



Electric Chain Hoist



Operation Manual & Parts List

Series:

- ☐ YSF-050.100.200
- ☐ YSE(D)-050.100.200.300
- ☐ YSH(D)-050.100.200.300
- ☐ YSL(D)-050.100.200.300
- ☐ YET(D)-050.100.200.300
- ☐ YHT(D)-050.100.200.300
- ☐ YLT(D)-050.100.200.300



CHENG DAY MACHINERY WORKS CO., LTD.

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 ELECTRIC CHAIN HOIST.



CONTENTS

Safety-Important	1
1. Foreword	3
2. Main Specification	4
2.1 Specification	4
2.2 Mechanical Classification (Grade) and Life	5
2.3 Safety Device	6
2.4 Main Specification and Dimensions of Hook Suspension Type Hoist	7
2.5 Optional Trolley Accessory	7
3. Safety Rules	9
4. Installation	12
4.1 Unpacking Information	12
4.2 Voltage	12
4.3 Installation	12
5. Operation	15
6. Maintenance and Inspection	16
6.1 Maintenance	16
6.2 Inspection	16
7. Troubleshooting	20
7.1 Wiring Diagrams.....	20
7.2 Troubleshooting and Remedial Action	28
8. Drawings and Parts List	29
9. Oil Quality Table	55

1. FOREWORD

This manual contains important information to help you properly install, operate and maintain the Black Bear electric chain hoist for maximum performance, economy and safety.

Please study its contents thoroughly before putting the electric chain hoist into operation.

By practicing correct operation, procedures and by carrying out the preventative maintenance Recommendations, you will be assured of dependable service. In order to help us to supply Correct spare parts quickly, please always specify

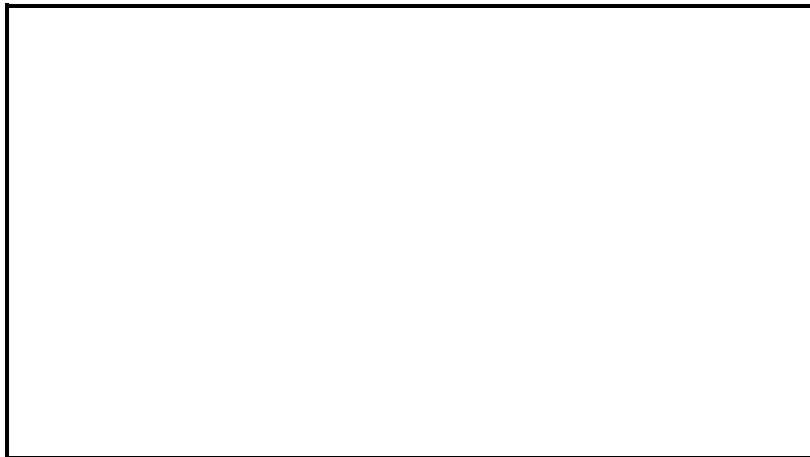
(1) Hoist model

(2) Serial number

(3) Part number, plus the description.

We will have your trust of Cheng Day's long term satisfactory service as our belief.

Should you have any queries, please contact :



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

2. MAIN SPECIFICATIONS

2.1 Specifications

The following specifications are common to all electric chain hoists.

Table 2-1 Specifications

Item		Detail	
Working temperature range (°C)		-5 to +40	
Working humidity range (%)		85 or less	
Protection	Hoist	IP 42	
	Push button	IP 65	
Electric power supply		Three Phase, 220V~600V, 50Hz,60Hz	
Noise Level (dB)	Single speed hoist	81	
	Dual speed hoist	81	
Chain Size	Wll (working load limit) (t)	Nominal diameter (mm)	Pitch (mm)
	0.5T, 1T, 2T, 3T	7.1	20.2

Remarks: (1) Contact an authorized dealer for information on using the hoist over the working temperature or humidity range.

(2) For dimensions and other details, refer to the latest catalogue.

(3) Noise levels were measured at a distance of 1m horizontally from the hoists during normal operation.

2.2 Mechanical Classification (Grade) and Life

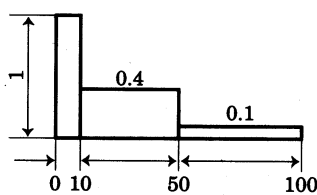
Safety and life for electric chain hoists are guaranteed only when the said equipment is operated in accordance with the prescribed grade.

Electric chain hoists have been designed for grade 2m except YSF-series 1Dm in the FEM regulations (FEM 9.511). Details are provided in Table 2-2.

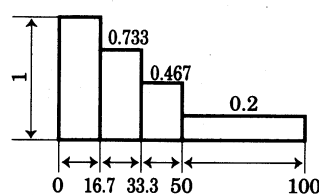
Average daily operating time and total operating time are determined by load distribution.

Table 2-2 Mechanical classifications

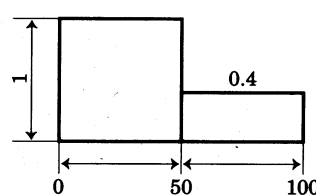
Load Spectrum (Load distribution)	Definitions	Cubic mean value	1Dm	2m
			Average daily operating time (h)	Average daily operating time (h)
			Total operating time (h)	Total operating time (h)
1 (light)	Mechanisms or parts thereof, usually subject to very small loads and in exceptional cases only to maximum loads.	$k \leq 0.50$	0.25-0.5	4-8
			800	12500
2 (medium)	Mechanisms or parts thereof, usually subject to small loads but rather often to maximum loads.	$0.50 < k \leq 0.63$	0.12-0.25	2-4
			400	6300
3 (heavy)	Mechanisms or parts thereof, usually subject to medium loads but frequently to maximum loads.	$0.63 < k \leq 0.80$	≤ 0.12	1-2
			200	3200
4 (very heavy)	Mechanisms or parts thereof, usually subject to maximum or almost maximum loads.	$0.80 < k \leq 1.00$	-	0.5-1
			-	1600



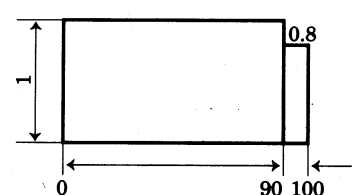
% operating time
Load spectrum 1



% operating time
Load spectrum 2



% operating time
Load spectrum 3



% operating time
Load spectrum 4

2.3 Safety Devices

(1) Motor brake

“Electro-Magnetic Brake” is of a unique design in its field. It features simultaneous motor braking upon switching off power even under full load condition.

(2) Mechanical load brake

The mechanical load brake can hold a full capacity load independent of motor brake. This brake assures that load does not accelerate while being lowered.

(3) Hook and hook latch

The hook is drop-forged from high tensile steel and heat treated for strength and Toughness. The bottom hook is capable of 360° swivel and fitted with safety latch to ensure safe lifting.

(4) Phase error relay

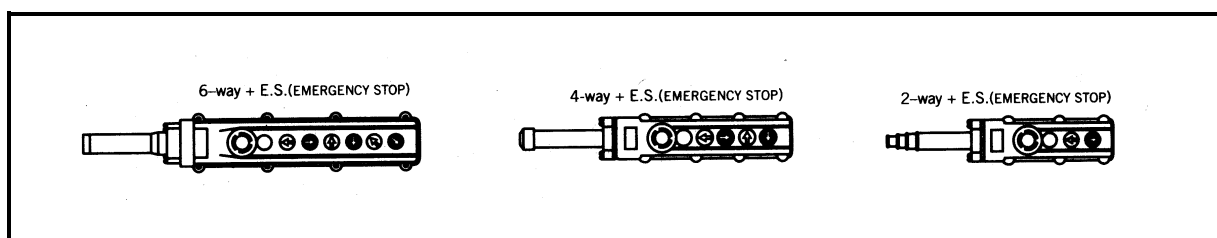
The Phase error relay circuit has been exclusively developed to prevent motor from running when the phase are incorrectly connected.

(5) Limit Switches (except YSE series)

Upper and lower limit switches are fitted for switching off power automatically in case of over lifting or over lowering.

(6) Emergency stop device (optional)

This button is used to stop the hoist in an emergency situation. It is a red, mushroom type button, located at the uppermost position of the pendant. When pressed, power to the equipment is switched off and the button locks automatically. Turning it to the right will release the lock and enable re-starting. (Illust.1)



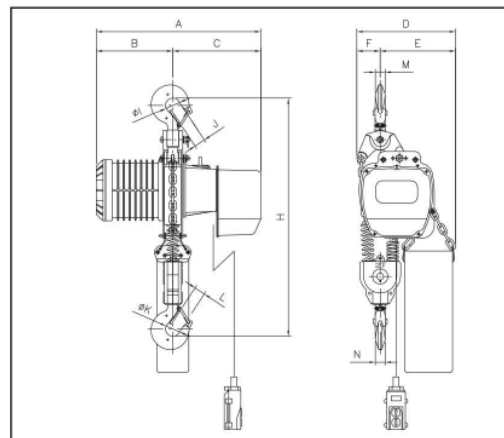
Illust.1

2.4 Main Specifications and Dimensions of Hook Suspension Type Hoist :

■ SPECIFICATIONS:

Capacity (ton)			0.5	1	2	0.5	1	2	0.5	1	2	3
Life Height (m)			3 (6) etc.									
Load Chain (mm)			Φ7.1									
Single Speed (m/min)	50Hz	YSF	5.6	3.9	1.9	6.7	4.7	2.3	-	-	-	-
		YSL	-	-	-	-	-	-	6.7	4.7	2.3	1.5
		YSH	-	-	-	-	-	-	(9.2)	(6.7)	3.3	2.2
		YSE	-	-	-	-	-	-	6.7	4.7	2.3	-
	60Hz	YSF	6.7	4.7	2.3	8.0	5.6	2.8	-	-	-	-
		YSL	-	-	-	-	-	-	8.0	5.6	2.8	1.8
		YSH	-	-	-	-	-	-	(11.0)	(8.0)	4.0	2.6
		YSE	-	-	-	-	-	-	8.0	5.6	2.8	-
Dual Speed (m/min)	50Hz	YSLD	-	-	-	-	-	-	6.7/2.2	4.7/1.6	2.3/0.77	1.5/0.5
		YSHD	-	-	-	-	-	-	9.2/3.1	6.7/2.2	3.3/1.1	2.2/0.73
	60Hz	YSLD	-	-	-	-	-	-	8.0/2.7	5.6/1.9	2.8/0.93	1.8/0.6
		YSHD	-	-	-	-	-	-	11.0/3.7	8.0/2.7	4.0/1.3	2.6/0.87
Motor Power (kw)			1.8			1.8			1.5(1.8)		1.8	
Power Supply			Single Phase 110V, 115V			Single Phase 220V, 230V			3 Phase, 220V- 600V			
E.D. Rating (%)			15			15			40			
Load Chain Fall Number			1		2	1		2	1		2	3

※Dual speed E.D. Rating = 40/20%



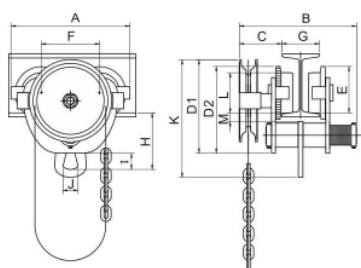
YSL, YSH, YSE, YSF

■ SPECIFICATIONS:

Capacity (ton)	Model	Dimensions (mm)																			
		H		A				B				C	D	E	F	I	J	K	L	M	N
0.5	YSL, H, E, F-050	595	E560	505	F548	LD548	HD548	245	F288	LD288	HD288	260	240	115	125	40	28	40	28	23	23
1	YSL, H, E, F-100	595	E560	505	F548	LD548	HD548	245	F288	LD288	HD288	260	240	115	125	40	28	40	28	23	23
2	YSL, H, E, F-200	745	E710	505	F548	LD548	HD548	245	F288	LD288	HD288	260	240	175	65	46	36	46	36	31	31
3	YSL, H-300	880	-	505	-	LD548	HD548	245	-	LD288	HD288	260	280	175	105	52	40	52	40	34	34

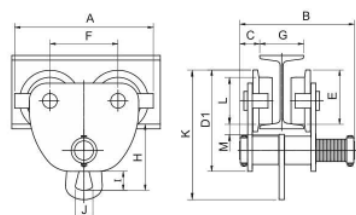
■ TROLLEY

● Geared Trolley (GT)



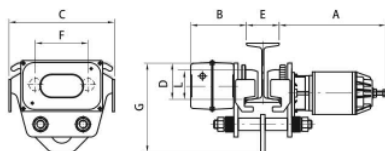
Model	Capacity (ton)	Dimensions (mm)															Min radius of curve (m)	N.W. (kg)
		A	B	C	D1	D2	E	F	H	I	J	K	L	M	G			
GT-050	0.5	194	266	81	150	151	69	89	115	33	28	199	60	32	50-150	1	8.8	
GT-100	1	217	273	84	170	167	78	100	125	35	31	221	70	29	75-150	1	13.5	
GT-200	2	247	309	91	224	207	91	116	171	55	56	301	80	31	100-175	1.3	19.8	
GT-300	3	270	346	96	241	239	103	130	215	79	60	355	90	35	100-200	1.5	30.3	

● Plain Trolley (PT)



Model	Capacity (ton)	Dimensions (mm)													Min radius of curve (m)	N.W. (kg)
		A	B	C	D1	E	F	H	I	J	K	L	M	G		
PT-050	0.5	194	220	35	151	69	89	115	33	28	199	60	32	50-150	1	6.4
PT-100	1	217	227	39	167	78	100	125	35	31	218	70	29	75-150	1	10.6
PT-200	2	247	260	43	207	91	116	171	55	56	284	80	31	100-175	1.3	16.8
PT-300	3	270	300	50	239	103	130	215	79	60	353	90	35	100-200	1.5	25.8

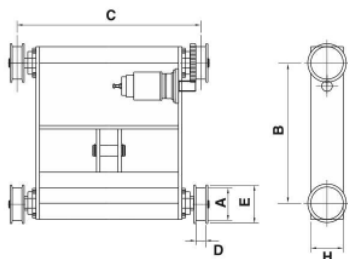
● Monorail Motorized Trolley (MT)



Model	Capacity (ton)	Dimensions (mm)								Speed (m/min)		Motor (kw)	Pole (P)	Min. radius of curve (m)	N.W. (kg)
		A	B	C	D	E	F	G	L	50Hz	60Hz				
MTS-100	1	328	173	294	105	75-125	253	253	78	20	24.16	0.25/0.17	4	1.3	40
MTD-100										20/6.7	24/8	0.25/0.08	4/1.2		
MTS-200	2	328	173	322	119	100-150	279	279	90	20	24.16	0.25/0.17	4	1.5	45
MTD-200										20/6.7	24/8	0.25/0.08	4/1.2		
MTS-300	3	368	180	356	124	125-175	172	303	100	20	24.16	0.6/0.4	4	1.8	65
MTD-300										20/6.7	24/8	0.6/0.2	4/1.2		

