

SWL Lifting Products

Motorized Trolleys

Parts & Operations Manual

For Models: MT-100 to MT-1000

SAFETY-IMPORTANT

The use of any hoist and trolley presents some risk of personal injury or property damage.

That risk is greatly increased if proper instructions and warnings are not followed. Before using this hoist, each user should become thoroughly familiar with all warnings, instructions and recommendations herein.



THIS SYMBOL POINTS OUT IMPORTANT SAFETY INSTRUCTIONS WHICH IF NOT FOLLOWED COULD ENDANGER THE PERSONAL SAFETY AND/OR PROPERTY OF YOURSELF AND OTHERS. READ AND FOLLOW ALL INSTRUCTIONS IN THIS MANUAL AND ANY PROVIDED WITH THE EQUIPMENT BEFORE ATTEMPTING TO OPERATE YOUR SWL MOTORIZED TROLLEY.



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I. FOREWORD

This manual contains important information to help you properly install, operate and maintain the □□ □ motor driven trolley for maximum performance, economy and safety.

Please study its contents thoroughly before putting the trolley into operation. By practicing correct operation procedures and by carrying out the recommended preventative maintenance suggestions, you will be assured of dependable service.

In order to help us to supply correct spare parts quickly, please always specify:

1). Trolley Model, 2). Serial Number and 3). Part Number, as well as the description.

We trust that you will find this "SWL" trolley satisfies your requirements.

Should you have any queries, please contact:



(Please ask for a company's stamp from your local agent)

II. OPERATING AND SAFETY PROCEDURES

The following are operating and safety procedures for safe operation of the SWL motor driven trolley. Taking precedence over and specific rules listed here, however is the most importance rule of all. A few minutes spent reading these rules can make an operator aware of dangerous practices to avoid and precautions to take for his own safety and others.

1. Immediately after installation, operate trolley with safe working load over the entire length of runway or monorail system to be sure that all adjustments and operations are satisfactory.
2. Rail stops must be installed for all trolleys operating on open end beams. These stops must be positioned such that impact forces are absorbed by trolley side frames only.
3. When preparing to lift a load, be sure that the attachments to the hook are firmly seated in hook saddle. Avoid off center loading on the point of hook.
4. When lifting, raise the load only enough to clear the floor or support and check to be sure that the attachments to hook and load are firmly seated. Continue lift only after you are assured the load is free of all obstructions.
5. When applying a load, it should be directly under the trolley. Avoid off center loading of any kind.
6. Take up a slack load chain carefully and start lifting load slowly to avoid shock and jerking of hoist load chain. If there is any evidence of overloading, immediately lower the load and remove the excess load.
7. Do not allow the load to swing or twist while hoisting.
8. Anticipate the stopping point and allow trolley to coast to smooth stop. Reversing or plugging to stop trolley causes overheating of motor and swaying of load.
9. Do not load trolley beyond the rated capacity. Overload can cause immediate failure of load carrying parts or cause damage resulting in future failure at less than rated capacity.
10. Do not use this or any other overhead materials handling equipment for lifting or transporting people.
11. Stand clear of all loads and avoid moving a load over the heads of other people. Warn people of your intention to move a load in their area.

12. Do not leave the load suspended in the air unattached.

13. Do not wrap the load chain around the load and hook into itself as a choker chain.

Doing this will result in the follow:

(a) Operation of the upper limit switch is bypassed and the load could hit the hoist.

(b) The loss of the swivel effect of the hook which could mean twisted chain and a jammed lift wheel.

(c) The chain could be damaged at the hook.

14. Permit only qualified personnel to operate the unit.

III. GENERAL INFORMATION

The SWL motorized trolleys are designed for use with the Black Bear Electric Chain Hoists.

The trolleys are available in the following capacities: 1-Ton, 2-Ton, 3-Ton, 5-Ton, 7.5-Ton, and 10-Ton. These trolleys are similar except for the size of the load carrying members.

The trolleys have rugged steel side plates with anti-drop fins, steel wheel axles, steel suspension bolts, construction steel load plate seated in middle of two suspension bolts for top hook of hoist to hook on. The hot forged travelling wheels machine to suit both I-beam and flat beam.

Hardened steel gears are attached to two trackwheels and driven by a hardened steel pinion.

The pinion is driven by planetary gear reducer in high quality grease. A weather proof motor drive the gear reducer.

The electric housing contains a reversing contactor and a terminal boards. The transformer will be an option depending on the user's need. The 3-phase motor is always equipped with a magnetic brake over the end of driven motor. Above the housing bottom, there three holes, one for cord from hoist, another for control cord from hoist, the third one for trolley motor cord, it will serve as an option for equipped with the Push-Bottom-Station cord for the trolley. In addition, there are two option holes on each side of the housing, motor power cord on the right, and an optional hole for the power cord to trolley on the left. All five holes are equipped with cable gland for IP-54 protection optionally. Please refer to Illust: 5 on page 13.

IV. INSTALLATION

1. UNPACKING INFORMATION

After removing the trolley from the shipping carton/crate, carefully inspect the external condition of the cord, electric housing, gear reducer, motor and brake (3-phase model) for damage that may have occurred during shipment and handling. Check to make sure all parts are furnished. i.e. trolley side frame with electric housing, side frame with reducing gear motor, position tube, spacer washer, stay-bolts, nuts and load plate for hoist top hook. Also, before attempting to install the trolley, make sure that the power supply indicated on the labels attached to the motor housing is the same as the power supply on which the unit is to operate. Generally, the hoist and trolley are packed separately. Except when the order indicates the requirement of 4-way control for the hoist with trolley (YSS series), then the hoist will be packed with trolley together in one wooden crate.



WARNING

For all trolley suspended hoist rail stops must be installed at each end of the rail. Failure to install rail stops will allow the hoist and trolley to fall off the end of the rail and thus cause an accident that may result in injury and/or property damage. The stops must be positioned as to not exert impact force on the hoist frame or trolley wheels. They must contact the ends of the trolley side frames.

2. TROLLEY TO BEAM

It is recommended that the trolley be mounted on the beam prior to attaching the hoist to the trolley. Before attempting to mount the trolley on the beam, measure the actual width of the beam flange on which the trolley is to operate. Using this measurement determine the arrangement of spacer washers between the two trolley side frames. First loosely assemble the side frames, position tubes, spacer washers and nuts on the stay bolts.



WARNING

The trolley and beam should be inspected periodically to assure their continued operations. Operating a malfunctioning trolley and/or operation the trolley on a beam with an excessively worn flange may allow the trolley to fall from the beam causing an accident that may result in injury and/or property damage.

Due to the variations in beam flange widths, it is suggested that the beam flange width be measured to determine the exact distribution of spacer washers. The distance between trackwheel flanges should be 3-5 mm greater than the beam flange width for straight runway beams, and 5-7 mm greater than the beam flange width if runway includes sharp curves. Now install the trolley on the beam by sliding one side frame out far enough to allow the trackwheels to clear beam flange. Lift the trolley up so that the trackwheels are riding on the beam and draw the side frames together and tighten the nuts snugly.

3. HOIST TO TROLLEY

There are four different ways of assembling the hoist to trolley:

(a) Hoist to trolley with top hook

(Please refer to Illust.:1)

(b) Hoist to trolley with "E" type rigid hook

(Please refer to Illust.:2)

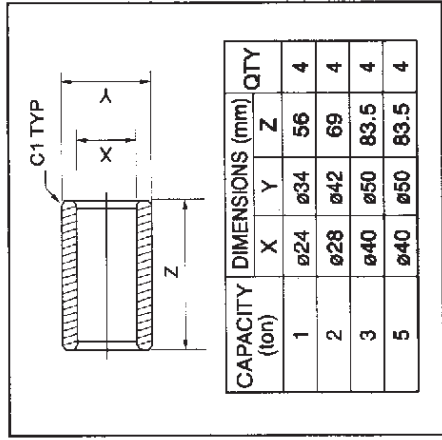
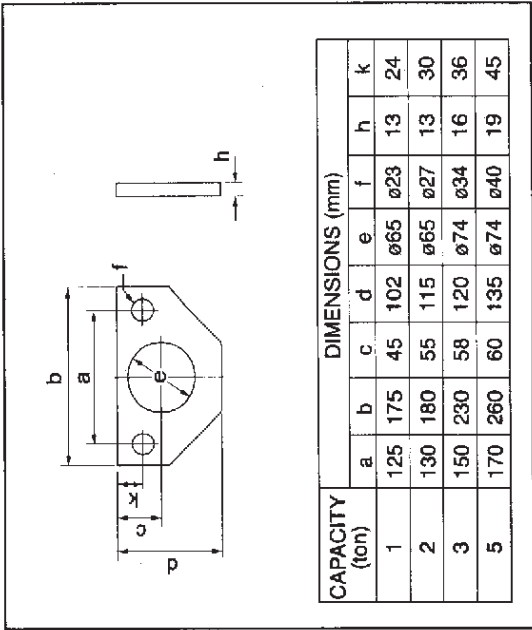
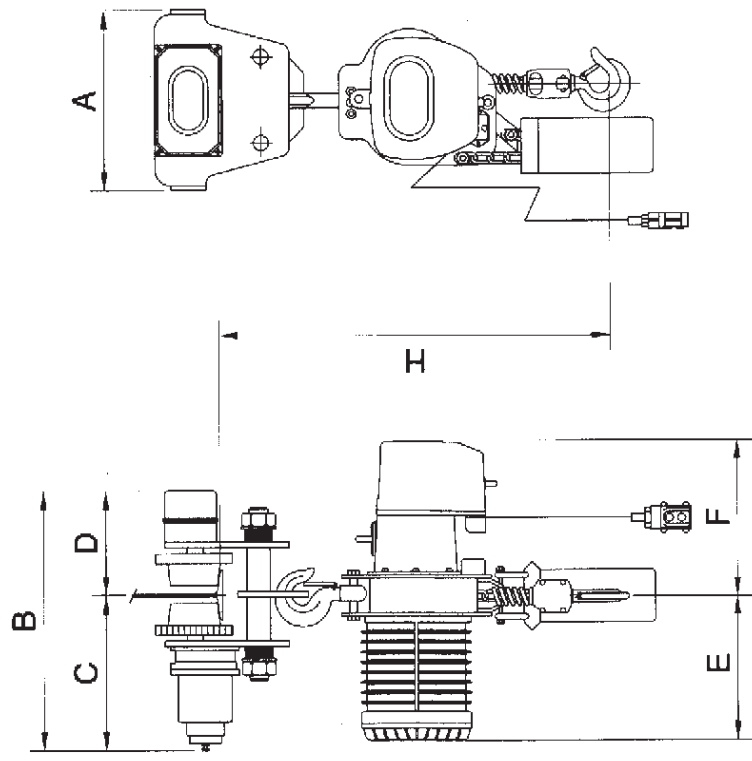
(c) Hoist to trolley with "A" type rigid hook

(Please refer to Illust.:3)

(d) Hoist to trolley of low headroom design

(Please refer to Illust.:4)

