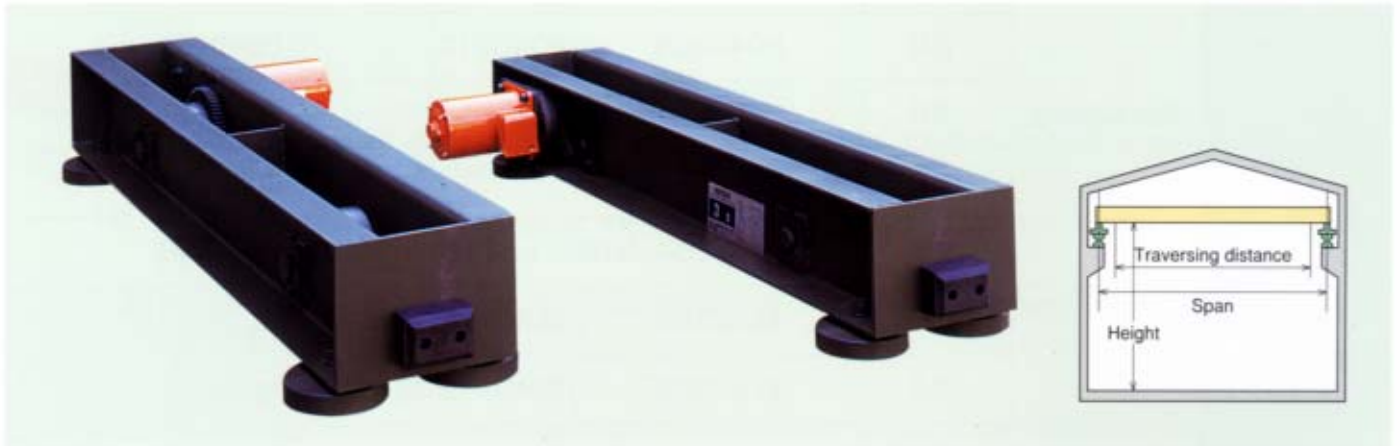
Type		Rated load (t)	Span (m)					
			5.0	8.5	12.0	15.0	18.0	21.0
Motorized	Top running	1.0	E040108		E040112	E040121		
		2.0	E040208		E040212	E040221		
		3.0	E040312			E040321		
		5.0	E040512			E040521		
		10.0	E041012			E041021		
	Suspension	1.0	EL40108		EL40112	EL40115		
		2.0	EL40208		EL40212	EL40215		
		3.0	EL40308		EL40312	EL40315		
		5.0	EL40512			EL40515		
Motorized (for use in silent environments)	Top running	1.0	E040108U		E040112U	E040121U		
		2.0	E040208U		E040212U	E040221U		
		3.0	E040312U			E040321U		
		5.0	E040512U					
	Suspension	0.5	EL400512U					
		1.0	EL40108U					
Geared	Top running	1.0	G040108		G040112			
		2.0	G040208		G040212			
		3.0	G040312					
		5.0	G040512					
	Suspension	1.0	GL40108		GL40112			
		2.0	GL40208		GL40212			
		3.0	GL40308		GL40312			
		5.0	GL40512					

Type		Rated load (t)	Span (m)		
			3.0	5.0	9.0
Plain	Suspension	0.5	PL40053	PL40105	
		1.0	PL40105		PL40109

MOTORIZED END CARRIAGES

Model E04 Top Running Type:

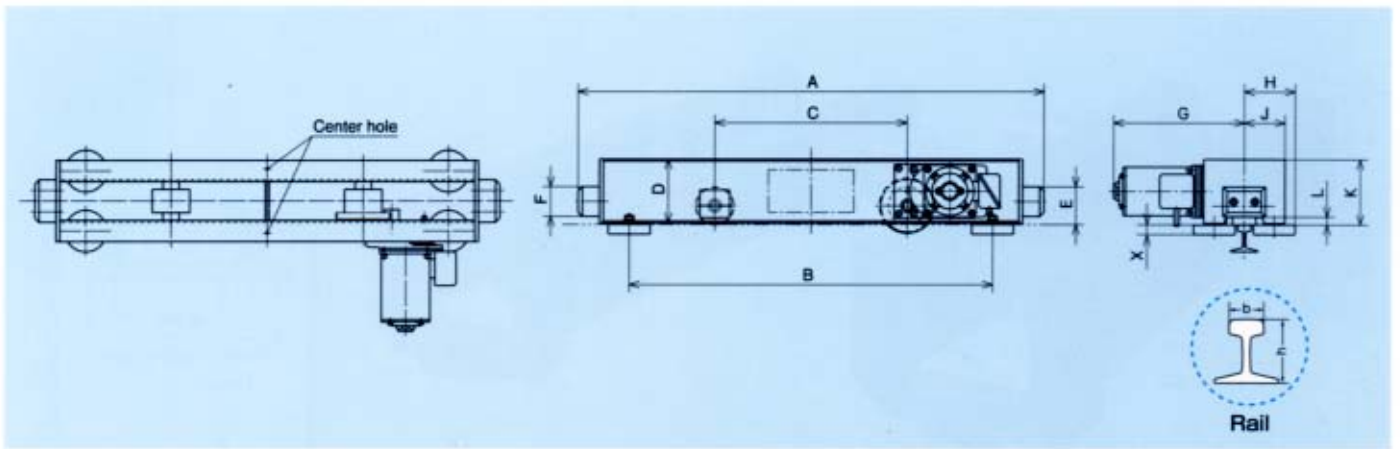
Top running end carriages run upon rails, and are ideal for materials handling applications that need to fully utilize the height of the building.



*Alphabet Code of Item Numbers: F = High-Speed, K = Half-Speed & T = 2-Speed.

Rated load (t)	Span (m)	Item No.	Traveling speed 50/60Hz (m/min)	Motor output (kW)	Rail (kg/m)	Maximum wheel load (kg/wheel)	Wheel diameter (mm)	Net weight (kg)			
1	8.5	E040108	20/24	2×0.2	15 (9)	1,450 (1000)	88	2×50			
		E040108F	25/30								
		E040108K	10/12								
	EOT40108	20/6.5/24/8	2×0.2/0.07	2×55							
	12	E040112	20/24					2×0.2			
		E040112F	25/30					2×0.3			
		E040112K	10/12	2×0.2							
		EOT40112	20/6.5/24/8	2×0.2/0.07				2×60			
	21	E040121	20/24	2×0.3				2,000	123	2×120	
		E040121F	25/30								
E040121K		10/12									
2	8.5	E040208	20/24	2×0.3	15	1,450	88	2×60			
		E040208F	25/30								
		E040208K	10/12								
	12	E040212	20/24	2×0.3				2,000	123	2×90	
		E040212F	25/30								
		E040212K	10/12								
	21	EOT40221	E040221	20/24				2×0.4	3,300 (2600)	158	2×155
			E040221F	25/30							
			E040221K	10/12							
			EOT40221	20/6.5/24/8							
3	12	E040312	20/24	2×0.4	22 (15)	3,700	173	2×125			
		E040312F	25/30								
		E040312K	10/12								
		EOT40312	20/6.5/24/8						2×0.4/0.13	2×130	
	21	EOT40321	E040321	20/24				2×0.4	3,700	173	2×210
			E040321F	25/30							
			E040321K	10/12							
EOT40321	20/6.5/24/8	2×0.4/0.13	2×215								
5	12	E040512	20/24	2×0.4	22 (30)	4,600 (5900)	218	2×170			
		E040512F	25/30								
		E040512K	10/12								
		EOT40512	20/6.5/24/8						2×0.4/0.13	2×175	
	21	EOT40521	E040521	20/24				2×0.4	4,600 (5900)	218	2×255
			E040521F	25/30							
			E040521K	10/12							
EOT40521	20/6.5/24/8	2×0.4/0.13	2×265								
10	12	E041012	20/24	2×0.75	30	8,500	318	2×410			
		E041012F	25/30								
		E041012K	10/12								
	21	E041021	E041021	20/24				2×0.4	8,500	318	2×415
			E041021F	25/30							
			E041021K	10/12							
EOT4021K	10/12	2×0.4	2×500								
EOT4021K	10/12	2×0.4	2×505								

N.B. Please contact us when using runway rails.



