
**OWNER'S (OPERATOR'S) MANUAL AND
SAFETY INSTRUCTIONS
FOR KITO URETHANE WHEEL CRANES**

N6 SERIES

ALWAYS SAVE THIS BOOK FOR FUTURE REFERENCE.

KITO

Thank you for purchasing the Kito N6 series Urethane wheel type Crane.
This crane has urethane coated steel track wheels. Light weight, quiet and stable, the crane is designed to improve work efficiency.
Owing to thorough quality controls, this crane has been manufactured to satisfy requirements for durability.
However, improper handling, usage or maintenance may result in unforeseen accident or injury. Therefore, read thoroughly this manual before using the equipment.

Application notes;

This manual is exclusively applied to N6C model cranes. Almost all parts of N6C model cranes have no interchangeability with N6 model cranes.

All of N6C type end carriages can not be assembled with G1 type geared motor but with G1B type geared motor only.

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1. DEFINITIONS

⚠ DANGER : indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

⚠ WARNING : indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

⚠ CAUTION : indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

WLL: indicates maximum mass (working load limit) which a crane is designed to support in general service. Under WLL, all values are indicated in t (ton).

2. INTENDED PURPOSE

This crane has been designed for vertically lifting, lowering and horizontally carrying loads by means of the pendant push button switches, under normal atmospheric conditions of the work place.

3. BEFORE USE

3.1 Safety summary

Danger exists when heavy loads are transported, particularly when the equipment is not being used properly or is poorly maintained. Because accidents and serious injury could result, special safety precautions apply to the operation, maintenance and inspection of the KITO crane.

⚠ WARNING : ALWAYS operate, inspect and maintain this Crane in accordance with applicable safety codes and regulations.

Following these simple rules can help to avoid hoisting accidents;

⚠ WARNING : IMPROPER crane use could result in death or serious injury. To avoid these hazards.

3.1.1 Before and during operation

NEVER lift or transport loads over or near people.

NEVER use a crane for lifting, supporting or transporting people.

NEVER leave a suspended load unattended.

NEVER lift more than the rated capacity.

NEVER reverse crane operation abruptly or inch the crane excessively in travel.

NEVER pull a load from an extreme angle.

NEVER allow the crane to impact the stopper or other crane.

ALWAYS inspect the crane before use and at periodic intervals.

ALWAYS pay attention to load swing while operating the crane.

ALWAYS be aware of what is going on in the vicinity of the crane during use.

ALWAYS keep travel and traverse paths, and shelters, unobstructed.

ALWAYS operate the push buttons from a location from where both the hook and load can be seen.

ALWAYS check slings and loads are properly installed before use.

ALWAYS walk behind or alongside a suspended load, and keep eyes looking forward, while operating the crane.

ALWAYS read the “Safety Instructions” for your hoist and trolley respectively provided.-----



3.1.2 Maintenance and checks

ALWAYS have maintenance, check and repairs performed by a qualified person.

ALWAYS place an “OUT OF SERVICE” sign on the crane when performing maintenance, checks or repairs.

ALWAYS turn OFF power to the hoist, trolley and crane before performing maintenance, checks or repairs.

ALWAYS wear a helmet and safety belt when performing maintenance, checks or repairs.

4. Cranes

4.1 Features

[Geared motor]

- (a) Employs an electromagnetic brake to mechanically adjust brake torque in stopping.
- (b) Travel is kept quiet because of the helical gear used in the reduction gear.
- (c) Comes in 3 models with different single speed specification (low, standard and high) and 1 model with dual speed specification (Reduction ratio of 4:1).

[Low-head end carriage]

- (a) Track wheels are easily taken off. This greatly shortens installation and maintenance work.
- (b) High tension bolts (H.T.B) are used to couple the end carriage to the girder as standard for low-head type.
- (c) The center punch for girder installation holes is marked on the end carriage to make centering easier.
- (d) The end carriage is coated with a red primer when shipped from the factory.
- (e) Travel is kept quiet with urethane-coated wheels. The wheels are cold and weather resistant, and water resistant.
- (f) Travel is kept quiet with a pinion L made from nylon. The pinion is weather and wear resistant.
- (g) The end carriage uses press formed frames designed by Kito.

[Overhead end carriage]

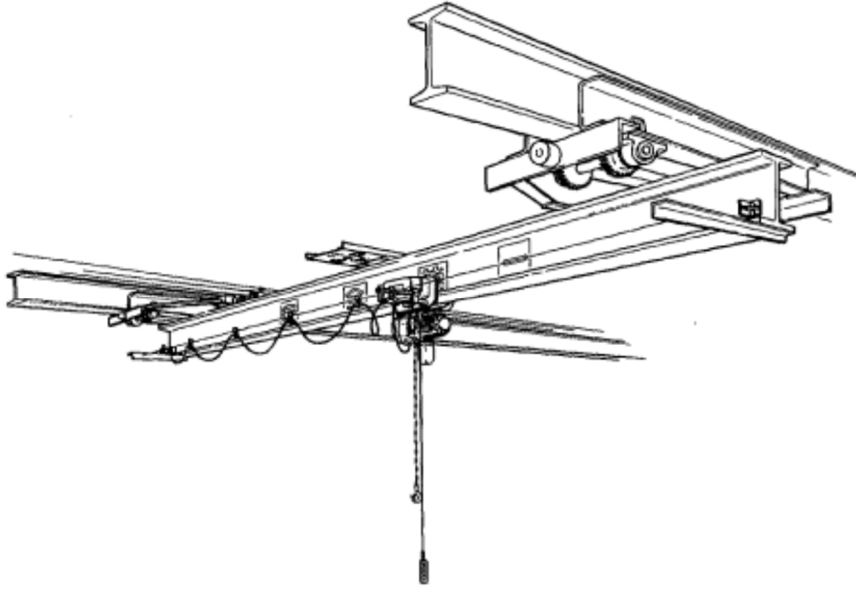
- (a) The end carriage has an open frame construction to facilitate track wheel maintenance.
- (b) The end carriage is built with side rollers to keep travel smooth and stable.
- (c) The center punch for girder installation holes, girders and travel rails are marked on the end carriage to make centering easier.
- (d) Span is easily adjusted on-site because the end carriage is coupled to the frame by bolts.
- (e) The end carriage is coated with a red primer when shipped from the factory.
- (f) Travel is kept quiet with urethane-coated wheels. The wheels are cold and weather resistant, and water resistant.
- (g) The end carriage uses press formed frames designed by Kito.

[Double girder end carriage]

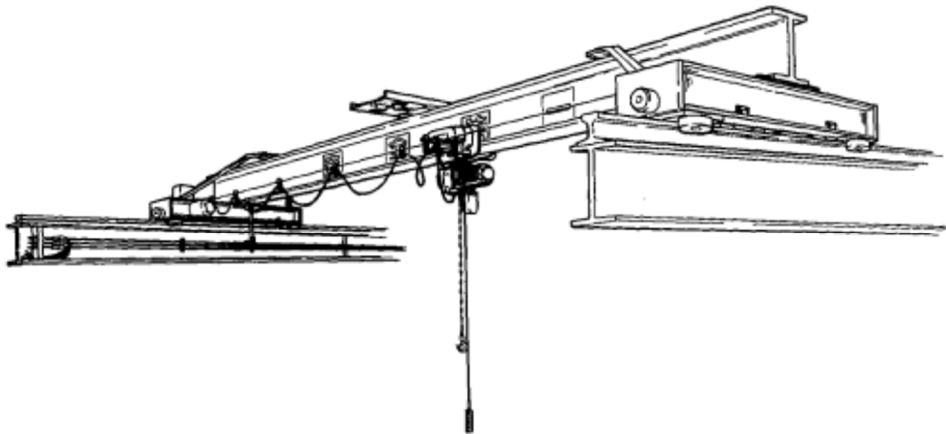
- (a) The end carriage has an open frame construction to facilitate track wheel maintenance.
- (b) The end carriage is built with side rollers to keep travel smooth and stable.
- (c) The center punch for girders and travel rails are marked on the end carriage to make centering easier.
- (d) The end carriage uses press formed frames (channel type) designed by Kito.
- (e) The end carriage is coated with a red primer when shipped from the factory.
- (f) Travel is kept quiet with urethane-coated wheels. The wheels are cold and weather resistant, and water resistant.

General view (For your reference)

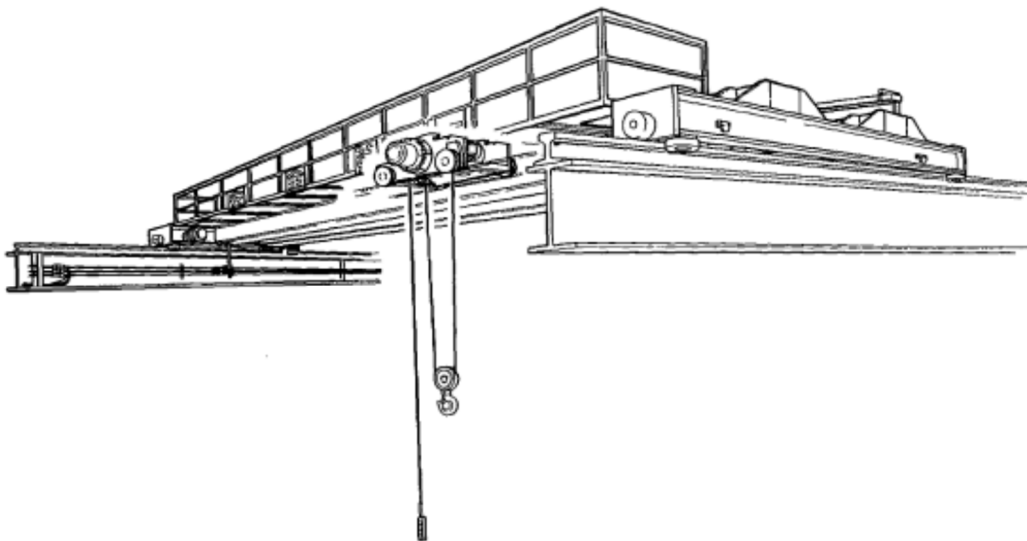
[Low-head crane]



[Overhead crane]

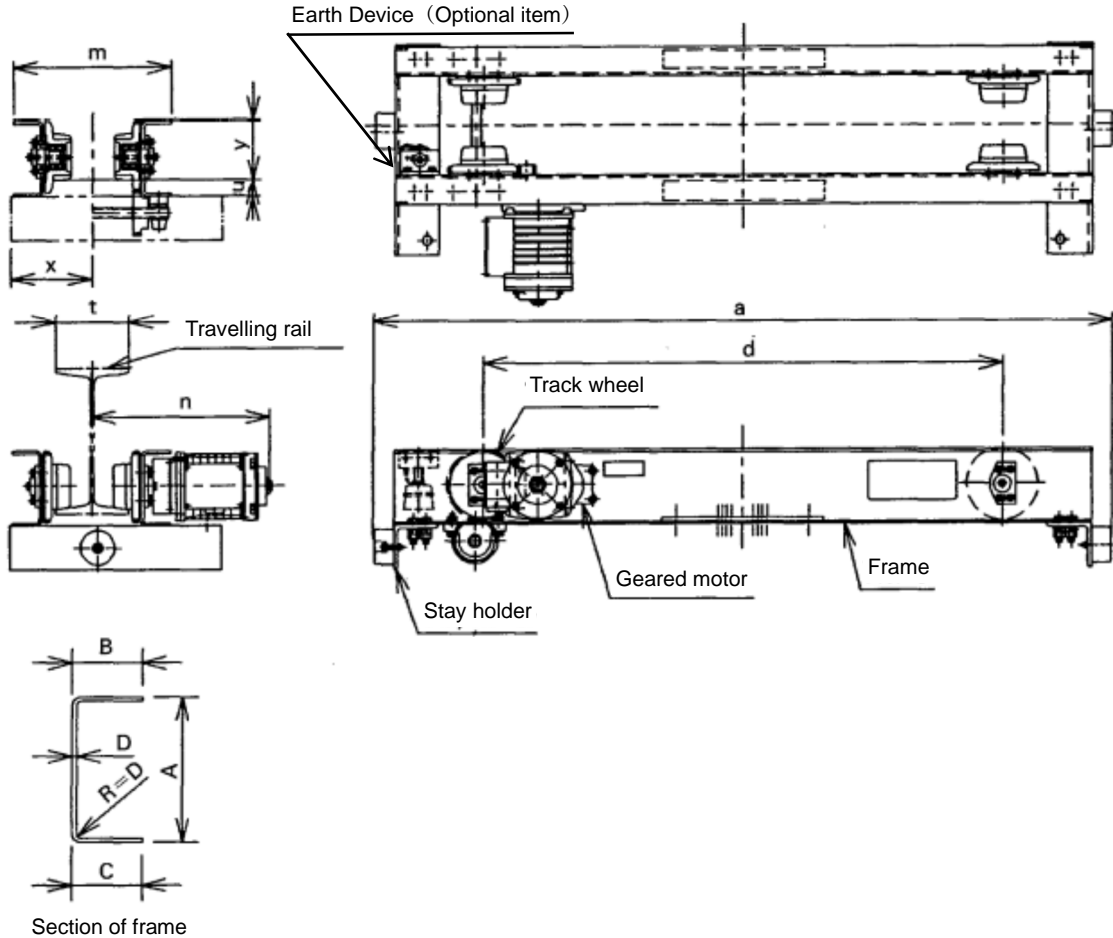


[Double girder crane]



4.2 Specifications and outer appearance

Urethane wheel low-head type motorized end carriage



Frame size A×B×C×D (mm)

WLL (t)	Span (m)	
	6	9
1	155×60×60×6	
2	200×80×80×9	

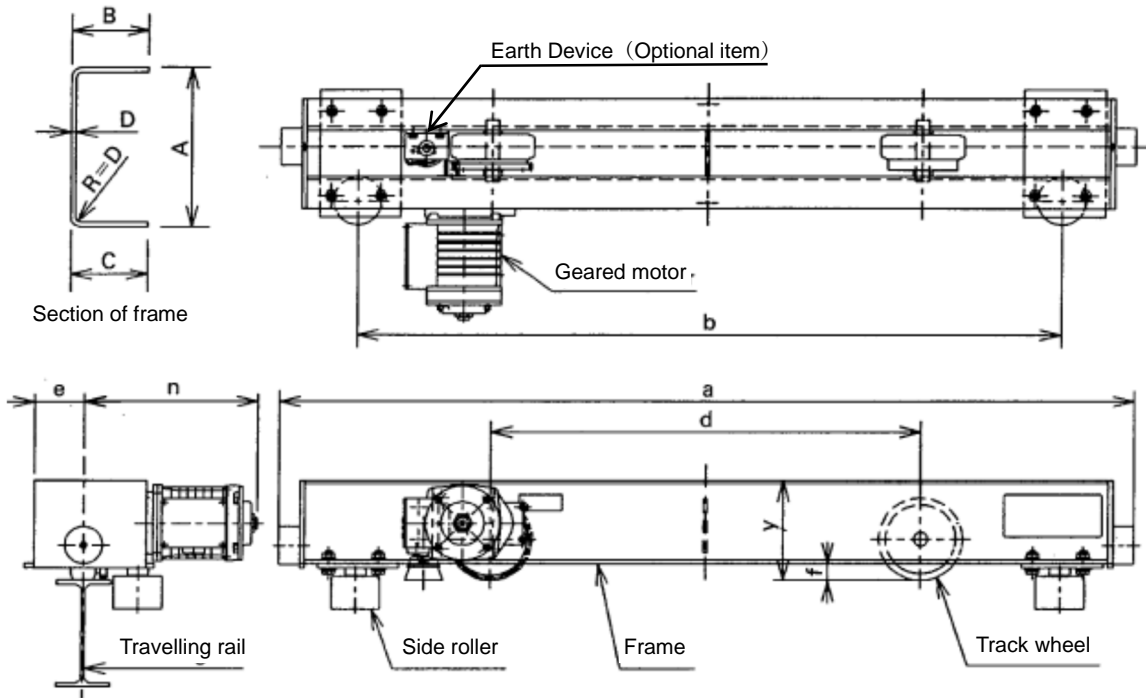
WLL	Max. span	Type	Code	Traveling motor output [kW×2] 50/60Hz [m/min]				Wheel diameter	Applicable traveling rail width	a	d	m	u	x	*2y	*1n	Max. wheel pressure	Net weight
				L	S	H	SD											
[t]	[m]			10/12	20/24	30/36	20:5/24:6	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[kg]	[kg]	
1	9	CEL010-9	N6CL310V	0.25	0.20	0.25	0.25/0.063	95	125 to 150	1500	1060	t+171	34	241-t/2	121	t/2+288	390	143
2	9	CEL020-9	N6CL320V	0.4	0.4	0.75	0.4/0.1	125	125 to 150	1500	1060	t+211	35	281-t/2	165	t/2+336	710	231

*1: Dimensions for standard speed geared motor

*2: Height from the traveling surface of the rail to the top point of the end carriage.