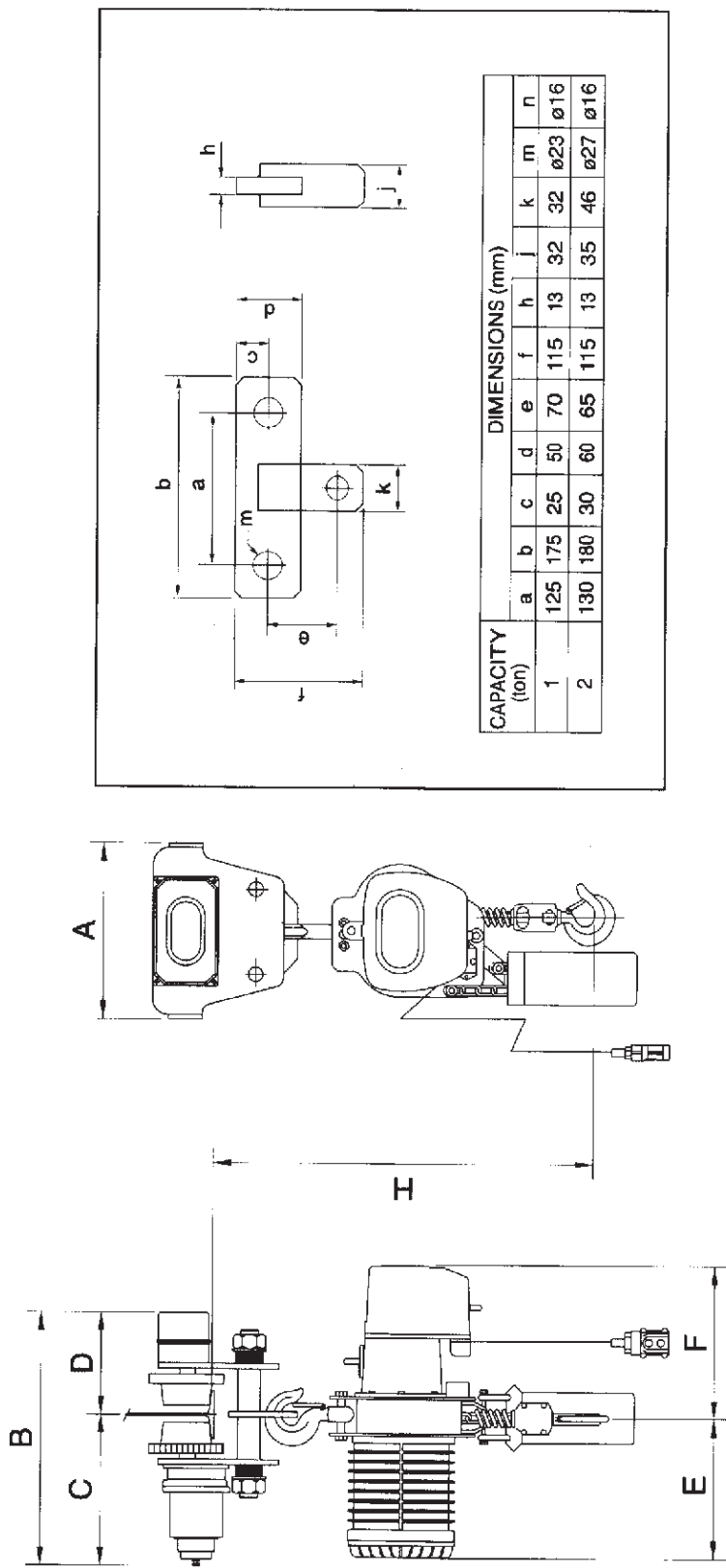
HOIST TO TROLLEY WITH TOP HOOK



S.W.L. T	HOIST	TROLLEY	DIMENSIONS (mm)						TROLLEY (KW)	SPACER 1/8"t	BEAM (mm)	TURNING RADIUS	
			A	B	C	D	H	E					F
1	YSL.H.E-100	MT-100	295	541	345	196	680	245	260	0.25	32	75-125	1.3M
2	YSL.H.E-200	MT-200	323	567	358	209	890	245	260	0.25	32	100-150	1.5M
2	YSS-200	MT-200	323	567	358	209	995	326	314	0.25	32	100-150	1.5M
3	YSS-300	MT-300	359	662	417	245	1120	326	314	0.6	32	125-175	1.8M
5	YSS-500	MT-500	389	673	422	251	1200	326	314	0.6	32	125-175	2M

MA001

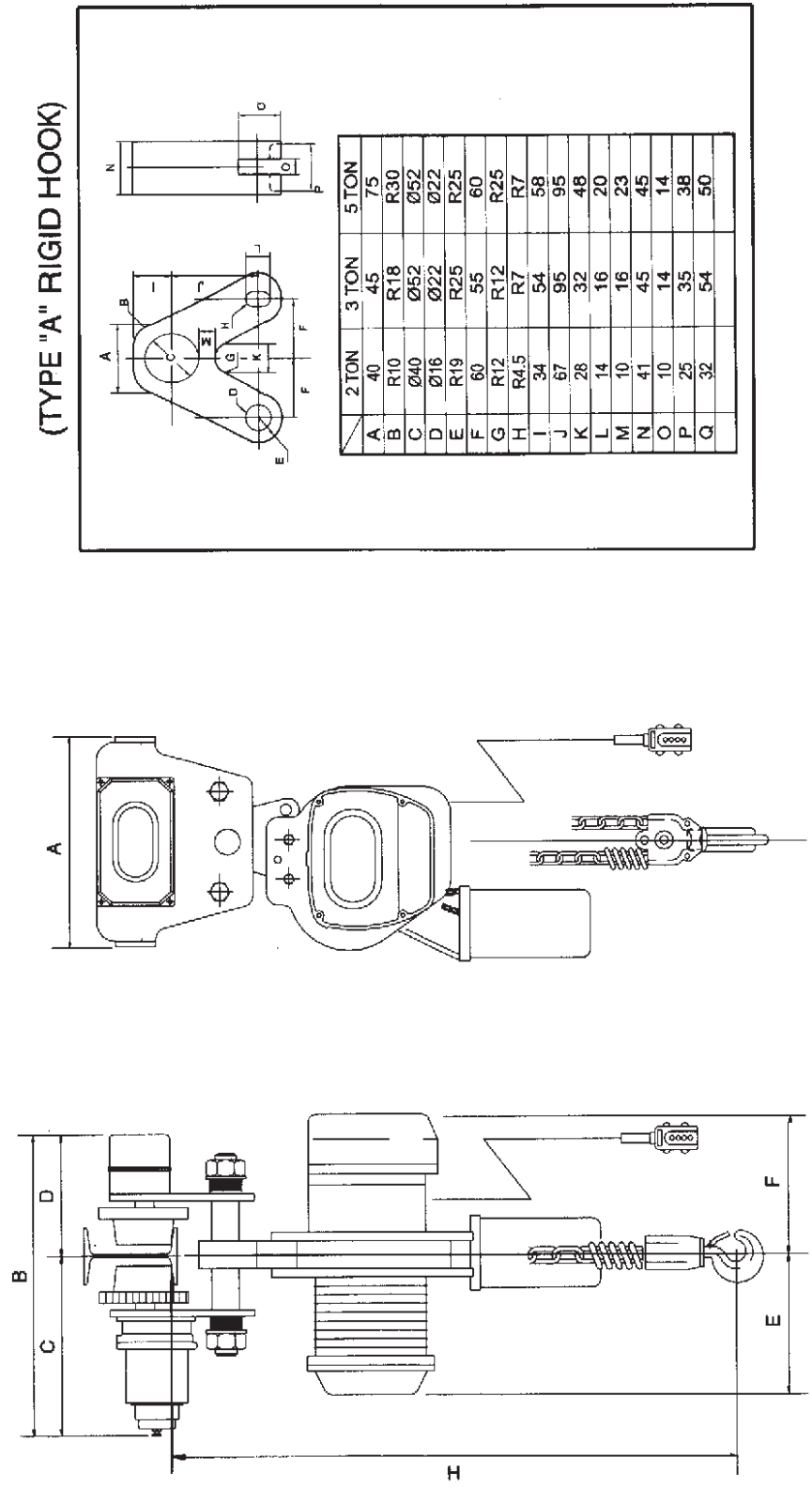
HOIST TO TROLLEY WITH TYPE "E" RIGID HOOK



S.W.L. T	HOIST	TROLLEY	DIMENSIONS (mm)						TROLLEY SPACER 1/8"t	BEAM (mm)	TURNING RADIUS	
			A	B	C	D	H	E				F
1	YSL.H.E-100	MT-100	295	541	345	196	554	245	260	32	75-125	1.3M
2	YSL.H.E-200	MT-200	323	567	358	209	718	245	260	32	100-150	1.5M
2	YSS-200	MT-200	323	567	358	209	720	245	260	32	100-150	1.5M

MA002

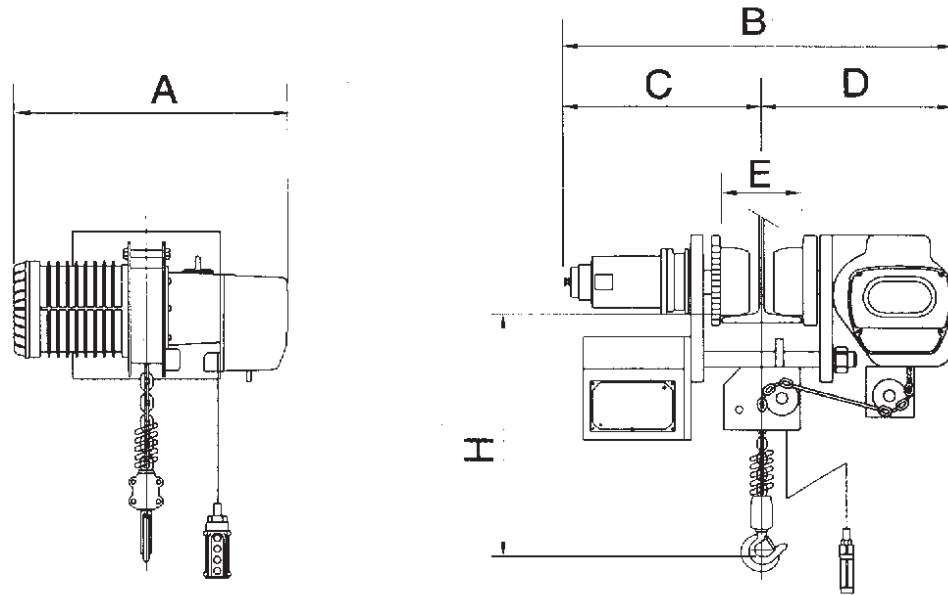
HOIST TO TROLLEY WITH TYPE "A" RIGID HOOK



S.W.L. T	HOIST	TROLLEY	A	B	C	D	E	F	TROLLEY (KW)	SPACER 1/8"l	BEAM (mm)	TURNING RADIUS
3	YSS-300	MT-300	359	662	417	245	875	326	0.6	32	125-175	1.8M
5	YSS-500	MT-500	389	673	422	251	915	326	0.6	32	125-175	2M

Illust.:3

HOIST TO TROLLEY OF LOW HEADROOM DESIGN



Capacity (ton)	Model	Dimensions (mm)						Lift Speed (m/min)		Trolley Speed (m/min)		Flang Width (mm)
		H	A	B	C	D	E	50HZ	60HZ	50HZ	60HZ	
1	YLT-100	420	505	691	360	331	75	4.7	5.6	20	24	75-125
	4.7/1.6							5.6/1.8	20/7	24/8		
2	YLT-200	500	505	717	375	342	100	2.3	2.8	20	24	100-150
	2.3/0.8							2.8/1.0	20/7	24/8		
3	YLT-300	600	505	781	418	363	125	1.5	1.8	20	24	125-175
	1.5/0.5							1.8/0.6	20/7	24/8		
1	YHT-100	420	505	691	360	331	75	6.7	8.0	20	24	75-125
	6.7/2.2							8.0/2.7	20/7	24/8		
2	YHT-200	500	505	717	375	342	100	3.3	4.0	20	24	100-150
	3.3/1.1							4.0/1.3	20/7	24/8		
3	YHT-300	600	505	781	418	363	125	2.2	2.6	20	24	125-175
	2.2/0.7							2.6/0.9	20/7	24/8		
2	YST-200	660	640	925	423	502	125	6.7	7.9	20	24	125-175
	6.7/2.2							7.9/2.6	20/7	24/8		
2.5	YST-250	676	640	925	423	502	125	5.2	6.4	20	24	125-175
	5.2/1.7							6.4/2.1	20/7	24/8		
3	YST-300	725	640	925	423	502	125	4.3	5.2	20	24	125-175
	4.3/1.4							5.2/1.7	20/7	24/8		
5	YST-500	765	640	925	423	502	125	2.6	3.2	20	24	125-175
	2.6/0.9							3.2/1.0	20/7	24/8		

Illust.: 4

4. ELECTRICAL INSTALLATION

The trolley electrical connection must be completed as shown in Illust.5, the Hoist & Trolley General Arrangement. Generally, the electric housing is provided with three holes in the bottom, one for trolley motor cord, the second one for trolley power cord from hoist and the third one for control cord from hoist. Moreover, the optional five holes design for independent usage of trolley are also available, please refer to the Illus.5. There are two holes on each side of the housing, on the left is the power cord for trolley, on the right is for the trolley motor cord.