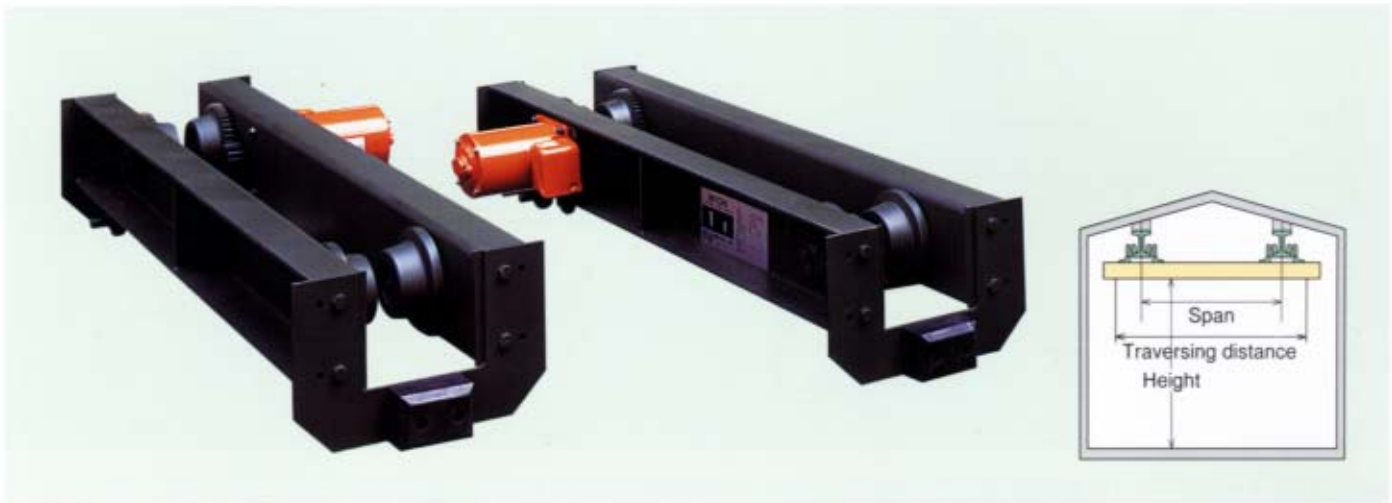
Item No.	Dimensions (mm)											
	A	B	C	D	E	F	G	H	J	K	L	X
E040108	1,090	850	450	150	89		310	114.5 (119.5)	95.5	154	18	
E040108F												
E040108K												
E040108K												
E040112	1,440	1,200	800				310					
E040112F												
E040112K												
E040112K												
E040121	2,340	2,100	1,400	200	97		350			214	14	23
E040121F												
E040121K												
E040121K												
E040208	1,090	850	450	150	89		310	114.5	120.5	154	18	
E040208F												
E040208K												
E040212												
E040212	1,440	1,200	800				310			214	14	
E040212F												
E040212K												
E040212K												
E040221	2,390	2,100	1,400				360					
E040221F												
E040221K												
E040221K												
E040312	1,580	1,290	800	200		114	400	169 (173.5)	135	217	17	
E040312F												
E040312K												
E040312K												
E040321	2,400	2,100	1,400				365					30
E040321F												
E040321K												
E040321K												
E040512	1,640	1,340	800				405	169	140	220	20	
E040512F												
E040512K												
E040512K												
E040521	2,420	2,100	1,400			121.5	375	185.5 (180.5)	148	240	40	40
E040521F												
E040521K												
E040521K												
E041012	2,000	1,663	1,000	300	194		390	210.5	163	348	48	50
E041012F												
E041012K												
E041012K												
E041021	2,450	2,100	1,400				390					
E041021F												
E041021F												
E041021K												

The design, materials and specifications are subject to change for improvements without notice.

MOTORIZED END CARRIAGES

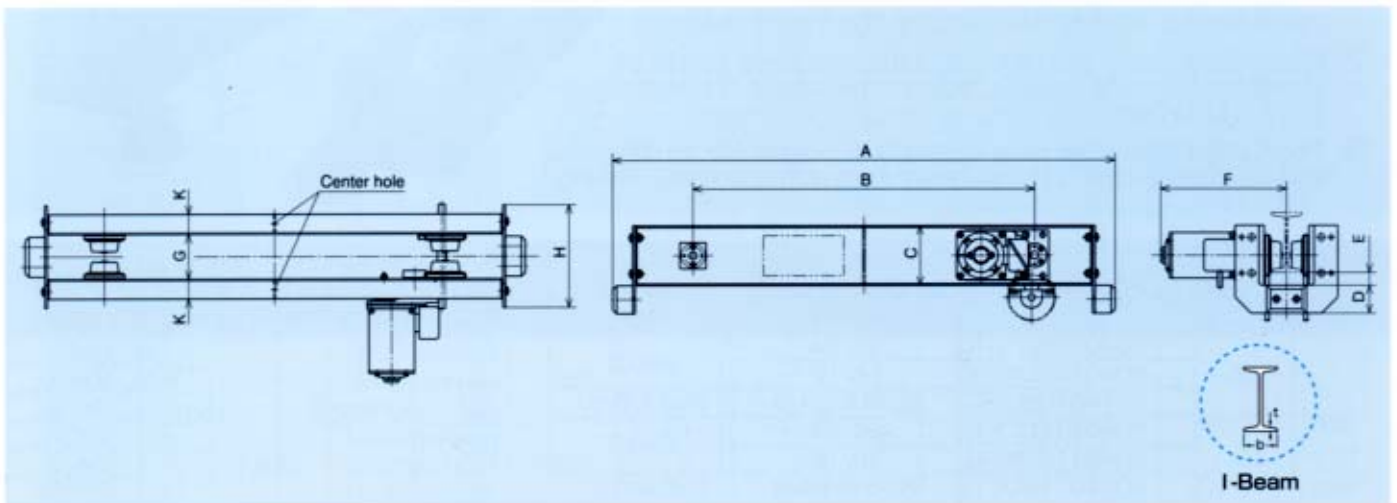
Model EL4 Suspension Type:

Suspension end carriages hang from runway beams, and are ideal for materials handling applications that require the full utilization of the width of the building.



※Alphabet Code of Item Numbers: F = High-Speed, K = Half-Speed & T = 2-Speed.

Rated load (t)	Span (m)	Item No.	Traveling speed 50/60Hz (m/min)	Motor output (kW)	Runway beam width (mm)	Maximum wheel load (kg/wheel)	Wheel diameter (mm)	Net weight (kg)		
1	8.5	EL40108	20/24	2×0.2	75	450	68.0	2×50		
		EL40108F	25/30		100			2×55		
		EL40108K	10/12		125			2×60		
		ELT40108	20/6.5/24/8	2×0.2/0.07						
	12	EL40112	20/24	2×0.2	100	950	93.5	2×85		
		EL40112F	25/30		125			2×90		
		EL40112K	10/12		150					
		ELT40112	20/6.5/24/8	2×0.2/0.07						
	15	EL40115	20/24	2×0.4	125	1,750	128.0	2×145		
		EL40115F	25/30		150					
		EL40115K	10/12		175			2×150		
		ELT40115	20/6.5/24/8	2×0.4/0.13						
2	8.5	EL40208	20/24	2×0.2	100	950	93.5	2×75		
		EL40208F	25/30	2×0.3						
		EL40208K	10/12	2×0.2						
		ELT40208	20/6.5/24/8	2×0.2/0.07						
	12	EL40212	20/24	2×0.3	125			2×95		
		EL40212F	25/30		150					
		EL40212K	10/12		2×0.2					
	15	EL40215	20/24	2×0.4		1,750	128.0	2×145		
		EL40215F	25/30					2×150		
		ELT40215	20/6.5/24/8		2×0.4/0.13					
3	8.5	EL40308	20/24	2×0.4	125	1,350	108.0	2×100		
		EL40308F	25/30						2×105	
		EL40308K	10/12						2×115	
		ELT40308	20/6.5/24/8	2×0.4/0.13						
	12	EL40312	20/24	2×0.4	150			2×120		
		EL40312F	25/30					2×185		
		EL40312K	10/12		2×0.4/0.13					
	15	EL40315	20/24	2×0.4		1,750	128.0	2×190		
		EL40315F	25/30		2×0.75					
		ELT40315	20/6.5/24/8		2×0.4/0.13					
5	12	EL40512	20/24	2×0.75				2×165		
		EL40512F	25/30							
		EL40512K	10/12					2×0.4		
	15	EL40515	20/24	2×0.75				2,250	166.0	2×235
		EL40515F	25/30	2×0.75						
	EL40515K	10/12	2×0.4							



Item No.	Dimensions (mm)								
	A	B	C	D	E	F	G	H	K
EL40108	1,250	850	150		42-t	b/2+280	b+37	257	50
EL40108F						b/2+337			
EL40108K						b/2+387			
ELT40108									
EL40112	1,610	1,200			29-t	b/2+290	b+50	350	
EL40112F						b/2+340			
ELT40112									
EL40115	2,000	1,500	200		37-t	b/2+330	b+52	390	
EL40115F						b/2+370			
EL40115K									
ELT40115									
EL40208	1,260	850	150		29-t	b/2+290	b+50	350	75
EL40208F						b/2+340			
EL40208K									
ELT40208									
EL40212	1,610	1,200		70	54-t	b/2+290	b+50	390	
EL40212F									
EL40212K									
EL40215									
EL40215F	2,000	1,500			37-t	b/2+330	b+52	390	
EL40215K						b/2+370			
ELT40215									
EL40308						1,300			
EL40308F	b/2+370								
EL40308K									
ELT40308									
EL40312	1,650	1,200				b/2+330	b+50	375	
EL40312F						b/2+370			
EL40312K									
ELT40312									
EL40315	2,000	1,500			37-t	b/2+330	b+52	390	
EL40315F						b/2+370			
EL40315K									
ELT40315									
EL40512	1,700	1,200				b/2+330	b+52	412	80
EL40512F									
EL40512K									
EL40515	2,100	1,500			38-t	b/2+350	b+74	412	
EL40515F									
EL40515K									