WLL: Working load limit

Urethane wheel overhead type motorized end carriage



Frame size A×B×C×D (mm)

Span (m)	9	12	15	18	21
WLL (t)	155×60×60×6		200×70×70×6		
1		155×60×60×6			200×90×90×9
2		200×95×95×6		200×95×95×6	
3		200×95×95×6		200×80×80×9	240×105×105×9
5		200×95×95×6		240×105×105×9	
7.5					300×125×125×9
10		200×80×80×9			

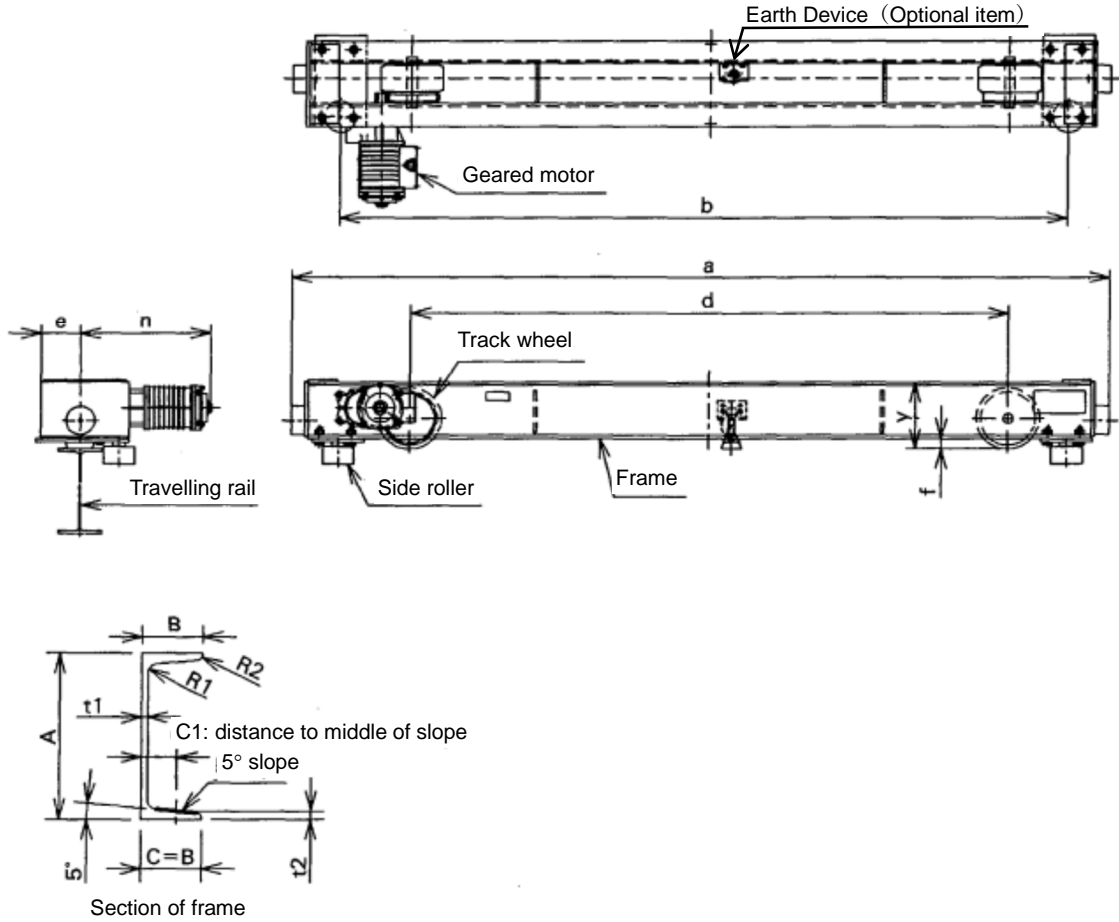
WLL	Max. span	Type	Code	Traveling motor output [kW×2] 50/60Hz [m/min]				Wheel diameter	Applicable traveling rail width	a	d	m	u	x	*2y	*1n	Max. wheel pressure	Net weight
				L	S	H	SD											
				10/12	20/24	30/36	20.5/24.6											
1	9	CEO010-9	N6CO310E	0.25	0.25	0.25	0.25/0.063	155	100 to 150	1586	1307	800	92	32	188	317	800	156
	12	CEO020-12	N6CO420E	0.4	0.4	0.4	0.4/0.1	175	150 to 200	1696	1445	900	112	32	188	383	1500	202
	18	CEO010-18	N6CO610E	0.4	0.4	0.4	0.4/0.1	175	150 to 200	2356	2105	1200	122	32	233	383	1500	265
	21	CEO030-21	N6CO730E	0.75	0.75	0.75	0.75/0.19	220	150 to 200	2792	2499	1400	147	39	239	454	3400	502
2	12	CEO020-12	N6CO420E	0.4	0.4	0.4	0.4/0.1	175	150 to 200	1696	1445	900	112	32	188	383	1500	202
	15	CEO030-15	N6CO530E	0.75	0.75	0.75	0.75/0.19	220	150 to 200	2082	1761	1000	152	39	239	451	3400	384
	18	CEO030-18	N6CO630E	0.75	0.75	0.75	0.75/0.19	220	150 to 200	2422	2101	1200	152	39	239	451	3400	398
	21	CEO030-21	N6CO730E	0.75	0.75	0.75	0.75/0.19	220	150 to 200	2792	2499	1400	147	39	239	454	3400	502
3	15	CEO030-15	N6CO530E	0.75	0.75	0.75	0.75/0.19	220	150 to 200	2082	1761	1000	152	39	239	451	3400	384
	18	CEO030-18	N6CO630E	0.75	0.75	0.75	0.75/0.19	220	150 to 200	2422	2101	1200	152	39	239	451	3400	384
	21	CEO030-21	N6CO730E	0.75	0.75	0.75	0.75/0.19	220	150 to 200	2792	2499	1400	147	39	239	454	3400	502
5	12	CEO050-12	N6CO450E	0.75	0.75	1.5	0.75/0.19	220	150 to 200	1852	1531	900	152	39	239	451	3400	355
	18	CEO050-18	N6CO650E	1.5	1.5	1.5	1.5/0.38	260	150 to 200	2402	2106	1200	139	39	239	540	4200	543
	21	CEO075-21	N6CO775E	1.5	1.5	1.5	1.5/0.38	340	150 to 200	2821	2506	1400	184	39	279	553	6300	665
7.5	12	CEO100-12	N6CO411E	1.5	1.5	1.5	1.5/0.38	340	150 to 200	2081	1766	900	159	39	239	553	6300	525
	18	CEO075-18	N6CO675E	1.5	1.5	1.5	1.5/0.38	340	150 to 200	2421	2106	1200	184	39	279	553	6300	627
	21	CEO075-21	N6CO775E	1.5	1.5	1.5	1.5/0.38	340	150 to 200	2821	2506	1400	184	39	279	553	6300	665
10	12	CEO100-12	N6CO411E	1.5	1.5	1.5	1.5/0.38	340	150 to 200	2081	1766	900	159	39	239	553	6300	525
	21	CEO100-21	N6CO711E	1.5	1.5	1.5×2	1.5/0.38	440	200 to 250	2849	2509	1400	234	46	346	592	8300	1027[1220]

*1: Dimensions for standard speed geared motor

*2: height from the traveling surface of the rail to the top point of the end carriage.

WLL: Working load limit

Urethane wheel overhead type double girder motorized end carriage (1)



Frame size AxBxt1xt2 (mm)

Symbol	Size	R1	R2	C1
FRM1	200×80×7.5×11	12	6	47
FRM2	250×90×9×13	14	7	53

Symbol of frame size

Span (m)	15	21	27
WLL (t)	FRM1	FRM1	FRM2
3			
5			
7.5	FRM2		

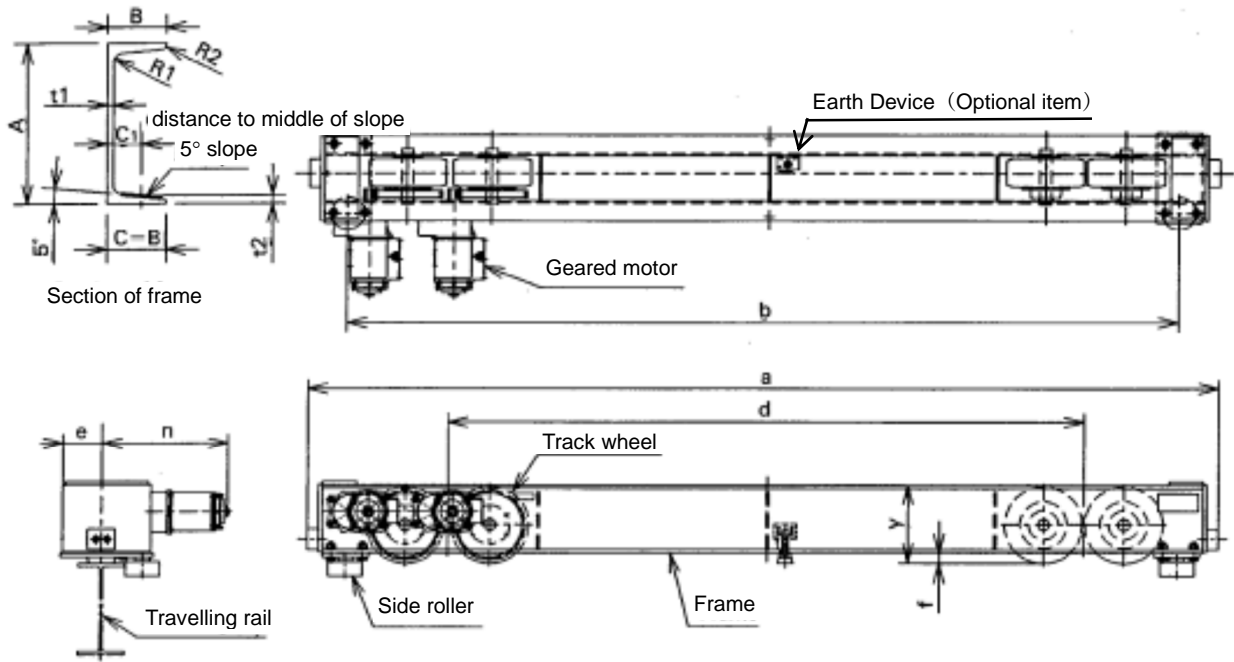
WLL	Max. span	Type	Code	Traveling motor output [kW×2] 50/60Hz [m/min]				Wheel diameter	Applicable traveling rail width	a	d	m	u	x	*2y	*1n	Max. wheel pressure	Net weight
				L	S	H	SD											
				[t]	[m]	[mm]	[mm]											
3	15	WCO030-15	N6KO530E	0.75	0.75	1.5	0.75/0.19	220	150 to 200	2851	2539	2085	137	39	239	453	3400	524
	21	WCO030-21	N6KO730E	1.5	1.5	1.5	1.5/0.38	260	150 to 200	3111	2796	2295	139	39	239	538	4200	653
	27	WCO030-27	N6KO930E	1.5	1.5	1.5	1.5/0.38	300	150 to 200	3211	2896	2140	159	39	239	548	4400	881
5	15	WCO030-21	N6KO730E	1.5	1.5	1.5	1.5/0.38	260	150 to 200	3111	2796	2295	139	39	239	538	4200	653
	21	WCO075-15	N6KO575E	1.5	1.5	1.5	1.5/0.38	340	150 to 200	3091	2776	2230	169	39	239	553	6300	930
7.5	15	WCO075-15	N6KO575E	1.5	1.5	1.5	1.5/0.38	340	150 to 200	3091	2776	2230	169	39	239	553	6300	930

*1: Dimensions for standard speed geared motor

*2: Height from the traveling surface of the rail to the top point of the end carriage.

WLL: Working load limit

Urethane wheel overhead type with double girder motorized end carriage (2)



Frame size A×B×l1×t2 (mm)

Symbol	Size	R1	R2	C1
FRM1	250×90×9×13	14	7	53
FRM2	300×90×9×13	14	7	53
FRM3	300×90×10×15.5	19	9.5	55
FRM4	380×100×10.5×16	18	9	60
FRM5	380×100×13×20	24	12	62

Symbol of frame size

WLL (t)	Span (m)		
	15	21	27
5	---	---	---
7.5	FRM1	FRM1	FRM2
10	---	---	---
15	FRM3	FRM4	---
20	FRM4	FRM5	FRM5

WLL	Max. span	Type	Code	Traveling motor output [kW×2] 50/60Hz [m/min]				Wheel diameter	Applicable traveling rail width	a	d	m	u	x	*2y	*1n	Max. wheel pressure	Net weight
				L	S	H	SD											
				[mm]	[mm]	[mm]	[mm]											
5	27	WCO075-21	N6KO775E	1.5×2	1.5×2	1.5×2	1.5/0.38×2	260×2	175 to 200	3771	3456	2700	149	39	289	540	4200	1150
	21	WCO075-21	N6KO775E	1.5×2	1.5×2	1.5×2	1.5/0.38×2	260×2	175 to 200	3771	3456	2700	149	39	289	540	4200	1160
7.5	27	WCO075-27	N6KO975E	1.5×2	1.5×2	1.5×2	1.5/0.38×2	300×2	175 to 200	4059	3701	2900	159	46	346	548	4400	1438
	15	WCO075-21	N6KO775E	1.5×2	1.5×2	1.5×2	1.5/0.38×2	260×2	175 to 200	3771	3456	2700	149	39	289	540	4200	1160
10	21	WCO075-27	N6KO975E	1.5×2	1.5×2	1.5×2	1.5/0.38×2	300×2	175 to 200	4059	3701	2900	159	46	346	548	4400	1438
	27	WCO150-21	N6KO715E	1.5×2	1.5×2	1.5×2	1.5/0.38×2	340×2	200 to 250	4412	4063	3220	179	46	426	554	6300	1672
15	15	WCO150-15	N6KO515E	1.5×2	1.5×2	1.5×2	1.5/0.38×2	340×2	200 to 250	3992	3643	2790	169	46	346	554	6300	1378
	21	WCO150-21	N6KO715E	1.5×2	1.5×2	1.5×2	1.5/0.38×2	340×2	200 to 250	4412	4063	3220	179	46	426	554	6300	1672
	27	WCO200-21	N6KO721E	1.5×2	1.5×2	-	1.5/0.38×2	340×2	250 to 300	5172	4823	3800	209	46	426	593	8300	2575
20	27	WCO200-21	N6KO721E	-	-	2.2×2	-	440×2	250 to 300	5292	4943	3840	209	46	426	709	8300	2700
	15	WCO200-15	N6KO521E	1.5×2	1.5×2	-	1.5/0.38×2	440×2	250 to 300	4742	4393	3380	209	46	426	593	8300	2214
	15	WCO200-15	N6KO521E	-	-	2.2×2	-	440×2	250 to 300	4872	4523	3420	209	46	426	709	8300	2336
	21	WCO200-21	N6KO721E	1.5×2	1.5×2	-	1.5/0.38×2	440×2	250 to 300	5172	4823	3800	209	46	426	593	8300	2575
	21	WCO200-21	N6KO721E	-	-	2.2×2	-	440×2	250 to 300	5292	4943	3840	209	46	426	709	8300	2700
	27	WCO200-27	N6KO921E	1.5×2	1.5×2	-	1.5/0.38×2	440×2	250 to 300	5422	5073	4070	209	46	426	593	8300	2944
	27	WCO200-27	N6KO921E	-	-	2.2×2	-	440×2	250 to 300	5552	5203	4110	209	46	426	709	8300	3071

*1: Dimensions for standard speed geared motor

*2: Height from the traveling surface of the rail to the top point of the end carriage.

WLL: Working load limit

5. Assembly, wiring and test run



WARNING : ALWAYS make sure that the load supporting structures and load attaching device are strong enough to hold the weight of load and hoist. Have all assembly works by the authorized people. Off-limits to unauthorized people in assembly works area.

5.1 Assembly

For detailed assembly instructions, refer to the urethane wheel crane's assembly manual. The end carriage can be easily set on the travel rails with the following procedure.

<Low-head type carriage>

- (a) Detach all track wheels and axles from the end carriage as shown in Fig. 1.
The end carriage frame can be erected without detaching it from the girder. Reassemble the track wheels and axles when the end carriage is in position.
There is always the risk of the hoist and trolley moving when installing, therefore it is easy to fix them to the girder. Also, pay attention when assembling with the power supply cable, junction cable and other accessories.
- (b) Installing as shown in Fig. 1.

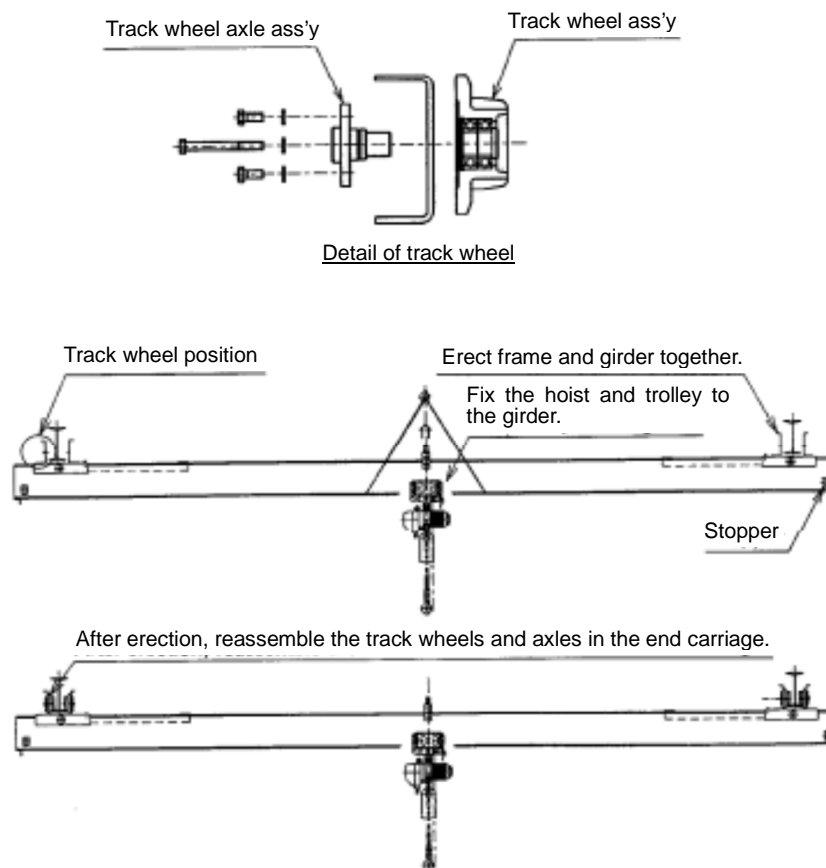


Fig. 1

- (c) Precautions in installation (Refer to Fig. 2)

Pay attention to the following points when coupling the end carriage to the girder on site.

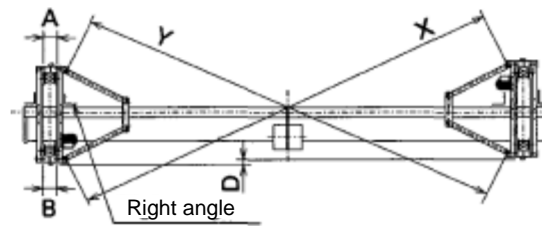


Fig. 2

- Keep the end carriage frames parallel (A and B should be the same).
- Minimize any discrepancy between the left and right end carriage frames position (D should be minimized).

⚠ WARNING : If improperly assembled and installed, the crane will repeatedly strike the stopper on the travel rail. This may cause bolts to loosen or other trouble.

- Keep the end carriage at a right angle to the girder.
- Minimize any discrepancy in angling between the left and right end carriage frames (X and Y dimensions).

⚠ WARNING : When installing the hoist and trolley on the girder, refer to the “Safety Instructions” for your hoist and trolley respectively provided.

<Overhead type crane>

- (a) Generally, the simple way to erect the completed crane is shown in Fig. 3. Lift crane into position of following figure, then turn the crane so as to fit on the travel rails.

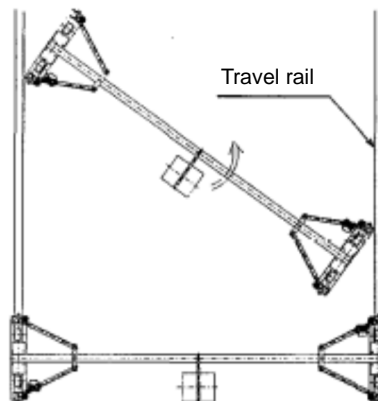


Fig. 3

- (b) Precautions in installation (Refer to Fig. 4).

The end carriage comes set at a right angle to the girder and squared to size when delivered, nevertheless, pay attention to the following points when coupling the end carriage to the girder on-site.

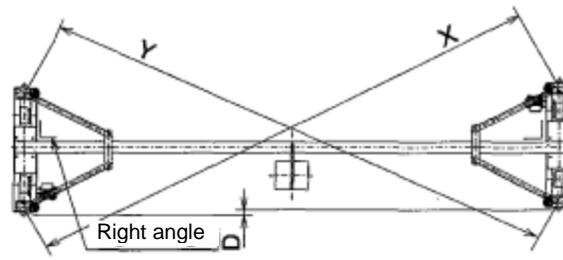


Fig. 4

- Minimize any discrepancy between the left and right end carriage frames position (D should be minimized).

⚠ WARNING : If improperly assembled and installed, the crane will repeatedly strike the stopper on the travel rail. This may cause bolts to loosen or other trouble.

- Keep the end carriage at a right angle to the girder.
- Minimize any discrepancy in angling between the left and right end carriage frames (X and Y dimensions).
- When using a urethane wheel crane, please lay a dedicated earth wire. When using an earth brush, do not paint on the running surface of the track wheel. (Painting can also cause the track wheel to slip)

⚠ WARNING : When installing the hoist and trolley on the girder, refer to the “Safety Instructions” for your hoist and trolley respectively provided.

<Double girder crane>

Many double girder cranes come equipped with peripheral equipment and accessories, and there are equally as many different ways to erect them.

