TOP RUNNING END TRUCK

OPERATION MANUAL
&
PARTS LIST

SERIES:

- ☐ TC(D)-12
- ☐ TC(D)-15
- ☐ TC(D)-20
- ☐ TC(D)-22
- ☐ TC(D)-25
- ☐ TC(D)-30
- ☐ TC(D)-40

CHENG DAY MACHINERY WORKS CO., LTD.

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OPERATING INSTRUCTIONS :

Since improper installation, operation and maintenance would result not only with insufficient performance and low efficiency, but also with danger or damage to the End Truck, read this manual carefully before installation and operation to insure safety and high performance.

(Warranty does not cover any trouble or damage cause by negligence of proper handling and care.)

1. Inspection after delivery :

End Truck has been completely adjusted and tested before shipping. Check the following items to make sure good meets your requirements or not : Also refer to parts breakdown list as page-04.

a. Check the nameplate if it is the correct End Truck you have ordered.
b. Check for damage.
c. Check the accessories for shortage.
d. Check motor voltage, frequency, and insulation grade.
e. Wheelbase of Top Running End Truck.
f. Wheel tread width of Top Running End Truck.
g. Put on End Truck the top to ceiling, light or obstacle clearance enough or not.
h. Check all the screws and end trucks for abnormal appearance.

2. Installation :

1. The runway rail shall be straight, parallel, level and at the same elevation, the distance, center to center and elevation shall be within the tolerances given as page-28.
2. Rail separation at joint should not exceed 1.5mm.
3. The top running end truck gear drive motors, suggest installed at the same side of walkway for easy maintain.

3. Correct & adequate handling of End Truck :

To extend the service life of machine and to keep safety as end trucks deal with heavy goods, pay attention to handling and operating the End Truck. The followings are general matter to be attended to. Possibly you should specify the notices in conformity with a place of use or should distribute pamphlets to call operators attention.

3-1 Safe handling and operation :

a. Assign a man to maintenance.

Although the End Truck may be operated easily by any unskilled operator, a man should be assigned to maintenance of the End Truck to keep its original performance as long as possible.

b. Inspection before start

Monthly and yearly inspections should be made to check each part of crane for whether or not it is in good order. The results of these inspections should be recorded and kept for three years. And daily inspection should be also made before start according to the table of daily inspections.

c. Do not exceed the rated load

Frequent experiences of overloading not only shorten End Truck life by wearing out some parts or damaging the motor, but also may cause a trouble could lead to accident or even injury. So, never be used for handing a load exceeding its rated capacity.

4. Maintenance and inspection :

Because heavy loads are handled by the End Truck, trouble may lead to a grave accident and that would interrupt operation and spoil efficiency. Regular checking and maintenance as described in the following should be carried out in order to keep the good condition of the End Truck for a long service life.

4-1. Daily inspection :

Dry-run once by push buttons daily before operation and check the following.

a. Check such operation as horizontal movement for whether or not they are in good and smooth orders.

b. Function of brake.

c. Excessive noise.

4-2. Monthly inspection :

In the monthly inspection, it is recommended that the inspection period is decided with paying attention to safety, maintenance, and service frequency, wear and tear.

Inspection item		1	2	3	4	5	6
Traveling rail	a. Check the traveling scope for whether or not there is an obstacle in it.						
	b. Check rails for being bent or any abnormality.						
	c. Check stoppers for being deformed or coming off and also check mounting bolts for being loosened.						
	d. Check rail-mounting bolts for being loosened.						
	e. Check pads and plates laid under rails for being loosened.						
	f. Check rails for abnormal wearing.						
	g. Check rail joints for loosening, damage, and crack.						
Girder and saddle	h. Check mounting bolts of girder and saddle for loosening.						
	i. Check the mounting conditions of crossing rails on the main girder for whether or not they are in good conditions.						
	j. Check the mounting conditions of stoppers for crossing for whether or not they are in good order.						
	k. Check the lubrication conditions of engagement part of traveling wheel and gear and of wheel shaft.						
	l. Check the contact surface and flange of traveling wheels for abnormal wearing and cracks.						
	m. Check wheel shafts and key plates for deforming and loosening.						
	n. Check the mounting conditions of bumper and saddle.						
	o. Check the mounting bolts of traveling motor and reduction gears for loosening.						

4-3. Yearly inspection :

Yearly inspection and test should be performed on a fixed period according to the yearly inspection.

a. Check the main parts of End Truck for abnormality.

b. Check the insulations of conditions of electric parts.

c. Check the saddle and traveling wheels for abnormality.

d. When using a compact lift, check the guide rail for whether or not it is in good conditions.

5. Cause of trouble & treatment :

End Truck is a traveling machine which everyone can operate without any difficult.

a. If a trouble is occurred :

Immediately repair the trouble part. At this time, carefully look into the cause and eliminate it. Otherwise, the same kind of trouble may be occurred again.

b. When repairing :

As the trouble of End Truck may give bad influences upon your production schedule, every kind of spare parts and exchanging parts should be prepared at your workshop immediately to repair. When repairing, please carefully look into the running conditions before trouble and into the cause.

c. Trouble and remedy :

Trouble	Cause	Remedy
Twisting of end truck	1. Wheel tread or rail surface have paint, grease or oily. 2. Too short the wheelbase distance. 3. Girder's two drive motors brake torque uneven.	1.Clean the surface's paint, grease or oil. 2.Normally wheelbase distance is between 1/6~1/7 of span if too short, change longer one's. 3.Adjust the motor brake torque.
Abnormal wearing of rail or wheel	1. Rail assembled not in good tolerance. 2. Twisting End Truck.	1.Double-check and readjust the rail straightness of parallel and level. 2.According to remedy actions in twisting of End Truck.
Gear produce big noise	1. Gear or bearing wear. 2. Register marks were not properly matched when gears were assembled.	1. Replace worn out gear or bearing. 2. Overhaul and rearrange gears correctly.
Travel wheel freewheels	1. Foreign matter on I-beam is decreasing friction. 2. Improper End Truck mounting.	1. Clean I-beam. Apply sand if required in particular case. 2. Check the center of gravity and correct the mount.

d. Inquiry for trouble :

When inquiring the manufacturer about a particular trouble, include the following information.