MTS-100~500: 50Hz uses 4P motor ; 60Hz uses 4P or 6P motor
(Please specify as ordering 6P motor)

● Motor Saddle Trolley (MST)



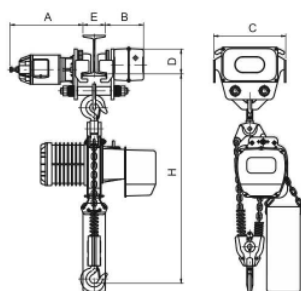
Model	Capacity (ton)	Speed (m/min)		Dimensions (mm)					Motor (kw)	Pole (P)	N.W. (kg)	
		50Hz	60Hz	A	B	C	D	E				H
MSTS-100	1	20	19	120	580	700	40	147	125	0.25	4	94
MSTD-100		20/6.7	19/6.3							0.25/0.08	4/2	
MSTS-200	2	20	19	120	580	700	40	147	125	0.25	4	94
MSTD-200		20/6.7	19/6.3							0.25/0.08	4/2	
MSTS-300	3	18	22	150	650	850	45	176	155	0.4	4	182
MSTD-300		18/6	22/7.3							0.4/0.13	4/2	

MSTS-100 50Hz with pinion of M3.5x15T

MSTS-200 — 60Hz with pinion of M3.5x12T

MSTS-300 ——— 50Hz/60Hz with pinion of M3.5x13T

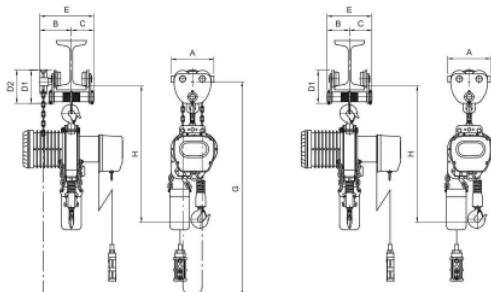
■ Dimensions of Hoist with Motorized Trolley



YSL, H, E, F 0.5ton~3ton

Capacity (ton)		Model	Dimensions(mm)					
			H	A	B	C	D	E
YSL, H, E, YSF	0.5, 1	MTS-050, 100	705	328	173	294	105	75-125
	2	MTS-200	935	328	173	322	119	100-150
YSL, H	3	MTS- 300	1030	368	180	356	124	125-175

■ Dimensions of Hoist with GT/PT

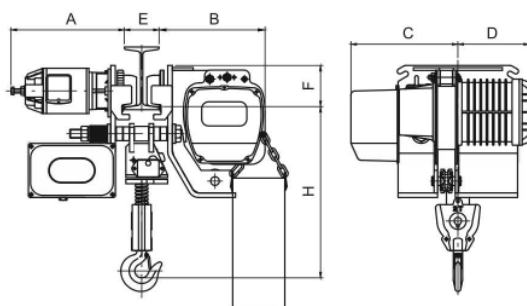


Hoist With GT

Hoist With PT

Capacity (ton)		Model	Dimensions(mm)								Flange Width (mm)
			H	A	B	C	D1	D2	E	G	
YSL,H, YSE,F	0.5	GT-050	710	194	156	110	151	150	266	2709	50-150
	0.5	PT-050	710	194	110	110	151	-	220	-	50-150
	1	GT-100	720	217	160	113.5	170	167	273	2719	75-150
	1	PT-100	720	217	113.5	113.5	167	-	227	-	75-150
	2	GT-200	920	247	179	130	224	207	309	3279	100-175
	2	PT-200	920	247	130	130	207	-	260	-	100-175
	YSL,H	3	GT-300	1110	270	196	150	241	239	346	3353
3		PT-300	1110	270	150	150	239	-	300	-	100-200

■ Features of YLT/YHT/YST Series:



Model	Capacity (ton)	Dimension (mm)							Hoisting				Traversing				N.W. (kg)
		H	A	B	C	D	E	F	Speed (m/min)		Motor kw pole	Speed (m/min)		Motor kw pole			
									50Hz	60Hz		50Hz	60Hz				
YET-050	0.5	440	327	307	278	241	75-125	112	6.7	8.0	1.5, 4P	20	24	0.25, 4P	188		
YETD-050						286			6.7/2.2	8.0/2.7	1.8/0.6, 4/12P	20/6.7	24/8	0.25/0.8, 4/12P			
YET-100						286			4.7	5.6	1.5, 4P	20	24	0.25, 4P			
YETD-100						286			4.7/1.6	5.6/1.9	1.8/0.6, 4/12P	20/6.7	24/8	0.25/0.8, 4/12P			
YET-200	2	520	330	310	311	208	100-150	118	2.3	2.8	1.8, 4P	20	24	0.25, 4P	216		
YETD-200						253			2.3/0.77	2.8/0.93	1.8/0.6, 4/12P	20/6.7	24/8	0.25/0.8, 4/12P			
YET-300						208			1.5	1.8	1.8, 4P	20	24	0.6, 4P			
YETD-300						221			1.5/0.5	1.8/0.6	1.8/0.6, 4/12P	20/6.7	24/8	0.6/0.2, 4/12P			
YLT-050	0.5	440	327	307	278	241	75-125	112	6.7	8.0	1.5, 4P	20	24	0.25, 4P	188		
YLT-100						286			6.7/2.2	8.0/2.7	1.8/0.6, 4/12P	20/6.7	24/8	0.25/0.8, 4/12P			
YLT-100						286			4.7	5.6	1.5, 4P	20	24	0.25, 4P			
YLT-200						208			4.7/1.6	5.6/1.9	1.8/0.6, 4/12P	20/6.7	24/8	0.25/0.8, 4/12P			
YLT-200	2	520	330	310	311	208	100-150	118	2.3	2.8	1.8, 4P	20	24	0.25, 4P	216		
YLT-200						253			2.3/0.77	2.8/0.93	1.8/0.6, 4/12P	20/6.7	24/8	0.25/0.8, 4/12P			
YLT-300						208			1.5	1.8	1.8, 4P	20	24	0.6, 4P			
YLT-300						221			1.5/0.5	1.8/0.6	1.8/0.6, 4/12P	20/6.7	24/8	0.6/0.2, 4/12P			
YHT-050	0.5	440	327	307	278	241	75-125	112	9.2	11	1.8, 4P	20	24	0.25, 4P	188		
YHTD-050						286			9.2/3.1	11/3.7	1.8/0.6, 4/12P	20/6.7	24/8	0.25/0.8, 4/12P			
YHT-100						241			6.7	8.0	1.8, 4P	20	24	0.25, 4P			
YHTD-100						286			6.7/2.2	8.0/2.7	1.8/0.6, 4/12P	20/6.7	24/8	0.25/0.8, 4/12P			
YHT-200	2	520	330	310	311	208	100-150	118	3.3	4.0	1.8, 4P	20	24	0.25, 4P	216		
YHTD-200						253			3.3/1.1	4.0/1.3	1.8/0.6, 4/12P	20/6.7	24/8	0.25/0.8, 4/12P			
YHT-300						208			2.2	2.6	1.8, 4P	20	24	0.6, 4P			
YHTD-300						221			2.2/0.73	2.6/0.87	1.8/0.6, 4/12P	20/6.7	24/8	0.6/0.2, 4/12P			

3. SAFETY RULES

DANGER

The hoist herein is not designed for, and should not be used for, lifting, supporting, or transporting personnel. Any modifications to upgrade, re-rate, or otherwise alter the hoist equipment must be authorized by either the original manufacturer or a qualified professional engineer.

(1) Only the trained personnel are allowed to operate the hoist.

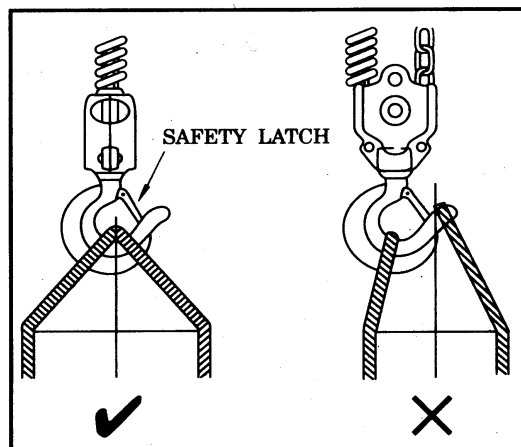
(2)

DANGER

Do not use the hoist in explosive atmosphere.

(3) Prior to each lifting operation, it is essential to make sure that:

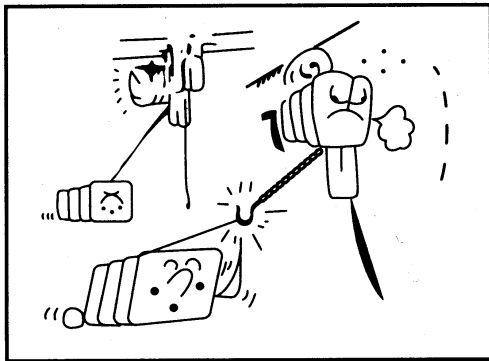
- (a) The correct lifting sling is being used.
- (b) The lifting sling is located in the hook as shown below (Illust.2) and that a safety latch has been fitted.



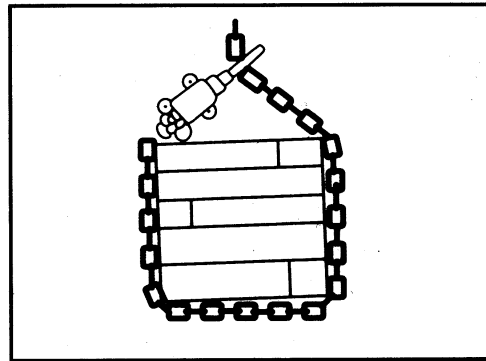
Illust. 2

- (c) The object to be hoisted is well secured for direct lifting (a proper lifting frame or apparatus is strongly recommended for direct lifting.)

- (4) Firm and steady button operation is required, never push the button switch intermittently.
- (5) Always avoid excessive inching operation.
- (6) Always make sure the hoist motor completely stops before reversing.
- (7) Always leave the push button switch cable and bottom hook vertically static after completion of operation, never leave them at any position which may cause swing or slip.
- (8) Sling must be applied to load evenly and centrally to ensure correct balance.
Never lift any object which is insecure or out of balance.
- (9) Never use hoist to end or side pull a load. (Illust.3)
- (10) Never wrap around and hook back the load chain as a sling to lift a load.
(Illust.4)



Illust. 3



Illust. 4

(11)

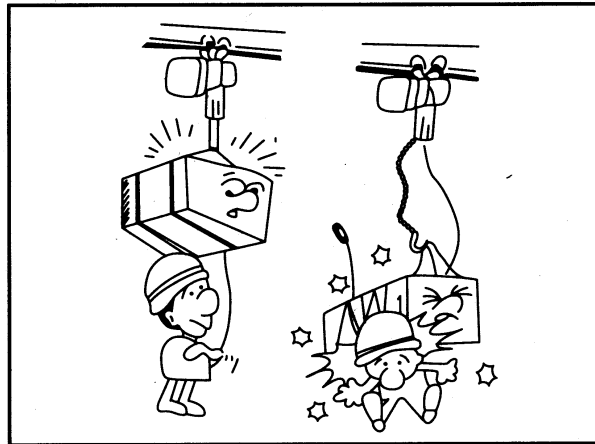
! WARNING

Do not use the hoist chain as a welding electrode.

(12)



Never stand under a raised load (Illust. 5)



Illust. 5

(13) Lifting must always be personally attended, never leave a raised load unattended.

(14) Over-capacity-load lifting is hazardous and should not be undertaken.

(15) Never lift a load when the load chain is twisted.

(16) Regularly inspect and check the condition of load chain. Do not operate with damaged chain.

(17) Bucket Specifications :

Key No.	Bucket No.	Chain Size (mm)	Chain Length (m)	Bucket Size(mm)	Material
200772	2	7.1	5.6-8.9	150×100×380L	Canvas
200773	3	7.1	9.0-13.5	150×100×470L	Canvas
200774	4	7.1	13.6-20.5	150×100×560L	Canvas
200775	5-1	7.1	18.5	210×140×465×t2	Steel
200776	5-2	7.1	18.6-25.5	210×160×545×t2	Steel
200777	5-3	7.1	25.6-30.5	210×160×665×t2	Steel
200778	5-4	7.1	30.6-40.5	210×170×815×t2	Steel
200779	5-5	7.1	40.6-50.5	210×170×975×t2	Steel
200780	5-6	7.1	50.5-60.5	210×180×1135×t2	Steel

※ Remember to change bucket if the length of chain increased.

4. INSTALLATION

4.1 Unpacking Information

After removing the hoist from its packing box, carefully inspect the external condition of the electrical cables, contactor, gear box and motor casing for damage.

Check and ensure that these items are present.

Each hoist is supplied as standard with the following accessories.

1. Chain bucket	1 set
2. Power cable	3 meters
3. Push button control switch	1 piece

4.2 Voltage

CAUTION

If power supply deviates from standard by more than $\pm 10\%$ abnormal operation or damage to the motor may result. It is imperative to ensure correct voltage supply before commencing operation.

4.3 Installation

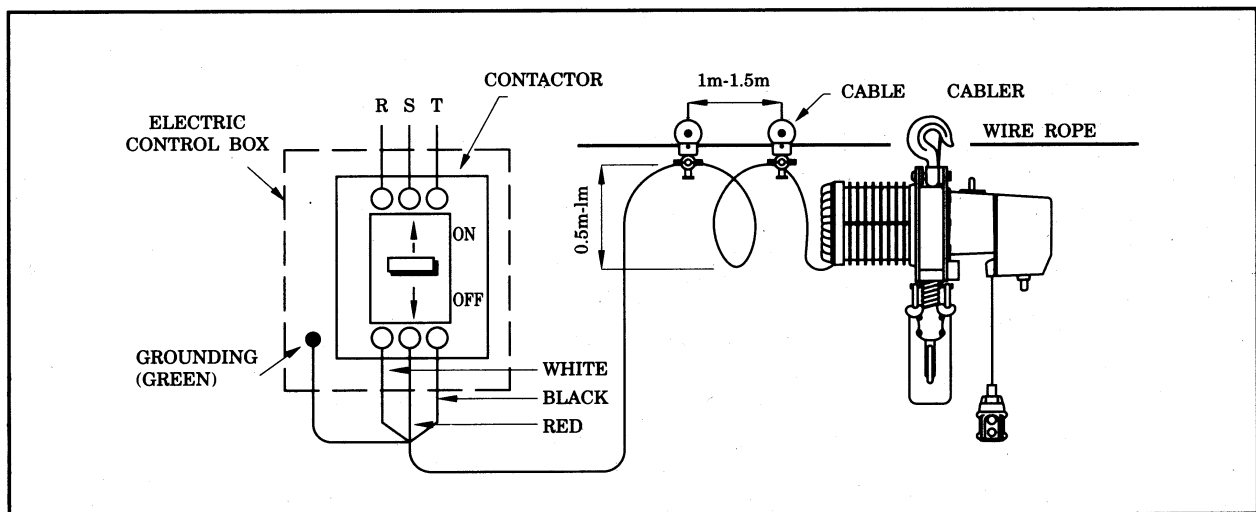
WARNING

Connection to power supply before installation procedures having been completed is strictly prohibited.