For the details of wiring connection, please refer to the wiring diagrams (Illust.6 & 7). Also be noted that the above mentioned diagrams only acceptable for the standard units of 3-phase & 1-phase.

Hoist with trolley wiring diagram shown example as follows:

Illust.8 is 3 phases, single speed model.

Illust.9 is 3 phases, dual speed model.

Illust.10 is 3 phases, hoist dual speed, trolley single speed model.

Illust.11 is 3 phases, hoist single speed, trolley dual speed model.

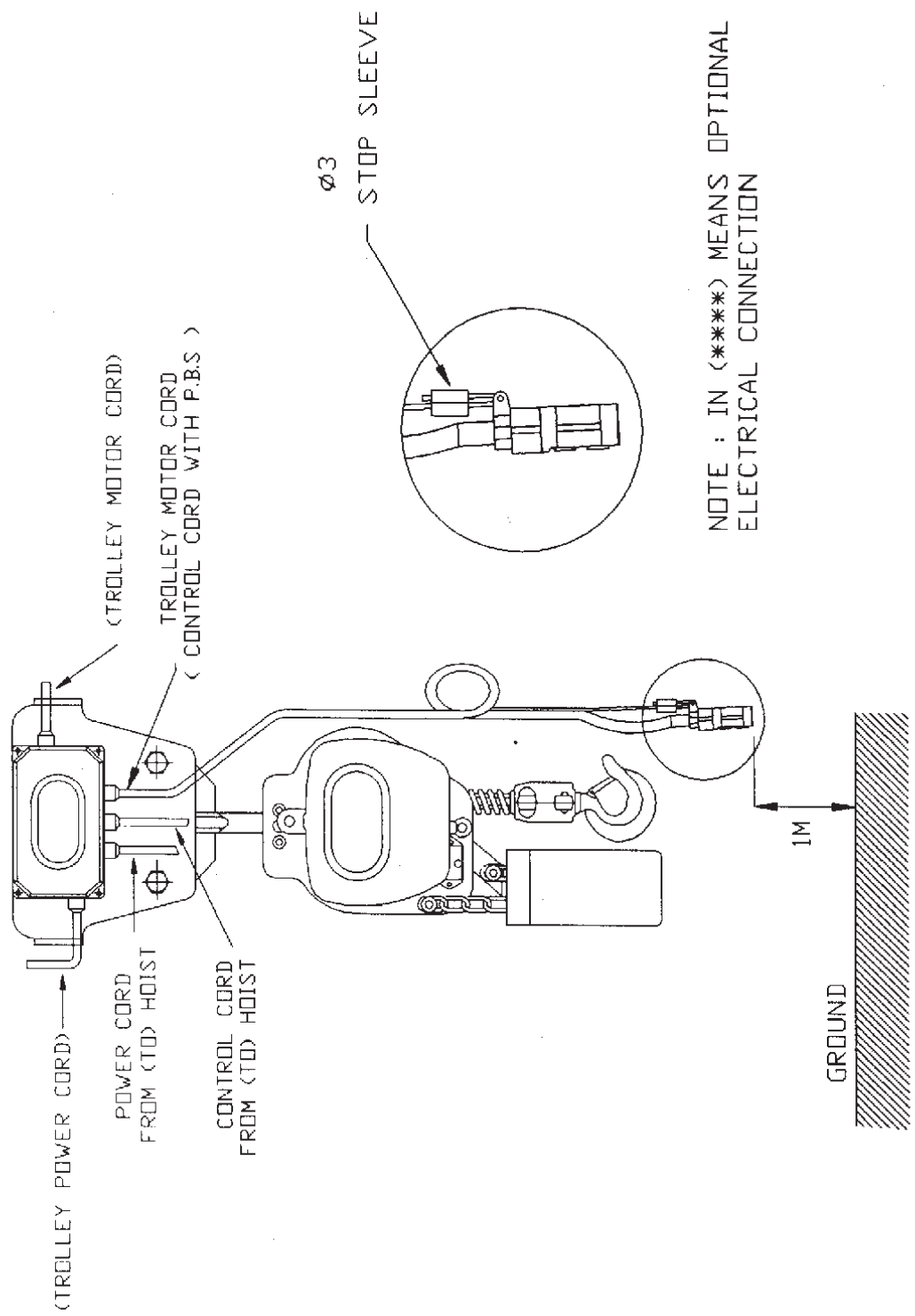
For special unit, please see wiring diagram supplied with unit.



5. TEST RUNNING

After trolley to beam, hoist hook to trolley and wiring connection completed, operate the trolley forward and backward over a short distance. Then you can operate the trolley over the entire length of runway or monorail system to be sure that all adjustment and operations are satisfactory.