The design, materials and specifications are subject to change for improvements without notice.

MOTORIZED END CARRIAGES for use in silent environments

Model EO4 Top Running Type:

1. The polyurethane wheels of these end carriers run on the top surface of standard H-beams, and emit much less sound and vibrations than steel wheels.
2. When compared with runway rails, runways made of standard H-beam largely reduce the costs for materials and installation.
3. The Large diameter side-rollers will positively guide the end carriages down the runway and will increase safety.

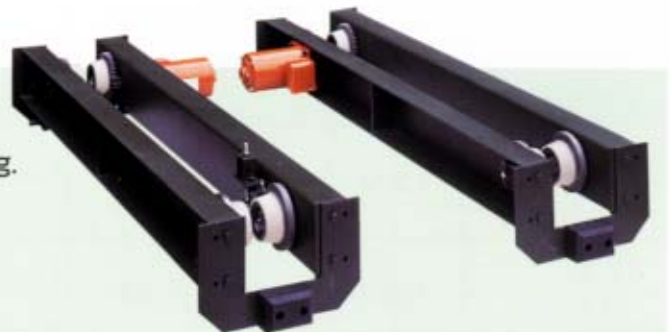


Rated load (t)	Span (m)	Item No.	Traveling speed 50/60Hz (m/min)	Motor output (kW)	Runway beam width (mm)	Maximum wheel load (kg/wheel)	Wheel diameter (mm)	Net weight (kg)
1	8.5	EO40108U	20/24	2x0.2	100 125 150	1,450	150	2x60
		EO40108UK	10/12					2x65
		EOT40108U	20/6.5/24/8					2x0.2/0.07
	12	EO40112U	20/24	2x0.2	100 125 150	1,450	150	2x65
		EO40112UK	10/12					2x70
		EOT40112U	20/6.5/24/8					2x0.2/0.07
	21	EO40121U	20/24	2x0.2	100 125 150	2,000	190	2x145
		EO40121UK	10/12					2x150
		EOT40121U	20/6.5/24/8					2x0.2/0.07
2	8.5	EO40208U	20/24	2x0.2	100 125 150	1,450	150	2x70
		EO40208UK	10/12					2x75
		EOT40208U	20/6.5/24/8					2x0.2/0.07
	12	EO40212U	20/24	2x0.2	100 125 150	2,000	190	2x115
		EO40212UK	10/12					2x120
		EOT40212U	20/6.5/24/8					2x0.2/0.07
	21	EO40221U	20/24	2x0.4	150 175 200	3,300	225	2x200
		EO40221UK	10/12					2x205
		EOT40221U	20/6.5/24/8					2x0.4/0.13
3	12	EO40312U	20/24	2x0.4	100 125 150	3,300	225	2x170
		EO40312UK	10/12					2x175
		EOT40312U	20/6.5/24/8					2x0.4/0.13
	21	EO40321U	20/24	2x0.4	150 175 200	3,700	265	2x270
		EO40321UK	10/12					2x275
		EOT40321U	20/6.5/24/8					2x0.4/0.13
5	12	EO40512U	20/24	2x0.4	100 125 150	3,700	265	2x230
		EO40512UK	10/12					2x235
		EOT40512U	20/6.5/24/8					2x0.4/0.13

*Alphabet Code of Item Numbers: K = Half-Speed & T = 2-Speed.