- NOTE : If the hoist is to be suspended from an electric trolley, assembly may be eased by firstly removing the top hook, just attaching hoist top hook to the trolley load plate.

-
- FRONT SHORT CHAIN**
- REAR LONG CHAIN**

(3) Connect power supply to hoist and operate the push button switch.
This operation must be carried out by a trained person.



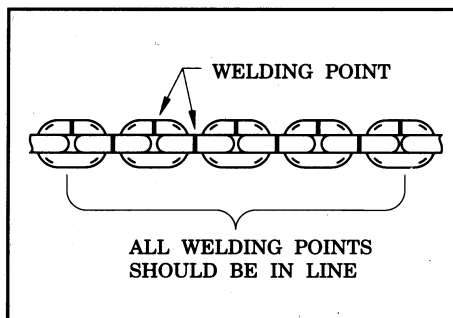
13

(4) Operation Test

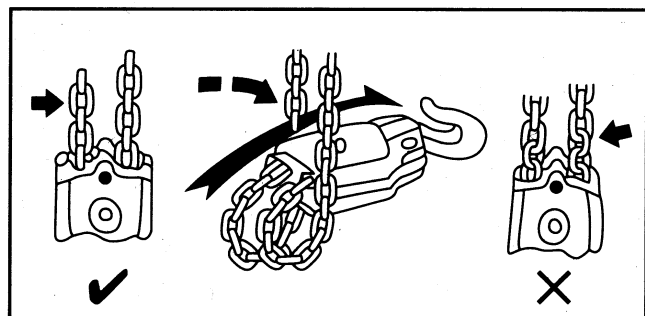
- (a) Firmly push  switch button to lower load chain until the limit spring touches the limit switch. Power should be cut off automatically.
- (b) Firmly push  switch button to check the collection of load chain into chain bucket.
- (c) Check the emergency stop device function (if fitted):
- While holding down either  or  button on the push button switch, push the emergency stop button. Check that the hook stops when the emergency stop button is pushed. Also, check the hoist does not move in response to the push button switch. Finally, check that the emergency stop device pops out when turned to the right and that operation can be resumed thereafter. If the equipment fails to pass another above checks, check the wiring and automatic locking function of the emergency stop device.
- (d) Check load chain lubrication (It has been lubricated at our works, but the lubricant may dry out during transportation). Any readily available lubricant is recommended. It is further advisable to keep a small amount of lubricant in chain bucket to allow chain in oil bath.
- (e) Check chain position. Weld joints on links must face the same direction (Illust. 8), correct chain operation can only be achieved when all joints are vertically in line.

 CAUTION

The bottom hook on multi-fall hoist must never be rotated as Shown below. (Illust. 9)



Illust. 8



Illust. 9

5. OPERATION

After running test and checks have been completed, the hoist will be ready for normal Operation.

WARNING

Since dealing with heavy loads may involve unexpected danger all of the “SAFETY RULES” (Ref 3.) must be followed and the operator must be aware of the following points while using the hoist.

- (1) The operator must have a clear and unobstructed view of the entire working area before operating the hoist.
- (2) The operator must check that the entire working area is safe and secure before operating the hoist.
- (3) When using the hoist with a motorized trolley, the operator must take care to prevent excessive load swinging by sympathetic use of the trolley controls.

6. MAINTENANCE AND INSPECTION



**Do not perform maintenance on the hoist while it is carrying a load
Except monthly checking for the brake or limit switch.**



Before performing maintenance do not forget to affix tags to the Power source and the push button switch reading : “DANGER”, “EQUIPMENT BEING REPAIRED”.

6.1 Maintenance

- (1) Check the level of gear box lubricant after the first 500 hours operation, thereafter check every 3 months and lubricate accordingly.

NOTE: WE RECOMMEND USING A LUBRICANT OIL EQUIVALENT TO ISO VG460.

- (2) Always keep the hoist unit dry and never misuse it in a manner likely to reduce its durability.
- (3) When it is necessary to keep the unit outdoors, a protective covering should be fitted.

6.2 Inspection

- (1) Daily inspection: Before starting daily operation, check the following,
 - (a) Correct power supply.
 - (b) “Up” , “Down” and “Emergency stop” (where fitted) test runs under no load.
 - (c) Correct motor performance.
 - (d) No abnormal or excessive noise.
 - (e) No malfunction of the bottom hook safety latch.
 - (f) Proper function of moving/turning parts, limit switches and brake.
 - (g) Well lubricated load chain.

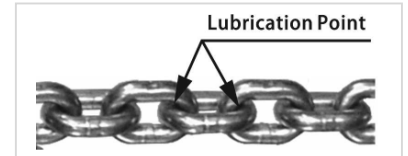
(2) Monthly inspection

WARNING

Always use the hoist manufacture's recommended parts when repairing a hoist.

(a) Load chain :

Distorted, elongated or worn chain link will not sit properly on the load sprocket wheel and may cause chain breakage and/or damage to hoist unit. To ensure safe and efficient operation, the chain links must be checked for their pitch (inside length), inside width and outside width monthly according to following table 6-2-a at page 18.

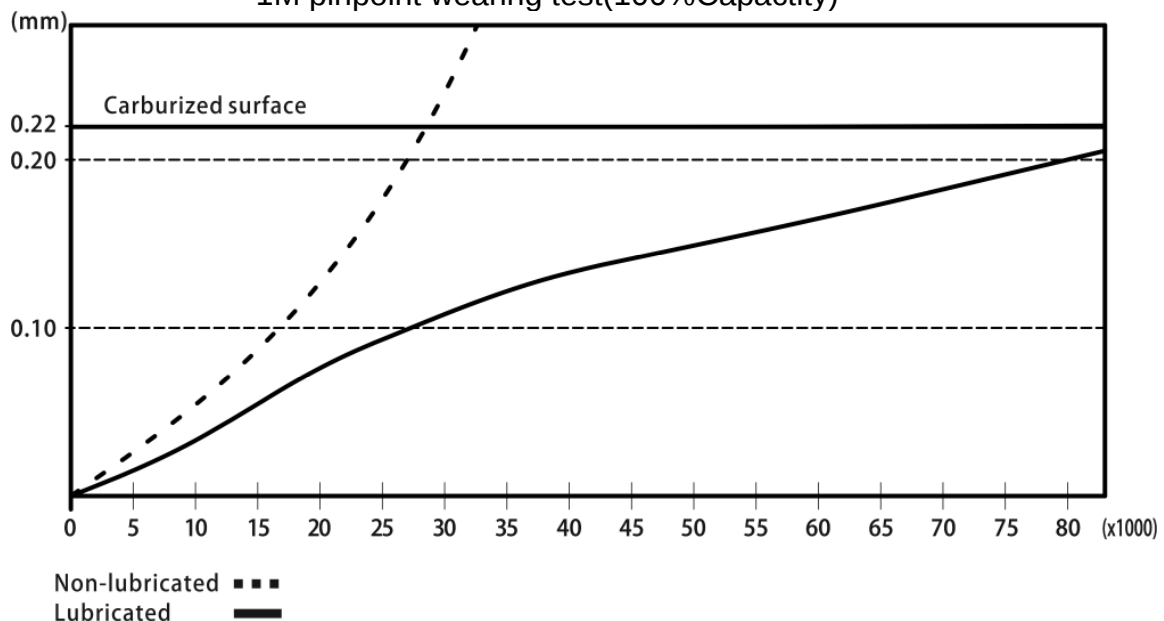


Chain Wearing Test

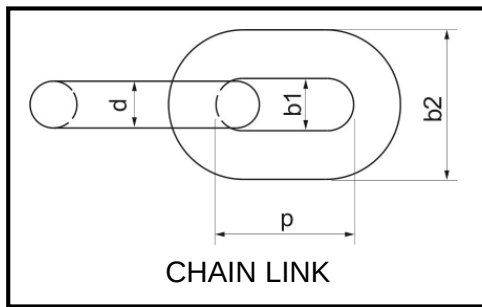
Load Spectrum	Cubic mean Value	Using times	
		Non-lubricated	Lubricated
1.(Light)	50%	232000	688000
2.(Medium)	63%	116000	344000
3.(Heavy)	80%	58000	172000
4.(Very heavy)	100%	29000	86000

Above testing data under lifting height 1M

1M pinpoint wearing test(100%Capacity)



Number of cycles (Lifting + lowering)



Load (ton)	Dia.-Meter (mm) (d)	Inside Length (mm) (p)	Inside Width (mm) (b1)	Outside Width (mm) (b2)	Breaking Load (kN)
1/2~3	7.1	20.2	8.2	23.2	63

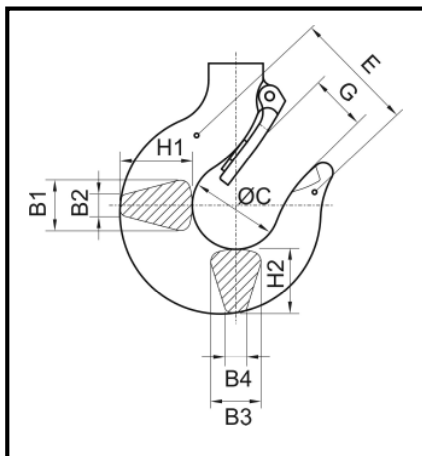
Table 6-2-a

(b) Load hook :

Check hook with care. If hook shows crack deformation or wear in excess of 5% of its original size, it should be replaced. (Ref. following table)

(b) Load hook :

Check hook with care. If hook shows crack deformation or wear in excess of 5% of its original size, it should be replaced. (Ref. following table)



Capacity (ton)	Dimensions (mm)									Allow Stress (kg/mm ²)
0.5T,1T	H1	B1	B2	H2	B3	B4	C	G	E	70
2T	45	31	10	41	31	10	46	36	75	70
3T	55	34	19	48	34	19	52	40	90	70

Table 6-2-b

(c) Limit Switches :



A qualified electrician should perform this inspection.

Check correct operation of the limit switches. Clean thoroughly and apply a thin lubrication to ensure correct operation.

(3) Annual inspection



Your dealer should be asked to perform this inspection.

- (a) Check gearing for any excessive wear or damage.
- (b) Replace gearbox lubricant completely (**700 C.C ~800C.C ±10%**), as following table for your reference Table 6-2-c.
- (c) Check brake lining and ratchet pawl for any wear or damage.
- (d) Check operation of pawl spring.
- (e) After reassembly of above check, lifting a load several times to ensure good performance of the hoist before starting duty operation.

※Table of recommended oils according to DIN 51354

ISO-VGDIN 51519 viscosity At 40°C mm ² /s (cST)	Approximate viscosity of the VG Categories 50°C mm ² /s (cST)	ARAL	BP	ESSO	MOBIL OIL
VG460	251	Aral Degol BG 460-BMB 460	BP Energol GR-XP 460	Spartan EP-460	Mobilgear 634

ISO-VGDIN 51519 viscosity At 40°C mm ² /s (cST)	Approximate viscosity of the VG Categories 50°C mm ² /s (cST)	SHELL	TEXACO	I.P.	AGIP	TOTAL
VG460	251	Omala oil 460	Meropa 460	Mellana 460	Blasia 460	Carter EP 460

Table 6-2-c

(4) Chain Gauge – Wear and Stretch Measuring

- (a) The chain gauge is useful and convenience for measuring.
- (b) Please use a chain gauge to measure the chain pitch and diameter, such as illustrations (1) and (2).
- (c) Every chain ring must be measured, and the chain must be replaced when one of chain ring is wear or stretch.
- (d) It will be a cutting-out possibility if you use a chain fall either wear or stretch during operation.
- (e) Do not replace a chain fall by yourself and do please contact specific either service centers or contractors to help you out.
- (f) The chain fall must be replaced whole instead of a partial part.
- (g) The load sheave, regulator, and chain compressing wheel must be replaced the same time as you do a second time replacement.

Remark :

- (1) Chain must be perfect condition without any defects and attachments.

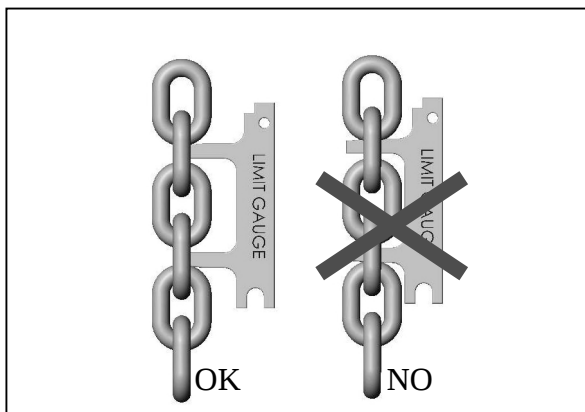


Illustration (1)
Chain pitch measure

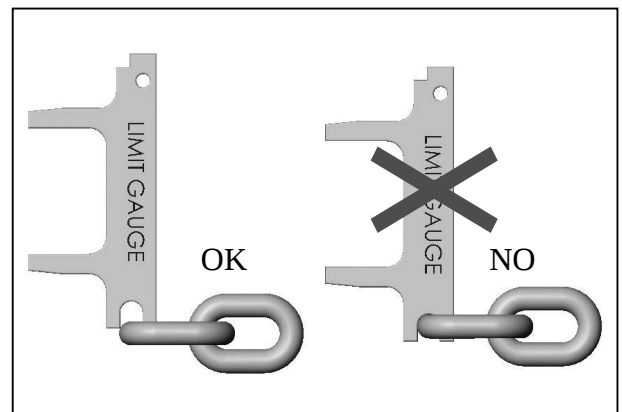


Illustration (2)
Diameter measure

7. TROUBLESHOOTING

7.1 Wiring Diagrams

(1) C10011 for dual voltage connection of motor leads and A30004-1 for YSF series	21
(2) A40054 for YSE direct on line series and A10185-1 for YSE low voltage control series	22
(3) A10019-2RM for YSL/YSH series (220V~600V) and A20015-2RM for YSLD/YSHD series (380V~600V)	23
(4) A20189RM for YSLD/YSHD series and A20190RM for YLTD/YHTD series (220V)	24
(5) A10173-1RM for YLT/YHT series (220V~600V) and A20165-1RM for YLTD/YHTD series (380V~600V)	25
(6) US-02-30-RM for YSL/YSH series and US-02-7A-RM for YLT/YHT series (230/460V)	26
(7) US-02-03A-RM for YSLD/YSHD series and US-02-28A-RM for YLTD/YHTD series (230/460V)	27

The above listed wiring diagram for reference only.