1. Purpose of use.
2. Total period used.
3. Frequency or period of time or daily usage.
4. Frequency of inching.
5. Details of trouble.
6. How trouble happened and symptoms noted before trouble happened.

6. Top Running End Trucks-Series Parts Breakdown List

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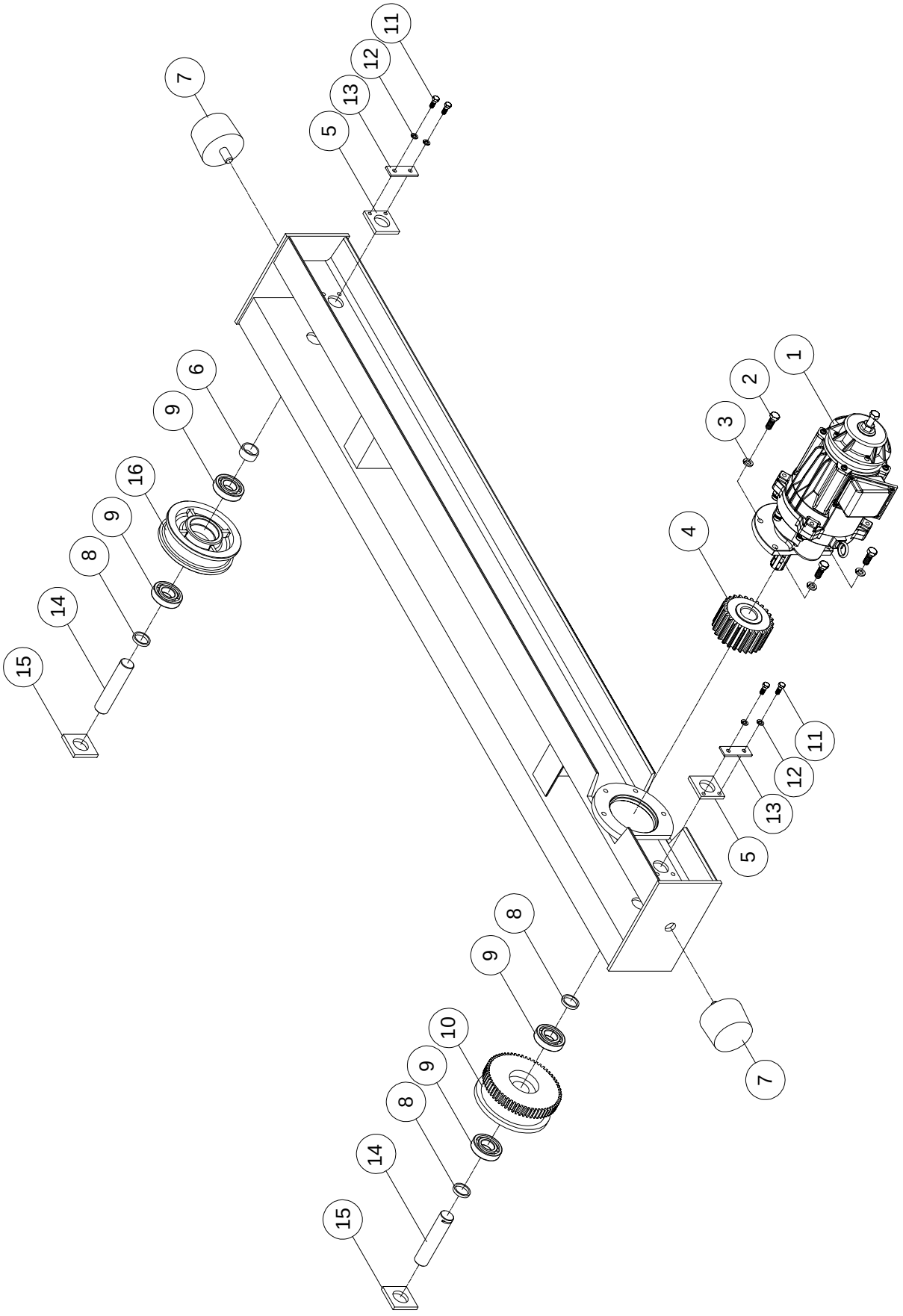
Top Running End Trucks Explosion



Top Running End Trucks Part List

NO.	PARTS CODE	DESCRIPTION	Q'TY REQ'D			
			TC-12			
			9KG	12KG	15KG	22KG
1	136372	Soft Start/Stop Reduction Motor	2			
2	400046	Hex. Bolt <M10×1.5×25L>	8			
3	400096	Spring Washer <M10>	8			
4	201756	Drive Pinion <M3.5×18T×49L>	2			
5	201441	Reinforcing Plate-Fixed Side (square)	4			
6	201885	Axle Spacer B <Ø42.3×Ø32.3×20L>	2			
7	400313	Bumper	4			
8	201880	Axle Spacer A < Ø42.3×Ø32.3×8L>	6			
9	407824	Bearing <6206 Z>	8			
10	201001	Drive Wheel <M3.5×40T×72L>	2			
	201046	Drive Wheel <M3.5×40T×78L>		2		
	201047	Drive Wheel <M3.5×40T×84L>			2	
	201048	Drive Wheel <M3.5×40T×94L>				2
11	400462	Hex. Bolt <M8×1.25×12L>	8			
12	400095	Spring Washer <M8>	8			
13	201456	Axle Keeper <t4.5×25.4×70L>	4			
14	201284	Axle <Ø30×150L>	4	4		
	201285	Axle <Ø30×165L>			4	4
15	201446	Reinforcing Plate-Unfixed Side (square)	4			
16	201021	Idler Wheel <Ø147×60L>	2			
	201076	Idler Wheel <Ø147×66L>		2		
	201077	Idler Wheel <Ø147×72L>			2	
	201078	Idler Wheel <Ø147×82L>				2