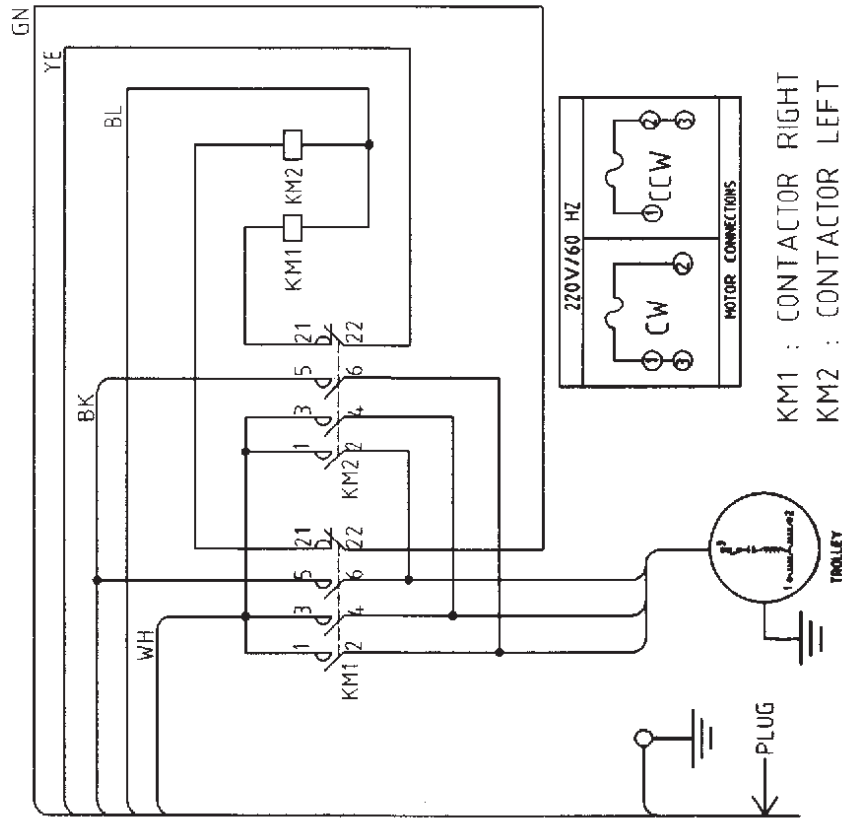
HOIST & TROLLEY GENERAL ARRANGEMENT



NOTE : IN (****) MEANS OPTIONAL OF ELECTRICAL CONNECTION

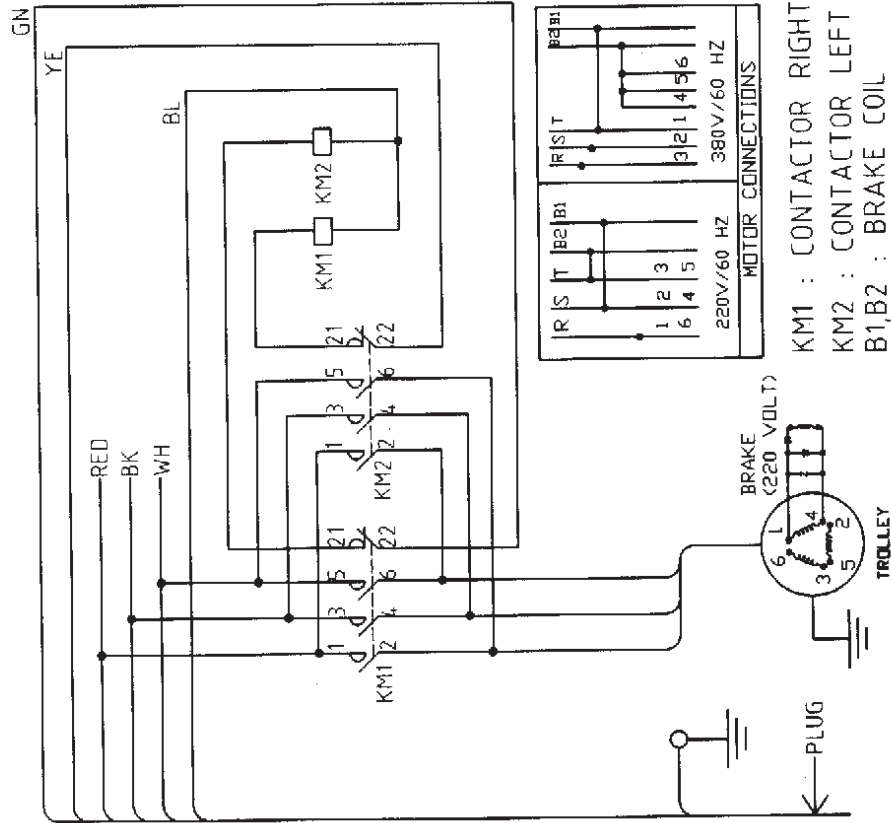
Illust.: 5

SINGLE PHASE

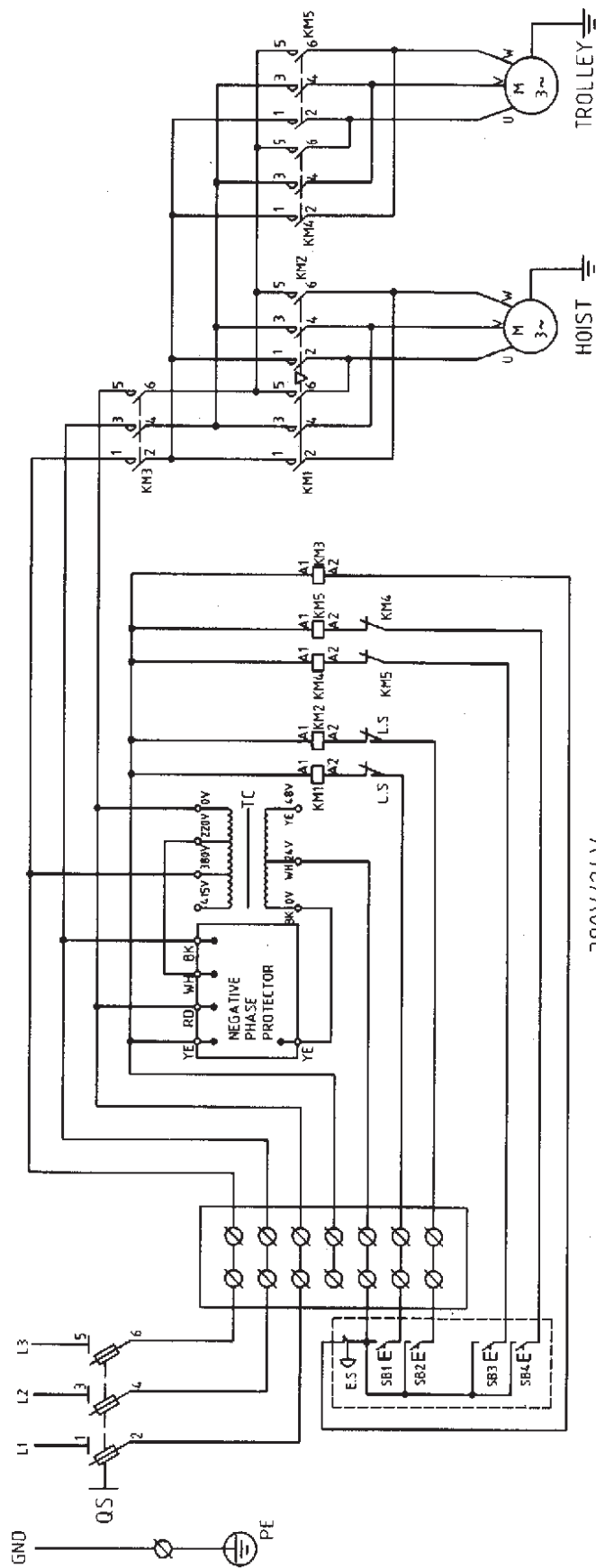


Illust. 6

THREE PHASE



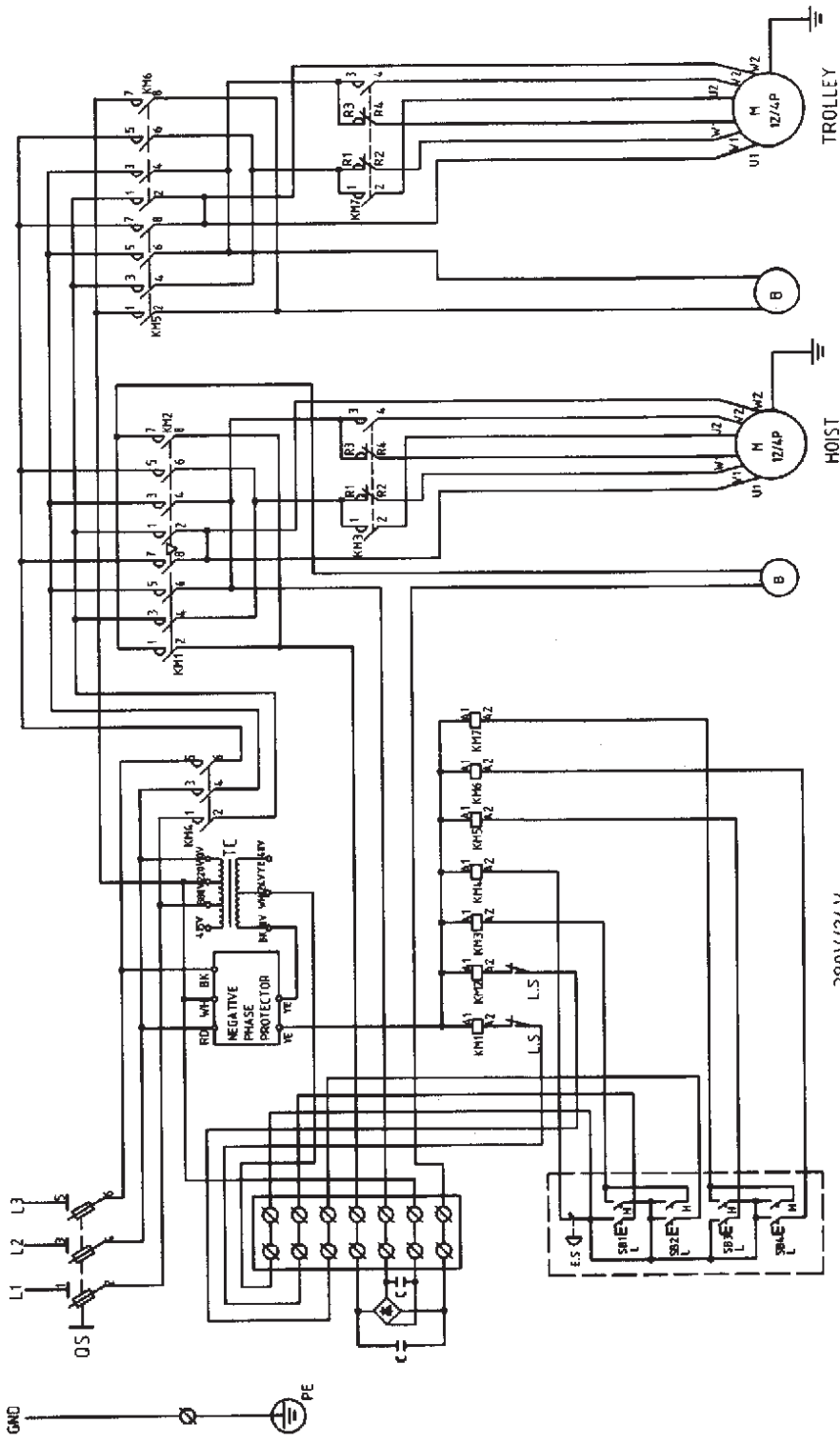
Illust. 7



380V/24V

- Q.S DISCONNECT SWITCH,OPTION,SUPPLY BY CUSTOMER
- PE PROTECTION EARTH
- E.S EMERGENCY STOP
- SB1 PUSH BUTTON LIFTING
- SB2 PUSH BUTTON LOWERING
- SB3 PUSH BUTTON LEFT
- SB4 PUSH BUTTON RIGHT
- TC TRANSFORMER FOR CONTROL POWER
- KM1 CONTACTOR LIFTING
- KM2 CONTACTOR LOWERING
- KM3 POWER SOURCE CONTACTOR MAIN
- KM4 CONTACTOR LEFT
- KM5 CONTACTOR RIGHT
- L.S LIMIT SWITCH UP/DOWN

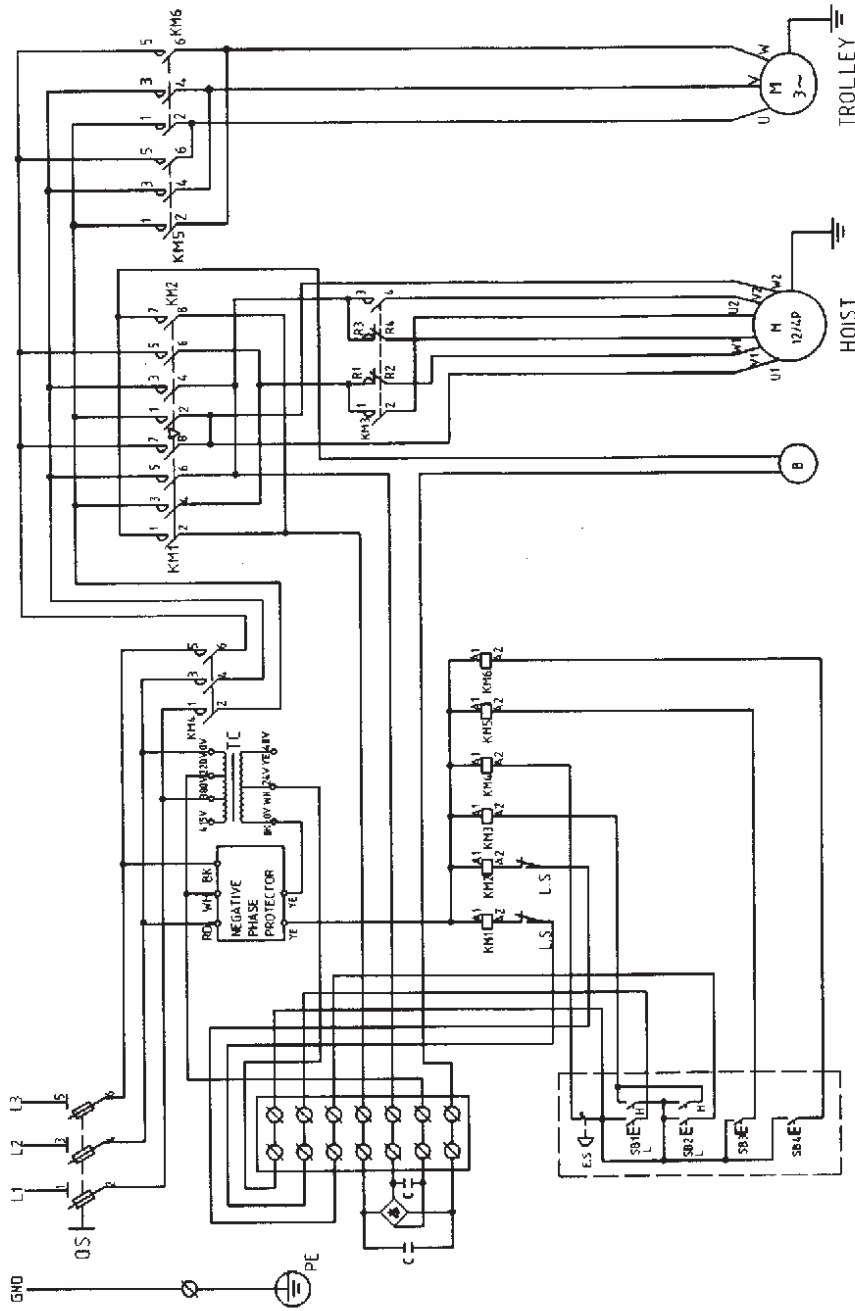
Illust. 8



380V/24V

- DS DISCONNECT SWITCH,OPTION,SUPPLY BY CUSTOMER
- PE PROTECTION EARTH
- E.S EMERGENCY STOP
- SB1 DUAL SPEED,PUSH BUTTON,LIFTING
- SB2 DUAL SPEED,PUSH BUTTON,LOWERING
- SB3 DUAL SPEED,PUSH BUTTON,LEFT
- SB4 DUAL SPEED,PUSH BUTTON,RIGHT
- TC TRANSFORMER FOR CONTROL POWER
- KM1 CONTACTOR LIFTING
- KM2 CONTACTOR LOWERING
- KM3 CONTACTOR,DUAL SPEED CONTROL
- KM4 POWER SOURCE,CONTACTOR MAIN
- KM5 CONTACTOR LEFT
- KM6 CONTACTOR RIGHT
- KM7 CONTACTOR,DUAL SPEED CONTROL
- L.S LIMIT SWITCH UP/DOWN
- Ⓟ BRAKE COIL