The end user should refer to the wiring diagram stuck to the inside cover of the electric housing.

Our electric specifications can be done according to followings:

- (a) 3-Phase or 1-phase
- (b) 50Hz or 60 Hz
- (c) Single and dual voltage

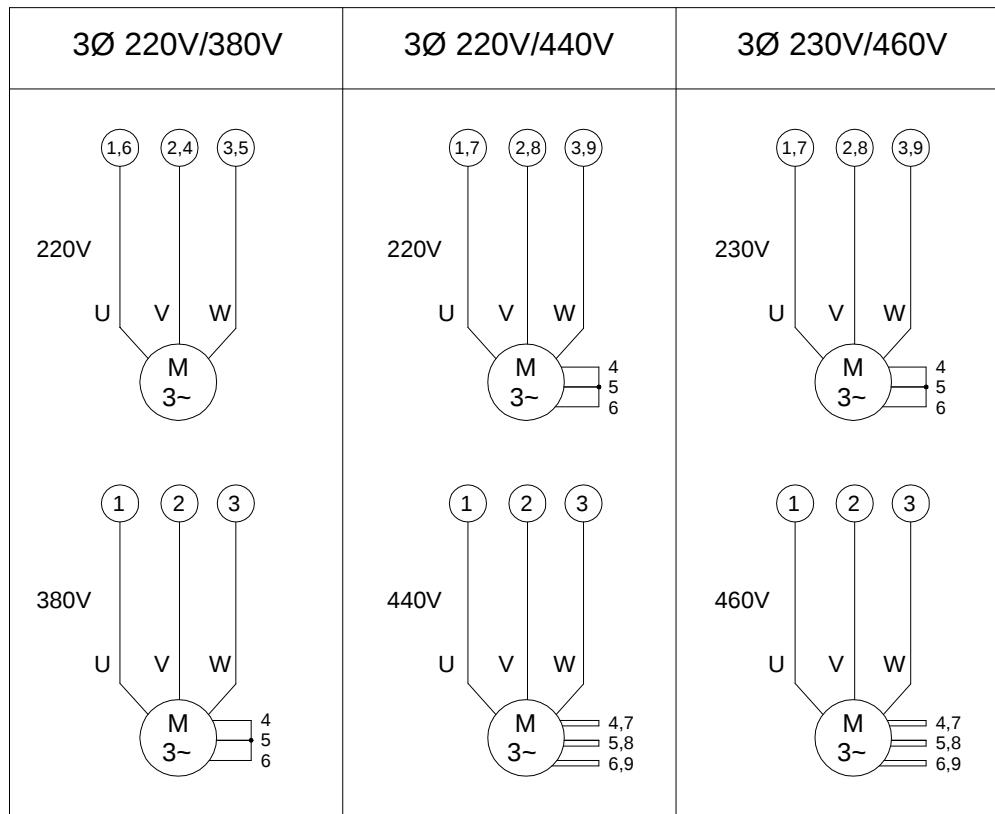
Voltage Hertz	Dual Voltage	Single Voltage
50 Hz	220V/380V 220V/440V	220V to 600V
60 Hz	230V/460V	

Table 7-1

Warranty Details :

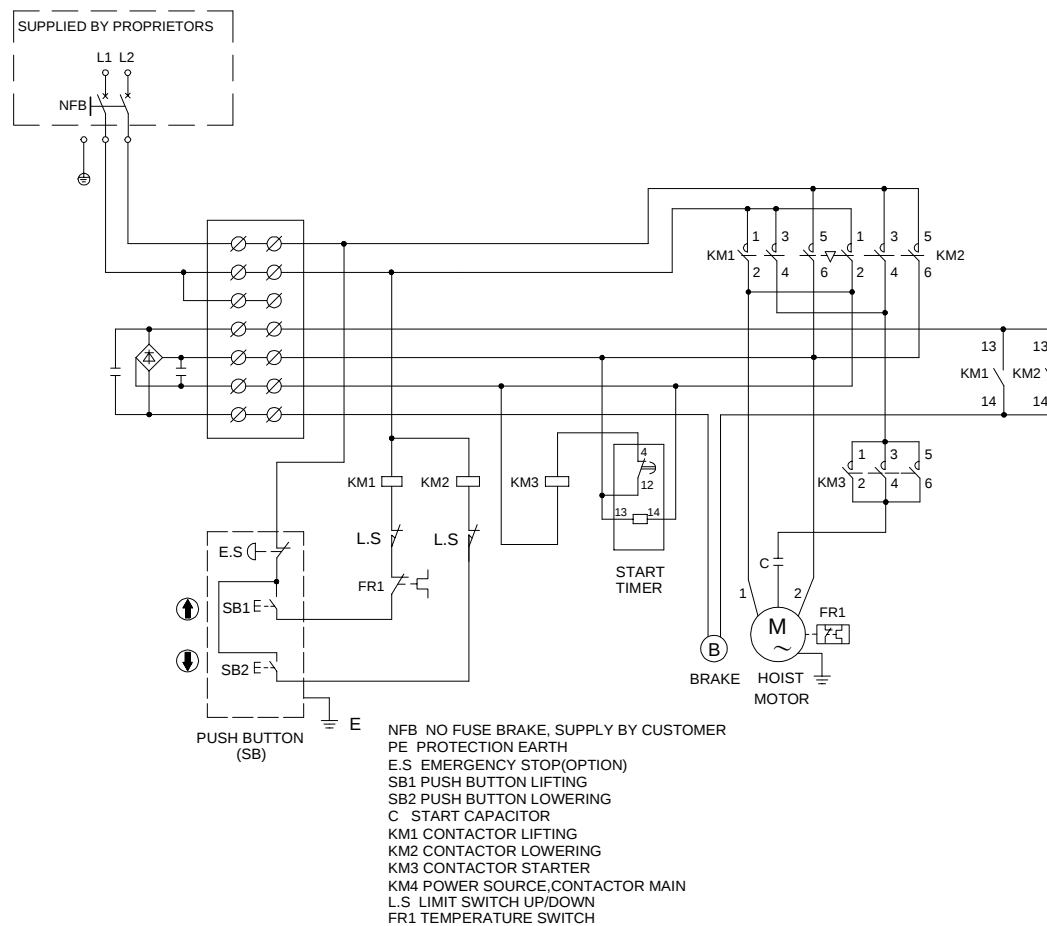
1. Warranty Period : One year for Mechanical Spare Parts after purchase the product.
2. Non-Warranty Scope :
 - a. Electrical Spare Parts (ex. Contactor, Pendant, Phase Error Relay, etc.)
 - b. Expense Spare Parts (ex. Chain Bucket, Brake Lining, etc.)
 - c. Damage caused by unsuitable operation.
(galvanize plant, chemical plant, and dye-works etc.)
 - d. Damage caused by operating on the wrong electric voltage.
 - e. Damage caused by user emending the product.
 - f. Damage caused by natural disaster.
3. Warranty Scope shall be permitted by Cheng Day Machinery and Within One Year of damaged Mechanical Spare Parts Repair and Replacement.
(circumstance stated in detail No. 2 are not included.)

DUAL VOLTAGE CONNECTION OF MOTOR LEADS



C10011

YSF SERIES



A30004-1

A40054

Diagram illustrating the main wiring connections for the hoist motor control system, including the power supply (L1, L2, L3, PE), the motor (M), the control circuit (E.S., SB1, SB2, FR1), and the interlocking logic (KM1, KM2, KM3).

Key components and connections shown:

- Power Supply:** L1, L2, L3, PE.
- Motor:** M (3~).
- Control Circuit:** E.S. (Emergency Stop), SB1 (Stop), SB2 (Start), FR1 (Thermal Relay).
- Interlocking Logic:** KM1, KM2, KM3 (Circuit Breakers).
- Transformer (TR):** 220V~600V, 24V, 0V.
- Fuses:** F1, F2.

Connections are detailed for the motor, control circuit, and interlocking logic, ensuring safe and reliable operation.

A10185-1

E.S EMERGENCY STOP(OPTION)
F1/2 FUSE(OPTION)
SB1 PUSH BUTTON LIFTING
SB2 PUSH BUTTON LOWERING
TR TRANSFORMER FOR CONTROL POWER
KM1 CONTACTOR LIFTING
KM2 CONTACTOR LOWERING
KM3 POWER SOURCE, CONTACTOR MAIN(OPTION)
SQ1/2 LIMIT SWITCH UP/DOWN
FR1 TEMPERATURE SWITCH

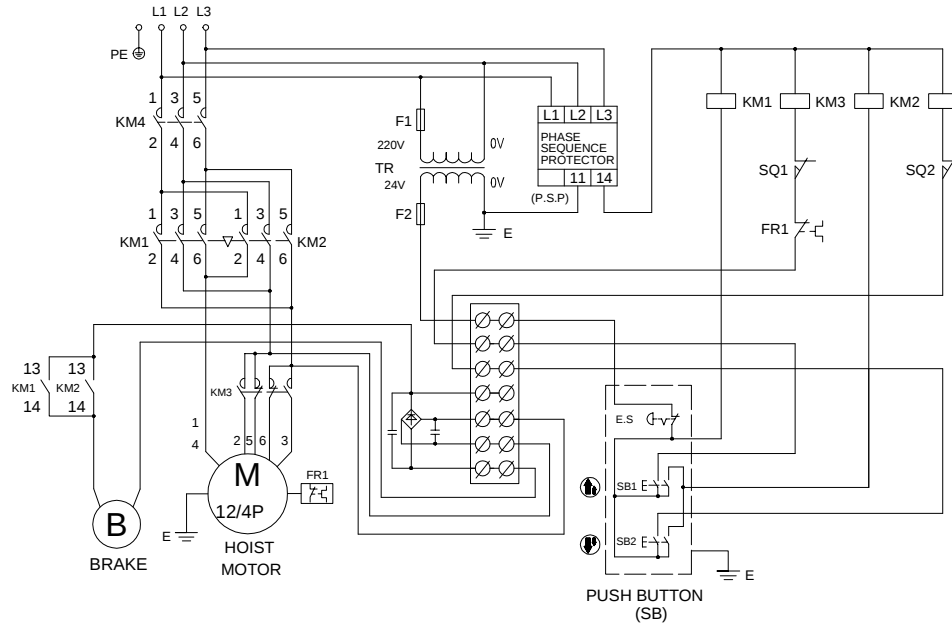
A10019-2RM

[illegible]

E.S EMERGENCY STOP(OPTION)
F1/2 FUSE(OPTION)
SB1 DUAL SPEED,PUSH BUTTON LIFTING
SB2 DUAL SPEED,PUSH BUTTON LOWERING
TR TRANSFORMER FOR CONTROL POWER
KM1 CONTACTOR LIFTING
KM2 CONTACTOR LOWERING
KM3 CONTACTOR, DUAL SPEED CONTROL
KM4 POWER SOURCE, CONTACTOR MAIN(OPTION)
SQ1/2 LIMIT SWITCH UP/DOWN
FR1 TEMPERATURE SWITCH
(B) BRAKE COIL

A20015-2RM

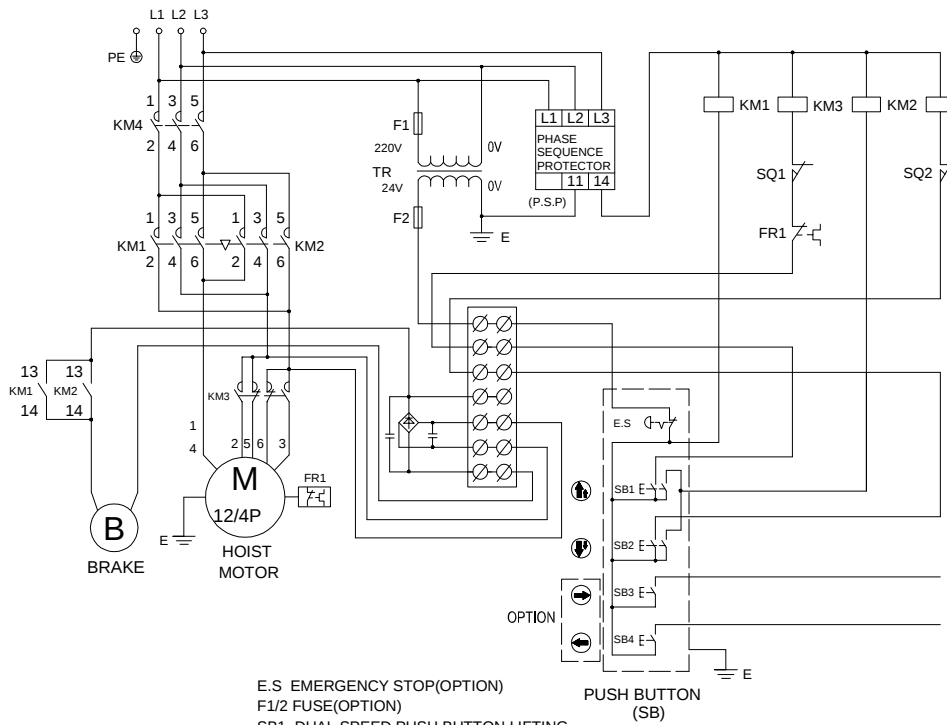
YSLD/YSHD SERIES



- E.S EMERGENCY STOP(OPTION)
- F1/2 FUSE(OPTION)
- SB1 DUAL SPEED,PUSH BUTTON LIFTING
- SB2 DUAL SPEED,PUSH BUTTON LOWERING
- TR TRANSFORMER FOR CONTROL POWER
- KM1 CONTACTOR LIFTING
- KM2 CONTACTOR LOWERING
- KM3 CONTACTOR, DUAL SPEED CONTROL
- KM4 POWER SOURCE, CONTACTOR MAIN(OPTION)
- SQ1/2 LIMIT SWITCH UP/DOWN
- FR1 TEMPERATURE SWITCH
- (B) BRAKE COIL