Top Running End Trucks Part List

NO.	PARTS CODE	DESCRIPTION	Q'TY REQ'D				
			TC-15				
			9KG	12KG	15KG	22KG	30KG
1	136372	Soft Start/Stop Reduction Motor	2				
2	400046	Hex. Bolt <M10×1.5×25L>	8				
3	400096	Spring Washer <M10>	8				
4	201755	Drive Pinion <M3.5×16T×49L>	2				
5	201442	Reinforcing Plate-Fixed Side (square)	4				
6	201886	Axle Spacer B <Ø48×Ø38×23L>	2				
7	400313	Bumper	4				
8	201881	Axle Spacer A <Ø48×Ø38×8L>	6				
9	407817	Bearing <6307 Z>	8				
10	201043	Drive Wheel <M3.5×49T×77L>	2				
	201002	Drive Wheel <M3.5×49T×85L>		2			
	201015	Drive Wheel <M3.5×49T×91L>			2		
	201044	Drive Wheel <M3.5×49T×101L>				2	
	201045	Drive Wheel <M3.5×49T×111L>					2
11	400462	Hex. Bolt <M8×1.25×12L>	8				
12	400095	Spring Washer <M8>	8				
13	201456	Axle Keeper <t4.5×25.4×70L>	4				
14	201286	Axle <Ø35×155L>	4	4			
	201264	Axle <Ø35×180L>			4	4	4
15	201447	Reinforcing Plate-Unfixed Side (square)	4				
16	201073	Idler Wheel <Ø176×62L>	2				
	201022	Idler Wheel <Ø176×70L>		2			
	201035	Idler Wheel <Ø176×76L>			2		
	201074	Idler Wheel <Ø176×86L>				2	
	201075	Idler Wheel <Ø176×96L>					2

Top Running End Trucks Part List

NO.	PARTS CODE	DESCRIPTION	Q'TY REQ'D				
			TC-20				
			9KG	12KG	15KG	22KG	30KG
1	136372	Soft Start/Stop Reduction Motor	2				
2	400046	Hex. Bolt <M10×1.5×25L>	8				
3	400096	Spring Washer <M10>	8				
4	201755	Drive Pinion <M3.5×16T×49L>	2				
5	201438	Reinforcing Plate-Fixed Side (circle)	4				
6	201889	Axle Spacer B <Ø50×Ø42×23L>	2				
7	400313	Bumper	4				
8	201883	Axle Spacer A <Ø50×Ø42×8L>	6				
9	407825	Bearing <6308 Z>	8				
10	201042	Drive Wheel <M3.5×63T×83L>	2				
	201003	Drive Wheel <M3.5×63T×88L>		2			
	201004	Drive Wheel <M3.5×63T×93L>			2		
	201016	Drive Wheel <M3.5×63T×103L>				2	
	201020	Drive Wheel <M3.5×63T×113L>					2
11	400462	Hex. Bolt <M8×1.25×12L>	8				
12	400095	Spring Washer <M8>	8				
13	201457	Axle Keeper <t4.5×Ø70 >	4				
14	201268	Axle <Ø40×180L>	4	4	4		
	201272	Axle <Ø40×210L>				4	4
15	201439	Reinforcing Plate-Unfixed Side (circle)	4				
16	201072	Idler Wheel <Ø225×68L>	2				
	201023	Idler Wheel <Ø225×73L>		2			
	201024	Idler Wheel <Ø225×78L>			2		
	201036	Idler Wheel <Ø225×88L>				2	
	201040	Idler Wheel <Ø225×98L>					2