Illust.9

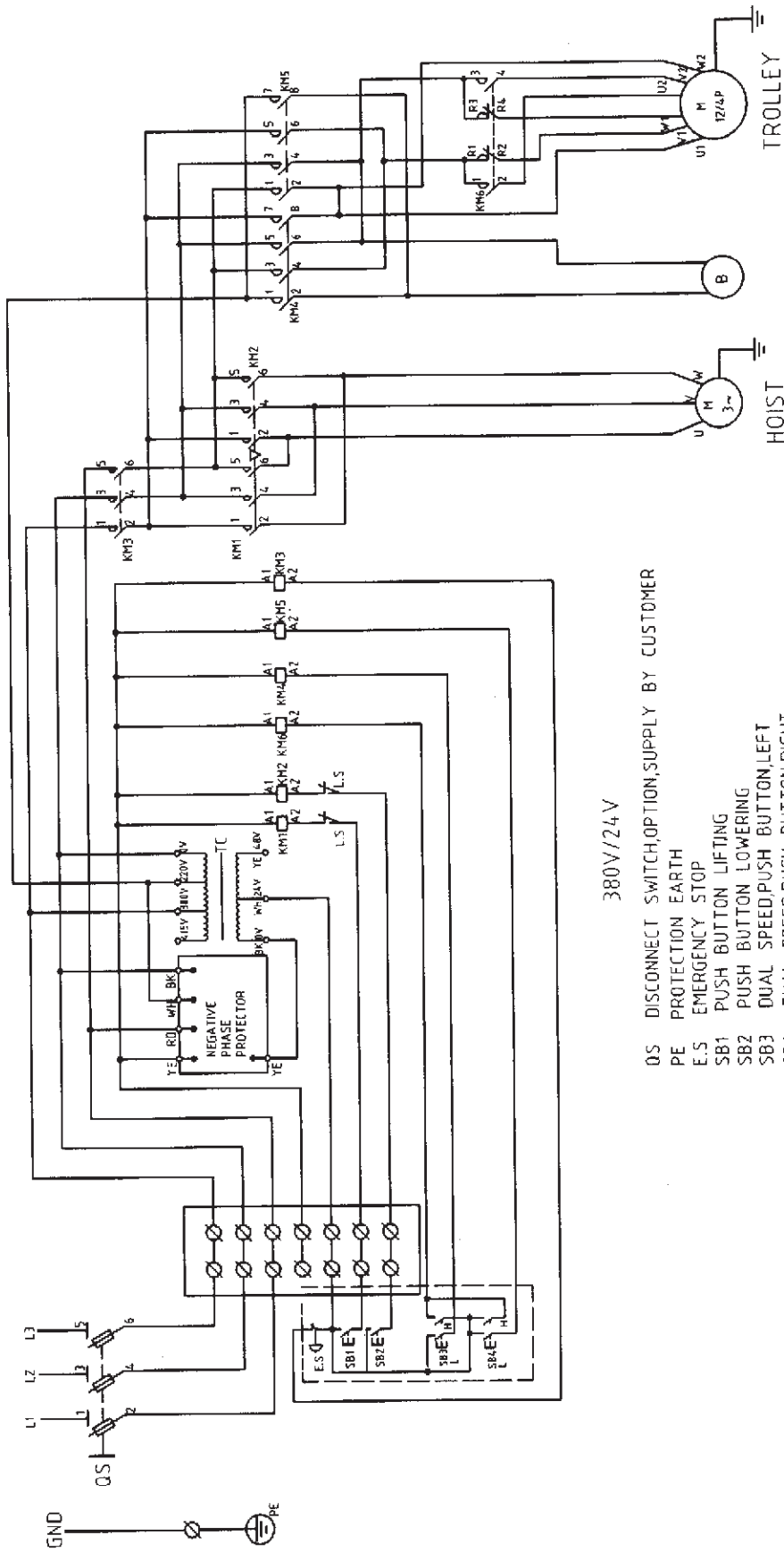


380V/24V

- QS DISCONNECT SWITCH,OPTION,SUPPLY BY CUSTOMER
- PE PROTECTION EARTH
- E.S EMERGENCY STOP
- SB1 DUAL SPEED,PUSH BUTTON,LIFTING
- SB2 DUAL SPEED,PUSH BUTTON,LOWERING
- SB3 PUSH BUTTON,LEFT
- SB4 PUSH BUTTON,RIGHT
- TC TRANSFORMER FOR CONTROL POWER
- KM1 CONTACTOR LIFTING

- KM2 CONTACTOR LOWERING
- KM3 CONTACTOR,DUAL SPEED CONTROL
- KM4 POWER SOURCE,CONTACTOR MAIN
- KM5 CONTACTOR LEFT
- KM6 CONTACTOR RIGHT
- L.S LIMIT SWITCH UP/DOWN
- B BRAKE COIL

Illust.:10



380V/24V

- QS DISCONNECT SWITCH,OPTION,SUPPLY BY CUSTOMER
- PE PROTECTION EARTH
- E.S EMERGENCY STOP
- SB1 PUSH BUTTON LIFTING
- SB2 PUSH BUTTON LOWERING
- SB3 DUAL SPEED,PUSH BUTTON,LEFT
- SB4 DUAL SPEED,PUSH BUTTON,RIGHT
- TC TRANSFORMER FOR CONTROL POWER
- KM1 CONTACTOR LIFTING
- KM2 CONTACTOR LOWERING
- KM3 POWER SOURCE,CONTACTOR MAIN
- KM4 CONTACTOR LEFT
- KM5 CONTACTOR RIGHT
- KM6 CONTACTOR,DUAL SPEED CONTROL
- L.S LIMIT SWITCH UP/DOWN

Illust.:11

V. INSPECTION

To maintain continuous and satisfactory operation, a regular periodic inspection procedure must be initiated so that worn or damaged parts can be replaced before they become unsafe. The frequency of inspection must be determined by the individual application.

The following list gives an inspection procedure for normal usage under normal conditions. When the unit is subjected to heavy usage or duty, moist or other adverse atmospheric conditions, shorter time periods must be assigned. Inspection must be made of all parts for unusual wear, corrosion or damage in addition to those specifically mentioned in the succeeding list.

It is suggested that the unit be inspected monthly for wear damage and corrosion effects to all parts with particular attention to the following:

1. Tightness of all fasteners.
2. Contactor and control station for burnt or pitted contacts and loose or corroded terminals.
3. Cables and leads for broken wires, loose or corroded terminals and damaged insulation.
4. Terminal board for loose or corroded connections.
5. Trackwheels for wear of tread, flange and bearings.
6. Gear portion of trackwheel and pinion for wear.
7. Check the wear of top hook to load plate in trolley. If type "E" & "A" rigid hook are used, check the condition of those parts.
8. Collector or power supply system for damage, wear corrosion and proper operation.
9. 3-phase trolley is usually equipped with motor brake. Check the wear of brake lining and adjusting the gap between lining and drum to assure brake efficiency.

VI. MAINTENANCE

The following three steps are recommended for maintenance:

1. Once a month lubricate track wheel gear and pinion with grease or graphite grease.
2. Motor reducing gearbox uses planetary gear lubricated with cosmo No. 3 grease (Equivalent to: Shell Unedo 3, Exxon Eastan 3, Mobil Cup Grease 3) for good maintenance. It is highly recommended that the motor gearbox grease should be changed after 100 hours of operation, then every 6 months or 2500 hours of normal service. Whichever comes first, the grease needs to be changed as well.
3. The motor brake should be changed & be checked periodically for wear of brake lining and disc. The gap between brake lining & disc can be adjusted by the brake adjusting hex. bolts over the end of motor. (Please refer to the parts list on page 32 No.⑳ and page 36 No.㉑, brake adjusting hex. bolt.)

VII. TROUBLE SHOOTING

Please refer to table 1 on page 21.

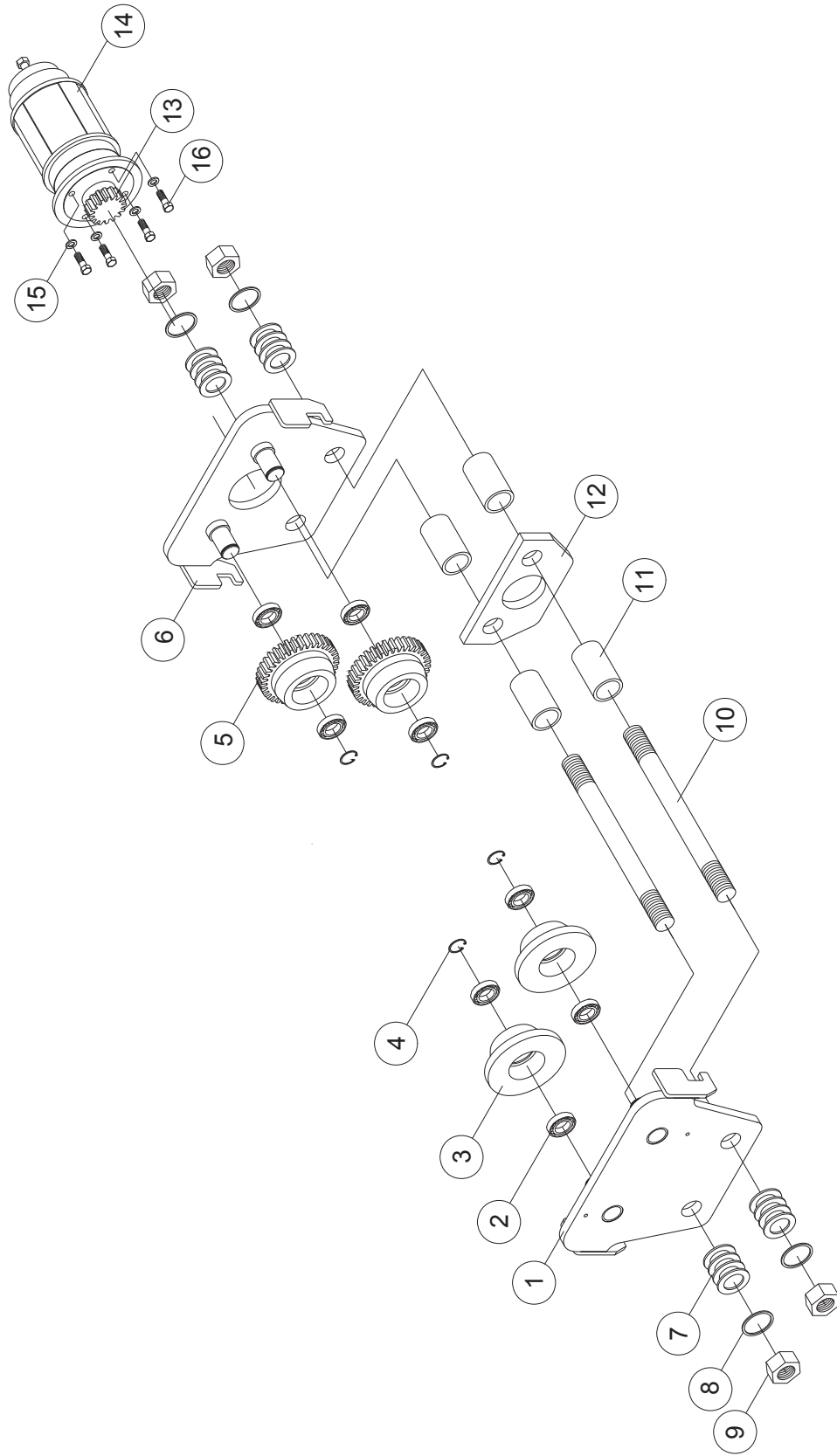
VIII. PARTS LIST (BOM)

1. Trolley Exploded view, 1~5 ton.....P.22~P.24
2. Trolley Exploded view, 7.5ton, 10 ton.....P.25~P.26
3. Electric Explosion, 1~10 ton.....P.27~P.28
4. Reducing Gear Motor, 0.25KW.....P.29~P.31
5. Reducing Gear Motor, 0.6KW & 0.9KW.....P.32~P.35
6. Reducing Gear Motor, 1.5KW.....P.36~P.38