- If the crane can be erected with the left and right end carriage frames attached to the girder, then erect the crane according to the same procedure described for overhead cranes, check dimensions after erecting the equipment, and adjust where necessary.
- If the crane cannot be erected with the left and right end carriage frames attached to the girder, then first erect the end carriage frames on the travel rails as shown in Fig. 5. Next, turn the girders so as to fit between the travel rails and lift into position, and attach the girders to the end carriage frames on the travel rail. When assembling, set the end carriages to a right angle with the girder and square with one another, and adjust span as necessary. (Refer to Fig.5)

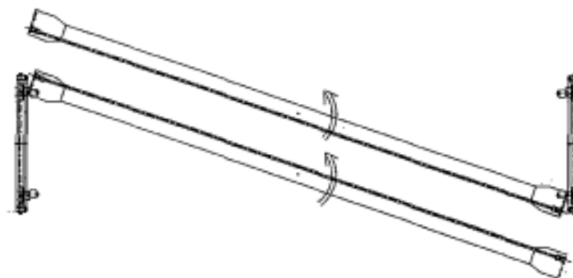


Fig. 5

(c) Precautions in installation (Refer to Fig. 6).

Pay attention to the following points when coupling the end carriage to the girder on-site.

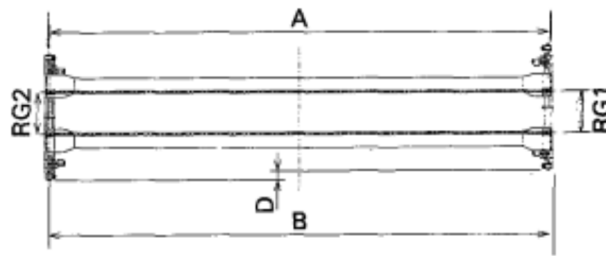


Fig. 6

- Minimize any discrepancy between the left and right end carriage frames position (D should be minimized). If improperly assembled and installed, the crane will repeatedly strike the stopper on the travel rail. This may cause bolts to loosen or other trouble.
- Minimize any discrepancy in rail gauge between the traverse rails (RG1 and RG2 dimensions).
- Keep the end carriage frames parallel (A and B should be the same).

5.2 Wiring



: ALWAYS turn OFF power source or breaker switch to prevent electric shock before beginning the wiring process.

HAVE all wiring performed by an authorized electrician.

Power can be supplied by the cable power supply, tro-reel, or trolley duct systems. For wiring from the power source to the crane's control box, refer to "9. Power supply" in this manual.

5.2.1 Control box internal wiring

Control box wiring differs depending on whether the emergency stop device (option) to the push button switch is attached or not, and whether an electric chain hoist or rope hoist is used. Check wiring diagrams before wiring.

For your reference, typical wiring schemes are shown in Figs. 7 through 12.

5.2.1 Electric traversing wire rope hoist with motorized trolley single speed (end carriage), without emergency stop device.

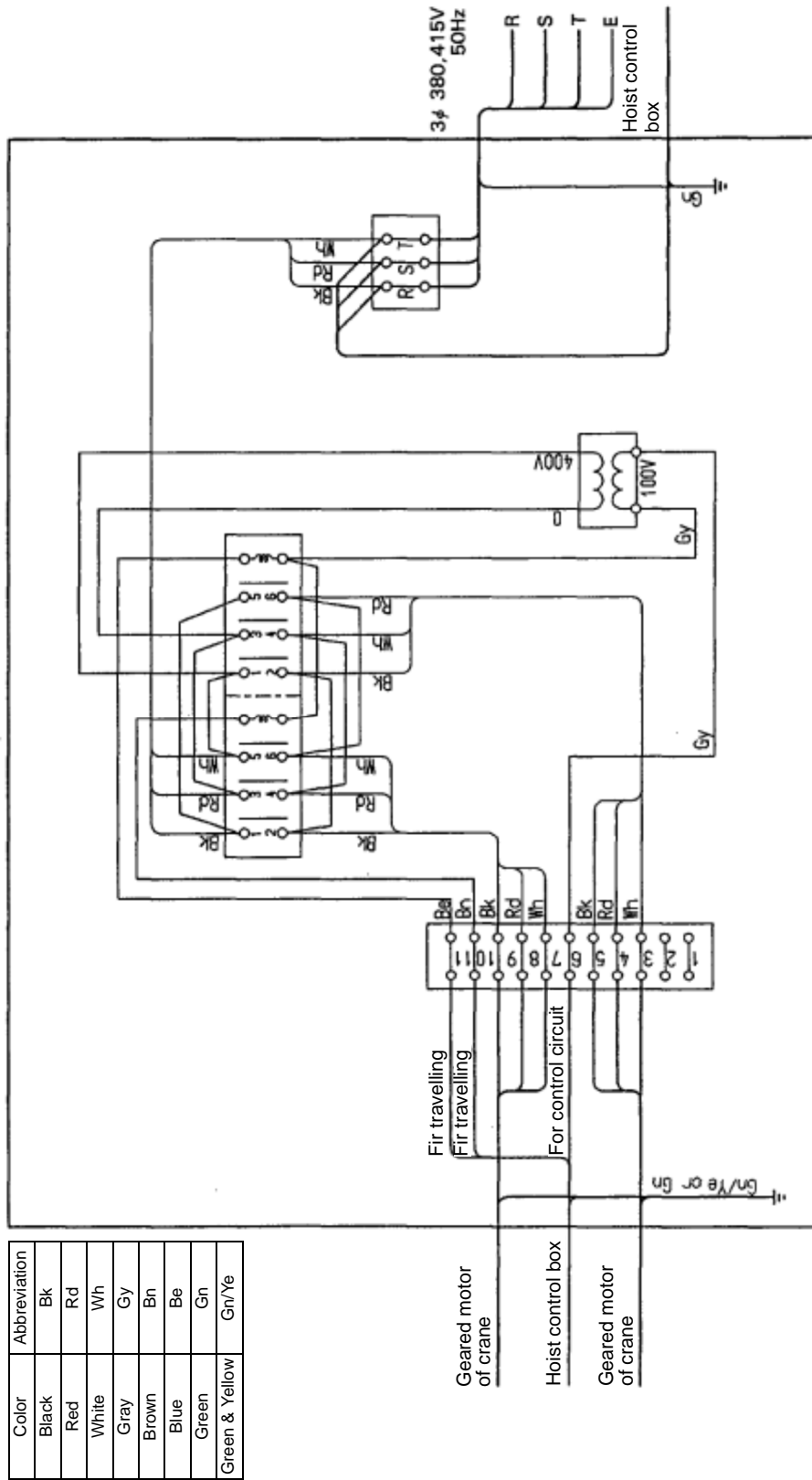


Fig. 7

5.2.1 Electric traversing wire rope hoist with motorized trolley single speed (end carriage), without emergency stop device.

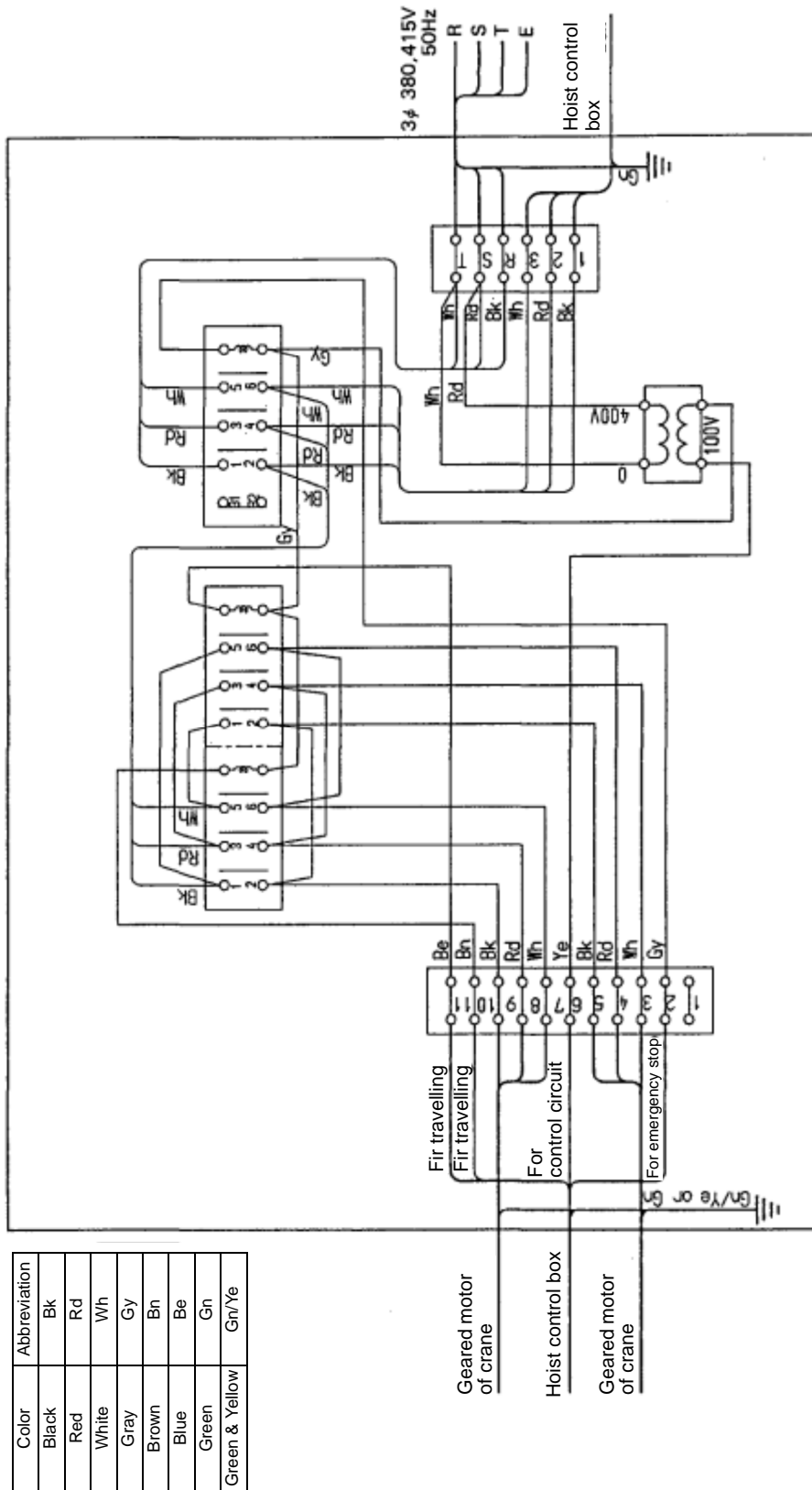
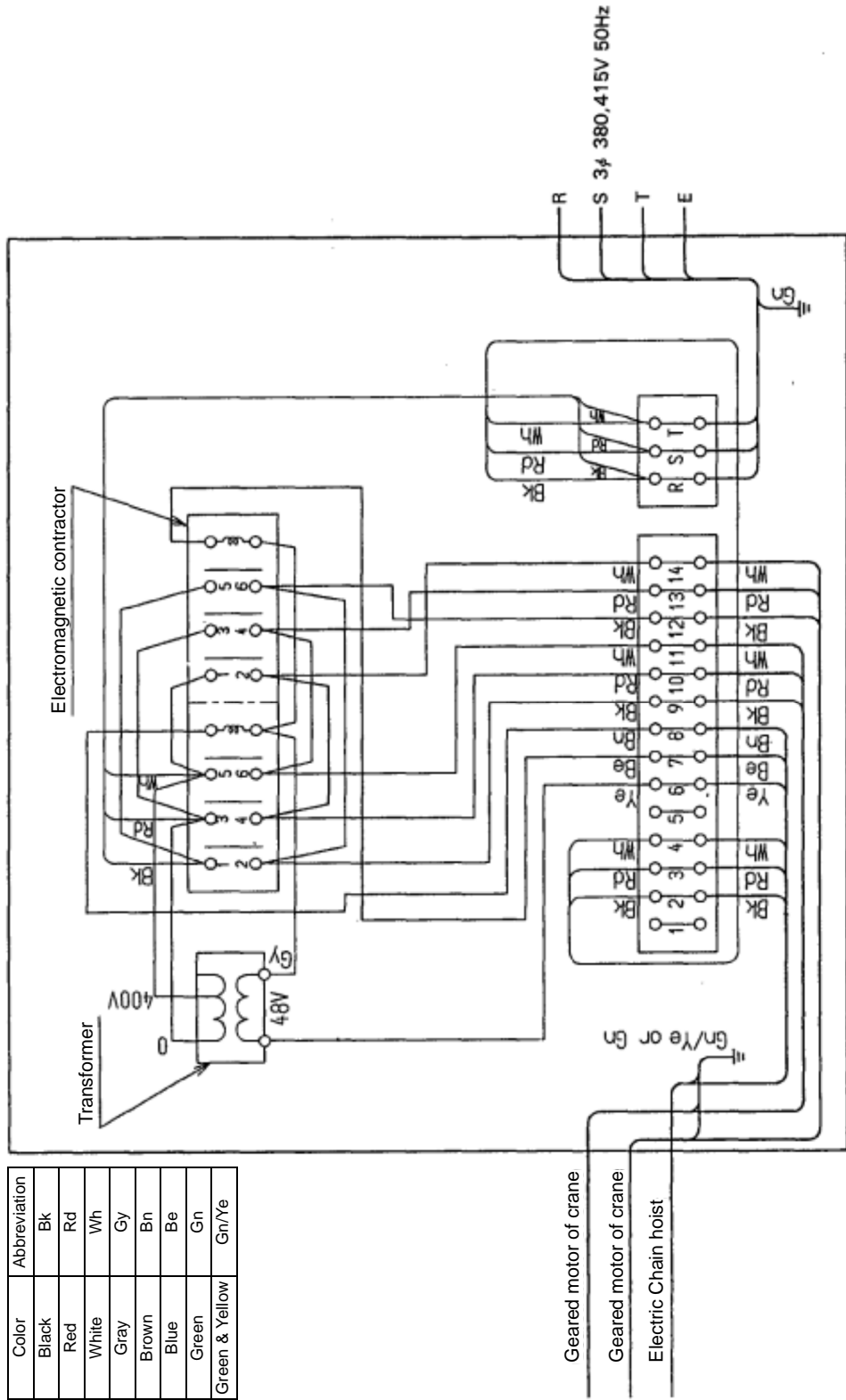


Fig. 8

5.2.1 Electric traversing wire rope hoist with motorized trolley single speed (end carriage), without emergency stop device.



Color	Abbreviation
Black	Bk
Red	Rd
White	Wh
Gray	Gy
Brown	Bn
Blue	Be
Green	Gn
Green & Yellow	Gn/Ye

Geared motor of crane
 Geared motor of crane
 Electric Chain hoist

* A disuse wire among three wires of the primary side of the transformer shall be isolated and rolled to be fixed securely.

Fig. 9

5.2.1 Electric traversing wire rope hoist with motorized trolley single speed (end carriage), without emergency stop device.

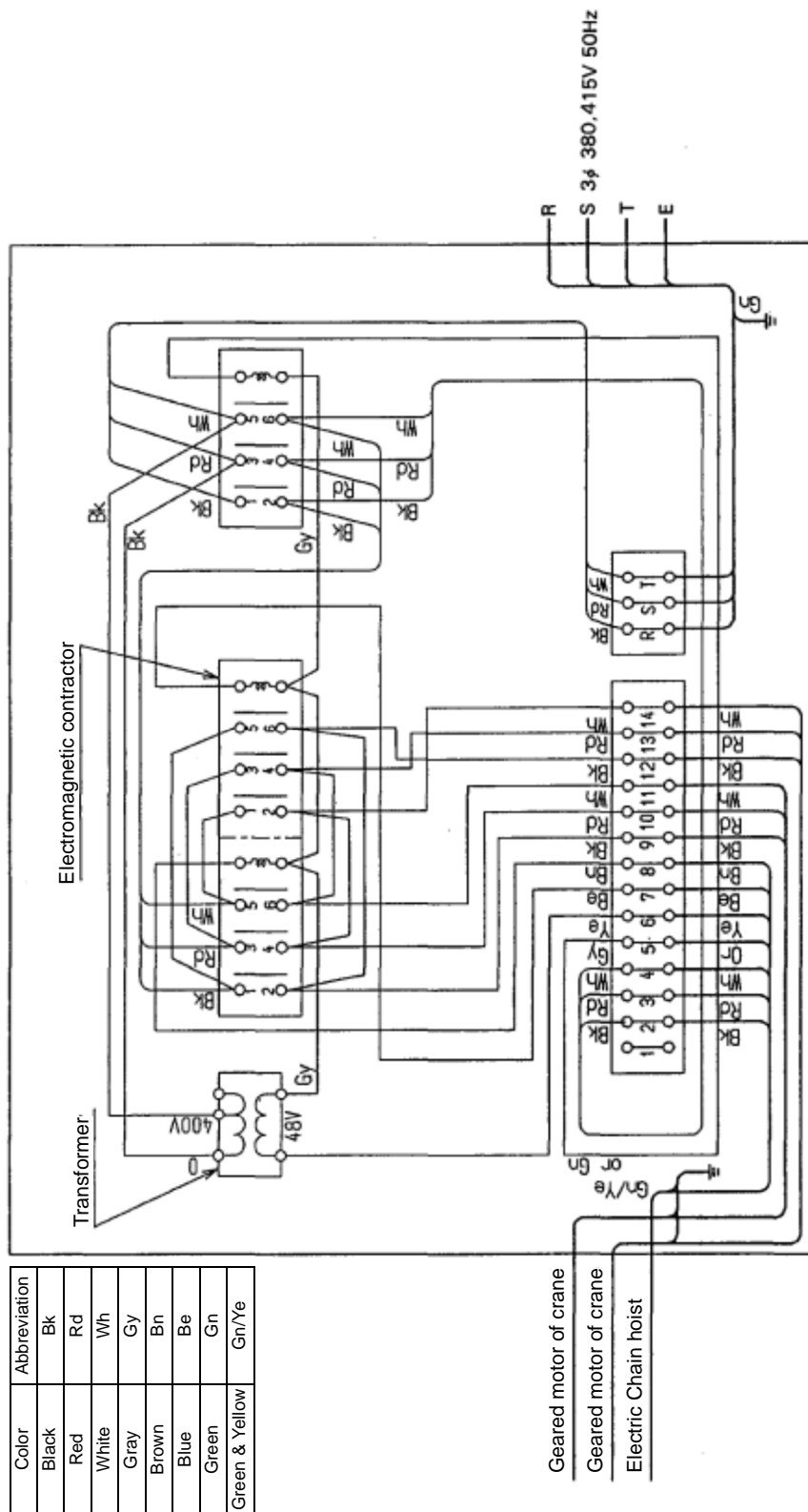


Fig. 10

5.2.1 Electric traversing wire rope hoist with motorized trolley single speed (end carriage), without emergency stop device.