Model EL4 Suspension Type:

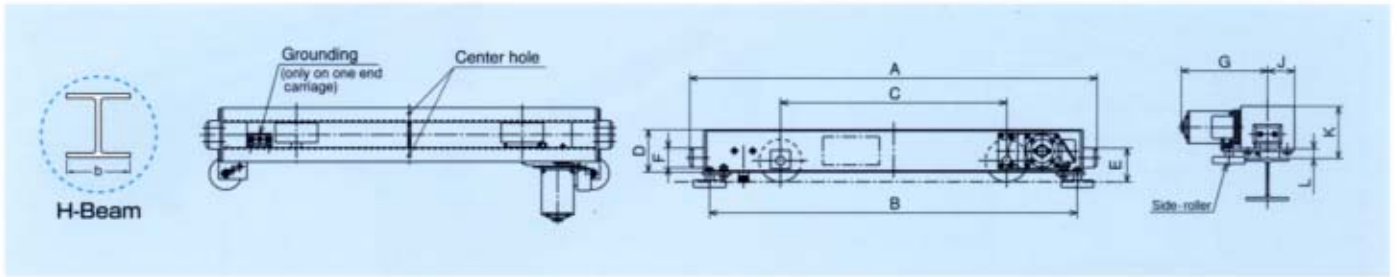
1. The polyurethane wheels are our own original special designs, which are specially processed to make them extra lightweight and longwearing.
2. The polyurethane wheels lower the amount of sound and vibrations.



Rated load (t)	Span (m)	Item No.	Traveling speed 50/60Hz (m/min)	Motor output (kW)	Runway beam width (mm)	Maximum wheel load (kg/wheel)	Wheel diameter (mm)	Net weight (kg)
0.5	12	EL400512U	20/24	2x0.2	125 150	450	93.5	2x86
		EL400512UK	10/12					2x91
		ELT400512U	20/6.5/24/8					2x0.2/0.07
1	8.5	EL40108U	20/24	2x0.2	125 150	450	93.5	2x76
		EL40108UK	10/12					2x81
		ELT40108U	20/6.5/24/8					2x0.2/0.07

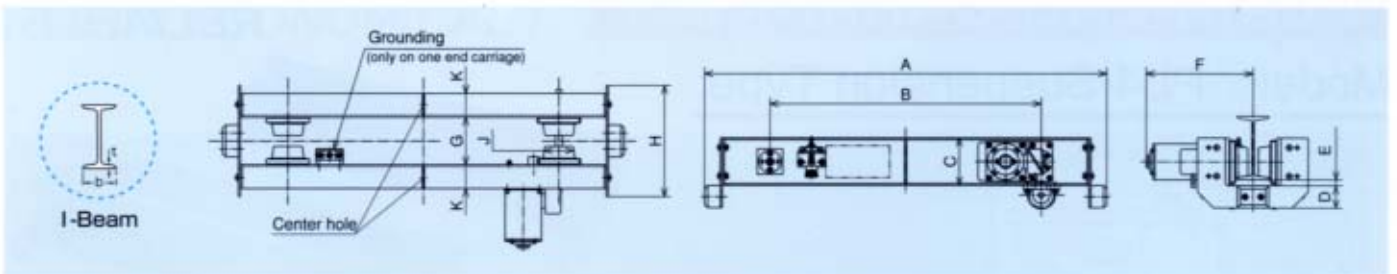
*Alphabet Code of Item Numbers: K = Half-Speed & T = 2-Speed.

FOR MINIMAL EMISSION OF SOUND AND VIBRATIONS!



Item No.	Dimensions (mm)									
	A	B	C	D	E	F	G	J	K	L
EO40108U	1,090	850(b=100)	450	150	120	70	310	95.5	185	35
EO40108UK		900(b=125)					367			
EOT40108U		950(b=150)					417			
EO40112U	1,440	1200(b=100)	800	200	130	70	310	120.5	185	35
EO40112UK		1250(b=125)					367			
EOT40112U		1300(b=150)					417			
EO40121U	2,340	2100(b=150)	1,400	200	130	70	310	135.0	250	50
EO40121UK		2150(b=175)					367			
EOT40121U		2200(b=200)					417			
EO40208U	1,090	850(b=150)	450	150	120	70	310	140.0	266	66
EO40208UK		900(b=175)					367			
EOT40208U		950(b=200)					417			
EO40212U	1,440	1200(b=150)	800	200	130	70	310	140.0	266	66
EO40212UK		1250(b=175)					367			
EOT40212U		1300(b=200)					417			
EO40221U	2,390	2100(b=150)	1,400	200	148	70	360	140.0	266	66
EO40221UK		2160(b=175)					438			
EOT40221U		2220(b=200)					478			
EO40312U	1,580	1290(b=150)	800	200	148	70	360	140.0	266	66
EO40312UK		1350(b=175)					438			
EOT40312U		1410(b=200)					478			
EO40321U	2,400	2100(b=150)	1,400	200	168	70	365	140.0	266	66
EO40321UK		2170(b=175)					443			
EOT40321U		2240(b=200)					483			
EO40512U	1,640	1340(b=150)	800	200	168	70	365	140.0	266	66
EO40512UK		1410(b=175)					443			
EOT40512U		1480(b=200)					483			

The design, materials and specifications are subject to change for improvements without notice.