A20189RM

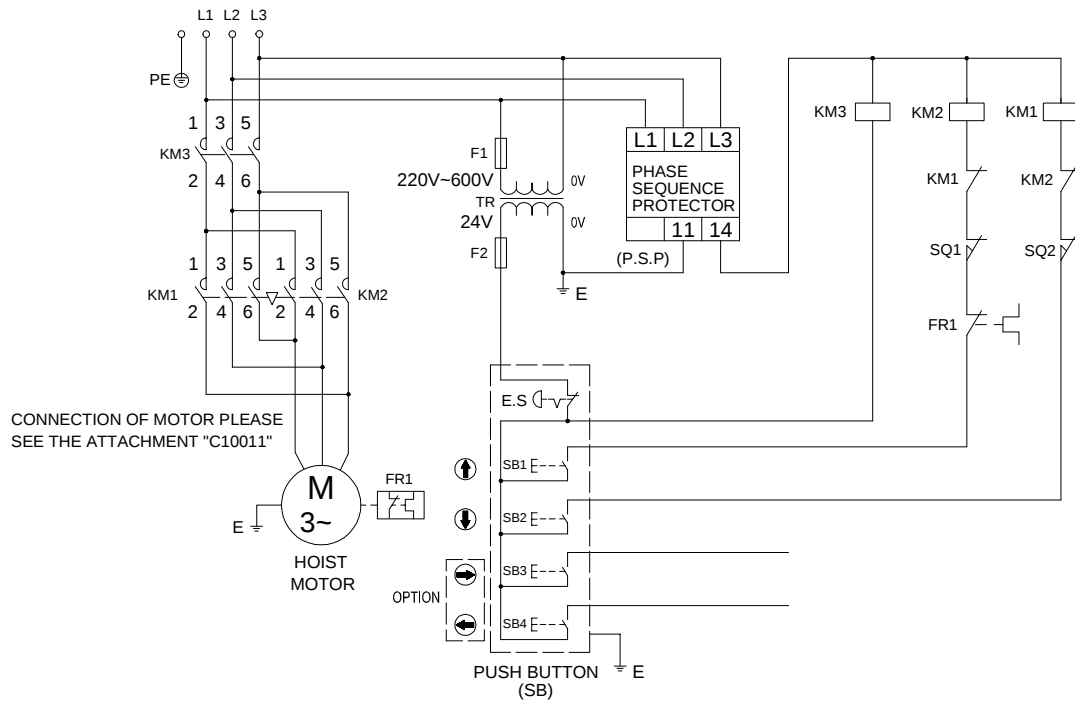
YLTD/YHTD SERIES



- E.S EMERGENCY STOP(OPTION)
- F1/2 FUSE(OPTION)
- SB1 DUAL SPEED,PUSH BUTTON LIFTING
- SB2 DUAL SPEED,PUSH BUTTON LOWERING
- TR TRANSFORMER FOR CONTROL POWER
- KM1 CONTACTOR LIFTING
- KM2 CONTACTOR LOWERING
- KM3 CONTACTOR, DUAL SPEED CONTROL
- KM4 POWER SOURCE, CONTACTOR MAIN(OPTION)
- SQ1/2 LIMIT SWITCH UP/DOWN
- FR1 TEMPERATURE SWITCH
- (B) BRAKE COIL

A20190RM

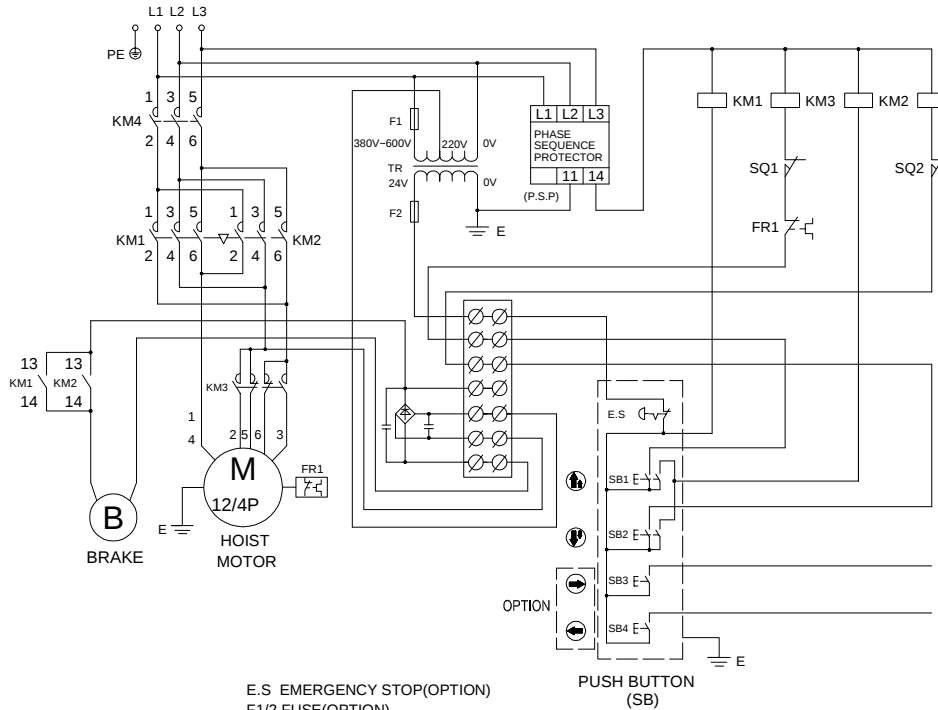
YLT/YHT SERIES



E.S EMERGENCY STOP(OPTION)
F1/2 FUSE(OPTION)
SB1 DUAL SPEED,PUSH BUTTON LIFTING
SB2 DUAL SPEED,PUSH BUTTON LOWERING
TR TRANSFORMER FOR CONTROL POWER
KM1 CONTACTOR LIFTING
KM2 CONTACTOR LOWERING
KM3 POWER SOURCE, CONTACTOR MAIN(OPTION)
SQ1/2 LIMIT SWITCH UP/DOWN
FR1 TEMPERATURE SWITCH

A10173-1RM

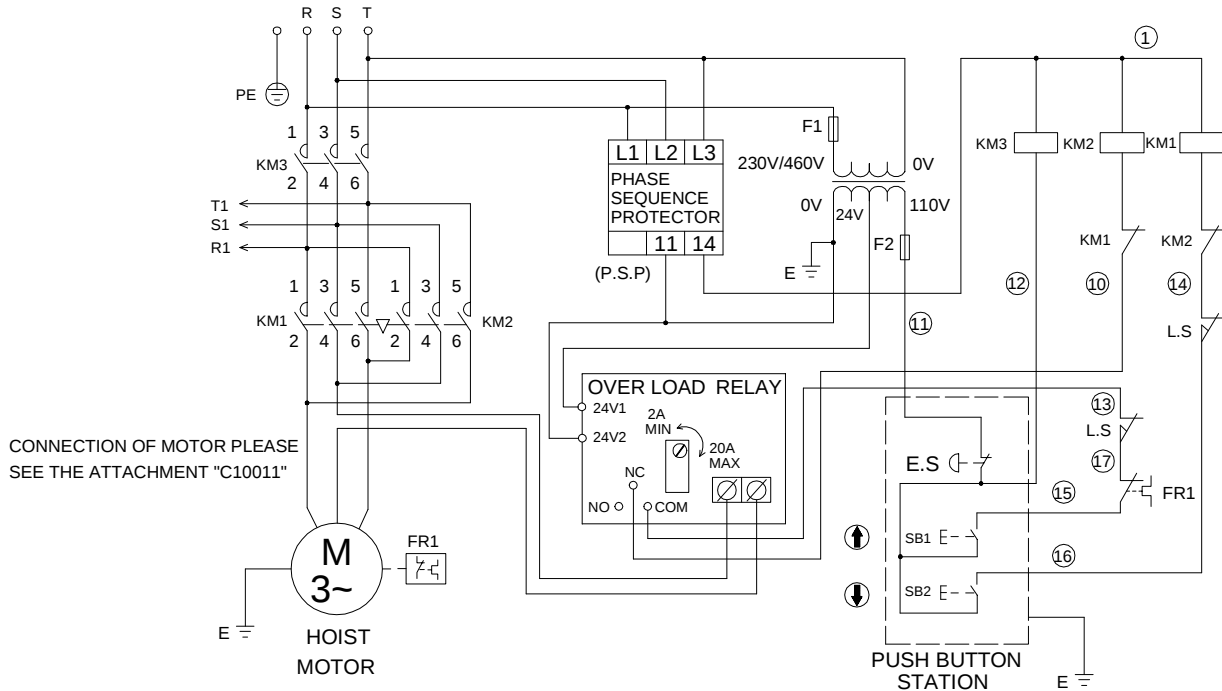
YLTD/YHTD SERIES



E.S EMERGENCY STOP(OPTION)
F1/2 FUSE(OPTION)
SB1 DUAL SPEED,PUSH BUTTON LIFTING
SB2 DUAL SPEED,PUSH BUTTON LOWERING
TR TRANSFORMER FOR CONTROL POWER
KM1 CONTACTOR LIFTING
KM2 CONTACTOR LOWERING
KM3 CONTACTOR, DUAL SPEED CONTROL
KM4 POWER SOURCE, CONTACTOR MAIN(OPTION)
SQ1/2 LIMIT SWITCH UP/DOWN
FR1 TEMPERATURE SWITCH
(B) BRAKE COIL