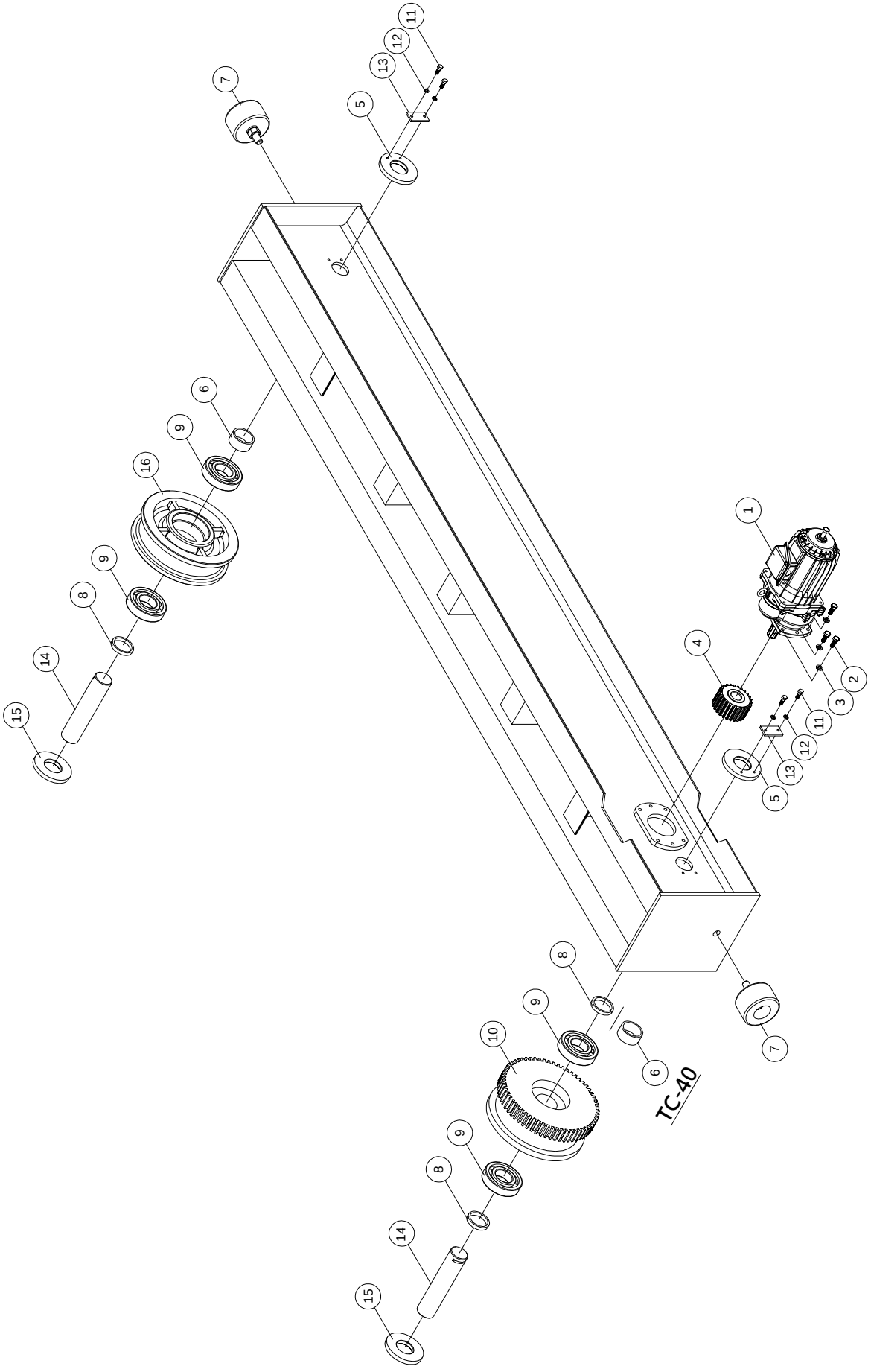
Top Running End Trucks Part List

NO.	PARTS CODE	DESCRIPTION	Q'TY REQ'D				
			TC-22				
			9KG	12KG	15KG	22KG	30KG
1	135743	Soft Start/Stop Reduction Motor	2				
2	406815	Hex. Bolt <M12×1.75×30L>	12				
3	400097	Spring Washer <M12>	12				
4	201679	Drive Pinion <M3.5×23T×63L>	2				
5	201444	Reinforcing Plate-Fixed Side (circle)	4				
6	201896	Axle Spacer B <Ø60×Ø48×23L>	2				
7	202582	Bumper	4				
8	201882	Axle Spacer A <Ø60×Ø48×8L>	6				
9	407826	Bearing <6309 Z>	8				
10	201017	Drive Wheel <M3.5×69T×83L>	2				
	201018	Drive Wheel <M3.5×69T×88L>		2			
	201005	Drive Wheel <M3.5×69T×93L>			2		
	201010	Drive Wheel <M3.5×69T×103L>				2	
	201011	Drive Wheel <M3.5×69T×113L>					2
11	400462	Hex. Bolt <M8×1.25×12L>	8				
12	400095	Spring Washer <M8>	8				
13	201457	Axle Keeper <t4.5×Ø70 >	4				
14	201265	Axle <Ø45×180L>	4	4	4		
	201266	Axle <Ø45×210L>				4	4
15	201449	Reinforcing Plate-Unfixed Side (circle)	4				
16	201037	Idler Wheel <Ø246×68L>	2				
	201038	Idler Wheel <Ø246×73L>		2			
	201025	Idler Wheel <Ø246×78L>			2		
	201030	Idler Wheel <Ø246×88L>				2	
	201031	Idler Wheel <Ø246×98L>					2

Top Running End Trucks Part List

NO.	PARTS CODE	DESCRIPTION	Q'TY REQ'D			
			TC-25			
			9KG	15KG	22KG	30KG
1	135742	Soft Start/Stop Reduction Motor	2			
2	400046	Hex. Bolt <M10×1.5×25L>	8			
3	400096	Spring Washer <M10>	8			
4	201673	Drive Pinion <M3.5×23T×63L>	2			
5	201459	Reinforcing Plate-Fixed Side (circle)	4			
6	201891	Axle Spacer B <Ø60×Ø52×30L>	2			
7	202582	Bumper	4			
8	201879	Axle Spacer A <Ø60×Ø52×10L>	6			
9	407827	Bearing <6310 Z>	8			
10	201199	Drive Wheel <M4.0×69T×90L>	2			
	201221	Drive Wheel <M4.0×69T×100L>		2		
	214751	Drive Wheel <M4.0×69T×120L>			2	
	214753	Drive Wheel <M4.0×69T×120L>				2
11	405011	Hex. Recess Bolt <M8×1.25×15L>	8			
12	400095	Spring Washer <M8>	8			
13	200635	Axle Keeper <t6.0×38×70L>	4			
14	201283	Axle <Ø50×183L>	4			
	201277	Axle <Ø50×193L>		4		
	201275	Axle <Ø50×218L>			4	4
15	201460	Reinforcing Plate-Unfixed Side (circle)	4			
16	201259	Idler Wheel <Ø284×70L>	2			
	201246	Idler Wheel <Ø284×80L>		2		
	214752	Idler Wheel <Ø284×100L>			2	
	214754	Idler Wheel <Ø284×100L>				2