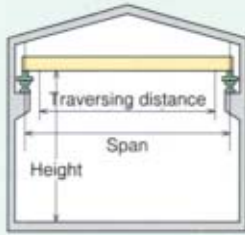
Item No.	Dimensions (mm)								
	A	B	C	D	E	F	G	H	K
EL400512U	1,610	1,200	150	70	29-t	b/2+290	b+50	350	75
EL400512UK						b/2+340			
ELT400512U						b/2+290			
EL40108U	1,260	850	150	70	29-t	b/2+290	b+50	350	75
EL40108UK						b/2+340			
ELT40108U						b/2+290			

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GEARED END CARRIAGES

FOR SMOOTH AND

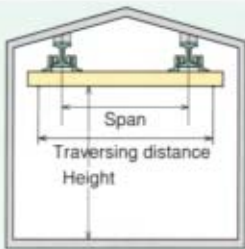
Model GO4 Top Running Type:



Rated load (t)	Span (m)	Item No.	Standard hand chain drop (m)	Rail (kg/m)	Maximum wheel load (kg/wheel)	Wheel diameter (mm)	Net weight (kg)
1	8.5	GO40108	3.0	15 (9)	1,450 (1000)	88	2x45
	12.0	GO40112					2x50
2	8.5	GO40208		15	1,450	123	2x55
	12.0	GO40212					2x85
3	12.0	GO40312		22 (15)	3,300 (2600)	158	2x115
5		GO40512					22

N.B. Please contact us when using runway rails.

Model GL4 Suspension Type:

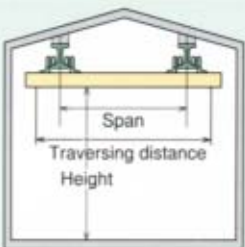


Rated load (t)	Span (m)	Item No.	Standard hand chain drop (m)	Runway beam width (mm)	Maximum wheel load (kg/wheel)	Wheel diameter (mm)	Net weight (kg)
1	8.5	GL40108	3.0	75·100·125	450	68.0	2x45
	12.0	GL40112					2x80
2	8.5	GL40208		100·125·150	950	93.5	2x70
	12.0	GL40212					2x90
3	8.5	GL40308		125·150·175	1,350	108.0	2x90
	12.0	GL40312					2x105
5	12.0	GL40512	1,750	128.0	2x155		

PLAIN END CARRIAGES

RELIABLE AND

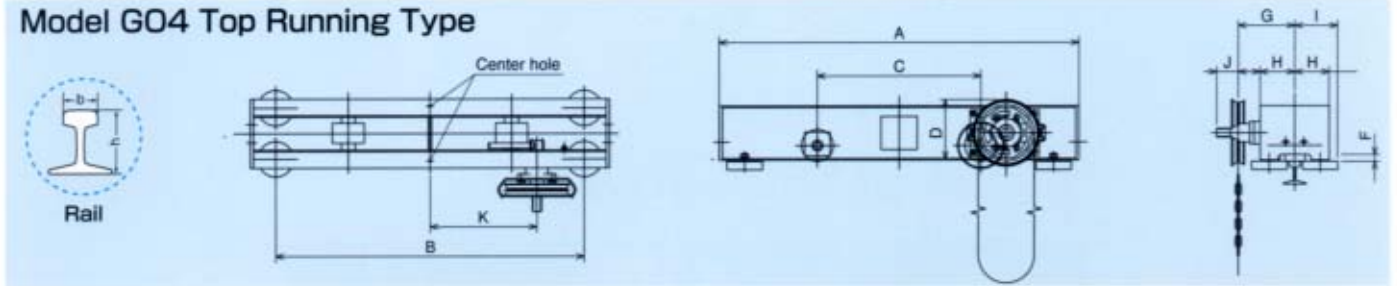
Models PL4 Suspension Type:



Rated load (t)	Span (m)	Item No.	Runway beam width (mm)	Maximum wheel load (kg/wheel)	Wheel diameter (mm)	Net weight (kg)
0.5	3.0	PL40053	75·100·125	210	56.5	2x11
1	5.0	PL40105		300	68.5	2x20
	9.0	PL40109	100·125·150	400	83	2x41

MINUTE POSITIONING WITH HAND CHAIN !