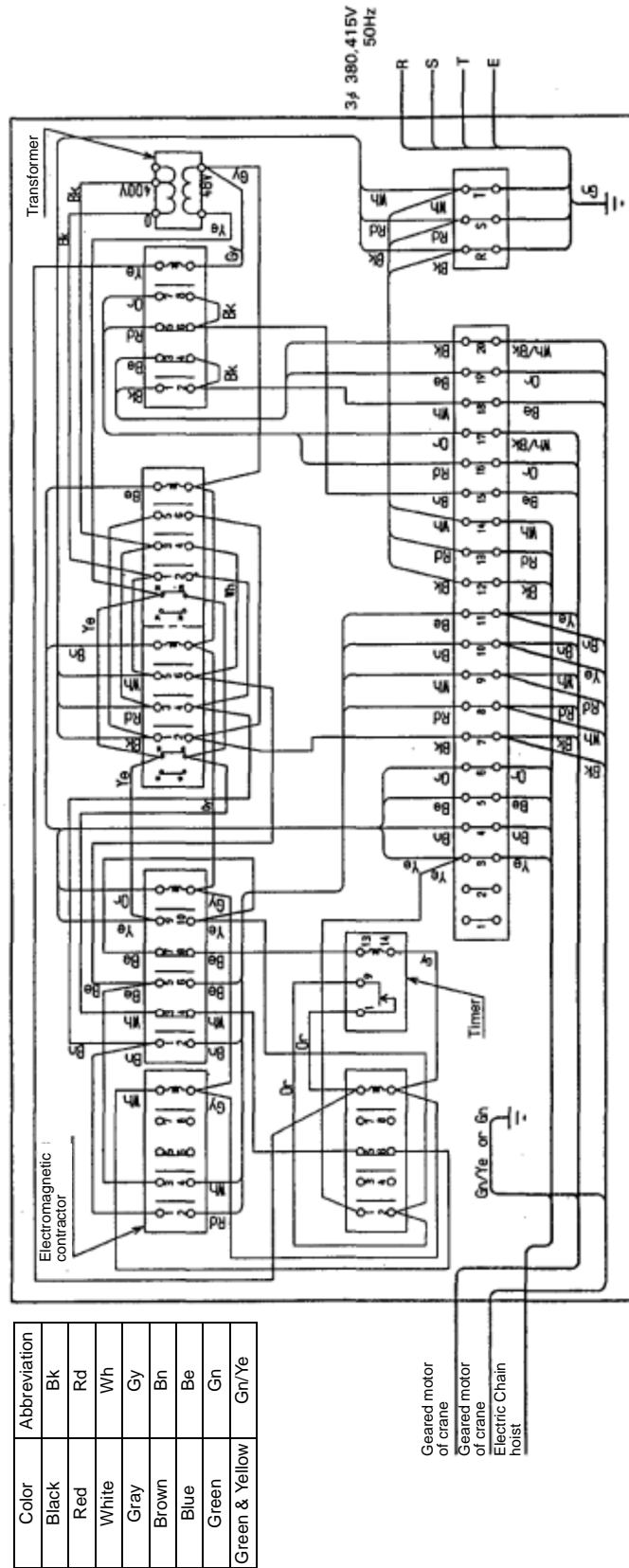


Fig. 11

5.2.1 Electric chain hoist with motorized trolley, dual speed (end carriage), with emergency stop device.

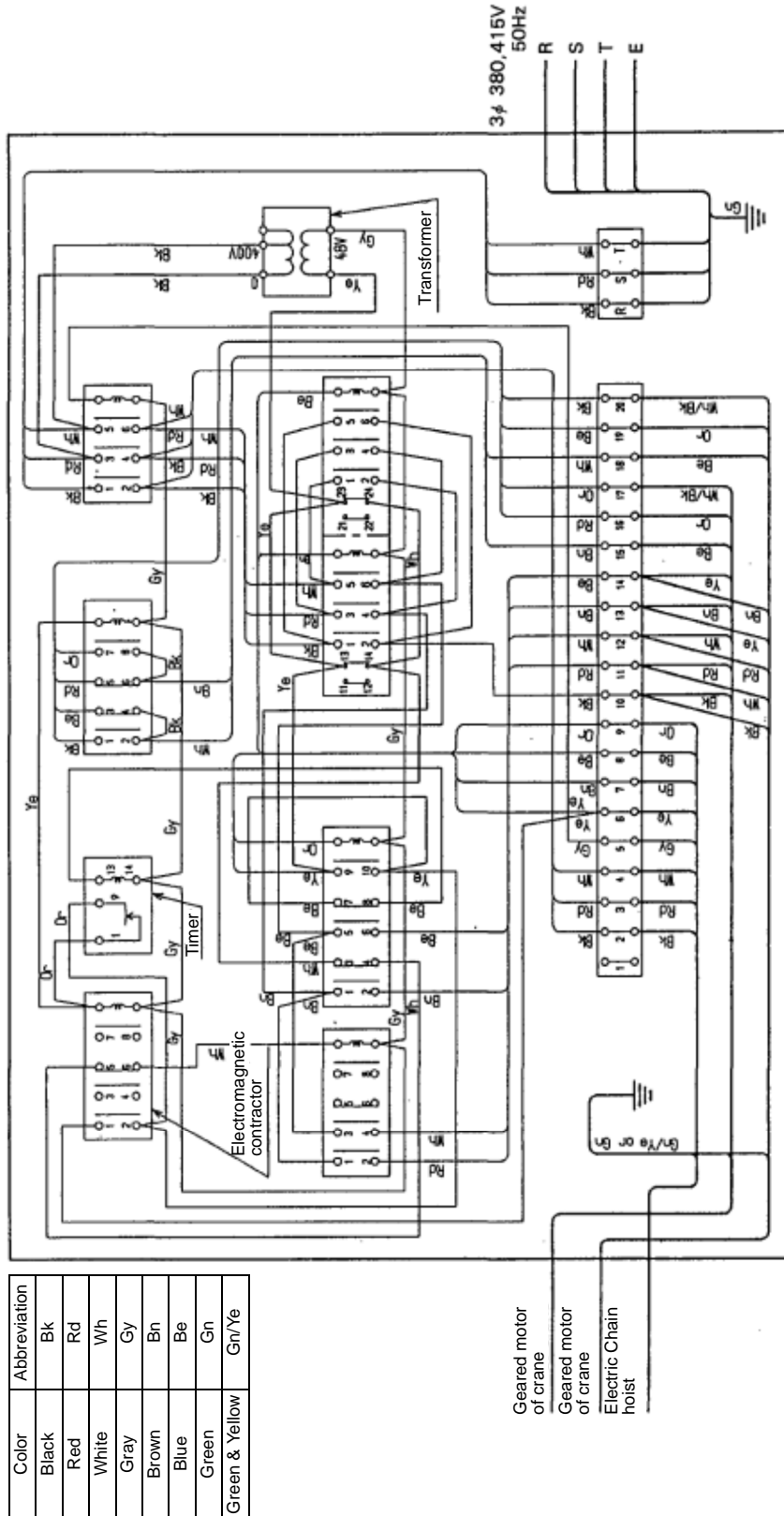


Fig. 12

5.2.2 Traverse side power supply

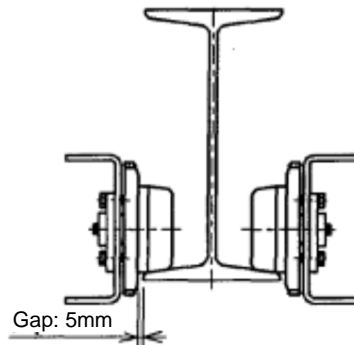
Though different according to span, cranes generally use a cable power supply system.

5.3 Test run

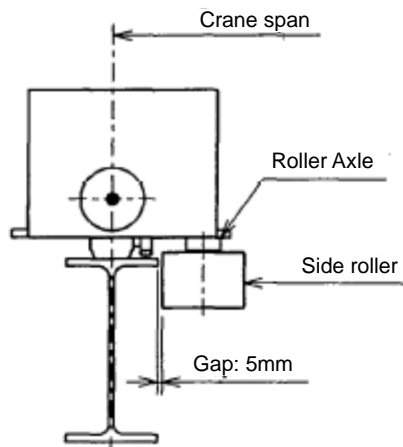
Re-check the following points after the crane has been installed.

- (a) Make sure the stoppers are securely set on the girder, and that bolts are tight.
 - (b) Make sure bolts coupling the end carriages to the girders are tight.
 - (c) Make sure that bolts fastening the track wheel axles are tight.
 - (d) Make sure the power collector moves smoothly.
 - (e) Make sure the left and right end carriages are not backwards.
- After the above checks, check the following points to see if the crane travels properly.

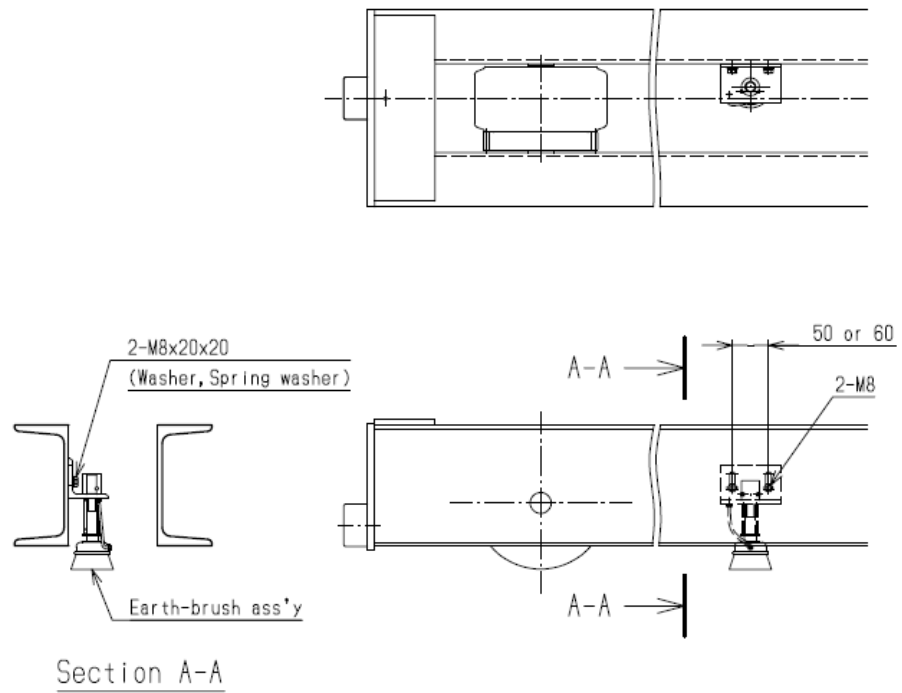
- (f) Make sure no abnormal noises are made.
- (g) Make sure the crane does not travel on an incline or swerve.
- (h) Make sure the gap (approx. 5mm) between the travel rail and track wheel flange is the same on both left and right sides.



- (i) Make sure the gap (approx. 5mm) between the travel rail and side rollers is the same on both left and right sides.



If you cannot lay a dedicated earth wire, please attach the earth brush (optional item) as shown in the following.



- j) After the above checks but before actually using the equipment, try lifting, lowering, traveling and traversing with a rated load suspended. Check the crane and parts move smoothly.

6. For better usage

There are things “to do” and “not to do”, in order to safely operate the equipment and maintain it in proper working order for many years.

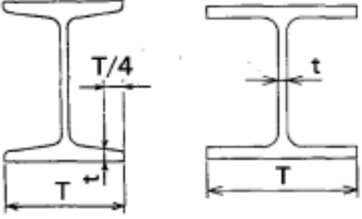
⚠ WARNING : Red carefully “Safety Instructions” for your hoist and trolley respectively provided.

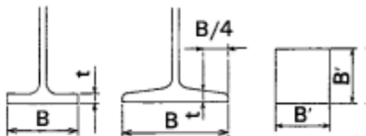
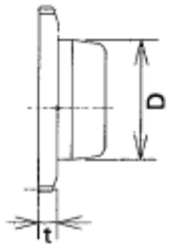

7. Maintenance and inspections

In order to safety operate the equipment and maintain it in proper working order for many years, perform daily, monthly and yearly checks on it. For your reference, sample monthly and yearly check lists are provided at the end of this manual.

7.1 Check items and criteria for judgement

Part	Check item	Inspection method	Discard limit/criteria	Remedy
Crane electric parts	1. Power supply [For cable power supply system]			
	<ul style="list-style-type: none"> • Messenger wire tautness • Cable hanger installation and mobility • Cable length 	<ul style="list-style-type: none"> • Check visually. • Check visually. • Check visually. 	<ul style="list-style-type: none"> • The wire must be sufficiently taut. • The cable must be hung at intervals but never twisted. • The cable must be longer than crane’s maximum travel distance. 	<ul style="list-style-type: none"> • Tighten where necessary. • Replace hangers where necessary. • Replace cable with a longer one where necessary.
	2. Ground connection	<ul style="list-style-type: none"> • Check grounded parts. 	<ul style="list-style-type: none"> • Parts must be grounded to meet 100Ω resistance against ground. • Insulating objects like paint must not be found on the travel surfaces. 	<ul style="list-style-type: none"> • Ground parts in conformity with your local wiring regulations. • Remove any insulating objects.
	3. Insulation	<ul style="list-style-type: none"> • Measure charged and non-charged parts with an insulation resistance meter. 	<ul style="list-style-type: none"> • Insulation resistance must be 0.5MΩ more. 	<ul style="list-style-type: none"> • Investigate the cause and eliminate the trouble.

Part	Check item	Inspection method	Discard limit/criteria	Remedy
Travel rail	4. Travel rail			
	• Rail surface wear	• Check visually and use calipers where necessary.	<ul style="list-style-type: none"> • The travel rail surface must not be worn.  <ul style="list-style-type: none"> • Wear limit for T: Up to 5% of new part • Wear limit for t: Up to 10% of new part 	• Replace worn parts.
	• Looseness in fixing bolts	• Try turning with a wrench.	• Fixing bolts and hook bolts must be sufficiently tight.	• Tighten where necessary.
	• Oil accumulation on rail surface	• Check visually.	• The rail surface must be free of oil.	• Clean where necessary.
	• Span	• Measure with a tape measure or other means.	• Crane span Low-head crane: $\pm 5\text{mm}$ Overhead crane: $\pm 5\text{mm}$ Double girder crane: $\pm 5\text{mm}$	• Adjust to the prescribed span.
• Rail slope	• Measure with a level.	• Slope must be within 1/1000 of the distance between supporting beams.	• Adjust to the prescribed level.	
• Rail deformation	• Check visually and use calipers where necessary.	• For I-beams, no deformation or sagging must be found.	• Replace deformed parts.	
Girder	5. Girder			
	• Girder deformation	• Check visually and use calipers where necessary.	• For I-beam, no deformation or sagging must be found.	• Reinforce or replace parts as necessary.
	• Welded parts	• Check visually and perform color check where necessary.	<ul style="list-style-type: none"> • No cracks must be found. • No corrosion must be found. 	• Reinforce or repair part as necessary.

Part	Check item	Inspection method	Discard limit/criteria	Remedy																																									
Girder	<ul style="list-style-type: none"> Girder wear 	<ul style="list-style-type: none"> Check visually and use calipers where necessary. 	<ul style="list-style-type: none"> The travel rail surface must not be worn.  <ul style="list-style-type: none"> Wear limit for B: Up to 5% of new part Wear limit for B': UP to 10% of new part Wear limit for t: Up to 10% of new part 	<ul style="list-style-type: none"> Replace worn parts. 																																									
	<ul style="list-style-type: none"> Looseness in fixing bolts Deflection 	<ul style="list-style-type: none"> Try turning with a wrench. Measure with a level under rated load. 	<ul style="list-style-type: none"> Fixing bolts girder must be sufficiently tight. Deflection must be within 1/800 or less of the span. 	<ul style="list-style-type: none"> Tighten where necessary. Reinforce girders or lower the rated load. 																																									
End carriage	6. End carriage <ul style="list-style-type: none"> Track wheel wear 	<ul style="list-style-type: none"> Measure with calipers  	<ul style="list-style-type: none"> Wear in the travel surface and flange must not exceed in the below figures. <p><Track wheels for low head crane></p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th colspan="4" style="text-align: right;">mm</th> </tr> </thead> <tbody> <tr> <td rowspan="2" style="text-align: center;">ϕD</td> <td>Standard dimension</td> <td style="text-align: center;">$\phi 95$</td> <td style="text-align: center;">$\phi 125$</td> </tr> <tr> <td>When worn</td> <td style="text-align: center;">$\phi 90$</td> <td style="text-align: center;">$\phi 115$</td> </tr> <tr> <td rowspan="2" style="text-align: center;">t</td> <td>Standard dimension</td> <td style="text-align: center;">15</td> <td style="text-align: center;">15</td> </tr> <tr> <td>When worn</td> <td style="text-align: center;">12</td> <td style="text-align: center;">12</td> </tr> </tbody> </table> <p><Track wheels for overhead crane> <Track wheels for double girder crane></p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th colspan="5" style="text-align: right;">mm</th> </tr> </thead> <tbody> <tr> <td rowspan="3" style="text-align: center;">ϕD</td> <td>Standard dimension</td> <td style="text-align: center;">$\phi 155$</td> <td style="text-align: center;">$\phi 175$</td> <td style="text-align: center;">$\phi 220$</td> </tr> <tr> <td>When worn</td> <td style="text-align: center;">$\phi 149$</td> <td style="text-align: center;">$\phi 167$</td> <td style="text-align: center;">$\phi 209$</td> </tr> <tr> <td>Standard dimension</td> <td style="text-align: center;">$\phi 260$</td> <td style="text-align: center;">$\phi 340$</td> <td style="text-align: center;">$\phi 440$</td> </tr> <tr> <td rowspan="2" style="text-align: center;">t</td> <td>When worn</td> <td style="text-align: center;">$\phi 247$</td> <td style="text-align: center;">$\phi 330$</td> <td style="text-align: center;">$\phi 427$</td> </tr> </tbody> </table> <ul style="list-style-type: none"> No cracks must be found. 	mm				ϕD	Standard dimension	$\phi 95$	$\phi 125$	When worn	$\phi 90$	$\phi 115$	t	Standard dimension	15	15	When worn	12	12	mm					ϕD	Standard dimension	$\phi 155$	$\phi 175$	$\phi 220$	When worn	$\phi 149$	$\phi 167$	$\phi 209$	Standard dimension	$\phi 260$	$\phi 340$	$\phi 440$	t	When worn	$\phi 247$	$\phi 330$	$\phi 427$	<ul style="list-style-type: none"> Replace parts where exceeding their wear limit. Replace.
	mm																																												
ϕD	Standard dimension	$\phi 95$	$\phi 125$																																										
	When worn	$\phi 90$	$\phi 115$																																										
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t	When worn	$\phi 247$	$\phi 330$	$\phi 427$																																									
	<ul style="list-style-type: none"> Cracks in track wheel contact surface 	<ul style="list-style-type: none"> Check visually. 	<ul style="list-style-type: none"> No cracks must be found. 	<ul style="list-style-type: none"> Replace. 																																									