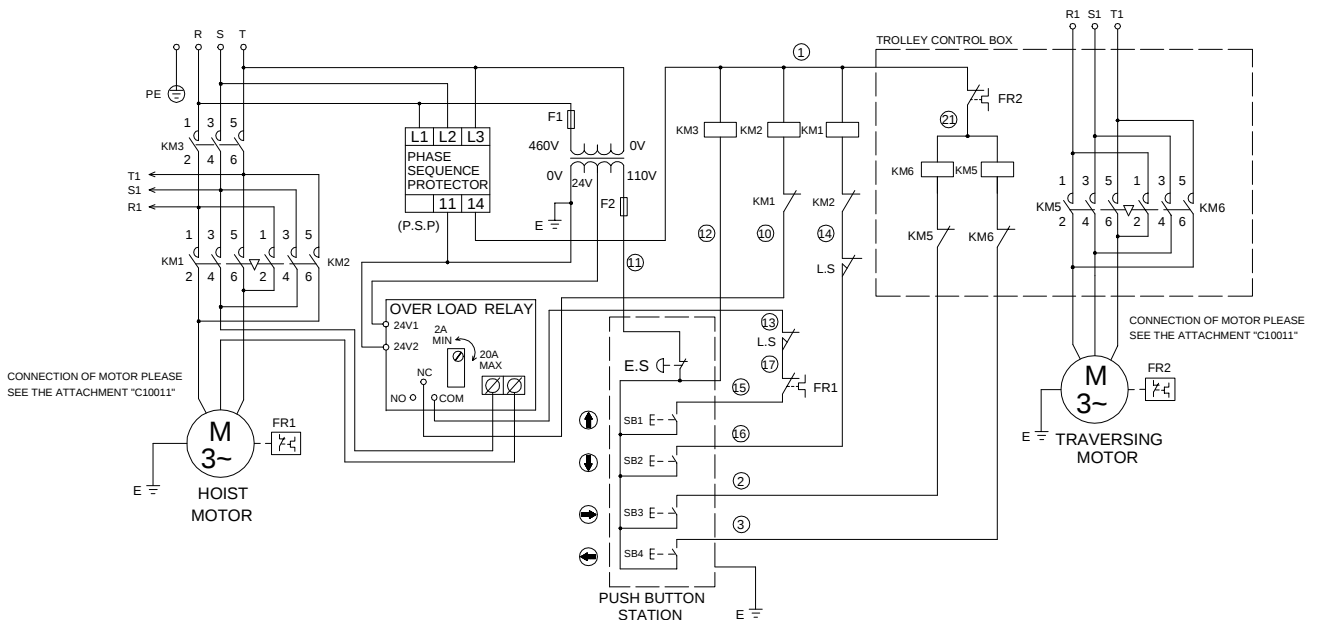
A20165-1RM

YSL/YSH SERIES



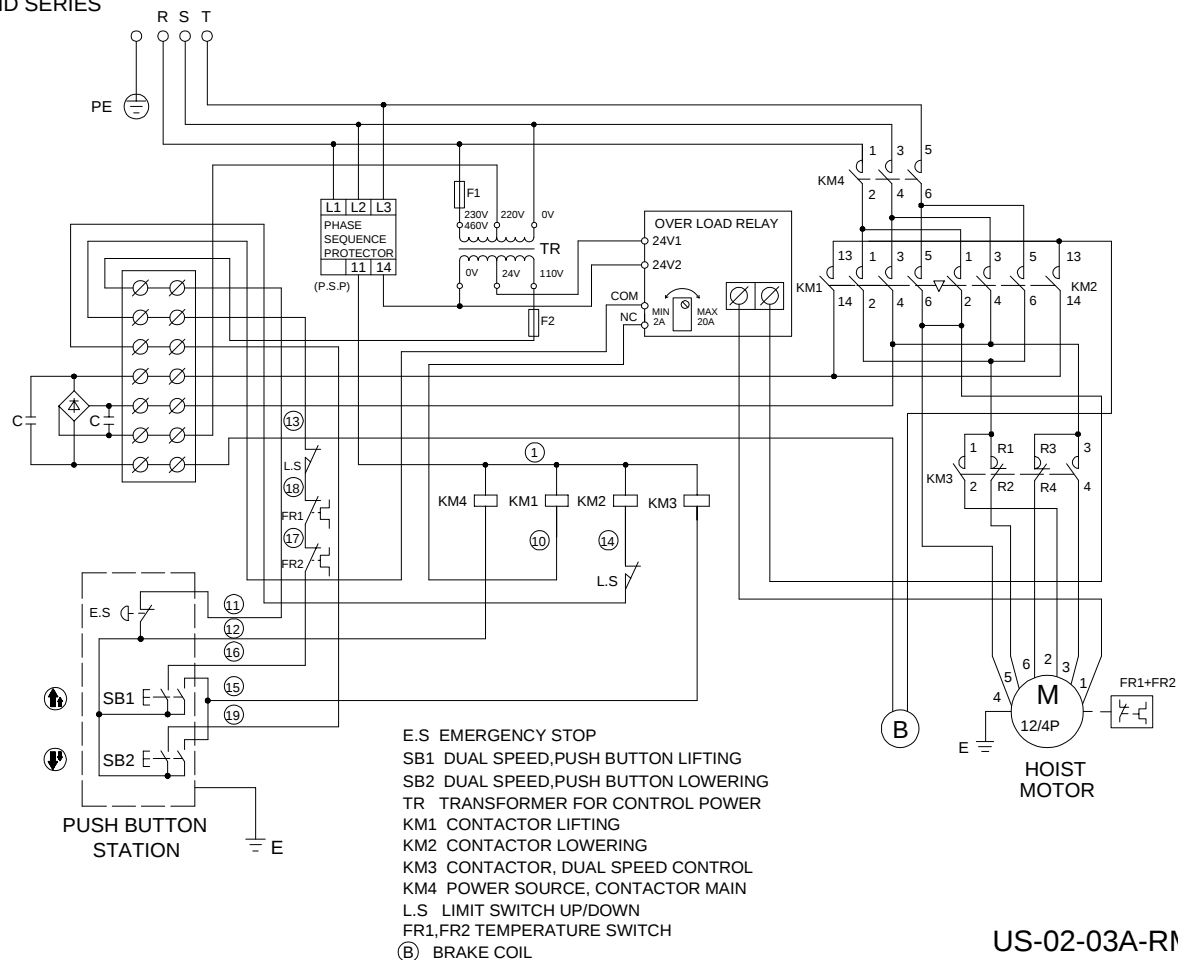
US-02-30-RM

YLT/YHT SERIES



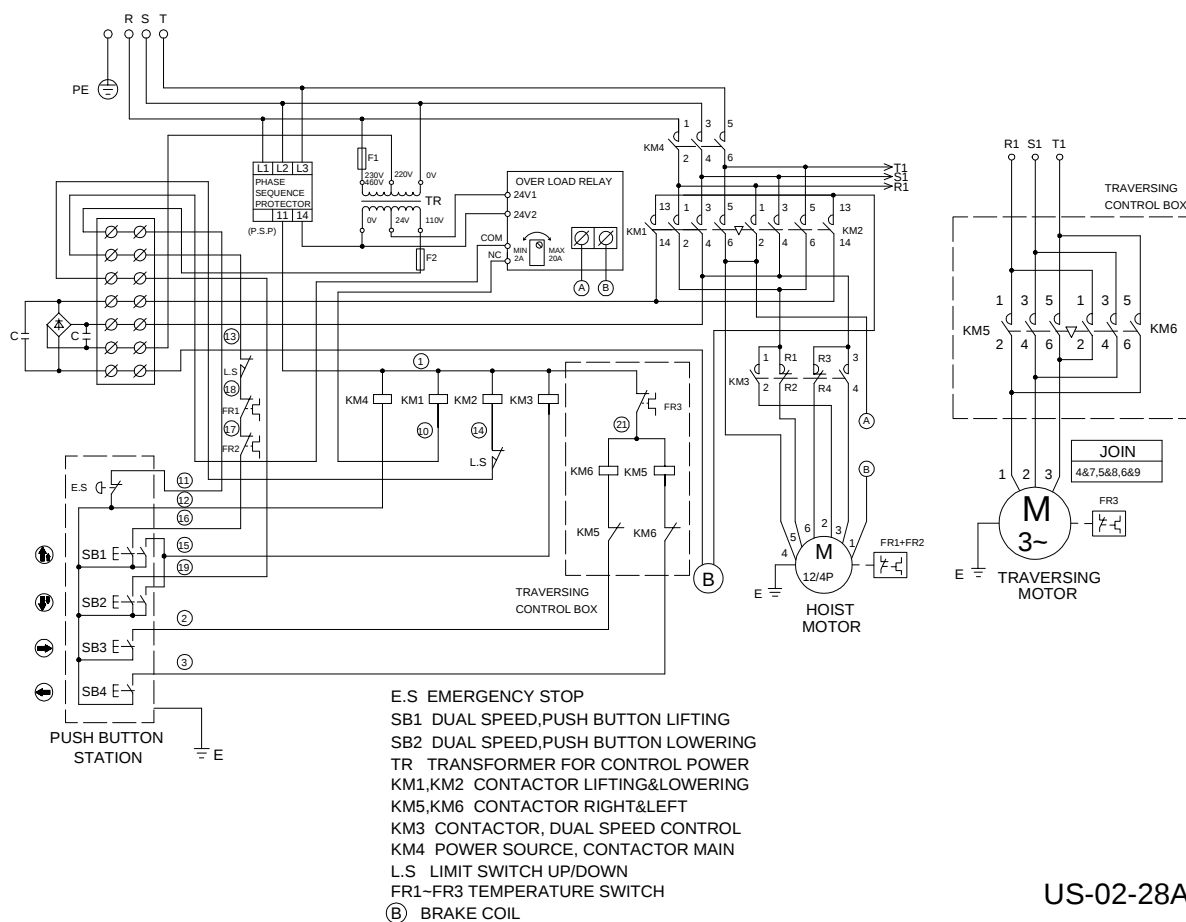
US-02-7ARM

YSLD/YSHD SERIES



US-02-03A-RM

YLTD/YHTD SERIES



US-02-28A-RM

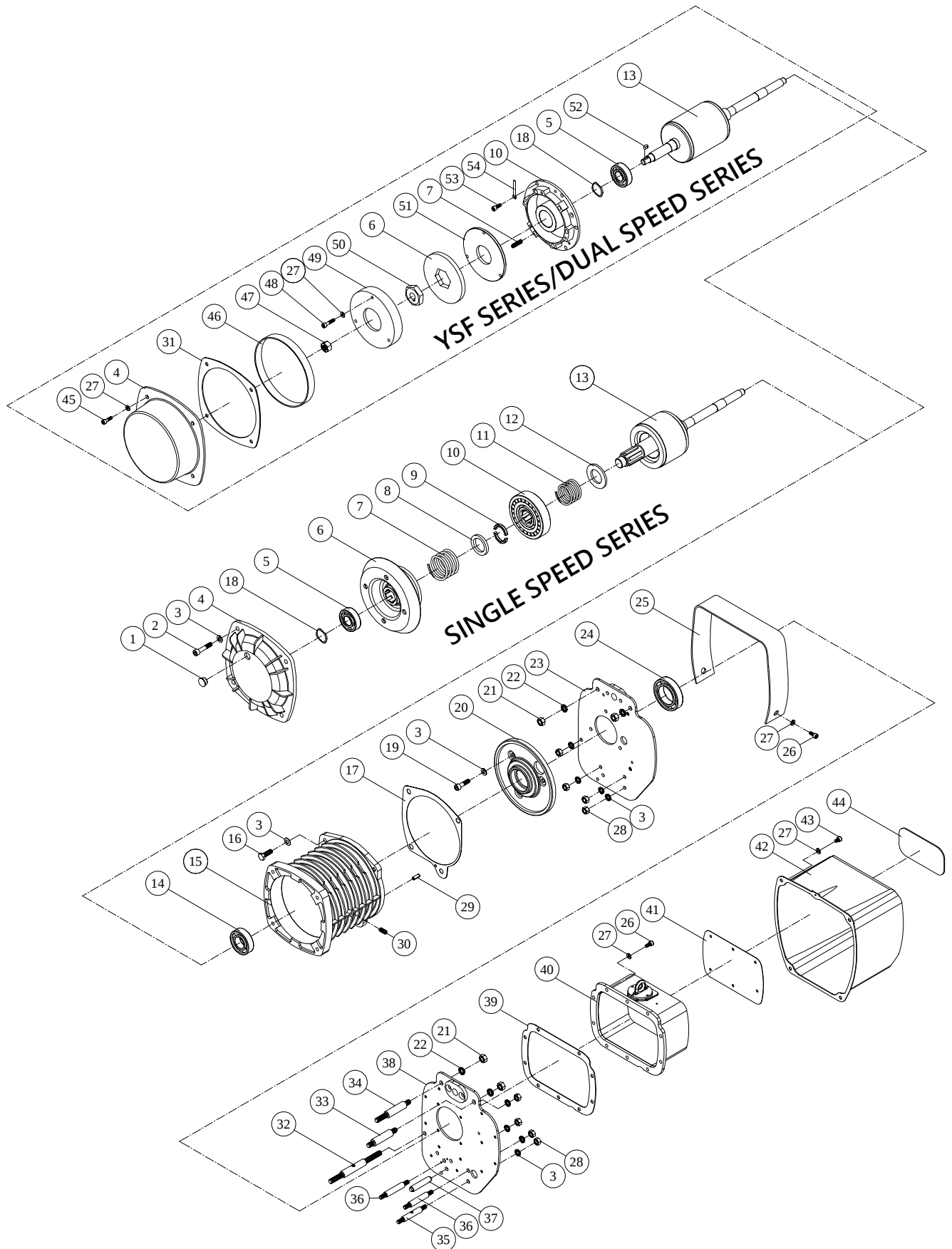
7.2 Troubleshooting and Remedial Action

SITUATION	CAUSE	REMEDY
Hoist will not operate	(1) Phase error relay operated due to incorrect phase connections. (2) Blown power fuse or tripped power circuit breaker. (3) Blown control circuit fuse. (4) Broken/disconnected power or control circuit wire. (5) Low supply voltage (6) Motor hums but does not rotate (7) Emergency stop button release pushed(if fitted) (8) Faulty contactor	Reverse any two phase connections. Check supply requirements and replace the fuse/reset breaker to meet requirements. Check fuse for correct rating and replace Locate and repair/reconnect. Check if 10% reduction of voltage, have mains supply checked. Check phases of motor - insulate and repair. Check the cause as necessary Operate manually if hoist runs then control circuit/coil is faulty-locate fault and repair. If hoist does not run then check main supply. If input supply is correct but there is a faulty output supply then replace the contactor
Hoist will not stop	Welded contacts in contactor	Replace contactor
Brake slips	Abrasion of motor brake	Replace
Hoist runs but can't lift rated load (YSE-Series)	Clutch Slipping	Tighten adjusting nut and reverse $1\frac{1}{8}$ circle
Abnormal sound on load chain/chain sprocket	(1) Chain dry (2) Worn chain sprocket	Lubricate Replace load chain and chain sprocket
Electric shock	(1) Poor earth connection (2) Accumulated foreign matter/moisture on electrical parts	Provide correct earth connection Remove foreign matter/dry electrical parts
Oil leak	(1) No oil plug (2) Oil plug loosen (3) No plug packing (4) Worn or deteriorated oil packing	Attach the normal oil plug Fasten the plug tightly Attach normal packing Attach the new packing

8. Drawings and Parts List

(1) VII-1 MOTOR EXPLOSION & HOUSING DRAWING	30
(2) VII-1 MOTOR ASSEMBLY & HOUSING B.O.M	31
(3) VII-2 HOOK EXPLOSION DRAWING	35
(4) VII-2 HOOK ASSEMBLY B.O.M	36
(5) VII-3 LOAD CHAIN SECTION EXPLOSION DRAWING	38
(6) VII-3 LOAD CHAIN SECTION ASSEMBLY B.O.M	39
(7) VII-4 REDUCING GEARBOX EXPLOSION DRAWING	41
(8) VII-4 REDUCING GEARBOX ASSEMBLY B.O.M	42
(9) VII-5 ELECTRIC EXPLOSION (STANDARD) DRAWING	44
(10) VII-5 ELECTIRC PARTS ASSEMBLY(STANDARD) B.O.M	45
(11) VII-5 ELECTRIC EXPLOSION (USA) DRAWING	47
(12) VII-5 ELECTIRC PARTS ASSEMBLY(USA) B.O.M	48
(13) VII-6 LOW HEADROOM MODEL'S TROLLEY EXPLOSION DRAWING.....	51
(14) VII-6 LOW HEADROON MODEL'S TROLLEY ASSEMBLY B.O.M	52

VII - 1 MOTOR ASSEMBLY & HOUSING



VII – 1 MOTOR ASSEMBLY & HOUSING

D : DUAL SPEED

KEY NO.	PARTS CODE	DESCRIPTION	Q'TY REQ'D EACH UNIT															
			YSE(D)			YSF			YSL(D)				YSH(D)					
			0.5	1	2	1/2	1	2	0.5	1	2	3	0.5	1	2	3		
1	400263	Dust Stopper	1						1				1					
2	400014	Hex. Recess Bolt<M8×30L>	4						4				4					
3	400095	Spring Washer<M8>	17,13D			13			17,13D				17,13D					
4	100431J	Motor End Cover	1						1				1					
	1D			1			1D				1D							
5	405577	Bearing<6204 2RS>	1,1D			1			1,1D				1,1D					
6	100432	Brake Drum	1						1				1					
	100408	Brake Shoe Lining	1D			1			1D				1D					
7	400236	Brake Spring	1						1				1					
	6D			6			6D				6D							
8	100364	End Spacer	1						1				1					
9	100362	Load Brake Gear Spacer	2						2				2					
10	100413	Electro-Magnetic Brake Controller	1						1				1					
	100500	Magnetic Coil Ass'y	1D			1			1D				1D					
11	400235	Spindle Spring	1						1				1					
12	100428	Spring Pad	1						1				1					
13	100320	Motor Rotor	1						1									
									1				1					
				1														
	1D						1D						1D					
											1D							
											1							
	100302	Motor Rotor<110V, 115V>				1												
14	400129	Bearing<6005 ZZ>	1,1D			1			1,1D				1,1D					

VII – 1 MOTOR ASSEMBLY & HOUSING

D : DUAL SPEED

KEY NO.	PARTS CODE	DESCRIPTION	Q'TY REQ'D EACH UNIT															
			YSE(D)			YSF			YSL(D)				YSH(D)					
			0.5	1	2	0.5	1	2	0.5	1	2	3	0.5	1	2	3		
15	A	Motor Stator Ass'y	1						1									
	B			1					1		1							
	C				1													
	D		1D			1D		1D										
16	400013	Hex. Recess Bolt<M8×25L>	2						2					2				
17	402505	Gasket 5#	1,1D			1			1,1D					1,1D				
18	400577	Corrugated Washer<6204>	1,1D						1,1D					1,1D				
19	400012	Hex. Recess Bolt<M8×20L>	3,3D			3			3,3D					3,3D				
20	100460	Flange	1,1D			1			1,1D					1,1D				
21	400082	Hex. Nut<M10×1.5>	4,4D			4			4,4D					4,4D				
22	400096	Spring Washer<M10>	9,9D			9			9,9D					9,9D				
23	265649	Motor Front Plate Ass'y	1,1D			1			1,1D					1,1D				
24	400134	Bearing<6008 ZZ>	1,1D			1			1,1D					1,1D				
25	400265	Rubber Cover	1,1D			1			1,1D					1,1D				
26	408635	Hex. Recess Bolt<M6×14L>	12,12D			12			12,12D					12,12D				
27	400094	Spring Washer<M6>	20,29D			29			20,29D					20,29D				
28	400081	Hex. Nut<M8×1.25>	8,8D			8			8,8D					8,8D				
29	400213	Spring Pin<Ø6×16L>	1,1D			1			1,1D					1,1D				
30	400585	Threaded Stud<M8×16L>	1,1D			1			1,1D					1,1D				
31	402578	Gasket 51#	1D			1			1D					1D				
32	200235	Lock Stud C				1			1,1D					1,1D				
	200238	Lock Stud F	1,1D															
33	200234	Lock Stud B	1,1D			1			1,1D					1,1D				
34	200233	Lock Stud A	1,1D			1			1,1D					1,1D				
35	200236	Lock Stud D	1,1D			1			1,1D					1,1D				