TC-30;TC-40 Top Running End Trucks Explosion



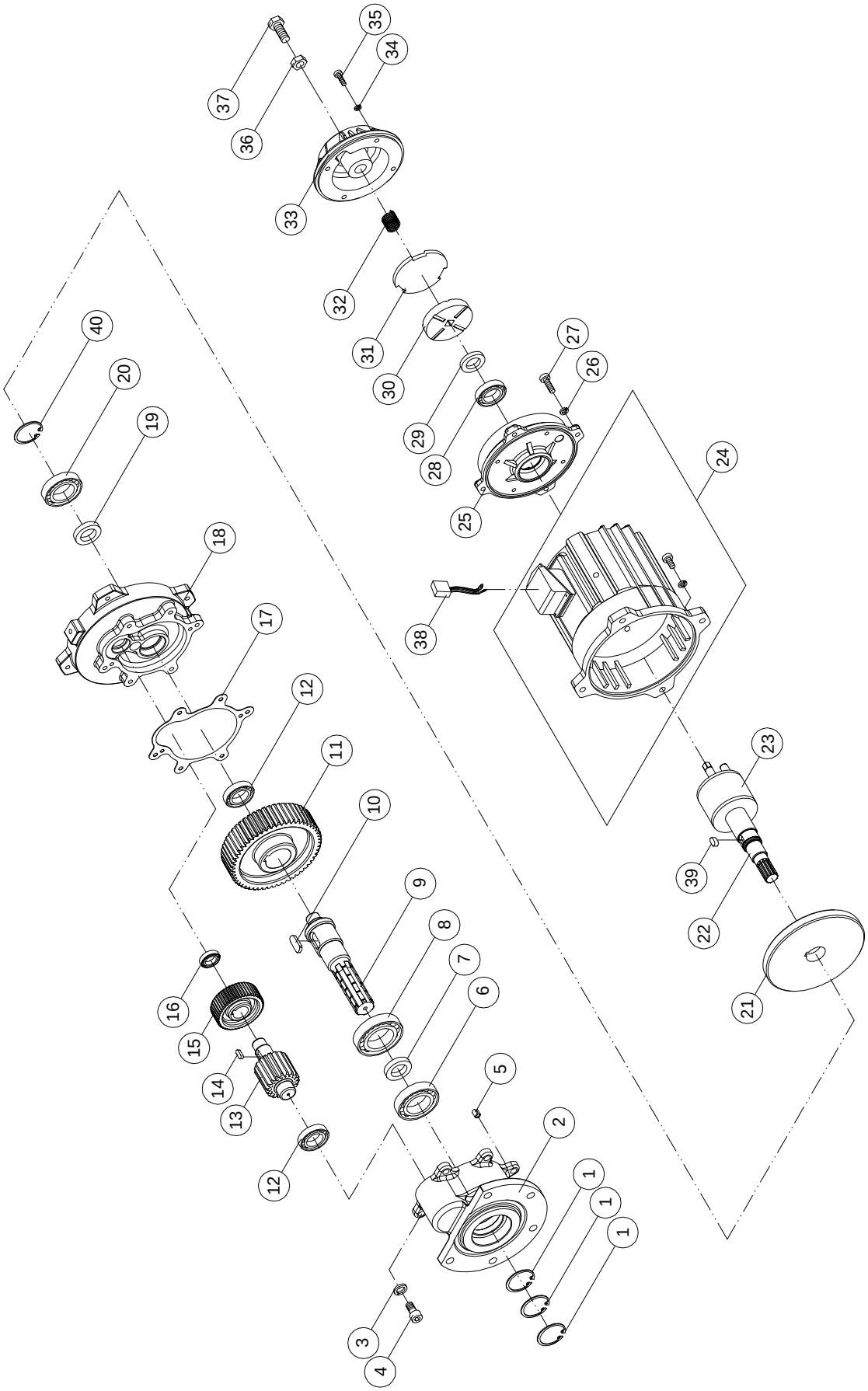
Top Running End Trucks Part List

NO.	PARTS CODE	DESCRIPTION	Q'TY REQ'D	
			TC-30	
			22KG	30KG
1	135744	Soft Start/Stop Reduction Motor	2	
2	406815	Hex. Bolt <M12×1.75×30L>	12	
3	400097	Spring Washer <M12>	12	
4	201683	Drive Pinion <M4.0×26T×63L>	2	
5	201458	Reinforcing Plate-Fixed Side (circle)	4	
6	201890	Axle Spacer B <Ø76×Ø62×35L>	2	
7	202582	Bumper	4	
8	201878	Axle Spacer A <Ø76×Ø62×10L >	6	
9	407823	Bearing <6312 Z>	8	
10	214755	Drive Wheel <M4.0×82T×125L>	2	
	214757	Drive Wheel <M4.0×82T×125L>		2
11	400012	Hex. Recess Bolt <M8×1.25×20L>	8	
12	400095	Spring Washer <M8>	8	
13	200635	Axle Keeper <t6.0×38×70L>	4	
14	201276	Axle <Ø60×225L>	4	
15	201461	Reinforcing Plate-Unfixed Side (circle)	4	
16	214756	Idler Wheel <Ø336×100L>	2	
	214758	Idler Wheel <Ø336×100L >		2

Top Running End Trucks Part List

NO.	PARTS CODE	DESCRIPTION	Q'TY REQ'D
			TC-40
			37KG
1	135744	Soft Start/Stop Reduction Motor	2
2	406815	Hex. Bolt <M12×1.75×30L>	12
3	400097	Spring Washer <M12>	12
4	201684	Drive Pinion <M6.0×12T×63L>	2
5	201462	Reinforcing Plate-Fixed Side (circle)	4
6	201892	Axle Spacer B <Ø85×Ø71×27L>	4
7	202582	Bumper	4
8	201877	Axle Spacer A <Ø85×Ø71×10L >	4
9	400824	Bearing <6314 Z>	8
10	201008	Drive Wheel <M6.0×72T×160L>	2
11	400443	Hex. Recess Bolt <M12×1.75×20L>	8
12	400097	Spring Washer <M12>	8
13	200637	Axle Keeper <t8.0×40×100L>	4
14	201279	Axle <Ø70×275L>	4
15	201463	Reinforcing Plate-Unfixed Side (circle)	4
16	201028	Idler Wheel <Ø444×145L>	2

Soft Start/Stop Reduction Motor Explosion



Soft Start/Stop Reduction Motor Parts List

(D)= DUAL SPEED

NO.	PARTS CODE	DESCRIPTION	Q'TY REQ'D			
			0.4kW		0.75kW	
			1/8.5	1/15	1/8.5	1/15
1	400193	Retaining Ring <S-30>	3	3	3	3
2	268091	Gear Case Cover A	1	1D	1	1
	219992			1		
3	400095	Spring Washer <M8>	6	6	6	6
4	400013	Hex. Recess Bolt <M8×1.25×25L>	6	6	6	6
5	400224	Spring Pin <Ø8 ×10L>	2	2D	2	2
	407477	Spring Pin <Ø6×10L>		2		
6	400817	Bearing <6206 Z>	1	1	1	1
7	400177	Oil Seal <Ø35×Ø55×11t>	1	1D	1	1
	400934	Oil Seal <Ø30×Ø50×8t>		1		
8	407758	Bearing <6207>	1	1D	1	1
	407757	Bearing <6206>		1		
9	216777	Drum Shaft	1	1D	1	1
	201990			1		
10	405908	Key <12×8×30L>	1	1D	1	1
	400379	Key <10×10×24L>		1		
11	216780	Drum Gear (4th Gear) <M2×53T>	1		1	
	201991	Drum Gear (4th Gear) <M1.5×60T>		1		
	216776	Drum Gear (4th Gear) <M2×60T>		1D		1
12	407734	Bearing < 6204>	2	2D	2	2
	407732	Bearing < 6203>		2		
13	216779	Load Brake Gear Shaft (3rd Gear) <M2×19T>	1		1	
	201988	Load Brake Gear Shaft (3rd Gear) <M1.5×12T>		1		
	216775	Load Brake Gear Shaft (3rd Gear) <M2×12T>		1D		1
14	400963	Key <6×6×15L>	1	1D	1	1
	400958	Key <5×5×10L>		1		
15	216774	Load Brake Gear (2nd Gear) <M1.25×36T>	1	1D	1	1
	201987	Load Brake Gear (2nd Gear) <M1×36T>		1		
16	400125	Bearing <6003>	1	1D	1	1
	405630	Bearing <6001>		1		
17	402654	Gasket	1	1D	1	1
	402647			1		