Part	Check item	Inspection method	Discard limit/criteria	Remedy																																				
End carriage	<ul style="list-style-type: none"> • Missing or mispositioned snap rings • Diameter of left and right track wheels 	<ul style="list-style-type: none"> • Check visually. • Measure with calipers or depress gauge. 	<ul style="list-style-type: none"> • No snap rings must be missing or out of position. • Difference in diameter must be within 1% or less. <table border="1"> <tr> <td colspan="3" style="text-align: center;"><Track wheels for lo-head crane></td> </tr> <tr> <td colspan="3" style="text-align: right;">mm</td> </tr> <tr> <td>Diameter</td> <td>ϕ 95</td> <td>ϕ 125</td> </tr> <tr> <td>Wear limit</td> <td>1.0</td> <td>1.2</td> </tr> </table> <table border="1"> <tr> <td colspan="4" style="text-align: center;"><Track wheels for overhead crane> <Track wheels for double girder crane></td> </tr> <tr> <td colspan="4" style="text-align: right;">mm</td> </tr> <tr> <td>Diameter</td> <td>ϕ 155</td> <td>ϕ 175</td> <td>ϕ 220</td> </tr> <tr> <td>Wear limit</td> <td>1.5</td> <td>1.7</td> <td>2.2</td> </tr> <tr> <td>Diameter</td> <td>ϕ 260</td> <td>ϕ 340</td> <td>ϕ 440</td> </tr> <tr> <td>Wear limit</td> <td>2.6</td> <td>3.4</td> <td>4.4</td> </tr> </table>	<Track wheels for lo-head crane>			mm			Diameter	ϕ 95	ϕ 125	Wear limit	1.0	1.2	<Track wheels for overhead crane> <Track wheels for double girder crane>				mm				Diameter	ϕ 155	ϕ 175	ϕ 220	Wear limit	1.5	1.7	2.2	Diameter	ϕ 260	ϕ 340	ϕ 440	Wear limit	2.6	3.4	4.4	<ul style="list-style-type: none"> • Put any out-of-place parts back in place. • Replace parts where exceeding their wear limit.
	<Track wheels for lo-head crane>																																							
	mm																																							
	Diameter	ϕ 95	ϕ 125																																					
Wear limit	1.0	1.2																																						
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Diameter	ϕ 260	ϕ 340	ϕ 440																																					
Wear limit	2.6	3.4	4.4																																					
<ul style="list-style-type: none"> • Side roller wear 	<ul style="list-style-type: none"> • Check visually or measure with calipers. 	<ul style="list-style-type: none"> • Roller wear must not exceed the below figures. <table border="1"> <tr> <td colspan="5" style="text-align: right;">mm</td> </tr> <tr> <td>Standard dimension</td> <td>ϕ 90</td> <td>ϕ 110</td> <td>ϕ 125</td> <td>ϕ 150</td> </tr> <tr> <td>When worn</td> <td>ϕ 82</td> <td>ϕ 102</td> <td>ϕ 117</td> <td>ϕ 142</td> </tr> </table>	mm					Standard dimension	ϕ 90	ϕ 110	ϕ 125	ϕ 150	When worn	ϕ 82	ϕ 102	ϕ 117	ϕ 142	<ul style="list-style-type: none"> • Replace parts where exceeding their wear limit. 																						
mm																																								
Standard dimension	ϕ 90	ϕ 110	ϕ 125	ϕ 150																																				
When worn	ϕ 82	ϕ 102	ϕ 117	ϕ 142																																				
<ul style="list-style-type: none"> • Greasing 	<ul style="list-style-type: none"> • Check visually. 	<ul style="list-style-type: none"> • The track wheel teeth and the tooth of the pinion L must be sufficiently greased. 	<ul style="list-style-type: none"> • Grease where necessary. 																																					
<ul style="list-style-type: none"> • Looseness in fixing bolts 	<ul style="list-style-type: none"> • Try turning with a wrench. 	<ul style="list-style-type: none"> • Fixing bolts must be sufficiently tight. 	<ul style="list-style-type: none"> • Tighten where necessary. 																																					
Geared motor	7. Geared motor <ul style="list-style-type: none"> • Electro-magnetic brake action 	<ul style="list-style-type: none"> • Operate the crane forward and in reverse. 	<ul style="list-style-type: none"> • The crane must come to a smooth stop when the brakes are applied. 	<ul style="list-style-type: none"> • Adjust the brakes where necessary. 																																				
	<ul style="list-style-type: none"> • Greasing 	<ul style="list-style-type: none"> • Overhaul and check visually. 	<ul style="list-style-type: none"> • Parts must be sufficiently greased. • Greased parts must not be overly dirty or contaminated with foreign matter. 	<ul style="list-style-type: none"> • Grease or degrease where necessary. • Replace parts where necessary. 																																				
Catwalk	8. Catwalk and inspection bridge <ul style="list-style-type: none"> • Catwalk 	<ul style="list-style-type: none"> • Check visually. 	<ul style="list-style-type: none"> • The catwalk floor must not be slippery or prevent danger of tripping. 	<ul style="list-style-type: none"> • Clean and/or inspect where necessary. 																																				
	<ul style="list-style-type: none"> • Rail 	<ul style="list-style-type: none"> • Check visually. 	<ul style="list-style-type: none"> • The rail must be sturdy, safe and undamaged. 	<ul style="list-style-type: none"> • Repair parts where necessary. 																																				

8. Track wheel disassembly and assembly



DANGER : NEVER perform disassembly and assembly works on the crane while it is supporting a load.

Off-limit to the area under the crane during the above works.

Low-head cranes come with detachable track wheel axles, in order to shorten installation and maintenance work.

8.1 Overhaul

Disassemble as described here following. Refer to Figs 13 and 14 for help.

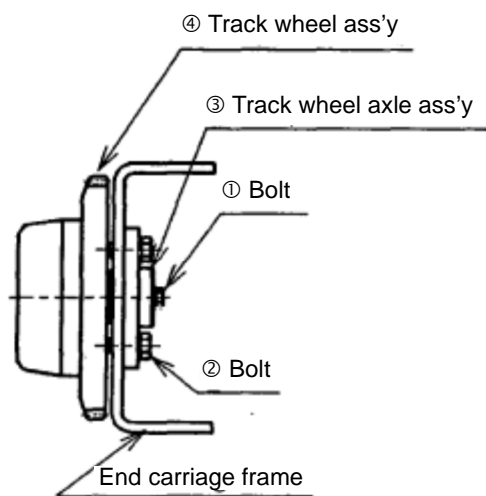


Fig. 13

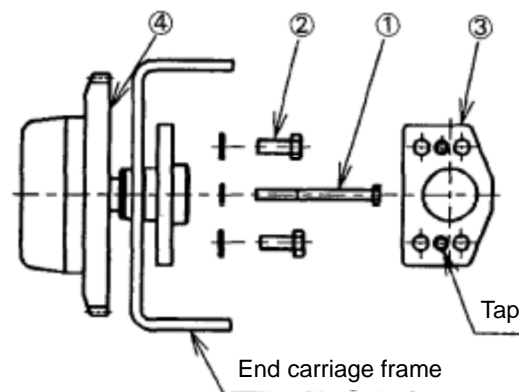


Fig. 14

Step 1: Remove bolt ①, while holding the track wheel ④ by hand.

Step 2: Remove bolt ②.

Step 3: Remove the axle ass'y ③ from the end carriage frame, by screwing into the tap holes (×2) on the axle ass'y with the bolt ②.

Step 4: Remove the track wheel ④ from the axle ass'y ③.

8.2 Assembly

After installing the crane or maintenance, reassemble the track wheels as shown in Fig. 15.

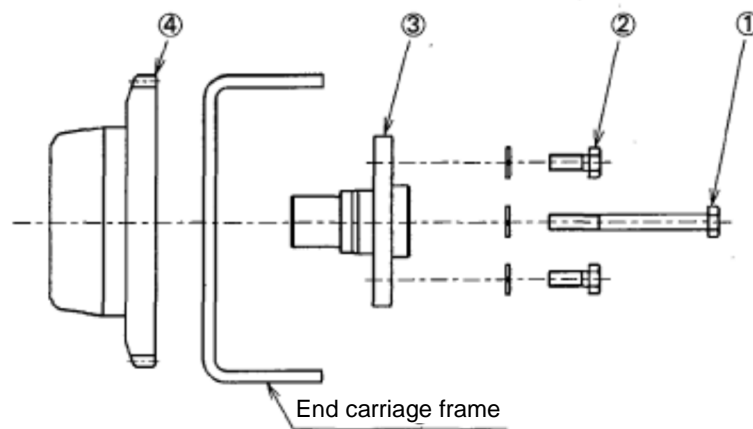


Fig. 15

- Step 1: While holding the track wheel ④ by hand, pass the axle ③ through the end carriage frame and insert inside the wheel bearing.
- Step 2: While holding the track wheel ④ by hand, screw bolt ① in until both the axle ③ and wheel ④ are fixed.
- Step 3: Press on the axle ③ until properly in place on the end carriage frame.
- Step 4: Screw bolt ② into the end carriage frame, until the axle ③ is fixed to the end carriage frame.

<After assemble check>

After assemble parts, check the following points before setting the track wheels on the travel rails.

- (a) Make sure the wheels turn freely by hand.
- (b) Make sure bolts are sufficiently tight.

9. Power supply

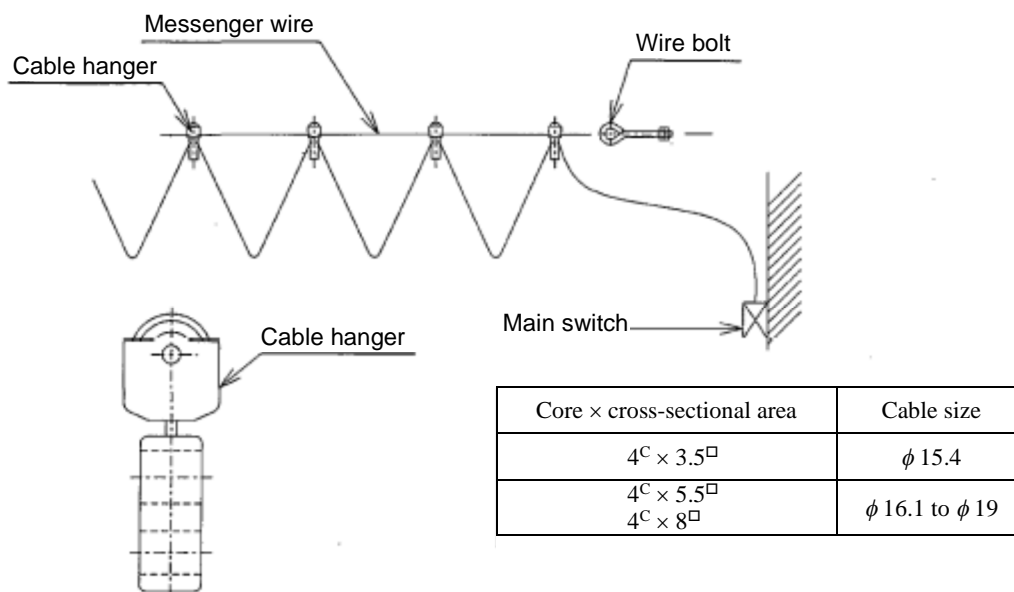
9.1 Power supply method

Power can be supplied from the source to the control box by a cable power supply, tro-reel, high tro-reel or trolley duct systems. But, for convenience sake, the simple cable power supply system is herein explained.

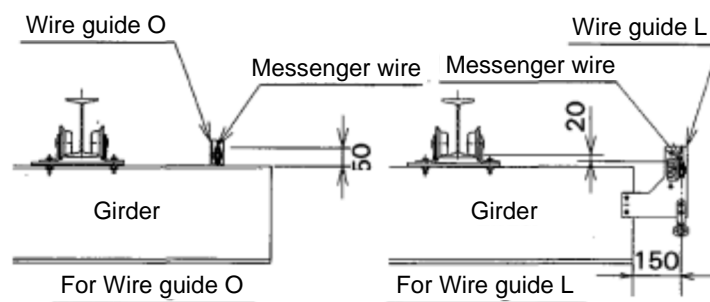
(a) Cable power supply system

This is the widest used means of supplying power to the crane because it is easy to arrange the cable.

- Use a messenger wire with a diameter between $\phi 3$ and $\phi 6$.
- Keep messenger wire length under 20 m.
- Refer to the Kito Crane catalogue for allowed cable length.



String the messenger wire along the girder with either the wire guide O or wire guide L.



<For Wire guide O>

- The messenger wire can be strung along either the inside or outside of the span.

<For Wire guide L>

- The messenger wire can be strung along the outside of the girder and anchored at the end of the girder.

10. Troubleshooting

Trouble	Cause	Remedy
<ul style="list-style-type: none"> The crane does not move smoothly. 	<ul style="list-style-type: none"> The end carriage is not set at a right angle to the girder or left and right end carriages are not parallel. Track wheels are unevenly worn. Due to wear in the track wheel flange, a gap has formed between the rail and wheel (rail swerves or runs on an incline). Pressure is unbalanced between left and right brakes. The wheel axle bolts are loose. A gap has formed between the side rollers and travel rail (most likely due to wear in the side roller). 	<ul style="list-style-type: none"> Set the end carriages at a right angle to the girder, and parallel with one another. Replace the wheels where necessary. Replace the wheels where necessary. Adjust the left and right brakes. Tighten bolts where necessary. Replace the side rollers where necessary.
<ul style="list-style-type: none"> The motor gets extremely hot. 	<ul style="list-style-type: none"> The motor is running on a single phase current. Voltage in the power supply has dropped. The brake circuit is disconnected. The rectifier is damaged. 	<ul style="list-style-type: none"> Rewire where necessary. Measure voltage in the power supply. Rewire where necessary. Replace the rectifier.
<ul style="list-style-type: none"> Buffers on the left and right end carriages do not contact the stoppers at the same time. 	<ul style="list-style-type: none"> The bolts coupling the end carriage to the girder are loose. 	<ul style="list-style-type: none"> Adjust parts so that contact is made at the same time, and tighten bolts where necessary.
<ul style="list-style-type: none"> Electrical shock 	<ul style="list-style-type: none"> The travel rail is not properly grounded. The end carriage is not properly grounded. The travel surface on the girder is coated with paint. Water or foreign matter has penetrated the electric parts. No dedicated earth wire is laid 	<ul style="list-style-type: none"> Ground parts where necessary. Ground the end carriage at the travel rail. Remove paint from girder surface. Dry parts and remove any foreign matter where necessary. Lay a dedicated earth wire.

11. WARRANTY

KITO Corporation (“KITO”) extends the following warranty to the original purchaser (“Purchaser”) of new products manufactured by “KITO” (KITO’s Products).

- (1) “KITO” warrants that KITO’s Products, when shipped, shall be free from defects in workmanship and/or materials under normal use and service and “KITO” shall, at the election of “KITO”, repair or replace free of charge any parts or items which are proven to have said defects, provided that all claims for defects under this warranty shall be made in writing immediately upon discovery and, in any event, within one (1) year from the date of purchase of KITO’s Products by “Purchaser” and provided, further, that defective parts or items shall be kept for examination by “KITO” or its authorized agents or returned to KITO’s factory or authorized service center upon requests by “KITO”.
- (2) “KITO” does not warrant components of products provided by other manufactures. However to the extent possible, “KITO” will assign to “Purchaser” applicable warranties of such other manufactures.
- (3) Except for the repair or replacement mentioned in (1) above which is “KITO”’s sole liability and purchaser’s exclusive remedy under this warranty, “KITO” shall not be responsible for any other claims arising out of the purchase and use of KITO’s Products, regardless of whether “Purchaser”’s claims are based on breach of contract, tort or other theories, including claims for any damages whether direct, indirect, incidental or consequential.
- (4) This warranty is conditional upon the installation, maintenance and use of KITO’s Products pursuant to the product manuals prepared in accordance with content instruction by “KITO”. This warranty shall not apply to KITO’s Products which have been subject to negligence, misuse, abuse, misapplication or any improper use or combination or improper fittings, alignment or maintenance.
- (5) “KITO” shall not be responsible for any loss or damage caused by transportation, prolonged or improper storage or normal wear and tear of KITO’s Products or for loss of operating time.
- (6) This warranty shall not apply to KITO’s Products which have been fitted with or repaired with parts, components or items not supplied or approved by “KITO” or which have been modified or altered.

THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY WARRANTY OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE.

12 Parts list

The following is a parts list for your end carriage.

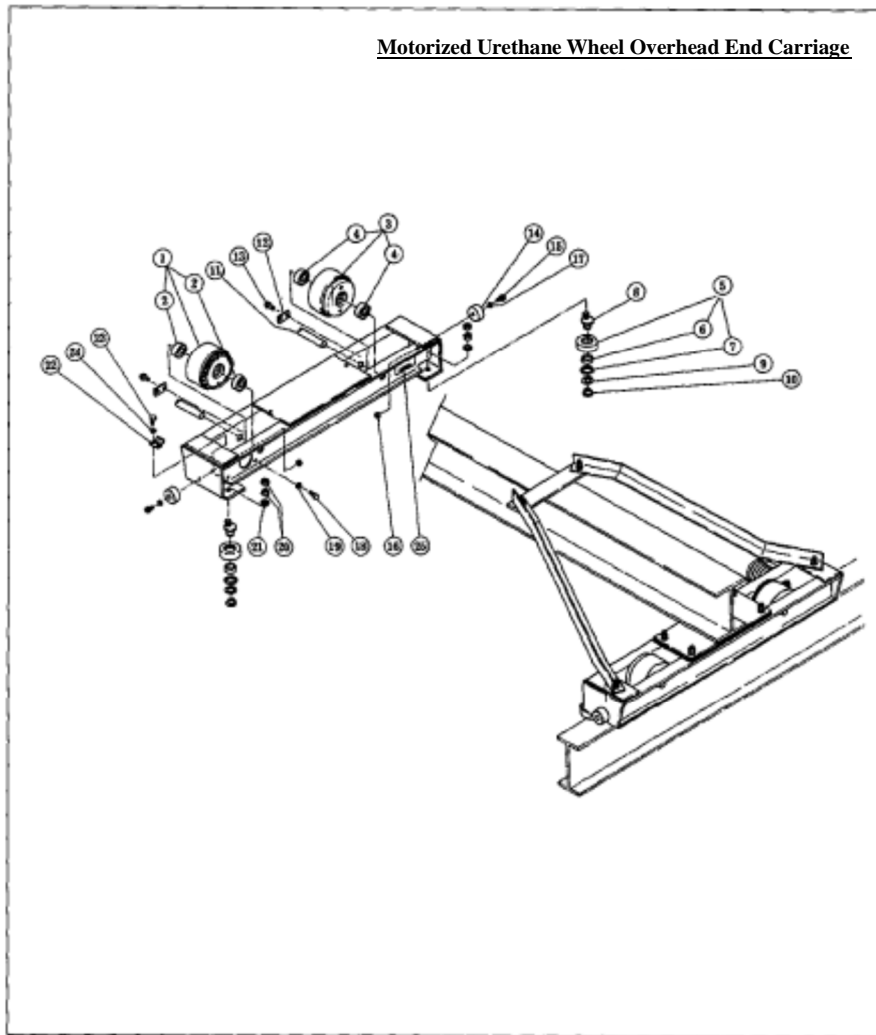


Fig. No.	Parts No.	Parts name	Type Code	Number per unit						Note	
				CE0010-9	CE0010-18	CE0020-12	CE0030-15	CE0030-18	CE0030-21		
				N6CO310E	N6CO610E	N6CO420E	N6CO530E	N6CO630E	N6CO730E		
①	N6CO-1101	Wheel A ass'y	2								
②	N6CO-107	Ball bearing	4	(6205ZZ)		(6306ZZ)		(6307ZZ)			
③	N6CO-1102	Wheel B ass'y	2								
④	N6CO-107	Ball bearing	4	(6205ZZ)		(6306ZZ)		(6307ZZ)			
⑤	N6QO-1108	Roller assembly	4								
⑥	N6QO-112	Ball bearing	4				(6205ZZ)				For roller
⑦	N6QO-110	Snap ring	4				(R-52)				For roller
⑧	N6CO-109	Roller washer	4								
⑨	N6CO-120	Socket bolt	4								For roller axle
⑩	N6CO-121	Spring washer	4				(S-25)				For roller axle
⑪	N6CO-103	Track wheel axle	4								
⑫	N6QO-105	Key plate	4								
⑬	N6QO-151	Socket bolt with spring washer	8				(M8×16×16)				For key plate
⑭	N6QL-207	Buffer	4								
⑮	N6QL-258	Socket bolt	4				(M8×35×22)				For buffer
⑯	N6QL-259	Nut	4				(1-M8)				For buffer
⑰	N6QL-260	Washer	4				(1-M8)				For buffer
⑱	N6QO-360	Bolt	8				(M8×28×28)		(M10×30×26)		For geared motor installation
⑲	N6QO-361	Spring washer	8				(2-M8)		(2-M10)		For geared motor installation
⑳	N6CO-370	Nut	8				(1-M20)				For roller axle
㉑	N6CO-371	Washer	8				(1-M20)				For roller axle
㉒	N6CO-5765	Ground wire assembly	2								
㉓	N6CO-767	Bolt	4				(M8×14×14)				For ground wire
㉔	N6CO-768	Spring washer	4				(2-M8)				For ground wire
㉕	N6CO-208	Name plate S	2								