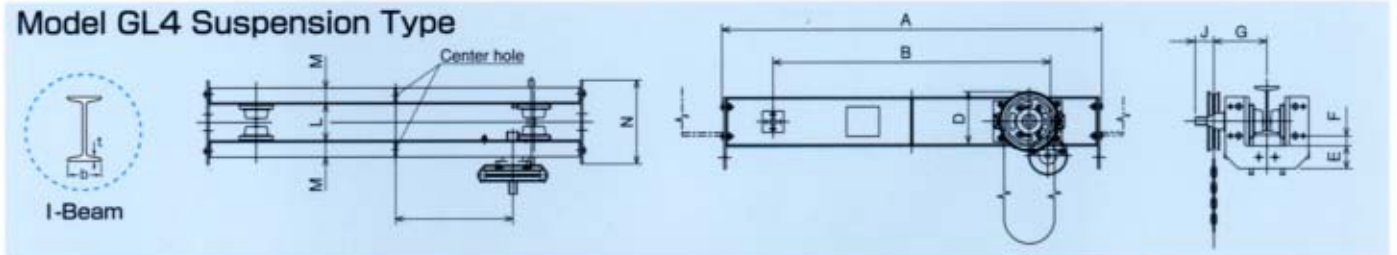
Model G04 Top Running Type



Item No.	Dimensions (mm)									
	A	B	C	D	F	G	H	I	J	K
GO40108	990	850	450	167	18	156	95.5	114.5 (119.5)	60	295
GO40112	1,340	1,200	800							470
GO40208	990	850	450	192	14	157.5	120.5	114.5		295
GO40212	1,340	1,200	800							488
GO40312	1,480	1,290	800	207	17	242	135	169(173.5)		514
GO40512	1,540	1,340			20	243.5	140	169		527

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Model GL4 Suspension Type

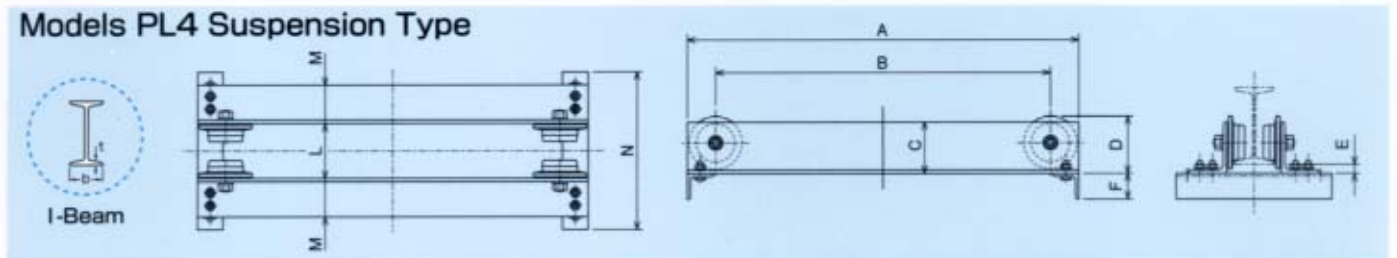


Item No.	Dimensions (mm)										
	A	B	D	E	F	G	J	K	L	M	N
GL40108	1,164	850	167	70	42-t	$b/2+126$	57	360	$b+37$	50	257
GL40112	1,524	1,200			29-t	60		519			
GL40208	1,174	850	192	70	29-t		$b/2+137$		344	$b+50$	75
GL40212	1,524	1,200			54-t	519					
GL40308	1,216	850	207	70	47-t		60	334	$b+52$	80	375
GL40312	1,566	1,200			47-t	497					
GL40512	1,620	1,200	37-t	$b/2+140$	497		$b+52$	80	390		

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EXTRMELY ECONOMICAL !

Models PL4 Suspension Type



Item No.	Dimensions (mm)									
	A	B	C	D	E	F	L	M	N	
PL40053	420	320	75	96	26-t	50	$b+30$	75	305	
PL40105	760	650	100	112	27-t	50	$b+32$	75	307	
PL40109	1,080	950	125	136	34-t	50	$b+33$	75	333	

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- Electric chain hoists (1-speed type)
- Electric chain hoists (2-speed type)
- Electric trolleys
- Manual operated chain hoists
- Manual operated trolleys (geared & plain)
- Chain lever hoists
- Cranes (top running type & suspension type)
- Jib cranes (semicircular & circular swiveling type)
- Webbing sling (polyester)

and more...for specific requirements