Table 1. Troubleshooting and Remedial Action

IF	CAUSE MAY BE	REMEDY
1. Trolley does not operate in either direction.	a) Power failure at trolley b) Phase error (Single phasing) c) Turn on control circuit d) Wrong voltage or frequency e) Low voltage f) Excessive load	Main line or branch circuit switch power on, branch line fuse blown or circuit breaker tripped. Power off, replace or reset. Check for grounded or connect supply lines or current collectors. Power on, grounded or connected one line of supply system, collectors, trolley wiring, reversing contactor, motor leads or windings. Check for electrical continuity. Power on or shorted windings in transformer or reversing contactor coil, loosen connection or broken wire in circuit, mechanical binding in contactor, control station switch contacts not making. Check continuity and repair or replace defective parts. The voltage and frequency must be the same as shown on trolley control box. Control power supply deviates from standard not to exceed $\pm 10\%$ to prevent abnormal operation or damage to the motor. Prevent frequently loading rated load of trolley.
2. Trolley operates in one direction only.	a) Turn on control circuit	As item 1. c)
3. Trolley operates sluggishly	a) Excessive load b) Low Voltage c) Worn or dirty rail	As item 1. f) As item 1. e) Clean rails, inspect for worn spots.
4. Motor overheats	a) Excessive load b) Low voltage c) Extreme external heating d) Frequent starting or reversing e) Phase error	As item 1. f) As item 1. e) Above an ambient temperature of $40^{\circ}\text{C}.$, the frequency of trolley operation must be limited to avoid overheating of motor. Special provision should be made to ventilate the space or shield the trolley from heat radiation. Excessive inching, jogging or plugging should be avoided since this type of operation will drastically shorten the life of motor and contactor. As item 1. e)

1-5 TON BODY PARTS



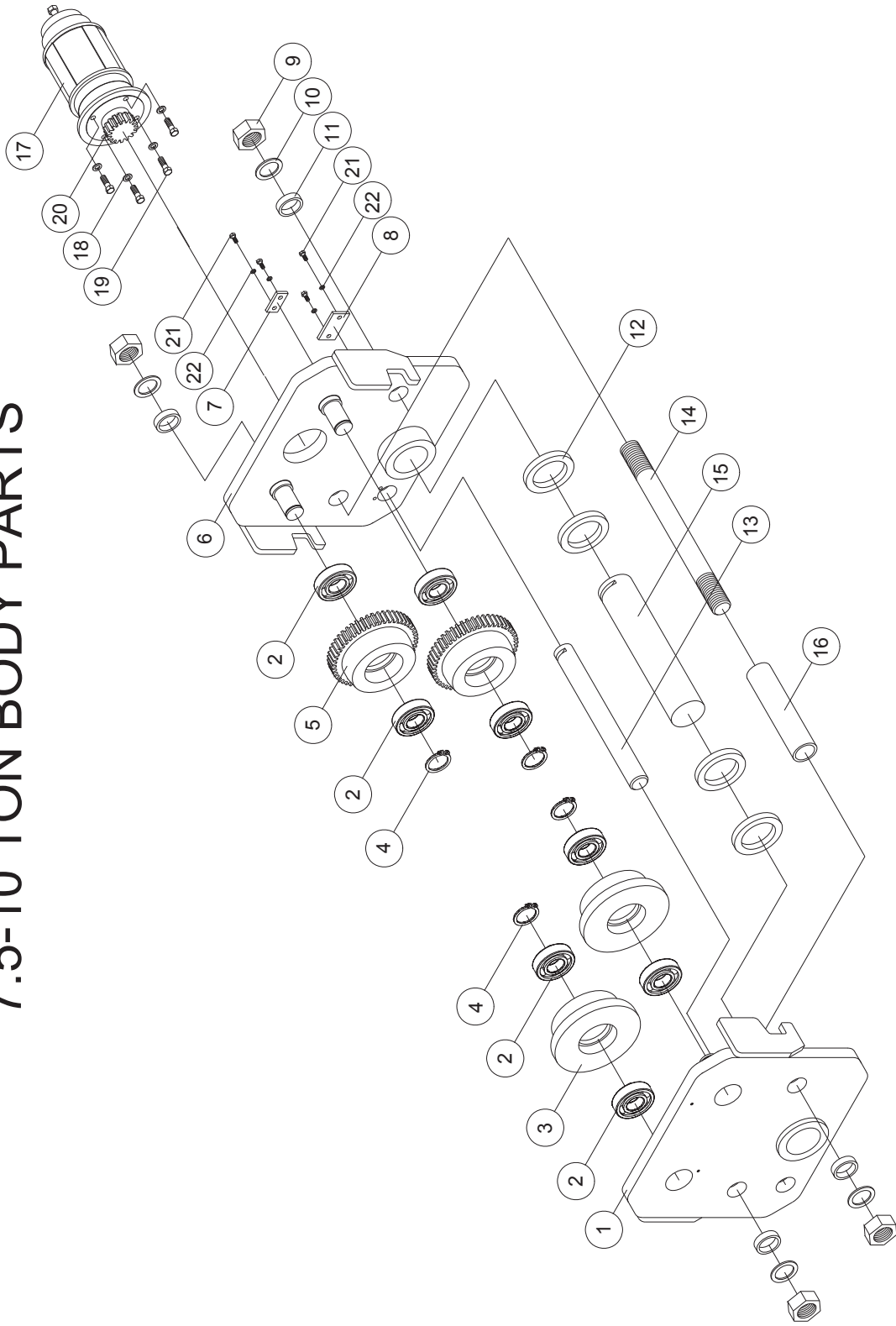
BODY PARTS B.O.M.

NO.	PARTS CODE	DESCRIPTION	Q'TY REQ'D EACH UNIT			
			1T	2T	3T	5T
1	202961	Electric Frame	1			
	202962			1		
	202963				1	
	202964					1
2	407835	Bearing <6204 Z>	8			
	407830	Bearing <6205 Z>		8		
	407824	Bearing <6206 Z>			8	
	407808	Bearing <6207 Z>				8
3	203131	Plain Wheel<ø105x40L>	2			
	203132	Plain Wheel<ø119x49L>		2		
	203133	Plain Wheel<ø133x54L>			2	
	203134	Plain Wheel<ø143.5x59L>				2
4	400191	Retaining Ring<S-20>	4			
	400192	Retaining Ring<S-25>		4		
	400193	Retaining Ring<S-30>			4	
	400194	Retaining Ring<S-35>				4
5	203111	Gear Wheel<M3.5x28Tx47L>	2			
	203112	Gear Wheel<M3.5x32Tx56L>		2		
	203113	Gear Wheel<M3.5x36Tx59L>			2	
	203114	Gear Wheel<M3.5x39Tx67L>				2
6	202931	Motor Frame	1			
	202932			1		
	202933				1	
	202934					1
7	203221	Spacer Washer<ø40xø24x1/8">	32			
	203222	Spacer Washer<ø46xø27x1/8">		32		
	203223	Spacer Washer<ø54xø34x1/8">			32	
	203224	Spacer Washer<ø60xø40x1/8">				32
8	400102	Spring Washer<7/8">	4			
	400103	Spring Washer<1">		4		
	400105	Spring Washer<1 1/4">			4	
	400106	Spring Washer<1 1/2">				4
9	400070	Hex. Nut<7/8"x9UNC>	4			
	400071	Hex. Nut<1"x8UNC>		4		
	400072	Hex. Nut<1 1/4"x7UNC>			4	
	400073	Hex. Nut<1 1/2"x6UNC>				4

BODY PARTS B.O.M.

NO.	PARTS CODE	DESCRIPTION	Q'TY REQ'D EACH UNIT			
			1T	2T	3T	5T
10	400057	Stay Bolt<7/8"x9UNCx250L>	2			
	400059	Stay Bolt<1"x8UNCx290L>		2		
	400063	Stay Bolt<1 1/4"x7UNCx360L>			2	
	400066	Stay Bolt<1 1/2"x6UNCx365L>				2
11	203151	Position Tube<ø34xø24x56L>	4			
	203152	Position Tube<ø38xø28x69L>		4		
	203153	Position Tube<ø50xø40x83.5L>			4	4
12	203186	Load Bracket<t13x102x175L>	1			
	203187	Load Bracket<t13x115x180L>		1		
	203188	Load Bracket<t16x120x230L>			1	
	203189	Load Bracket<t19x135x260L>				1
13	201761	Transmission Pinion<0.25Kw-M3.5x16T>	1	1		
	201771	Transmission Pinion<0.6Kw-M3.5x16T>			1	1
14		Motor Ass'y-0.25Kw	1	1		
		Motor Ass'y-0.6Kw			1	1
15	400096	Spring Washer<M10>	4	4	4	4
16	400045	Hex. Headed Bolt<M10x1.5x20L>	4			
	400046	Hex. Headed Bolt<M10x1.5x25L>		4		
	400047	Hex. Headed Bolt<M10x1.5x30L>			4	4

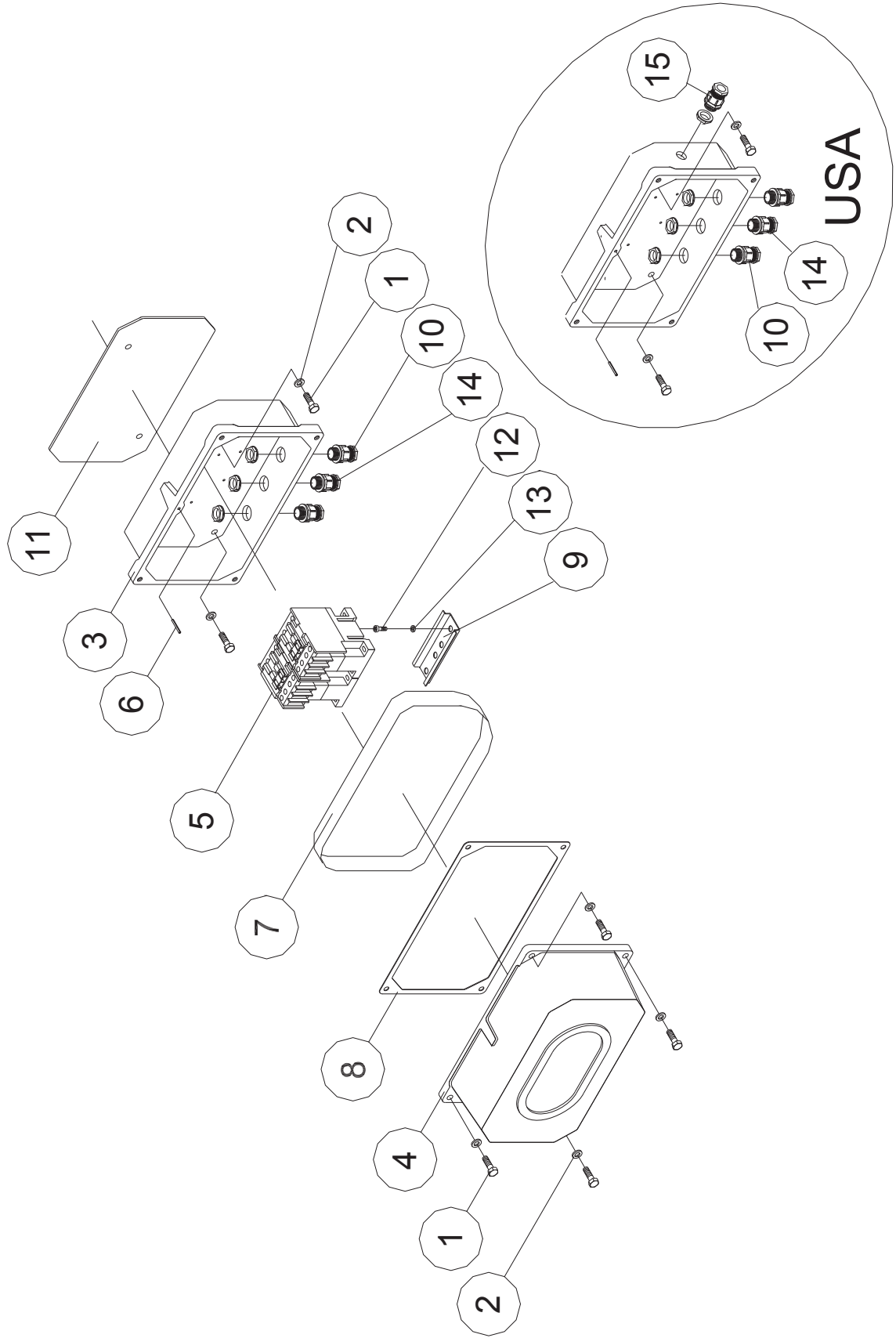
7.5-10 TON BODY PARTS



BODY PARTS B.O.M.