Motorized Urethane Wheel Overhead End Carriage

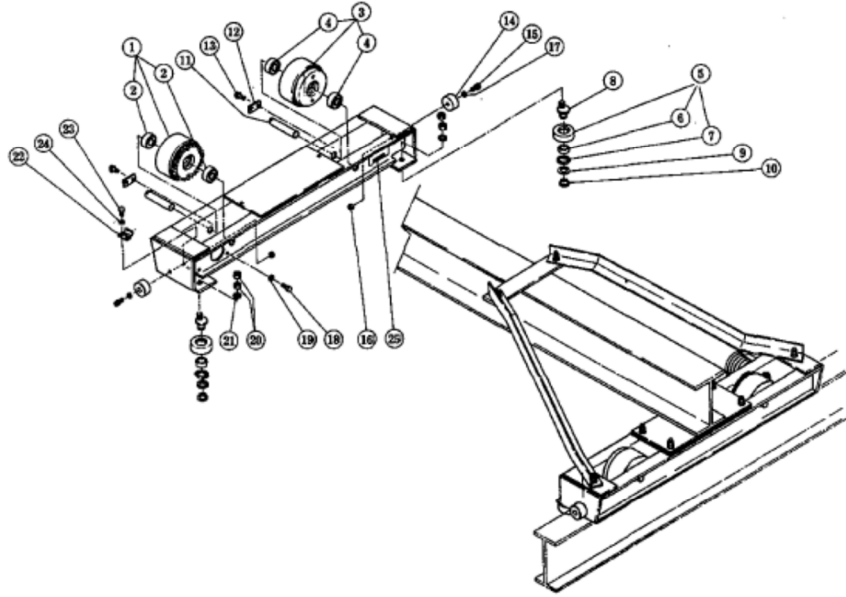


Fig. No.	Parts No.	Parts name	Type Code	Number per unit						Note	
				CEO050-12 N6CO450E	CEO050-18 N6CO650E	CEO075-18 N6CO675E	CEO075-21 N6CO775E	CEO100-12 N6CO411E	CEO100-21 N6CO711E		CEO100-21H N6CB711E
①	N6CO-1101	Wheel A ass'y	2 (4)								4 for CEO100-21H
2	N6CO-107	Ball bearing	4 (8)	(6307ZZ)	(6308ZZ)		(6310ZZ)		(6312ZZ)		8 for CEO100-21H
③	N6CO-1102	Wheel B ass'y	2								
4	N6CO-107	Ball bearing	4	(6307ZZ)	(6308ZZ)		(6310ZZ)		(6312ZZ)		
⑤	N6QO-1108	Roller assembly	4								
6	N6QO-112	Ball bearing	4	(6206ZZ)			(6207ZZ)				For roller
7	N6QO-110	Snap ring	4	(R-62)			(R-72)				For roller
⑧	N6CO-109	Roller axle	4								For roller axle
⑨	N6CO-120	Roller washer	4								For roller axle
⑩	N6CO-121	Snap ring	4	(S-30)			(S-35)				For roller axle
⑪	N6CO-103	Track wheel axle	4								
⑫	N6QO-105	Key plate	4								
⑬	N6QO-151	Socket bolt with spring washer	8	(M8×16×16)			(M8×20×20)				For key plate
⑭	N6QL-207	Buffer	4								
⑮	N6QL-258	Socket bolt	4				(M8×35×22)				For buffer
⑯	N6QL-259	Nut	4				(1-M8)				For buffer
⑰	N6QL-260	Washer	4				(1-M8)				For buffer
⑱	N6QO-360	Bolt	8 (16)	(M10×30×26)			(M12×35×20)				For geared motor installation, 16 for CEO100-21H
⑲	N6QO-361	Spring washer	8 (16)	(2-M10)			(2-M12)				For geared motor installation, 16 for CEO100-21H
⑳	N6CO-370	Nut	8	(1-M24)			(1-M30)				For roller axle
㉑	N6CO-371	Washer	4	(1-M24)			(1-M30)				For roller axle
㉒	N6CO-5765	Ground wire ass'y	2								
㉓	N6CO-767	Bolt	4				(M8×14×14)				For ground wire
㉔	N6CO-768	Spring washer	4				(2-M8)				For ground wire
㉕	N6CO-208	Name plate S	2								

Motorized Urethane Wheel Overhead Double Girder End Carriage

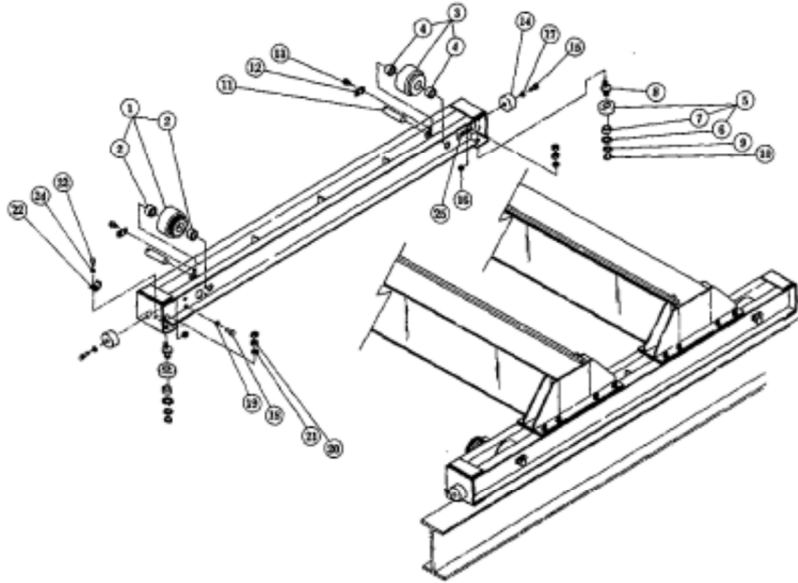


Fig. No.	Parts No.	Parts name	Type Code	Number per unit				Note
				WCO030-15	WCO030-21	WCO030-27	WCO075-15	
				N6KO530E	N6KO730E	N6KO930E	N6KO575E	
①	N6CO-1101	Wheel A ass'y	2					
2	N6CO-107	Ball bearing	4	(6307ZZ)	(6308ZZ)	(6309ZZ)	(6310ZZ)	
③	N6CO-1102	Wheel B ass'y	2					
4	N6CO-107	Ball bearing	4	(6307ZZ)	(6308ZZ)	(6309ZZ)	(6310ZZ)	
⑤	N6CO-1108	Roller assembly	4					
6	N6CO-110	Snap ring	4	(R-52)	(R-62)	(R-72)	(R-62)	For roller
7	N6CO-112	Ball bearing	4	(6205ZZ)	(6206ZZ)	(6207ZZ)	(6206ZZ)	For roller
⑧	N6CO-109	Roller axle	4					
⑨	N6CO-120	Roller washer	4					For roller axle
⑩	N6CO-121	Snap ring	4	(S-25)	(S-30)	(S-35)	(S-30)	For roller axle
⑪	N6KO-103	Track wheel axle	4					
⑫	N6QO-105	Key plate	4					
⑬	N6QO-151	Socket bolt with spring washer	8		(M8×16×16)		(M8×20×20)	For key plate
⑭	N6QO-207	Buffer	4					
⑮	N6QO-258	Socket bolt	4		(M8×35×22)			For buffer
⑯	N6QO-259	Nut	4		(1-M8)			For buffer
⑰	N6QL-260	Washer	4		(1-M8)			For buffer
⑱	N6QO-360	Bolt	8	(M10×35×26)		(M12×35×20)		For geared motor installation
⑲	N6QO-361	Spring washer	8	(2-M10)		(2-M12)		For geared motor installation
⑳	N6CO-370	Nut	8	(1-M20)	(1-M24)	(1-M30)	(1-M24)	For roller axle
㉑	N6CO-371	Washer	4	(1-M20)	(1-M24)	(1-M30)	(1-M24)	For roller axle
㉒	N6CO-5765	Ground wire ass'y	2					
㉓	N6CO-767	Bolt	4		(M8×14×14)			For ground wire
㉔	N6CO-768	Spring washer	4		(2-M8)			For ground wire
㉕	N6KO-208	Name plate S	2					

Motorized Urethane Wheel Overhead Double Girder End Carriage

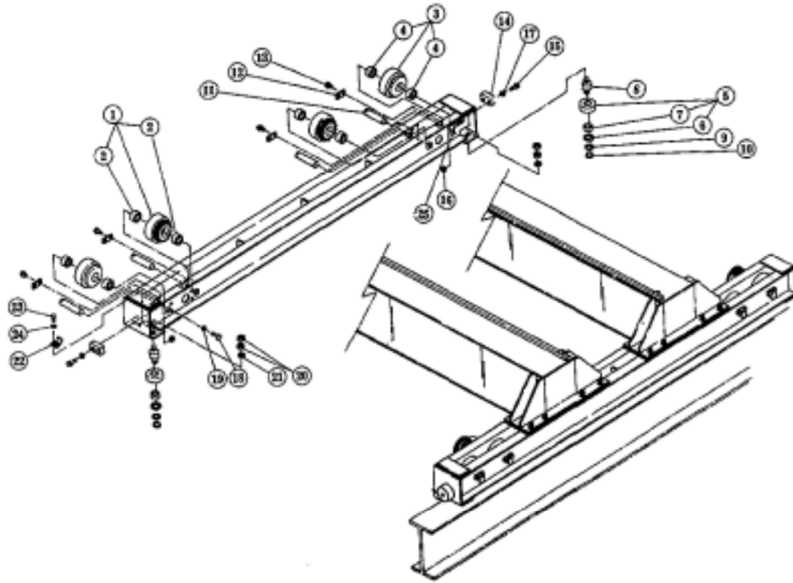
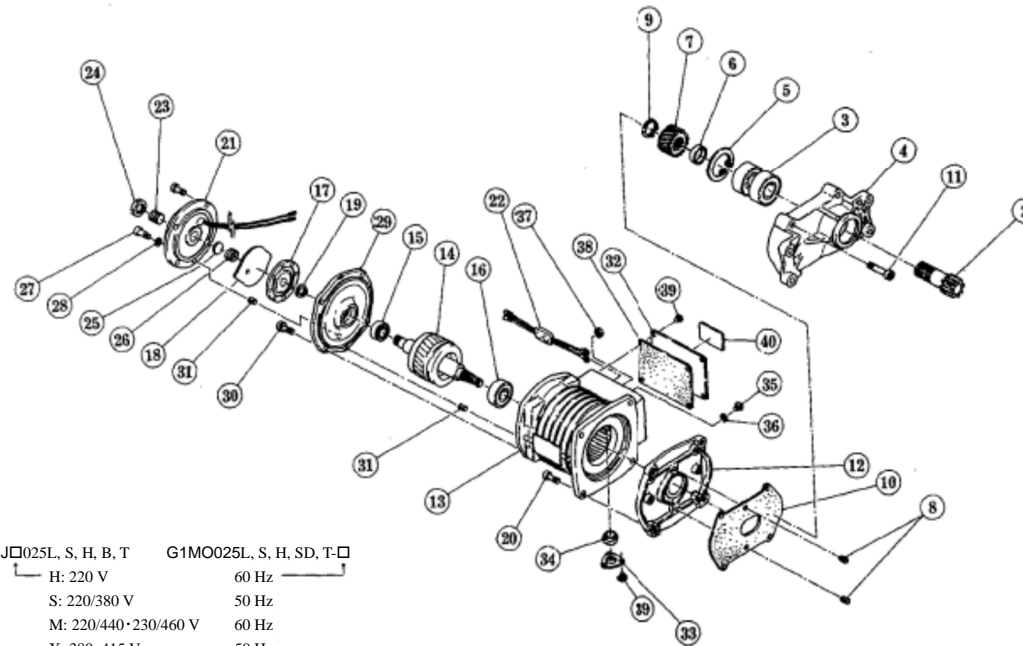


Fig. No.	Parts No.	Parts name	Type Code	Number per unit						Note	
				WCO075-21	WCO075-27	WCO150-21	WCO200-21	WCO200-21H	WCO200-27		WCO200-27H
①	N6CO-1101	Wheel A ass'y	4								
2	N6CO-107	Ball bearing	8	(6308ZZ)	(6309ZZ)	(6310ZZ)		(6312ZZ)			
③	N6CO-1102	Wheel B ass'y	4								
4	N6CO-107	Ball bearing	8	(6308ZZ)	(6309ZZ)	(6310ZZ)		(6312ZZ)			
⑤	N6KO-1108	Roller assembly	4								
6	N6KO-110	Snap ring	4	(R-62)		(R-72)		(R-90)			For roller
7	N6KO-112	Ball bearing	4	(6206ZZ)		(6207ZZ)		(6308ZZ)			For roller
⑧	N6KO-109	Roller axle	4								
⑨	N6KO-120	Track wheel washer	4								For roller axle
⑩	N6KO-121	Snap ring	4	(S-30)		(S-35)		(S-40)			For roller axle
⑪	N6KO-103	Track wheel axle	8								
⑫	N6QO-105	Key plate	8								
⑬	N6QO-151	Socket bolt with spring washer	16	(M8×16×16)			(M8×20×20)				For key plate
⑭	N6WO-207	Buffer	4								
⑮	N6WO-258	Socket bolt	8 (4)	(M8×35×22)			(M12×50×36)				For buffer, 4 for WCO075-21 & WCO075-27
⑯	N6WO-259	Nut	8 (4)	(1-M8)			(1-M12)				For buffer, 4 for WCO075-21 & WCO075-27
⑰	N6WO-260	Washer	8 (4)	(1-M8)			(1-M12)				For buffer, 4 for WCO075-21 & WCO075-27
⑱	N6QO-360	Bolt	16	(M12×35×20)			(M16×52×52)	(M12×35×20)	(M16×52×52)		For geared motor installation
⑲	N6QO-361	Spring washer	16	(2-M12)			(2-M16)	(2-M12)	(2-M16)		For geared motor installation
⑳	N6KO-370	Nut	8	(1-M24)		(1-M30)		(1-M36)			For roller axle
㉑	N6KO-371	Washer	8	(1-M24)		(1-M30)		(1-M36)			For roller axle
㉒	N6CO-5765	Ground wire ass'y	2								
㉓	N6CO-767	Bolt	4			(M8×14×14)					For ground wire
㉔	N6CO-768	Spring washer	4			(2-M8)					For ground wire
㉕	N6KO-208	Name plate S	2								

Overhead Geared Motor

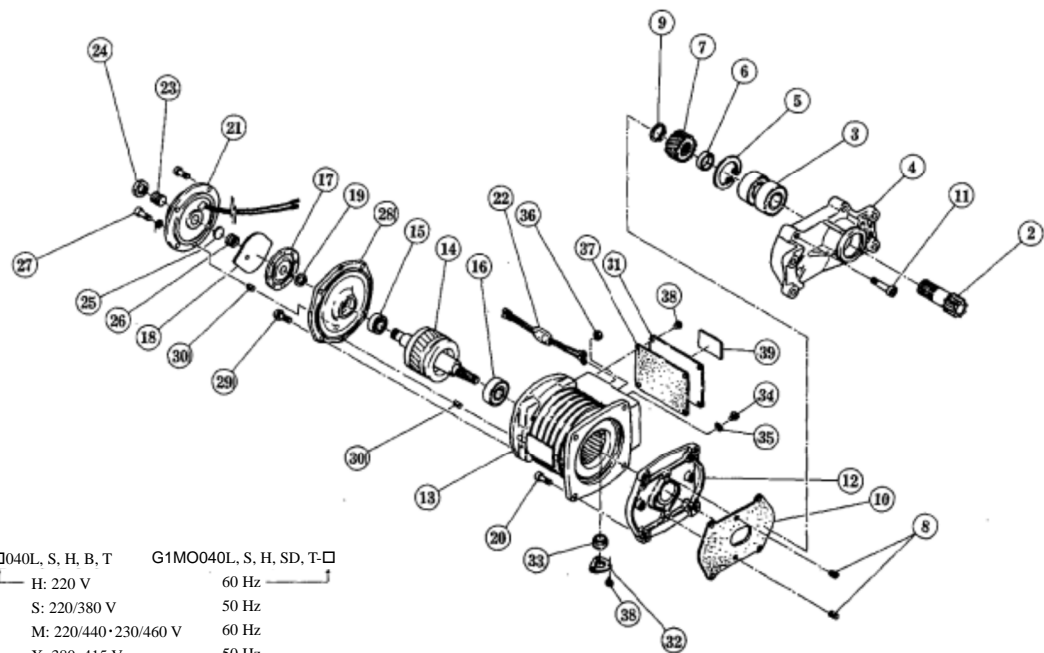


G1J□025L, S, H, B, T	G1MO025L, S, H, SD, T-□
└─ H: 220 V	60 Hz ─┘
S: 220/380 V	50 Hz
M: 220/440·230/460 V	60 Hz
X: 380·415 V	50 Hz
A: 500 V	50 Hz
K: 550·575 V	60 Hz

Fig. No.	Parts No.	Parts name	Type	Code					Note
				G1M0025S-□	G1M0025L-□	G1M0025SD-□	G1M0025H-□	G1M0040T-□	
			20/24	10/12	20/5/24/6	30/36	30/36		
①	G1JE-1303S	1 set of geared motor	2						20/24m/min
	G1JE-1303L	1 set of geared motor	2						10/12m/min
	G1JE-1303B	1 set of geared motor	2						20/5/24/6m/min
	G1JE-1303H	1 set of geared motor	2						30/36m/min
	G1JE-1303T	1 set of geared motor	2						30/36m/min
2	G1JE-301	Pinion	2						
3	G1JE-302	Ball bearing	4			(6204ZZ)			For pinion
4	G1JE-303	Gear box A	2						
5	G1JE-304	Snap ring	2			(R-47)			For gear box A
6	G1JE-305	Collar A	2						
7	G1JE-307S	Gear #2	2						For S
	G1JE-307L	Gear #2	2						For L, SD
	G1JE-307T	Gear #2	2						For H, T
8	G1JE-308	Spring pin	4						For gear box A, B
9	G1JE-309	Snap ring	2			(S-20)			For pinion
10	G1JE-310	Gear box packing	2						
11	G1JE-313	Socket bolt	8			(M6×40×24)			For gear box A
12	G1JE-401	Gear box B	2						
13	G1JE-5510S	Stator assembly	2						For S, L, H
	G1JE-5501B	Stator assembly	2						For SD
	G1JE-5501T	Stator assembly	2						For T
14	G1JE-5502S	Rotor assembly	2						For S, L
	G1JE-5502B	Rotor assembly	2						For SD
	G1JE-5502H	Rotor assembly	2						For H
	G1JE-5502T	Rotor assembly	2						For T
15	G1JE-508	Ball bearing	2		(6002-2RU)	(6202-2RU)	(6002-2RU)	(6202-2RU)	For motor axle/brake side
16	G1JE-509	Ball bearing	2		(6204-2RU)		(6005-2RU)		For motor axle/gear side
17	G1JE-512	Brake disk	2						
18	G1JE-513	Armature	2						
19	G1JE-514	Snap ring	2			(S-15)			For motor axle

Fig. No.	Parts No.	Parts name	Type	Code					Note
				G1M0025S-□	G1M0025L-□	G1M0025SD-□	G1M0025H-□	G1M0040T-□	
			20/24	10/12	20/5/24/6	30/36	30/36		
20	G1JE-515	Socket bolt	8			(M6×22×22)			For motor frame
	G1JE-515	Socket bolt with spring washer	8			(M6×22×22)		(M6×22×22)	For motor frame
21	G1JE-5610	Electromagnetic coil assembly	2						
22	G1JE-602	Rectifier	2						
23	G1JE-603	Adjusting bolt	2						For brake adjustment
24	G1JE-604	Lock nut	2						For brake adjustment
25	G1JE-605	Spring holder	2						
26	G1JE-606	Brake spring	2						
27	G1JE-607	Socket bolt	8			(M6×40×24)		(M6×10×24)	For electromagnetic coil
	G1JE-607	Socket bolt with spring washer	8			(M6×20×20)		(M6×20×20)	For electromagnetic coil
28	G1JE-608	Spring washer	8			(2-M6)		(2-M6)	For electromagnetic coil
29	G1JE-609	Brake bracket	2						
30	G1JE-611	Socket bolt with spring washer	8			(M6×20×20)		(M6×20×20)	For brake bracket
31	G1JE-616	Spring pin	4						For brake bracket, electromagnetic coil
32	G1JE-701S	Terminal cover	2						
	G1JE-701B	Terminal cover	2						
33	G1JE-703	Cable holder	2						
34	G1JE-704S	Cable packing 14	2						
	G1JE-704B	Cable packing 18	2						
35	G1JE-705	Round head screw	6 (10)			(M4×10)			For terminal, 10 parts for SD
36	G1JE-708	Spring washer	6 (10)			(2-M4)			For terminal, 10 parts for SD
37	G1JE-709	Nut	6 (10)			(2-M4)			For terminal, 10 parts for SD
38	G1JE-707S	Terminal cover packing	2						
	G1JE-707B	Terminal cover packing	2						
39	G1JE-710	Round head screw	16			(M4×10)			For terminal cover, cable holder, ground
40	G1JE-702S	Name plate TS	2						
	G1JE-702L	Name plate TS	2						
	G1JE-702B	Name plate TS	2						
	G1JE-702H	Name plate TS	2						
	G1JE-702T	Name plate TS	2						