#15Ref. Page34

VII – 1 MOTOR ASSEMBLY & HOUSING

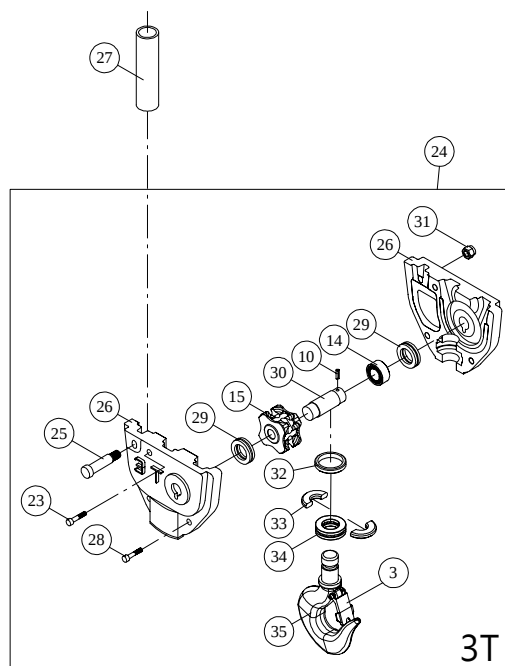
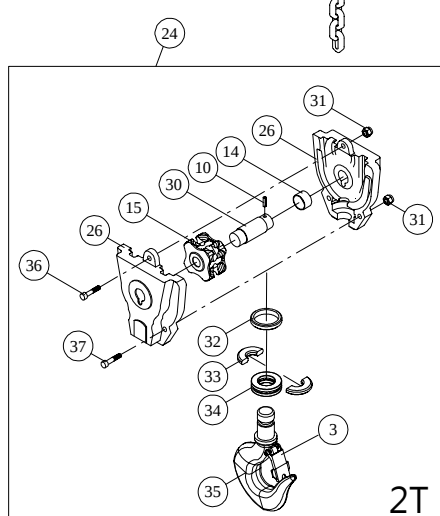
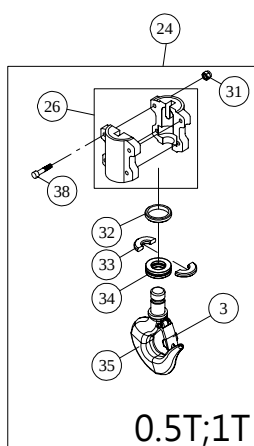
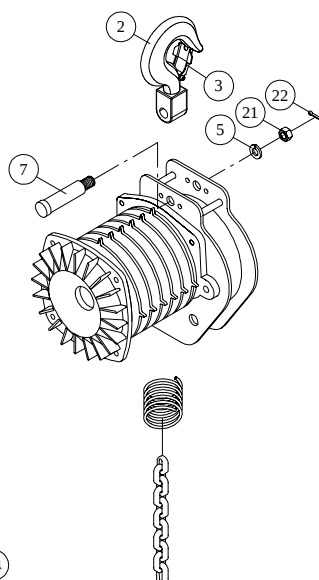
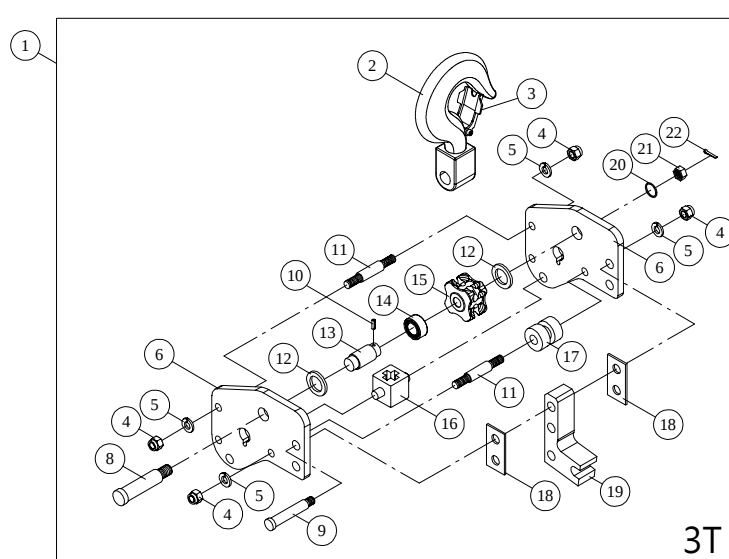
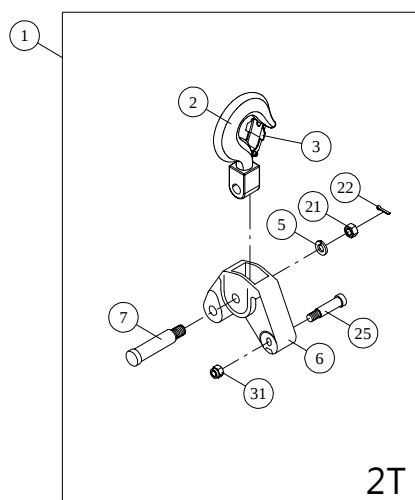
D : DUAL SPEED

KEY NO.	PARTS CODE	DESCRIPTION	Q'TY REQ'D EACH UNIT															
			YSE(D)			YSF			YSL(D)				YSH(D)					
			0.5	1	2	0.5	1	2	0.5	1	2	3	0.5	1	2	3		
36	200237	Lock Stud E	1,1D			2			2,2D				2,2D					
	200239	Lock Stud G	1,1D															
37	200240	Lock Pin				1			1,1D				1,1D					
38	265652	Gearbox Endplate	1,1D			1			1,1D				1,1D					
39	402523	Gasket 23#	1,1D			1			1,1D				1,1D					
40	200043A	Gearbox Casing				1			1,1D									
	1,1D																	
					1			1,1D										
											1,1D							
41	402525	Gasket 25#	1,1D															
	402524	Gasket 24#				1			1,1D				1,1D					
42	300763A	Electric components casing	1,1D			1			1,1D				1,1D					
43	400421	Hex. Recess Bolt<M6×1.0×10>	4,4D			4			4,4D				4,4D					
44		Name Plate	1,1D			1			1,1D				1,1D					
45	400007	Hex. Recess Bolt<M6×20L>	4D			4			4D				4D					
46	400266	Protection Rubber Band	1D			1			1D				1D					
47	400091	Lock Nut<M12×1.75>	1D			1			1D				1D					
48	400009	Hex. Bolt<M6×1.0×35L>	3D			3			3D				3D					
49	107495	Brake Drum Cover	1D			1			1D				1D					
50	100303	Brake Bushing	1D			1			1D				1D					
51	100405	Fixed Brake Plate	1D			1			1D				1D					
52	400963	Key<6×6×15L>				1			1D				1D					
53	400006	Hex. Recess Bolt<M6×16L>	6D			6			6D				6D					
54	300801	Cable Fixing Plate	2D			2			2D				2D					

VII – 1 MOTOR ASSEMBLY & HOUSING

KEY NO.	PARTS CODE		DESCRIPTION	Ø - HZ- V	
15	A	132551	Motor Stator Ass'y<1.5kW × 4P>	3Ø 60HZ	220 / 380V
		132552			220 / 440V
		132553			230 / 460V
		132557			480V
		132555			600V
		132561		3Ø 50HZ	220 / 380V
		132562			400V
		132563			415V
	B	132581	Motor Stator Ass'y<1.8kW × 4P>	3Ø 60HZ	220 / 380V
		132583			220 / 440V
		132584			230 / 460V
		132586			600V
		132591		3Ø 50HZ	220 / 380V
		132593			400V
		132592			415V
	C	132623	Motor Stator Ass'y<1.8kW × 4P>	1Ø 60HZ	115V
		132621			220V
		132622			230V
		132626		1Ø 50HZ	110V
		132627			220V
		132628			230V
	D	132651	Motor Stator Ass'y<1.8kW × 4/12P>	3Ø 60HZ	220V
		132661			230V
		132652			380V
		132655			440V
		132653			460V
		132654			600V
		132656		3Ø 50HZ	220V
		132657			380V
		132658			415V

VII-2 HOOK EXPLOSION



VII – 2 HOOK ASSEMBLY

D : DUAL SPEED

KEY NO.	PARTS CODE	DESCRIPTION	Q'TY REQ'D EACH UNIT			
			YSE(D),YSF(D) YSL(D),YSH(D)			YSL(D) YSH(D)
			0.5	1	2	3
1	200049	Top Hook Frame Ass'y			1	
	200048					1
2	209341	Top Hook Ass'y	1			
	209342			1		
	209343				1	
	209345					1
3	400487	Safety Latch Ass'y	2	2		
	400488				2	
	400489					2
4	400091	Lock Nut<M12×1.75>				8
5	400097	Spring Washer<M12>	1	1	2	9
6	200154	Hook Bracket			1	
	200726	Hook Bracket Disc Plate				2
7	200093	Lock Bolt	1	1	2	
8	200094	Lock Bolt				1
9	200169	Beam Connector Pin				2
10	400212	Spring Pin<Ø5×16L>			1	2
11	200147	Stay Bolt				3
12	200633	Sprocket Spacer Ring				2
13	200115	Sprocket Axle				1
14	400171	Needle Bearing<HK 25/26>			1	2
15	200108	Sprocket			1	2
16	200180	Chain Guide				1
17	200190	Chain Pressing Roller				1
18	200173	Beam Connector Pad				2
19	200721	Beam Connector				1
20	400098	Spring Washer<M16>				1
21	400084	Hex. Nut<M12×1.75>	1	1	2	
	400085	Hex. Nut<M16×1.5>				1
22	400603	Cotter Pin<3/32" ×1"L>	1	1	2	2
23	400015	Hex. Recess Bolt<M8×1.25×40L>				1

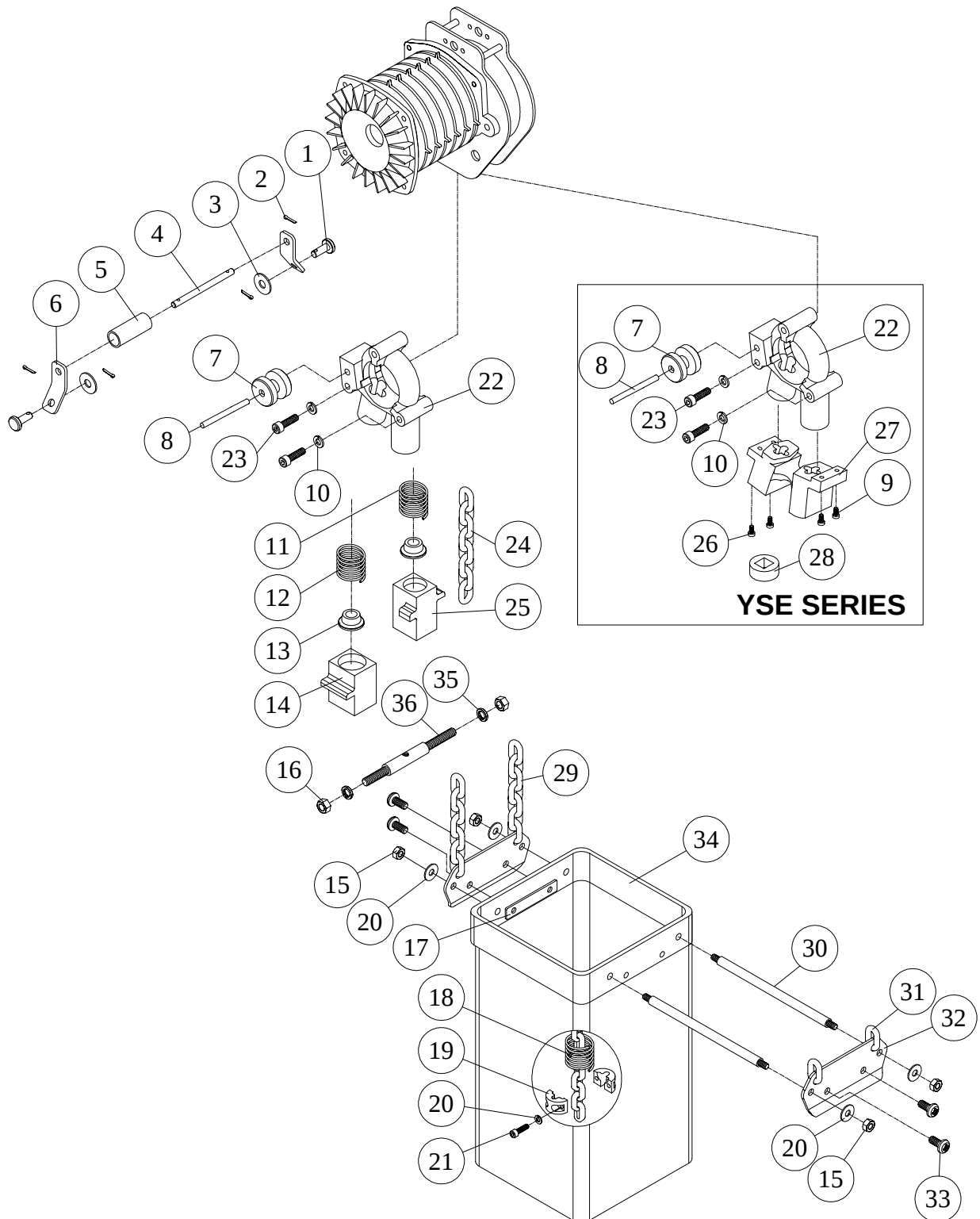
VII – 2 HOOK ASSEMBLY

D : DUAL SPEED

KEY NO.	PARTS CODE	DESCRIPTION	Q'TY REQ'D EACH UNIT			
			YSE(D),YSF(D) YSL(D),YSH(D)			YSL(D) YSH(D)
			0.5	1	2	3
24	200028	Bottom Hook Housing Ass'y	1			
	200021			1		
	200022				1	
	200023					1
25	200176	Chain Connecting Pin			1	1
26	200096	Bottom Hook Housing	1	1		
	200097	Bottom Hook Housing			2	
	200098	Bottom Hook Housing A				1
	206726	Bottom Hook Housing B				1
27	200351	Limit Tube				1
28	400017	Hex. Recess Bolt<M8×1.25×35L>				2
29	400176	Needle Bearing<AXK/2AS 2542>				2
30	200114	Sprocket Axle			1	
	200123					1
31	400087	Lock Nut<M6×1>	4	4		
	400088	Lock Nut<M8×1.25>			4	4
32	200131	End Spacer	1	1		
	200132				1	
	200133					1
33	200127	Load Brake Gear Spacer	2	2		
	200128				2	
	200129					2
34	400157	Thrust Bearing<2904>	1	1		
	400158	Thrust Bearing<2905>			1	
	400159	Thrust Bearing<51106>				1
35	209351	Bottom Hook Ass'y	1			
	209352			1		
	209353				1	
	209355					1
36	400014	Hex. Recess Bolt<M8×1.25×30L>			1	
37	400426	Hex. Recess Bolt<M8×1.25×45L>			2	
38	400008	Hex. Recess Bolt<M6×1.0×25L>	4	4		

#26.Bottom Hook Housing (Both Left & Right should be replaced at one time)