NO.	PARTS CODE	DESCRIPTION	Q'TY REQ'D EACH UNIT	
			7.5T	10T
1	202965	Electric Frame	1	
	202966			1
2	407817	Bearing<6307 Z>	8	
	407825	Bearing<6308 Z>		8
3	203135	Plain Wheel<ø178.5x60L>	2	
	203136	Plain Wheel<ø203x60L>		2
4	400194	Retaining Ring<S-35>	4	
	400195	Retaining Ring<S-40>		4
5	203115	Gear Wheel<M3.5x49Tx65L>	2	
	203116	Gear Wheel<M3.5x56Tx65L>		2
6	202935	Motor Frame	1	
	202936			1
7	200636	Stopper For Load Shaft<t6x25x50L>	1	1
8	200635	Stopper For Load Shaft<t6x38x70L>	1	1
9	400073	Hex. Nut<1 1/2"x6UNC>	4	
	400644	Hex. Nut<1 3/4"x5UNC>		4
10	400106	Spring Washer<1 1/2">	4	
	400104	Spring Washer<1 3/4">		4
11	203171	Spacer Sleeve<ø50xø40x13L>	8	
	203172	Spacer Sleeve<ø60xø46x13L>		8
12	203225	Spacer Ring<ø100xø71x13L>	4	4
13	203208	Load Shaft B<ø38x320L>	1	
	203209	Load Shaft B<ø38x340L>		1
14	400407	Stay Bolt<1 1/2"x6UNCx430L>	2	
	400411	Stay Bolt<1 3/4"x5UNCx460L>		2
15	203203	Load Shaft A<ø70x340L>	1	
	203204	Load Shaft A<ø70x360L>		1
16	203155	Stay Bolt Position Tube<ø50xø40x216L>	2	
	203156	Stay Bolt Position Tube<ø60xø46x216L>		2
17		Motor Ass'y-0.9Kw	1	
		Motor Ass'y-1.5Kw		1
18	400096	Spring Washer<M10>	4	4
19	400047	Hex. Headed Bolt<M10x1.5x30L>	4	4
20	201782	Transmission Pinion<0.9Kw-M3.5x16T>	1	
	201730	Transmission Pinion<1.5Kw-M3.5x23T>		1
21	400012	Hex. Recess Bolt<M8x1.25x20L>	4	4
22	400095	Spring Washer<M8>	4	4

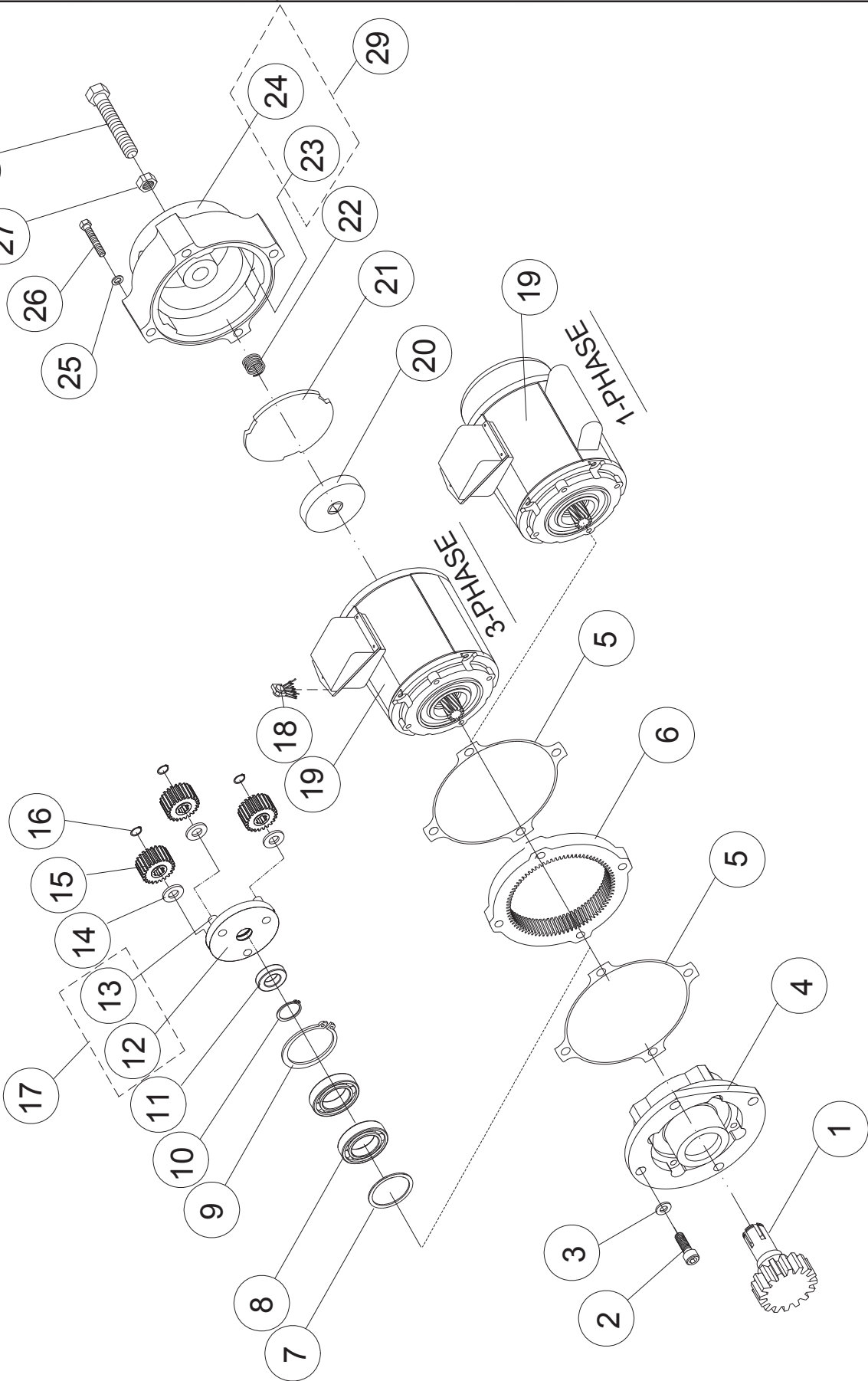
ELECTRIC EXPLOSION



ELECTRIC PARTS B.O.M.

NO.	PARTS CODE	DESCRIPTION	Q'TY REQ'D EACH UNIT	
			STD	USA
1	400006	Hex. Recess Bolt<M6×1.0×16L>	6	6
2	400094	Spring Washer<M6>	6	6
3	300316	Electric Housing	1	
	300305	Electric Housing<USA>		1
4	300348	Electric Housing Cover	1	
	300349	Electric Housing Cover<USA>		1
5		Contactor	2	2
6	400211	Spring Pin<ø3×14L>	1	1
7	400266	Rubber Band	1	1
8	402515	Gasket 15#	1	1
9	300079	Contactor Rail<2PC>	1	1
10	400270	Rubber Cap	2	
	400222	Rubber Cap<USA>		2
11	402516	Gasket 16#	1	1
12	400052	Cross Headed Screw<M4×0.7×15L>	4	4
13	400092	Spring Washer<M4>	4	4
14	400339	Rubber Cap	1	
	400222	Rubber Cap<USA>		1
15	400941	Rubber Cap<USA>		2

0.25 kW REDUCING GEAR MOTOR



0.25kw REDUCING GEAR MOTOR B.O.M.

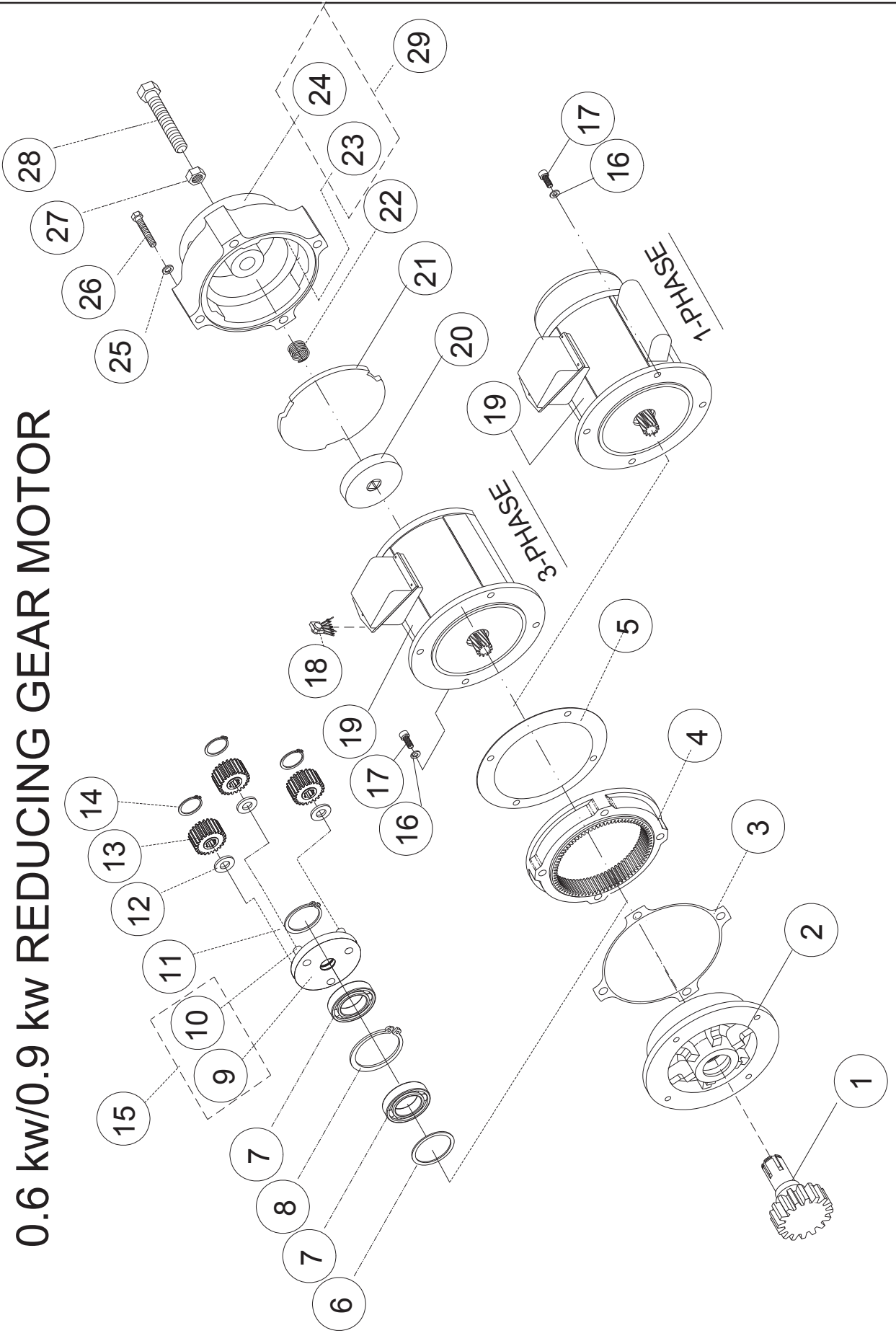
NO.	PARTS CODE	DESCRIPTION	Q'TY REQ'D EACH UNIT		
			3-Phase		1-Phase
			S	D	
1	201761	Transmission Axle With Pinion	1		
2	400046	Hex. Headed Bolt<M10×1.5×25L>	4		
3	400096	Spring Washer<M10>	4		
4	200320	Gear Box	1		
5	402513	Gear Box Gasket 13#	2		
6	200334	Inner Teeth Gear Sleeve	1		
7	400182	Oil Seal<ø25×ø40×6t>	1		
8	400695	Bearing<6204 Z>	2		
9	400198	Retaining Ring<R-47>	1		
10	400191	Retaining Ring<S-20>	1		
11	200347	Axle Sleeve<ø25×ø20×6L>	1		
12	200328	Reducing Gear Frame	1		
13	200392	Planetary Gear Axle<ø13×26.5L>	3		
14	400669	Flat Washer<ø21×ø11×2>	3		
15	200337	Planetary Gear	3		
16	400188	Retaining Ring<S-10>	3		
17	200391	Reducing Gear Frame Ass'y	1		
18	300144	Rectifier	1		
19	A	Motor Ass'y	1		
	B			1	
	C				1
20	100480	Brake Lining	1		
21	100407	Brake Disc	1		
22	400239	Brake Spring	1		
23	400243	Brake Coil	1		
24	100396	Brake Drum	1		
25	400094	Spring Washer<M6>	4		
26	400027	Hex. Headed Bolt<M6×1×45L>	4		

0.25kw REDUCING GEAR MOTOR B.O.M.