Overhead Geared Motor

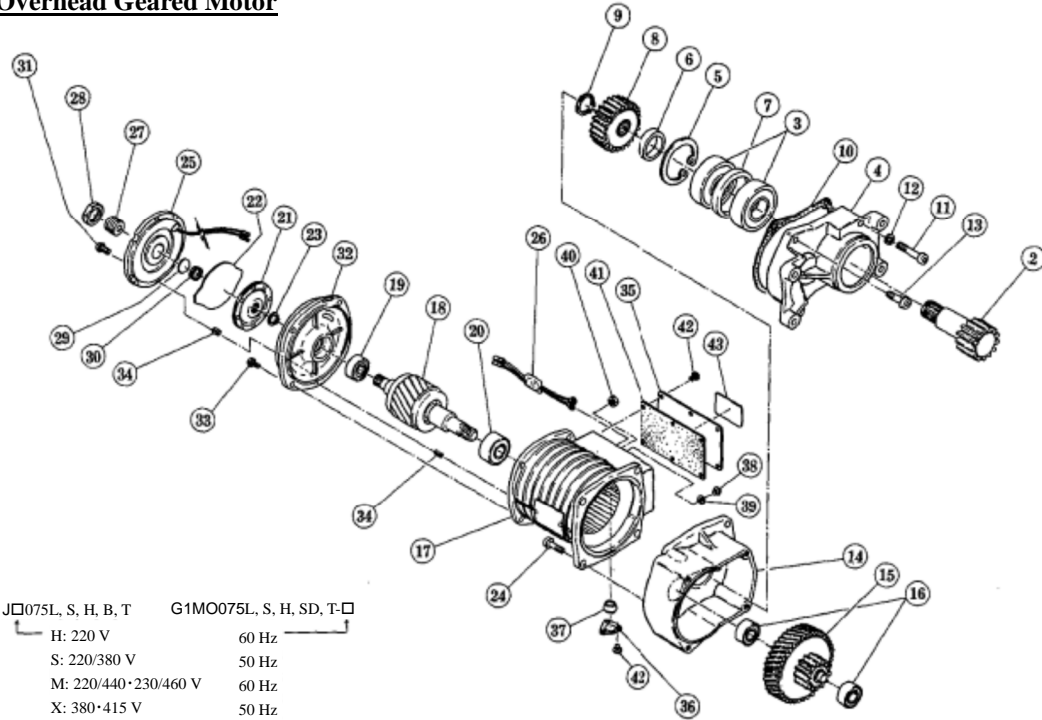


G1J□040L, S, H, B, T	G1MO040L, S, H, SD, T-□
└─ H: 220 V	└─ 60 Hz
└─ S: 220/380 V	└─ 50 Hz
└─ M: 220/440-230/460 V	└─ 60 Hz
└─ X: 380-415 V	└─ 50 Hz
└─ A: 500 V	└─ 50 Hz
└─ K: 550-575 V	└─ 60 Hz

Fig. No.	Parts No.	Parts name	Type	Code					Note
				G1M0040S-□	G1M0040L-□	G1M0040SD-□	G1M0040H-□	G1M0075T-□	
				20/24	10/12	20/5/24/6	30/36	30/36	
①	G1JE-1303S	1 set of geared motor	2						20/24m/min
	G1JE-1303L	1 set of geared motor	2						10/12m/min
	G1JE-1303B	1 set of geared motor	2						20/5/24/6m/min
	G1JE-1303H	1 set of geared motor	2						30/36m/min
	G1JE-1303T	1 set of geared motor	2						30/36m/min
2	G1JE-301	Pinion	2						
3	G1JE-302	Ball bearing	4			(6305ZZ)			For pinion
4	G1JE-303	Gear box A	2						
5	G1JE-304	Snap ring	2			(R-62)			For gear box A
6	G1JE-305	Collar A	2						For pinion
7	G1JE-307S	Gear #2	2						For S
	G1JE-307L	Gear #2	2						For L, SD
	G1JE-307H	Gear #2	2						For H, T
8	G1JE-308	Spring pin	4						For gear box A, B
9	G1JE-309	Snap ring	2			(S-25)			For pinion
10	G1JE-310	Gear box packing	2						
11	G1JE-313	Socket bolt	8			(M6×50×24)			For gear box A
12	G1JE-401	Gear box B	2						
13	G1JE-5510S	Stator assembly	2						For S, L, H
	G1JE-5501B	Stator assembly	2						For SD
	G1JE-5501T	Stator assembly	2						For T
14	G1JE-5502S	Rotor assembly	2						For S, L
	G1JE-5502B	Rotor assembly	2						For SD
	G1JE-5502H	Rotor assembly	2						For H
	G1JE-5502T	Rotor assembly	2						For T
15	G1JE-508	Ball bearing	2			(6202-2RU)		(6004-2RU)	For motor axle/brake side
16	G1JE-509	Ball bearing	2			(6204-2RU)		(6005-2RU)	For motor axle/gear side
17	G1JE-512	Brake disk	2						

Fig. No.	Parts No.	Parts name	Type	Code					Note
				G1M0040S-□	G1M0040L-□	G1M0040SD-□	G1M0040H-□	G1M0075T-□	
				20/24	10/12	20/5/24/6	30/36	30/36	
18	G1JE-513	Armature	2						
19	G1JE-514	Snap ring	2			(S-15)		(S-20)	For motor axle
20	G1JE-515	Socket bolt	8			(M8×22×22)			For motor frame
21	G1JE-5610	Electromagnetic coil assembly	2						
22	G1JE-602	Rectifier	2						
23	G1JE-603	Adjusting bolt	2						For brake adjustment
24	G1JE-604	Lock nut	2						For brake adjustment
25	G1JE-605	Spring holder	2						
26	G1JE-606	Brake spring	2						
27	G1JE-607	Socket bolt with spring washer	8			(M6×20×20)			For electromagnetic coil
28	G1JE-609	Brake bracket	2						
29	G1JE-611	Socket bolt with spring washer	8			(M6×20×20)			For brake bracket
30	G1JE-616	Spring pin	4						For brake bracket, electromagnetic coil
31	G1JE-701	Terminal cover	2						
32	G1JE-703	Cable holder	2						
33	G1JE-704S	Cable packing 14	2						
	G1JE-704B	Cable packing 18	2						
34	G1JE-705	Round head screw	6 (10)			(M4×10)			For terminal, 10 parts for SD
35	G1JE-708	Spring washer	6 (10)			(2-M4)			For terminal, 10 parts for SD
36	G1JE-709	Nut	6 (10)			(2-M4)			For terminal, 10 parts for SD
37	G1JE-707	Terminal cover packing	2						
38	G1JE-710	Round head screw	16			(M4×10)			For terminal cover cable holder, ground
39	G1JE-702S	Name plate TS	2						
	G1JE-702L	Name plate TS	2						
	G1JE-702B	Name plate TS	2						
	G1JE-702H	Name plate TS	2						
	G1JE-702T	Name plate TS	2						

Overhead Geared Motor

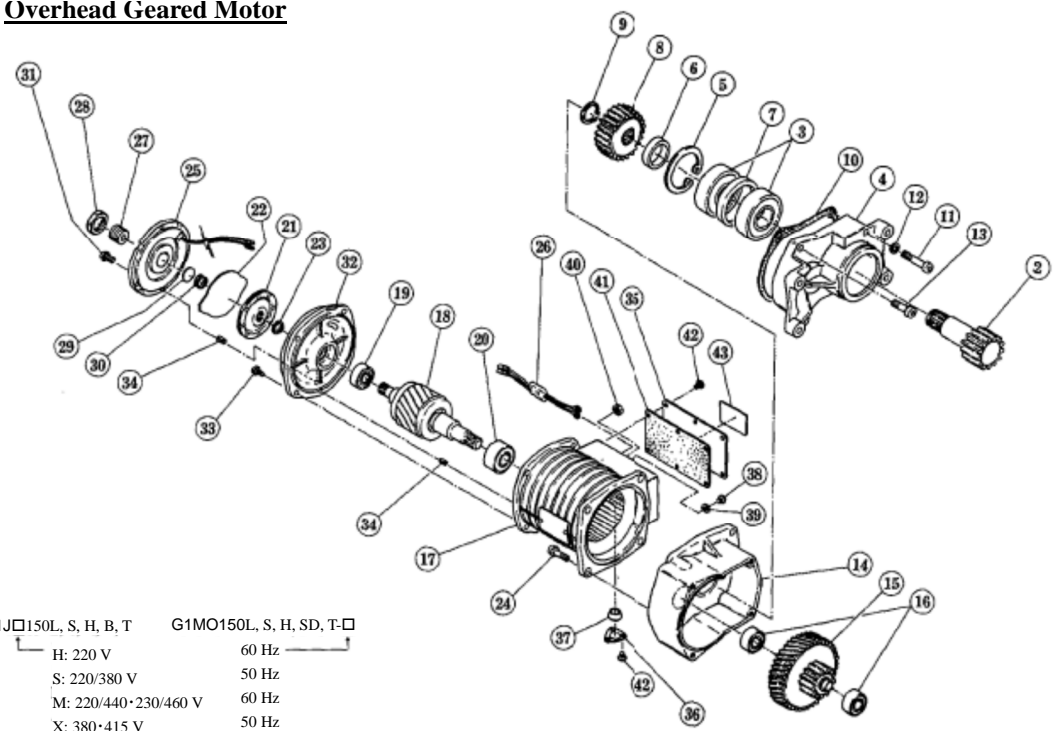


G1J□075L, S, H, B, T	G1M0075L, S, H, SD, T-□
H: 220 V	60 Hz
S: 220/380 V	50 Hz
M: 220/440·230/460 V	60 Hz
X: 380·415 V	50 Hz
A: 500 V	50 Hz
K: 550·575 V	60 Hz

Fig. No.	Parts No.	Parts name	Type	Code					Note
				Number per unit					
				G1M0075S-□	G1M0075L-□	G1M0075SD-□	G1M0075H-□	G1M0150T-□	
				20/24	10/12	20/5/24/6	30/36	30/36	
①	G1JE-1303S	1 set of geared motor	2						20/24m/min
	G1JE-1303L	1 set of geared motor	2						10/12m/min
	G1JE-1303B	1 set of geared motor	2						20/5/24/6m/min
	G1JE-1303H	1 set of geared motor	2						30/36m/min
	G1JE-1303T	1 set of geared motor	2						30/36m/min
2	G1JE-301	Pinion	2						
3	G1JE-302	Ball bearing	4			(6306ZZ)			For pinion
4	G1JE-303	Gear box A	2						
5	G1JE-304	Snap ring	2			(R-72)			For gear box A
6	G1JE-305	Collar A	2						
7	G1JE-306	Collar B	2						
8	G1JE-411S	Gear #4	2						For S
	G1JE-411L	Gear #4	2						For L, SD
	G1JE-411H	Gear #4	2						For H, T
9	G1JE-309	Snap ring	2			(S-25)			For pinion
10	G1JE-310	Gear box packing	2						
11	G1JE-313	Socket bolt	4			(M8×60×28)			For gear box A
12	G1JE-314	Spring washer	4			(2-M8)			For gear box A
13	G1JE-315	Socket bolt with spring washer	4			(M8×30×30)			For gear box A
14	G1JE-401S	Gear box B	2						
	G1JE-401T	Gear box B	2						
15	G1JE-5307S	Gear #2 assembly	2						For S
	G1JE-5307L	Gear #2 assembly	2						For L, SD
	G1JE-5307H	Gear #2 assembly	2						For H, T
16	G1JE-413	Ball bearing	4			(6203-2RU)			For gear #2 assembly
17	G1JE-5501S	Stator assembly	2						For S, L, H
	G1JE-5501B	Stator assembly	2						For SD
	G1JE-5501T	Stator assembly	2						For T
18	G1JE-5502S	Rotor assembly	2						For S, L, H
	G1JE-5502B	Rotor assembly	2						For SD
	G1JE-5502T	Rotor assembly							For T

Fig. No.	Parts No.	Parts name	Type	Code					Note	
				Number per unit						
				G1M0075S-□	G1M0075L-□	G1M0027SD-□	G1M0075H-□	G1M0150T-□		
				20/24	10/12	20/5/24/6	30/36	30/36		
19	G1JE-508	Ball bearing	2			(6004-2RU)			(6204-2RU)	For motor axle/brake side
20	G1JE-509	Ball bearing	2			(6204-2RU)			(6305-2RU)	For motor axle/gear side
21	G1JE-512	Brake disk	2							
22	G1JE-513	Armature	2							
23	G1JE-514	Snap ring	2			(S-20)				For motor axle/brake disk side
24	G1JE-515	Socket bolt	8			(M8×22×22)				For motor frame
	G1JE-515	Socket bolt with spring washer	8						(M10×28×28)	For motor frame
25	G1JE-5610	Electromagnetic coil assembly	2							
26	G1JE-602	Rectifier	2							
27	G1JE-603	Adjusting bolt	2							For brake adjustment
28	G1JE-604	Lock nut	2							For brake adjustment
29	G1JE-605	Spring holder	2							
30	G1JE-606	Brake spring	2							
31	G1JE-607	Socket bolt with spring washer	6			(M6×20×20)				For electromagnetic coil
32	G1JE-609	Brake bracket	2							
33	G1JE-611	Socket bolt with spring washer	8			(M6×20×20)			(M8×22×22)	For brake bracket
34	G1JE-616	Spring pin	4							For brake bracket, electromagnetic coil
35	G1JE-701	Terminal cover	2							
36	G1JE-703	Cable holder	2							
37	G1JE-704S	Cable packing 14	2							
	G1JE-704B	Cable packing 18	2							
38	G1JE-705	Round head screw	6 (10)			(M4×10)				For terminal, 10 parts for SD
39	G1JE-708	Spring washer	6 (10)			(2-M4)				For terminal, 10 parts for SD
40	G1JE-709	Nut	6 (10)			(2-M4)				For terminal, 10 parts for SD
41	G1JE-707	Terminal cover packing	2							
42	G1JE-710	Round head screw	6 (10)			(M4×10)				For terminal cover, cable holder, ground, 20 for 150T
43	G1JE-702S	Name plate TS	2							
	G1JE-702L	Name plate TS	2							
	G1JE-702B	Name plate TS	2							
	G1JE-702H	Name plate TS	2							
	G1JE-702T	Name plate TS	2							

Overhead Geared Motor



G1J□150L, S, H, B, T	G1MO150L, S, H, SD, T-□
H: 220 V	60 Hz
S: 220/380 V	50 Hz
M: 220/440·230/460 V	60 Hz
X: 380·415 V	50 Hz
A: 500 V	50 Hz
K: 550·575 V	60 Hz

Fig. No.	Parts No.	Parts name	Type	Code				Note
				G1M0150S-□	G1M0150L-□	G1M0150SD-□	G1M0150H-□	
			20/24	10/12	20/5/24/6	30/36		
			Travel speed m/min (50/60Hz)					
			Number per unit					
①	G1JE-1303S	1 set of geared motor	2					20/24m/min
	G1JE-1303L	1 set of geared motor	2					10/12m/min
	G1JE-1303B	1 set of geared motor	2					20/5/24/6m/min
	G1JE-1303H	1 set of geared motor	2					30/36m/min
2	G1JE-301	Pinion	2					
3	G1JE-302	Ball bearing	4		(6309ZZ)			For pinion
4	G1JE-303	Gear box A	2					
5	G1JE-304	Snap ring	2		(R-100)			For gear box A
6	G1JE-305	Collar A	2					
7	G1JE-306	Collar B	2					
8	G1JE-401S	Gear #4	2					For S
	G1JE-401L	Gear #4	2					For L, SD
	G1JE-401H	Gear #4	2					For H
9	G1JE-309	Snap ring	2		(S-30)			For pinion
10	G1JE-310	Gear box packing	2					
11	G1JE-313	Socket bolt	4		(M10×65×32)			For gear box A
12	G1JE-314	Spring washer	4		(2-M10)			For gear box A
13	G1JE-315	Socket bolt with spring washer	4		(M10×30×30)			For gear box A
14	G1JE-401	Gear box B	2					
15	G1JE-5307S	Gear #2 assembly	2					For S
	G1JE-5307L	Gear #2 assembly	2					For L, SD
	G1JE-5307H	Gear #2 assembly	2					For H
16	G1JE-413	Ball bearing	4		(6303-2RU)			For gear #2 assembly
17	G1JE-5501S	Stator assembly	2					For S, L, H
	G1JE-5501B	Stator assembly	2					For SD
18	G1JE-5502S	Rotor assembly	2					For S, L, H
	G1JE-5502B	Rotor assembly	2					For SD
19	G1JE-508	Ball bearing	2		(6204-2RU)			For motor axle/brake side

Fig. No.	Parts No.	Parts name	Type	Code				Note
				G1M0150S-□	G1M0150L-□	G1M0150SD-□	G1M0150H-□	
			20/24	10/12	20/5/24/6	30/36		
			Travel speed m/min (50/60Hz)					
			Number per unit					
20	G1JE-509	Ball bearing	2				(6305-2RU)	For motor axle/gear side
21	G1JE-512	Brake disk	2					
22	G1JE-513	Armature	2					
23	G1JE-514	Snap ring	2		(S-20)			For motor axle
24	G1JE-515	Socket bolt with spring washer	8		(M10×28×28)			For motor frame
25	G1JE-5610	Electromagnetic coil assembly	2					
26	G1JE-602	Rectifier	2					
27	G1JE-603	Adjusting bolt	2					For brake adjustment
28	G1JE-604	Lock nut	2					For brake adjustment
29	G1JE-605	Spring holder	2					
30	G1JE-606	Brake spring	2					
31	G1JE-607	Socket bolt with spring washer	6		(M6×20×20)			For electromagnetic coil
32	G1JE-609	Brake bracket	2					
33	G1JE-611	Socket bolt with spring washer	4		(M8×22×22)			For brake bracket
34	G1JE-616	Spring pin	4					For brake bracket, electromagnetic coil
35	G1JE-701	Terminal cover	2					
36	G1JE-703	Cable holder	2					
37	G1JE-704S	Cable packing 14	2					
	G1JE-704B	Cable packing 18	2					
38	G1JE-705	Round head screw	6 (10)		(M4×10)			For terminal, 10 parts for SD
39	G1JE-708	Spring washer	6 (10)		(2-M4)			For terminal, 10 parts for SD
40	G1JE-709	Nut	6 (10)		(2-M4)			For terminal, 10 parts for SD
41	G1JE-707	Terminal cover packing	2					
42	G1JE-710	Round head screw	20		(M4×10)			For terminal cover, cable holder, ground
43	G1JE-702S	Name plate TS	2					
	G1JE-702L	Name plate TS	2					
	G1JE-702B	Name plate TS	2					
	G1JE-702H	Name plate TS	2					