Soft Start/Stop Reduction Motor Parts List

(D)= DUAL SPEED

NO.	PARTS CODE	DESCRIPTION	Q'TY REQ'D			
			0.4kW		0.75kW	
			1/8.5	1/15	1/8.5	1/15
18	268178	Gear Case Cover B	1	1D	1	1
	219993			1		
19	400183	Oil Seal <Ø25×Ø40×8t>	1	1D	1	1
	400186	Oil Seal <Ø20×Ø35×8t>		1		
20	400815	Bearing <6205 2RS>	1	1D	1	1
	405577	Bearing <6204 2RS>		1		
21	107004	Flywheel	1	1D		
	107336			1		
	107012				1	1
22	106364	Motor Shaft	1			
	107335			1		
	106379		1D	1D		
	100528				1	1
	100544		1		1D	1D
23	106367	Motor Rotor	1			
	107334			1		
	100527		1D	1D		
	100529				1	1
	100543				1D	1D
24	A	Motor Stator Ass'y	1	1		
	B		1D	1D		
	C				1	1
	D				1D	1D
25	100587	Motor End Cover	1	1		
	100589		1D	1D	1	1
26	400094	Spring Washer <M6>	4	4	4	4
27	400008	Hex. Recess Bolt <M6×1.0×25L>	4D	4D	4	4
	400007	Hex. Recess Bolt <M6×1.0×20L>	4	4		
28	407702	Bearing <6303 2RS>		1D	1	1
	407701	Bearing <6202 2RS>	1	1		

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Soft Start/Stop Reduction Motor Parts List

(D)= DUAL SPEED

NO.	PARTS CODE	DESCRIPTION	Q'TY REQ'D			
			0.4kW		0.75kW	
			1/8.5	1/15	1/8.5	1/15
29	400181	Oil Seal <Ø17×Ø28×6t>		1D	1	1
	400932	Oil Seal <Ø15×Ø30×7t>	1	1		
30	100806	Brake Lining	1D	1D	1	1
	100805		1	1		
31	100808	Brake Plate	1D	1D	1	1
	100807		1	1		
32	400239	Brake Spring	1	1		
	400314		1D	1D	1	1
33	100509	Brake Drum Ass'y	1D	1D	1	1
	100508		1	1		
34	400094	Spring Washer <M6>	4	4	4	4
35	400008	Hex. Recess Bolt <M6×1.0×25L>	4	4	4	4
36	400085	Nut <M16×1.5>	1D	1D	1	1
	400084	Nut <M12×1.75>	1	1		
37	400468	Hex. Bolt <M16×1.5×50L>	1D	1D	1	1
	400464	Hex. Bolt <M12×1.75×35L>	1	1		
38	300152	Rectifier	1	1	1	1
39	405922	Key < 8×8×15L>	1	1		
	400974	Key < 8×8×20L>			1	1
40	400193	Retaining Ring <S-30>	1	1D	1	1
	400905	Retaining Ring <S-22>		1		

Soft Start/Stop Reduction Motor Parts List

NO.	PARTS CODE		DESCRIPTION	Ø - Hz- V	
24	A	133061	Motor Stator Ass'y <0.4kW>	3Ø 60Hz	220 / 380V
		133062			220 / 440V
		133064			230 / 460V
		133066		3Ø 50Hz	220 / 380V
		133067			415V
	B	132101		3Ø 60Hz	220V
		132111			380V
		132115			440V
		132112			230V
		132113			460V
		132114		3Ø 50Hz	220V
		132117			380V
		132116			415V
	C	133071	Motor Stator Ass'y <0.75kW>	3Ø 60Hz	220 / 380V
		133072			220 / 440V
		133078			230 / 460V
		133076		3Ø 50Hz	220 / 380V
		133077			415V
	D	106908		3Ø 60Hz	220V
		132118			380V
		132119			230V
		132120			460V
		132121		3Ø 50Hz	220V
		106915			380V
		132122			415V

Soft Start/Stop Reduction Motor Parts List

(D)= DUAL SPEED

NO.	PARTS CODE	DESCRIPTION	Q'TY REQ'D			
			1.1kW		1.5kW	
			1/12	1/20	1/12	1/20
1	400195	Retaining Ring <S-40>	3	3	3	3
2	219994	Gear Case Cover A	1	1	1	1
3	400095	Spring Washer <M8>	6	6	6	6
4	400017	Hex. Recess Bolt <M8×1.25×35L>	6	6	6	6
5	400224	Spring Pin < Ø8 ×10L>	2	2	2	2
6	407857	Bearing < 6208 ZZ>	1	1	1	1
7	400938	Oil Seal < Ø40 ×Ø62 ×12t>	1	1	1	1
8	407759	Bearing < 6208 >	1	1	1	1
9	216778	Drum Shaft (4th Gear)	1	1	1	1
10	405942	Key <12×8×35L>	1	1	1	1
11	216785	Drum Gear (4th Gear)<M2.5×54T>	1		1	
	216783	Drum Gear (4th Gear)<M2.5×60T>		1		1
12	407807	Bearing < 6205 ZZ>	2	2	2	2
13	216784	Load Brake Gear Shaft (3rd Gear) <M2.5×18T>	1		1	
	216782	Load Brake Gear Shaft (3rd Gear) <M2.5×12T>		1		1
14	405939	Key <8×7×25L>	1	1	1	1
15	216781	Load Brake Gear (2nd Gear) <M1.5×48T>	1	1	1	1
16	407843	Bearing < 6204 ZZ>	1	1	1	1
17	402656	Gasket	1	1	1	1
18	219995	Gear Case B	1	1	1	1
19	400934	Oil Seal < Ø30×Ø50×8t>	1	1	1	1
20	400151	Bearing < 6306 2RU>	1	1	1	1
21	100812	Flywheel	1	1	1	1
22	100827	Motor Shaft	1	1		
	100823		1D	1D	1D	1D
	100825				1	1
23	100826	Motor Rotor	1	1		
	100819		1D	1D		
	100824				1	1
	100818				1D	1D