NO.	PARTS CODE	DESCRIPTION	Q'TY REQ'D EACH UNIT		
			3-Phase		1-Phase
			S	D	
27	400084	Nut<M12×1.75>	1		
28	400030	Hex. Headed Bolt<M12×1.75×30L>	1		
29	100502	Brake Drum Ass'y	1		

NO.	PARTS CODE	DESCRIPTION	ϕ -HZ-V	
19	A	Motor Ass'y (S)	3 ϕ 60HZ	220V/380V
				220V/440V
				230V/460V
				240V
				480V
			600V	
			3 ϕ 50HZ	220V/380V
				400V
				415V
				525V
	B	Motor Ass'y (D)	3 ϕ 60HZ	208V
				220V
				230V
				380V
				440V
			460V	
			600V	
			3 ϕ 50HZ	220V
				230V
				380V
	400V			
	415V			
	525V			
	C	Motor Ass'y	1 ϕ 60HZ	110V/220V
				115V/230V
			1 ϕ 50HZ	110V/220V
				220V/230V

0.6 kw/0.9 kw REDUCING GEAR MOTOR



0.6kw/0.9kw REDUCING GEAR MOTOR B.O.M.

NO.	PARTS CODE	DESCRIPTION	0.6kw		0.9kw		
			3-Phase		3-Phase		1-Phase
			S	D	S	D	
1	201771	Transmission Axle With Pinion	1				
	201782				1		
2	200319	Gear Box			1		
3	402519	Gear Box Gasket B			1		
4	200336	Inner Teeth Gear Sleeve			1		
5	402517	Gear Box Gasket A			1		
6	400939	Oil Seal<30×45×8>			1		
7	400803	Bearing<6205Z>			2		
8	400199	Retaining Ring<R-52>			1		
9	200332	Reducing Gear Frame			1		
10	200394	Planetary Gear Axle<ø15×29.5L>			3		
11	400192	Retaining Ring<S-25>			1		
12	400667	Flat Washer<ø20×ø12×2>			3		
13	200342	Planetary Gear			3		
14	400189	Retaining<S-12>			3		
15	200326	Reducing Gear Frame Ass'y			1		
16	400095	Spring Washer<M8>			4		
17	400426	Hex. Recess Bolt<M8×1.25×45L>			4		
18	300144	Rectifier	1				
19	A	Motor Ass'y	1		1		
	B			1		1	
	C						1
20	100401	Brake Lining	1				
21	100402	Brake Disc	1				
22	400314	Brake Spring	1				
23	400244	Brake Coil	1				
24	100403	Brake Drum	1				
25	400094	Spring Washer<M6>	4				

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0.6kw/0.9kw REDUCING GEAR MOTOR B.O.M.

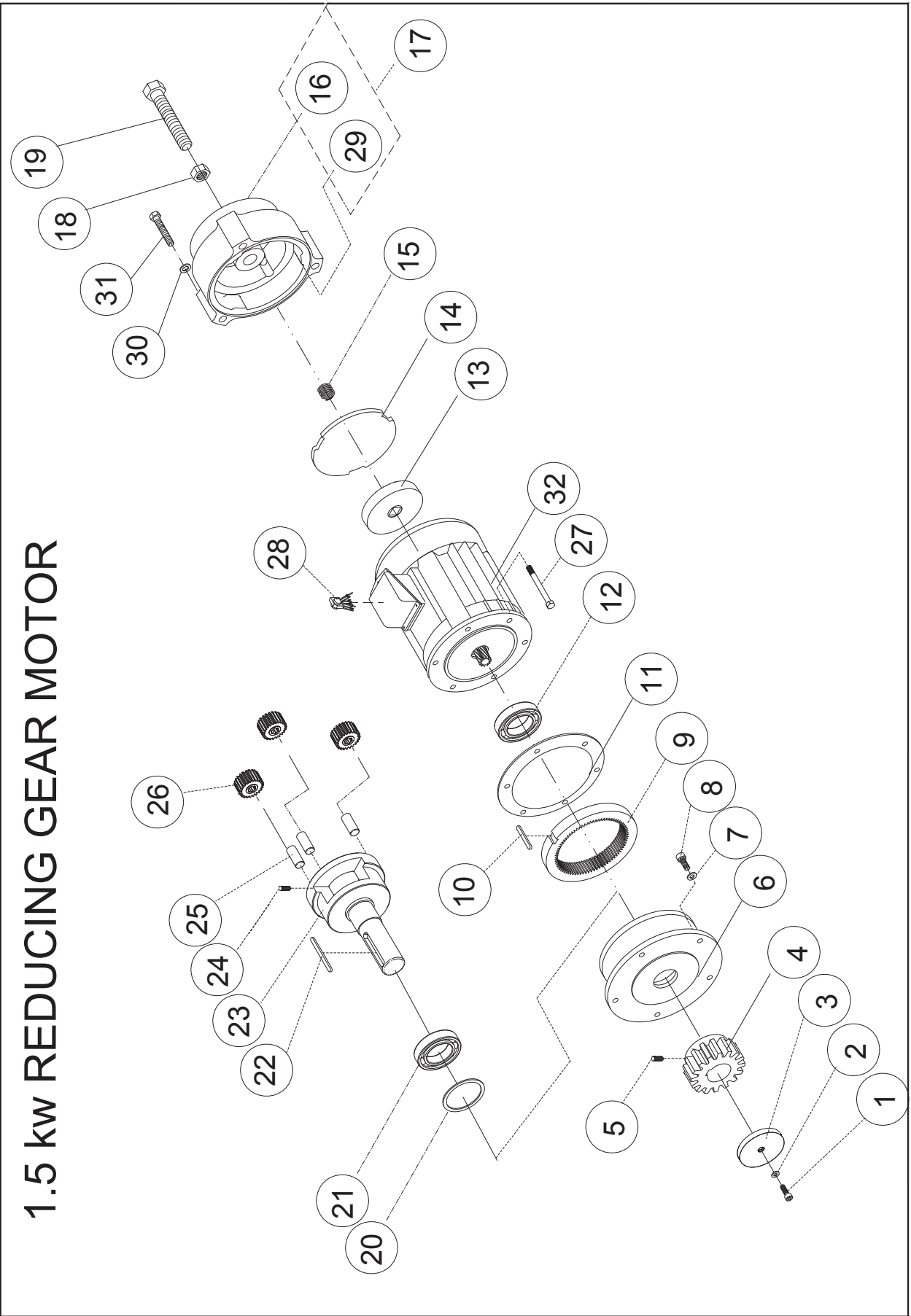
NO.	PARTS CODE	DESCRIPTION	0.6kw		0.9kw		
			3-Phase		3-Phase		1-Phase
			S	D	S	D	
26	400027	Hex. Headed Bolt<M6×1×45L>	4				
27	400085	Nut<M16×1.5>	1				
28	400468	Hex. Headed Bolt<M16×1.5×50L>	1				
29	100501	Brake Drum Ass'y	1				

NO.	PARTS CODE	DESCRIPTION	φ -HZ-V		
19	A	Motor Ass'y (S)	0.6KW	3φ 60HZ	220V/380V
					220V/440V
					230V/460V
					600V
				3φ 50HZ	220V/380V
					400V
					415V
					440V
					525V
			0.9KW	3φ 60HZ	220V/380V
					220V/440V
					230V/460V
					600V
				3φ 50HZ	220V/380V
					400V
					415V
					440V
					525V
	B	Motor Ass'y (D)	0.6KW	3φ 60HZ	208V
					220V
230V					
380V					
440V					
460V					
600V					
3φ 50HZ				380V	

0.6kw/0.9kw REDUCING GEAR MOTOR B.O.M.

NO.	PARTS CODE	DESCRIPTION	φ -HZ-V		
19	106846	Motor Ass'y (D)	0.6KW	3φ 50HZ	400V
	106834				415V
	106799				440V
	106842				460V
	106835				525V
	106867		220V		
	106869		3φ 60HZ	0.9KW	380V
	106871				460V
	106859				600V
	106862				3φ 50HZ
	106863	400V			
	106864	415V			
	106865	525V			
	106787	Motor Ass'y	0.9KW	1φ 60HZ	110V/220V
	106786				115V
106783	1φ 50HZ			110V/220V	

1.5 kw REDUCING GEAR MOTOR



1.5kw REDUCING GEAR MOTOR B.O.M.

NO.	PARTS CODE	DESCRIPTION	Q'TY REQ'D EACH UNIT	
			3-Phase	
			S	D
1	400013	Hex. Recess Bolt<M8×1.25×25L>	1	
2	400095	Spring Washer<M8>	1	
3	200349	Pinion's End Stopper	1	
4	201730	Transmission Axle Pinion	1	
5	400204	Bolt<M8×1.25×12L>	1	
6	200323	Gear Box	1	
7	400095	Spring Washer<M8>	6	
8	400013	Hex. Recess Bolt<M8×12.5×25L>	6	
9	200335	Inner Teeth Gear Sleeve	1	
10	400951	Key<t7×7×50L>	1	
11	402514	Motor Gasket 14#	1	
12	400124	Bearing<6907>	1	
13	100482	Brake Lining	1	
14	100459	Brake Disc	1	
15	400314	Brake Spring	1	
16	100458	Brake Drum	1	
17	100503	Brake Drum Ass'y	1	
18	400085	Nut<M16×1.5>	1	
19	400468	Hex. Recess Bolt<M16×1.5×50L>	1	
20	400187	Oil Seal<35×50×8>	1	
21	400145	Bearing<6207 Z>	1	
22	400980	Key<t10×10×70L>	1	
23	200331	Reducing Gear Frame	1	
24	400205	Bolt<M5×0.8×8L>	3	
25	200346	Planetary Gear Axle	3	
26	200339	Planetary Gear	3	
27	400013	Hex. Recess Bolt<M8×1.25×25L>	6	

1.5kw REDUCING GEAR MOTOR B.O.M.

NO.	PARTS CODE	DESCRIPTION	Q'TY REQ'D EACH UNIT	
			3-Phase	
			S	D
28	300144	Rectifier	1	
29	400245	Brake Coil	1	
30	400095	Spring Washer<M8>	3	
31	400012	Hex. Recess Bolt<M8×1.25×20L>	3	
32	A	Motor Ass'y	1	
	B			1

NO.	PARTS CODE	DESCRIPTION	ϕ -HZ-V	
32	A	Motor Ass'y (S)	3 ϕ 60HZ	220V/380V
				220V/440V
				460V
			3 ϕ 50HZ	220V/380V
				400V
				415V
	B	Motor Ass'y (D)	3 ϕ 60HZ	220V
				380V
				460V
			3 ϕ 50HZ	380V
				400V
				415V