Motorized Urethane Wheel Low-head End Carriage

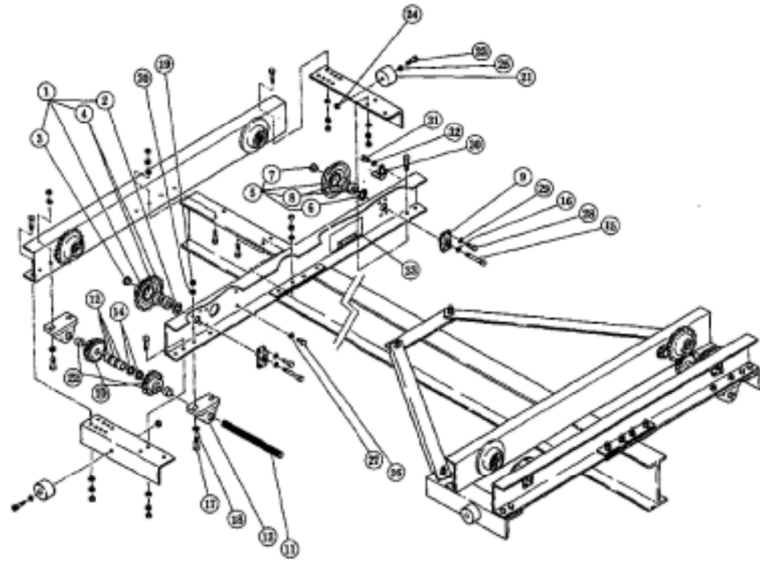
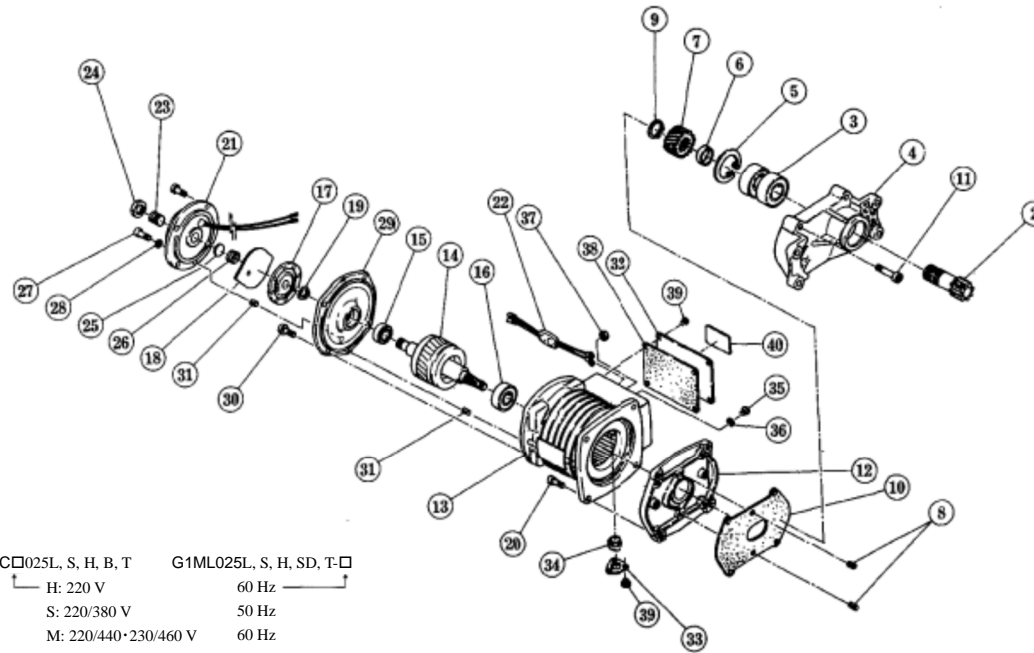


Fig. No.	Parts No.	Parts name	Type Code	Number per unit		Note
				CEL010-9	CEL020-9	
			N6CL310V	N6CL320V		
①	N6CL-1101	Wheel A ass'y	4			
2	N6CL-105	Snap ring	4	(R-52)	(R-72)	For track wheel
3	N6CL-	Bush	4			For track wheel
4	N6CL-	Ball bearing	8	(6304ZZ)	(6306ZZ)	For track wheel
⑤	N6CL-	Wheel B ass'y	4			
6	N6CL-	Snap ring	4	(R-52)	(R-72)	For track wheel
7	N6CL-	Bush	4			For track wheel
8	N6CL-	Ball bearing	8	(6304ZZ)	(6306ZZ)	For track wheel
⑨	N6QL-	Track wheel axle ass'y	8			
⑩	N6QL-	Pinion L	4			
⑪	N6QL-	Pinion axle L	2			
⑫	N6QL-	Collar A	6			
⑬	N6QL-	Pillow block	4	(UCP204)		
⑭	N6QL-	Snap ring	4	(S-20)		
⑮	N6QL-	Bolt	8	(M6×70×25)	(M8×85×30)	For track wheel installation
⑯	N6QL-	Spring washer	8	(2-M6)	(2-M8)	For track wheel installation
⑰	N6QL-	Bolt	8	(M10×40×26)		For pillow block
⑱	N6QL-	Spring washer	8	(2-M10)		For pillow block
⑲	N6QL-	Nut	8	(1-M10)		For pillow block
⑳	N6QL-	Washer	8			For pillow block
㉑	N6QL-	Buffer	4			
㉒	N6QL-	Collar B	4			
㉓	N6QL-	Socket bolt	4	(M8×35×22)		For buffer
㉔	N6QL-	Nut	4	(1-M8)		For buffer
㉕	N6QL-	Washer	4	(1-M8)		For buffer
㉖	N6QL-	Bolt	8	(M8×28×28)		For geared motor installation
㉗	N6QL-	Spring washer	8	(2-M8)		For geared motor installation
㉘	N6QL-	Bolt	32	(M8×20×20)		For track wheel axle ass'y
㉙	N6QL-	Spring washer	32	(2-M8)		For track wheel axle ass'y
㉚	N6CL-	Ground Wire ass'y	2			
㉛	N6CL-	Bolt	4	(M8×14×14)		For ground wire
㉜	N6CL-	Spring washer	4	(2-M8)		For ground wire
㉝	N6CL-	Name plate S	2			

Low-head geared motor

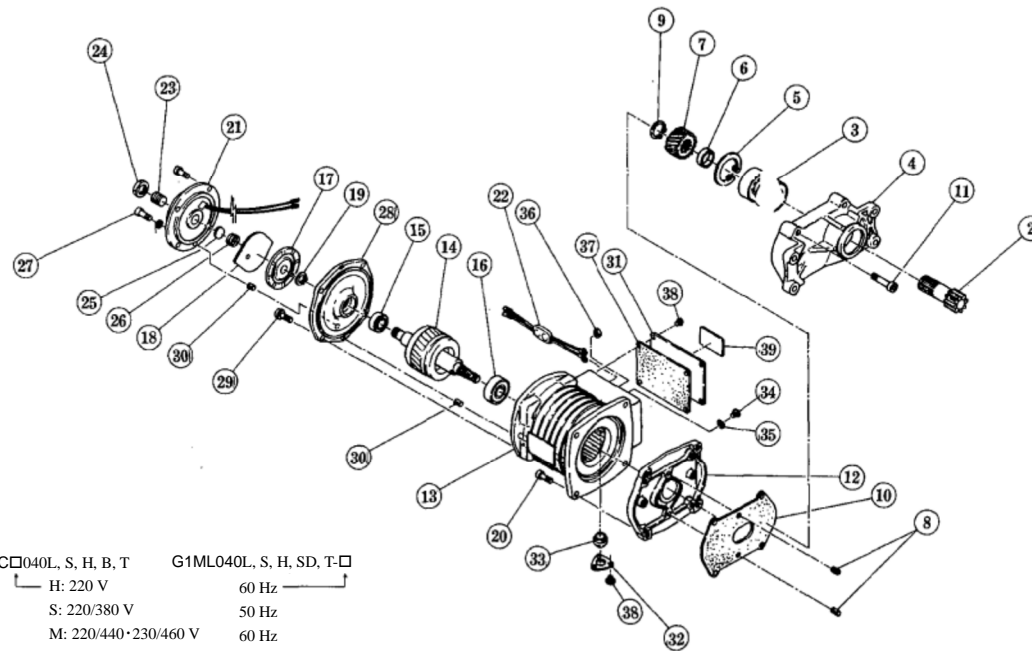


G1C□025L, S, H, B, T	G1ML025L, S, H, SD, T-□
└─ H: 220 V	└─ 60 Hz
└─ S: 220/380 V	└─ 50 Hz
└─ M: 220/440·230/460 V	└─ 60 Hz
└─ X: 380·415 V	└─ 50 Hz
└─ A: 500 V	└─ 50 Hz
└─ K: 550·575 V	└─ 60 Hz

Fig. No.	Parts No.	Parts name	Type	Code					Note
				Travel speed rpm (50/60Hz)					
				20/24	10/12	20/5/24/6	30/36	30/36	
①	G1CE-1303S	1 set of geared motor	2						20/24m/min
	G1CE-1303L	1 set of geared motor	2						10/12m/min
	G1CE-1303B	1 set of geared motor	2						20/5/24/6m/min
	G1CE-1303H	1 set of geared motor	2						30/36m/min
	G1CE-1303T	1 set of geared motor	2						30/36m/min
2	G1CE-301	Pinion	2						
3	G1JE-302	Ball bearing	4			(6204ZZ)			For pinion
4	G1JE-303	Gear box A	2						
5	G1JE-304	Snap ring	2			(R-47)			For gear box A
6	G1JE-305	Collar A	2						
7	G1JE-307S	Gear #2	2						For S
	G1JE-307L	Gear #2	2						For L, SD
	G1JE-307T	Gear #2	2						For H, T
8	G1JE-308	Spring pin	4						For gear box A, B
9	G1JE-309	Snap ring	2			(S-20)			For pinion
10	G1JE-310	Gear box packing	2						
11	G1JE-313	Socket bolt	8			(M6×40×24)			For gear box A
12	G1JE-401	Gear box B	2						
13	G1JE-5501S	Stator assembly	2						For S, L, H
	G1JE-5501B	Stator assembly	2						For SD
	G1JE-5501T	Stator assembly	2						For T
14	G1JE-5502S	Rotor assembly	2						For S, L
	G1JE-5502B	Rotor assembly	2						For SD
	G1JE-5502H	Rotor assembly	2						For H
	G1JE-5502T	Rotor assembly	2						For T
15	G1JE-508	Ball bearing	2		(6002-2RU)	(6202-2RU)	(6002-2RU)	(6202-2RU)	For motor axle/brake side
16	G1JE-509	Ball bearing	2		(6204-2RU)		(6005-2RU)		For motor axle/gear side
17	G1JE-512	Brake disk	2						
18	G1JE-513	Armature	2						
19	G1JE-514	Snap ring	2			(S-15)			For motor axle

Fig. No.	Parts No.	Parts name	Type	Code					Note	
				Travel speed rpm (50/60Hz)						
				20/24	10/12	20/5/24/6	30/36	30/36		
20	G1JE-515	Socket bolt	8		(M6×22×22)			(M6×22×22)		For motor frame
	G1JE-515	Socket bolt with spring washer	8			(M6×22×22)			(M6×22×22)	For motor frame
21	G1JE-5610	Electromagnetic coil assembly	2							
22	G1JE-602	Rectifier	2							
23	G1JE-603	Adjusting bolt	2							For brake adjustment
24	G1JE-604	Lock nut	2							For brake adjustment
25	G1JE-605	Spring holder	2							
26	G1JE-606	Brake spring	2							
27	G1JE-607	Socket bolt	8		(M6×40×24)			(M6×40×24)		For electromagnetic coil
	G1JE-607	Socket bolt with spring washer	8			(M6×20×20)			(M6×20×20)	For electromagnetic coil
28	G1JE-608	Spring washer	8		(2-M6)			(2-M6)		For electromagnetic coil
29	G1JE-609	Brake bracket	2							
30	G1JE-611	Socket bolt with spring washer	8			(M6×20×20)			(M6×20×20)	For brake bracket
31	G1JE-616	Spring pin	4							For brake bracket, electromagnetic coil
32	G1JE-701S	Terminal cover	2							
	G1JE-701B	Terminal cover	2							
33	G1JE-703	Cable holder	2							
34	G1JE-704S	Cable packing 14	2							
	G1JE-704B	Cable packing 18	2							
35	G1JE-705	Round head screw	6 (10)			(M4×10)				For terminal, 10 parts for SD
36	G1JE-708	Spring washer	6 (10)			(2-M4)				For terminal, 10 parts for SD
37	G1JE-709	Nut	6 (10)			(2-M4)				For terminal, 10 parts for SD
38	G1JE-707S	Terminal cover packing	2							
	G1JE-707B	Terminal cover packing	2							
39	G1JE-710	Round head screw	16			(M4×10)				For terminal cover, cable holder, ground
40	G1CE-702S	Name plate TS	2							
	G1CE-702L	Name plate TS	2							
	G1CE-702B	Name plate TS	2							
	G1CE-702H	Name plate TS	2							
	G1CE-702T	Name plate TS	2							

Low-head geared motor



G1C□040L, S, H, B, T	G1ML040L, S, H, SD, T-□
H: 220 V	60 Hz
S: 220/380 V	50 Hz
M: 220/440·230/460 V	60 Hz
X: 380·415 V	50 Hz
A: 500 V	50 Hz
K: 550·575 V	60 Hz

Fig. No.	Parts No.	Parts name	Type	Code					Note
				G1ML040S-□	G1ML040L-□	G1ML040SD-□	G1ML040H-□	G1ML075T-□	
			Code	G1C□040S	G1C□040L	G1C□040B	G1C□040H	G1C□075T	
			Number per unit	20/24	10/12	20/5/24/6	30/36	30/36	
			Travel speed m/min. (50/60Hz)						
①	G1CE-1303S	1 set of geared motor	2						20/24m/min
	G1CE-1303L	1 set of geared motor	2						10/12m/min
	G1CE-1303B	1 set of geared motor	2						20/5/24/6m/min
	G1CE-1303H	1 set of geared motor	2						30/36m/min
	G1CE-1303T	1 set of geared motor	2						30/36m/min
	2	G1CE-301	Pinion	2					
3	G1JE-302	Ball bearing	4			(6305ZZ)			For pinion
4	G1JE-303	Gear box A	2						
5	G1JE-304	Snap ring	2			(R-62)			For gear box A
6	G1JE-305	Collar A	2						For pinion
7	G1JE-307S	Gear #2	2						For S
	G1JE-307L	Gear #2	2						For L, SD
	G1JE-307H	Gear #2	2						For H, T
8	G1JE-308	Spring pin	4						For gear box A, B
9	G1JE-309	Snap ring	2			(S-25)			For pinion
10	G1JE-310	Gear box packing	2						
11	G1JE-313	Socket bolt	8			(M6×50×24)			For gear box A
12	G1JE-401	Gear box B	2						
13	G1JE-5501S	Stator assembly	2						For S, L, H
	G1JE-5501B	Stator assembly	2						For SD
	G1JE-5501T	Stator assembly	2						For T
14	G1JE-5502S	Rotor assembly	2						For S, L
	G1JE-5502B	Rotor assembly	2						For SD
	G1JE-5502H	Rotor assembly	2						For H
	G1JE-5502T	Rotor assembly	2						For T
15	G1JE-508	Ball bearing	2			(6202-2RU)		(6004-2RU)	For motor axle/brake side
16	G1JE-509	Ball bearing	2			(6204-2RU)		(6005-2RU)	For motor axle/gear side
17	G1JE-512	Brake disk	2						

Fig. No.	Parts No.	Parts name	Type	Code					Note
				G1ML040S-□	G1ML040L-□	G1ML040SD-□	G1ML040H-□	G1ML075T-□	
			Code	G1C□040S	G1C□040L	G1C□040B	G1C□040H	G1C□075T	
			Number per unit	20/24	10/12	20/5/24/6	30/36	30/36	
			Travel speed m/min. (50/60Hz)						
18	G1JE-513	Armature	2						
19	G1JE-514	Snap ring	2			(S-15)		(S-20)	For motor axle
20	G1JE-515	Socket bolt	8			(M8×22×22)			For motor frame
21	G1JE-5610	Electromagnetic coil assembly	2						
22	G1JE-602	Rectifier	2						
23	G1JE-603	Adjusting bolt	2						For brake adjustment
24	G1JE-604	Lock nut	2						For brake adjustment
25	G1JE-605	Spring holder	2						
26	G1JE-606	Brake spring	2						
27	G1JE-607	Socket bolt with spring washer	8			(M6×20×20)			For electromagnetic coil
28	G1JE-609	Brake bracket	2						
29	G1JE-611	Socket bolt with spring washer	8			(M6×20×20)			For brake bracket
30	G1JE-616	Spring pin	4						For brake bracket, electromagnetic coil
31	G1JE-701	Terminal cover	2						
32	G1JE-703	Cable holder	2						
33	G1JE-704S	Cable packing 14	2						
	G1JE-704B	Cable packing 18	2						
34	G1JE-705	Round head screw	6 (10)			(M4×10)			For terminal, 10 parts for SD
35	G1JE-708	Spring washer	6 (10)			(2-M4)			For terminal, 10 parts for SD
36	G1JE-709	Nut	6 (10)			(2-M4)			For terminal, 10 parts for SD
37	G1JE-707	Terminal cover packing	2						
38	G1JE-710	Round head screw	16			(M4×10)			For terminal cover, cable holder, ground
39	G1CE-702S	Name plate TS	2						
	G1CE-702L	Name plate TS	2						
	G1CE-702B	Name plate TS	2						
	G1CE-702H	Name plate TS	2						
	G1CE-702T	Name plate TS	2						

Sample check lists (monthly and yearly inspection)

Model No.		Manufacturing No.		Date installed	Inspection No.
Location		Type of crane	Rated load	Crane manufacturing No.	Inspection valid until

Check list			Date checked				
Hoist	Body	Outer appearance					
		Abnormal noise					
		Gear oil					
		Top pin					
		Plug-socket connection					
		Name plate					
	Push button switches	Performance test					
		Wiring					
	Brake	Performance					
	Limit switches	Limit lever/Lever pin coupling					
		Cross guide movement					
		Stopper					
	Load chain/Wire rope	Performance test					
		Outer appearance					
		Abnormal noise					
	Accessories	Wear					
		Suspender/Bottom yoke					
		Idle sheave					
		Chain spring					
		Hook shape/dimension					
Hook movement							
Hook latch							
Chain container							
Idle sheave							
Motorized/manual trolley	Push button switches	Operation test					
		Wiring					
	Traverser	Name plate					
		Traverse test					
		Motor reduction gear-to-frame installation					
		Wheel surface/Teeth wear					
		Snap ring for fixing wheels					
Frame deformation							

○: Good △: Replace or adjust next time. ×: Requires replacement or adjustment immediately.

Check list			Date checked				
Electric/Manual trolley	Traverser	Suspension shaft/Bolts					
		Side rollers					
		Hand wheel/Hand chain					
		Suspender					
Crane	Electric parts	Control box					
		Contactors/Transformer					
	Travel rails	Outer appearance					
		Wear in travel surface					
	Girders	Grounding*					
		Name plate					
		Wear					
	End carriage	Stoppers					
		Wear in wheel travel surface					
		Snap ring for fixing wheels					
		Frame deformation					
	Drive mechanism	Side rollers					
		Buffers					
		Grease					
		Motor brake					
		Soft run					
		Hand wheel/Hand chain					
	Collector arm	Messenger wire tautness					
		Cable hangers					
		T-Shaped hangers					
Cable							
Plug-socket connection							
Fuse capacity *							
Grounding *							
Incoming power supply voltage *							
Insulation resistance							
Load test							
Checked by							
Supervised by							

* Check yearly.

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