Soft Start/Stop Reduction Motor Parts List

(D)= DUAL SPEED

NO.	PARTS CODE	DESCRIPTION	Q'TY REQ'D			
			1.1kW		1.5kW	
			1/12	1/20	1/12	1/20
24	A	Motor Stator Ass'y	1	1		
	B		1D	1D		
	C				1	1
	D				1D	1D
25	100589	Motor End Cover	1	1		
	100593		1D	1D	1	1
26	400094	Spring Washer <M6>	4	4	4	4
27	400008	Hex. Recess Bolt <M6×1.0×25L	4	4	4	4
28	407702	Bearing <6303 2RS>	1	1		
	407703	Bearing <6305 2RS>	1D	1D	1	1
29	400181	Oil Seal <Ø17×Ø28×6t>	1	1		
	400943	Oil Seal <Ø25×Ø35×5t>	1D	1D	1	1
30	100806	Brake Lining	1	1		
	100756		1D	1D	1	1
31	100808	Brake Plate	1	1		
	100459		1D	1D	1	1
32	400314	Spring	1	1	1	1
33	100509	Brake Drum Ass'y	1	1		
	100505		1D	1D	1	1
34	400095	Spring Washer<M8>	4D	4D	4	4
	400096	Spring Washer<M6>	4	4		
35	400014	Hex. Recess Bolt<M8×1.25×30L>	4D	4D	4	4
	400008	Hex. Recess Bolt<M6×1.0×25L>	4	4		
36	400085	Nut<M16>	1	1	1	1
37	400468	Hex. Bolt <M16×1.5×50L>	1	1	1	1
38	300152	Rectifier	1	1	1	1
39	405963	Key <10×8×20L>	1	1	1	1

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Soft Start/Stop Reduction Motor Parts List

NO.	PARTS CODE		DESCRIPTION	Ø - Hz- V	
24	A	132123	Motor Stator Ass'y <1.1kW>	3Ø 60Hz	220 / 380V
		132124			220 / 440V
		132125			230 / 460V
		132126		3Ø 50Hz	220 / 380V
		132127			415V
	B	106909		3Ø 60Hz	220V
		132128			380V
		132134			440V
		132129			230V
		132130			460V
		132131		3Ø 50Hz	220V
		132132			380V
		132133			415V
	C	133121	Motor Stator Ass'y <1.5kW>	3Ø 60Hz	220 / 380V
		133122			220 / 440V
		133134			230 / 460V
		133126		3Ø 50Hz	220 / 380V
		133127			415V
	D	132104		3Ø 60Hz	220V
		133135			380V
		107037			230V
		107038			460V
		132136		3Ø 50Hz	220V
		108628			380V
		132137			415V

Soft Start/Stop Reduction Motor Parts List

(D)= DUAL SPEED

NO.	PARTS CODE	DESCRIPTION	Q'TY REQ'D					
			2.2kW		3.0kW		3.75kW	
			1/12	1/20	1/12	1/20	1/12	1/20
1	400195	Retaining Ring <S-40>	3	3	3	3	3	3
2	230308	Gear Case Cover A	1	1	1	1	1	1
3	400096	Spring Washer <M10>	6	6	6	6	6	6
4	400018	Hex. Recess Bolt <M10×1.5×40L>	6	6	6	6	6	6
5	400224	Spring Pin <Ø8 ×10L>	2	2	2	2	2	2
6	407819	Bearing <6308 ZZ>	1	1	1	1	1	1
7	400938	Oil Seal <Ø40×Ø62×12t>	1	1	1	1	1	1
8	407750	Bearing <6308>	1	1	1	1	1	1
9	216791	Drum Shaft (4th Gear)	1	1	1	1	1	1
10	400991	Key <16×10×35L>	1	1	1	1	1	1
11	216790	Drum Gear (4th Gear) <M3×54T>	1		1		1	
	216788	Drum Gear (4th Gear) <M3×60T>		1		1		1
12	407861	Bearing < 6206 ZZ>	2	2	2	2	2	2
13	216789	Load Brake Gear Shaft (3rd Gear)<M3×18T>	1		1		1	
	216787	Load Brake Gear Shaft (3rd Gear)<M3×12T>		1		1		1
14	405941	Key <10×8×30L>	1	1	1	1	1	1
15	216786	Load Brake Gear (2nd Gear)<M1.5×56T>	1	1	1	1	1	1
16	407807	Bearing <6205 ZZ>	1	1	1	1	1	1
17	402619	Gasket	1	1	1	1	1	1
18	230309	Gear Case B	1	1	1	1	1	1
19	400187	Oil Seal <Ø35×Ø50×8t>	1	1	1	1	1	1
20	400801	Bearing <6307 2RU>	1	1	1	1	1	1
21	100526	Flywheel	1	1	1	1	1	1
22	100565	Motor Shaft	1	1	1	1		
	100567		1D	1D	1D	1D		
	100575						1	1
	100577						1D	1D
23	100564	Motor Rotor	1	1				
	100566		1D	1D				
	100568				1	1		
	100569				1D	1D		

Soft Start/Stop Reduction Motor Parts List

(D)= DUAL SPEED

NO.	PARTS CODE	DESCRIPTION	Q'TY REQ'D					
			2.2kW		3.0kW		3.75kW	
			1/12	1/20	1/12	1/20	1/12	1/20
23	100573	Motor Rotor					1	1
	100576						1D	1D
24	A	Motor Stator Ass'y	1	1				
	B		1D	1D				
	C				1	1		
	D				1D	1D		
	E						1	1
	F						1D	1D
25	100595	Motor End Cover	1	1	1	1		
	100596						1	1
26	400096	Spring Washer <M10>	4	4	4	4	4	4
27	400431	Hex. Recess Bolt <M10×1.5×30L>	4	4	4	4	4	4
28	407703	Bearing <6305 2RS>	1	1	1	1	1	1
29	400943	Oil Seal <Ø25×Ø35×5t>	1	1	1	1	1	1
30	100794	Brake Lining	1	1	1	1	1	1
31	100461	Brake Plate	1	1	1	1	1	1
32	400328	Brake Spring	1	1	1	1	1	1
33	100510	Brake Drum Ass'y	1	1	1	1	1	1
34	400096	Spring Washer <M10>	4	4	4	4	4	4
35	400450	Hex. Recess Bolt <M10×1.5×35L>	4	4	4	4	4	4
36	400640	Nut <M20×2.5>	1	1	1	1	1	1
37	400469	Hex. Bolt <M20×2.5×60L>	1	1	1	1	1	1
38	300152	Rectifier	1	1	1	1	1	1

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Soft Start/Stop Reduction Motor Parts List

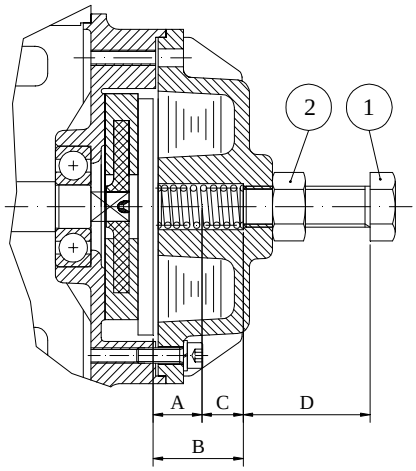
NO.	PARTS CODE		DESCRIPTION	Ø - Hz- V	
24	A	133101	Motor Stator Ass'y <2.2kW>	3Ø 60Hz	220 / 380V
		133102			220 / 440V
		133105			230 / 460V
		133106		3Ø 50Hz	220 / 380V
		133107			415V
	B	132105		3Ø 60Hz	220V
		132138			380V
		132141			440V
		132139			230V
		132140			460V
		132142		3Ø 50Hz	220V
		132143			380V
		132144			415V
	C	133111	Motor Stator Ass'y <3.0kW>	3Ø 60Hz	220 / 380V
		133112			220 / 440V
		133114			230 / 460V
		133116		3Ø 50Hz	220 / 380V
		133117			415V
	D	132106		3Ø 60Hz	220V
		107023			380V
		132146			440V
		107020			230V
		107021			460V
		107022		3Ø 50Hz	220V
		105144			380V
		132145			415V
	E	133141	Motor Stator Ass'y <3.75kW>	3Ø 60Hz	220 / 380V
		133142			220 / 440V
		133143			230 / 460V
		133146		3Ø 50Hz	220 / 380V
		133147			415V
	F	132107		3Ø 60Hz	220V
		107026			380V
		132149			440V
		107027			230V
		107028			460V
		107029		3Ø 50Hz	220V
		132147			380V
		132148			415V

7. Brake Adjustment

1. Loosen a nut ② , then tighten a bolt① until spring Is Fully compressed.

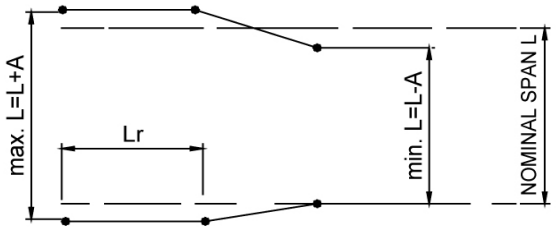
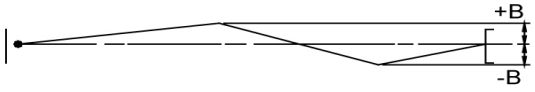
1. Turn bolt counterclockwise. The number of turning Shown in the table below based on motor.

2. Tighten a nut ②.



Spring / Motor	Free Length (mm)	Fully Press (A) (mm)	Working High(B) (mm)	Adjust(C) (mm)	Bolt Length (D) (mm)	Number of turns (N)	Adjustment Bolt
0.4kW	25	11.2	13.8	2.6	35	1.5	M12×1.75
0.4DkW	35	18.2	25.7	7.5	50	5	M16×1.5
0.75kW	35	18.2	25.7	7.5	50	5	M16×1.5
1.1kW	35	18.2	21.2	3	50	2	M16×1.5
1.5kW	35	18.2	21.2	3	50	2	M16×1.5
2.2kW	30	17.5	26.3	8.8	60	3.5	M20×2.5
3.0kW	30	17.5	23.8	6.3	60	2.5	M20×2.5
3.75kW	30	17.5	23.8	6.3	60	2.5	M20×2.5

8. Tolerance table:

ITEM	FIGURE	OVERALL TOLERANCE	MAXIMUM RATE OF CHANGE
CRANE SPAN (L) MEASURED AT CRANE WHEEL CONTACT SURFACE		L ≦ 15M A=4.5mm L > 15M≦30M A=6.0mm L > 30M A=9.0mm	6M IN 6mm
STRAIGHTNESS (B)		B=9.0mm	6M IN 6mm
ELEVATION (C)		C=9.0mm	6M IN 6mm
TOP RUNNING TRANSVERSE RAIL TO RAIL ELEVATION (D)		L ≦ 15M D=4.5mm L > 15M≦30M D=6.0mm L > 30M D=9.0mm	6M IN 6mm
TRANSVERSE GIRDER TO GIRDER ELEVATION UNDER RUNNING (D)			

In closing this manual, may we remind you that a person should be assigned to be in charge of the End Truck and regular inspections should be observed without fail so as to prevent troubles which could lead to grave hazard.