VII-3 LOAD CHAIN EXPLOSION



VII – 3 LOAD CHAIN SECTION

D : DUAL SPEED

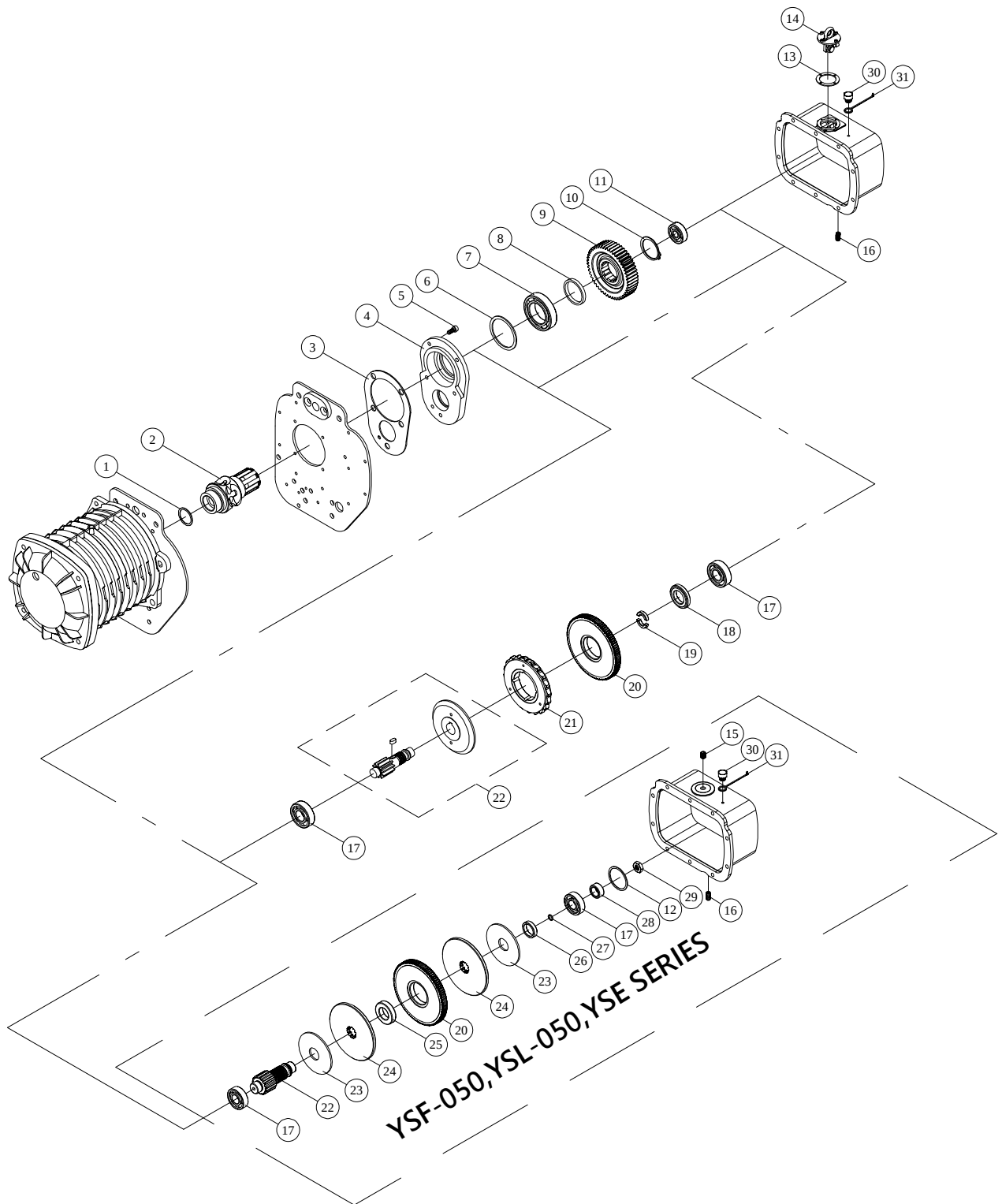
KEY NO.	PARTS CODE	DESCRIPTION	Q'TY REQ'D EACH UNIT													
			YSE(D)			YSF			YSL(D)				YSH(D)			
			0.5	1	2	0.5	1	2	0.5	1	2	3	0.5	1	2	3
1	200230	Pin	2			2			2				2			
2	400603	Cotter Pin<3/32"×1"L>	6			6			6				6			
3	400862	Flat Washer <M8>	2			2			2				2			
4	200231	Lock Pin	1			1			1				1			
5	200232	Retaining Tube	1			1			1				1			
6	200229	Bucket Retaining Pad	2			2			2				2			
7	200159	Chain Compressing Wheel	1			1			1				1			
8	400281	Compressing Wheel Axle	1			1			1				1			
9	400008	Hex. Recess Bolt<M6×1.0×25L>	2													
10	400095	Spring Washer<M8>	3			3			3				3			
11	400228	Guide Spring A				1			1				1			
12	400229	Guide Spring B				1			1				1			
13	200183	Bushing				2			2				2			
14	200205	Guide Tube B				1			1				1			
15	400080	Nut<M6×1.0>	4			4			4				4			
16	400081	Nut<M8×1.25>	2			2			2				2			
17	200226	Bucket Inner Plate	2			2			2				2			
18	400232	Limit Spring C				2			2				2			
	400231	Limit Spring B				1			1				1			
19	200200	Chain Stopper	2		4	2		4	2		4	2		4		
20	400094	Spring Washer<M6>	6		8	6		8	6		8	6		8		
21	400007	Hex. Recess Bolt<M6×1.0×20L>	2		4	2		4	2		4	2		4		

VII – 3 LOAD CHAIN SECTION

D : DUAL SPEED

KEY NO.	PARTS CODE	DESCRIPTION	Q'TY REQ'D EACH UNIT												
			YSE(D)			YSF			YSL(D)				YSH(D)		
			0.5	1	2	0.5	1	2	0.5	1	2	3	0.5	1	2
22	200158	Regulator				1			1				1		
	200157		1												
23	400012	Hex. Recess Bolt<M8×1.25×20L>	3			3			3				3		
24	400542	Load Chain	1			1			1				1		
25	200204	Guide Tube A				1			1				1		
26	400007	Hex. Recess Bolt<M6×1.0×20L>	2												
27	200206	Guide Tube Ass'y	1												
28	200310	Limit Stopper	1	3											
29	400565	Bucket Chain	2			2			2				2		
30	200228	Holding Stud	2			2			2				2		
31	400564	Bucket Chain	2			2			2				2		
32	200227	Bucket Side Plate	2			2			2				2		
33	400055	Cross Headed Screw<M6×1.0×12L>	4			4			4				4		
34		Chain Bucket Ass'y	1			1			1				1		
35	400095	Spring Washer<M8>				2			2				2		
36	200235	Lock Stud C				1			1				1		

VII-4 REDUCING GEARBOX EXPLOSION



VII – 4 REDUCING GEARBOX

D : DUAL SPEED

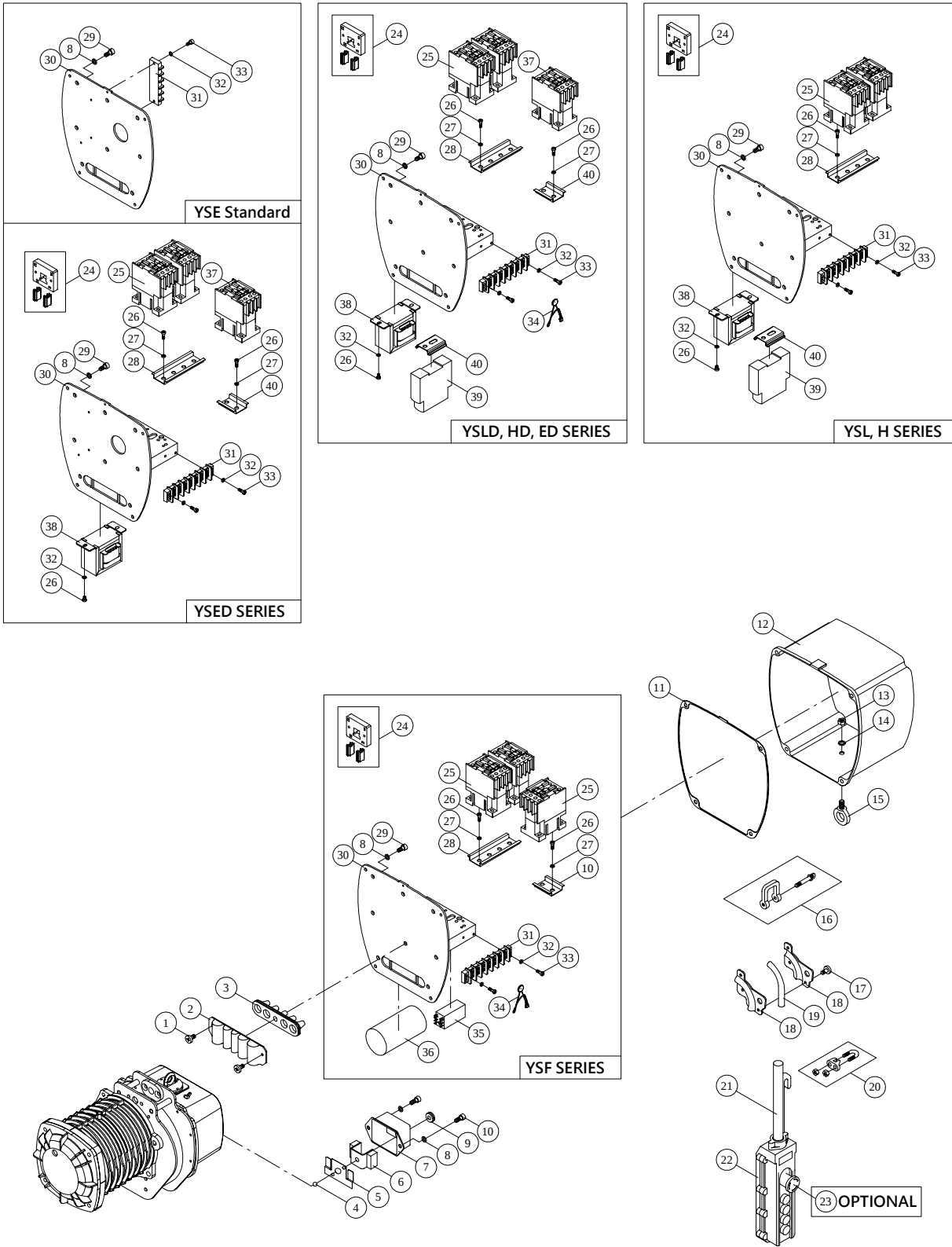
KEY NO.	PARTS CODE	DESCRIPTION	Q'TY REQ'D EACH UNIT														
			YSE(D)			YSF			YSL(D)				YSH(D)				
			0.5	1	2	0.5	1	2	0.5	1	2	3	0.5	1	2	3	
1	404487	Oil Seal <Ø17×Ø28×6t>	1			1			1					1			
	400180	Oil Seal <Ø18×Ø28×8t>											1				
2	200196	Load Sheave	1			1			1					1			
	200197												1				
3	402503	Gasket 3#	1			1			1				1				
4	200210	Flange											1				
	200211		1			1			1								
5	408635	Hex. Recess Bolt<M6×1.0×14L>	5			5			5				5				
6	400184	Oil Seal <Ø42×Ø55×9t>	1			1			1				1				
7	400133	Bearing<6008>	1			1			1				1				
8	200628	Load Brake Gear Spacer	1			1			1				1				
9	200263	Load Brake Gear<4th Gear>	1			1			1					1			
	200264			1			1			1							
	200298												1				
10	400195	Retaining Ring<S-40>	1			1			1				1				
11	400128	Bearing<6301>	1			1			1				1				
12	400182	Oil Seal <Ø25×Ø40×6t>	1														
13	402504	Gasket 4#					1			1			1				
14	208291	Ratchet Pawl Bracket Ass'y					1			1			1				
15	400208	Oil Plug<3/8"PT>	1			1			1								
16	400207	Oil Plug<1/8"PT>	1			1			1				1				
17	407732	Bearing<6203>	2			2			2								
	407734	Bearing<6204>											2				
18	200275	End Spacer					1			1							
	200276												1				
19	200271	Load Brake Gear Spacer				1			1								
	200272						2			2							
	200273												2				

VII – 4 REDUCING GEARBOX

D : DUAL SPEED

KEY NO.	PARTS CODE	DESCRIPTION	Q'TY REQ'D EACH UNIT															
			YSE(D)			YSF			YSL(D)				YSH(D)					
			0.5	1	2	0.5	1	2	0.5	1	2	3	0.5	1	2	3		
20	200363	Intermediate Gear <2nd.Gear><110V, 115V>				1												
	200594						1											
	200248	Intermediate Gear <2nd.Gear>				1				1								
	200593						1				1							
	200591												1					
	200251		1															
	200592													1				
21	200581	Ratchet Wheel					1				1	1						
22	200620	Load Brake Gear Shaft Ass'y <3rd Gear>					1				1							
	200256			1														
	200257		1															
	200619													1				
	200259					1				1								
	200618												1					
23	200291	Cone Spring Washer	2															
24	200290	Sliding Brake Disc	2															
25	200270	Bushing	1															
26	200630	Spacer	1															
27	400226	O-Ring<Ø12×Ø17×2.5t>	1															
28	200289	Oil Seal Bushing	1															
29	400090	Lock Nut<M12×1.25>	1															
30	200926	Hexagon Oil Plug<M12×1.25×16.5L>	1			1			1				1					
31	200927	Air Plug	1			1			1				1					

VII-5 ELECTRIC EXPLOSION(Standard)



VII – 5 ELECTRIC PARTS(Standard)

D : DUAL SPEED

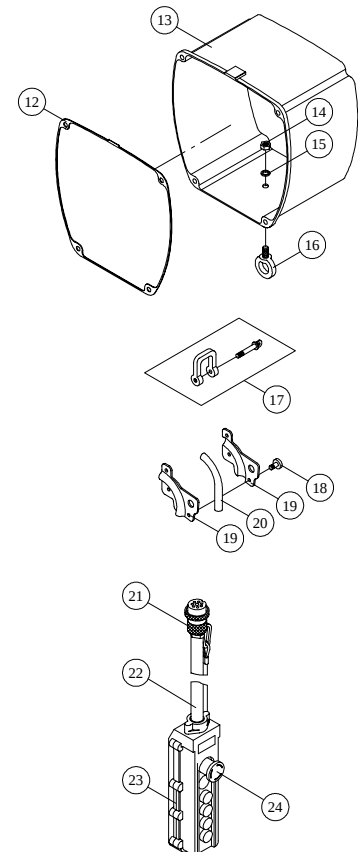
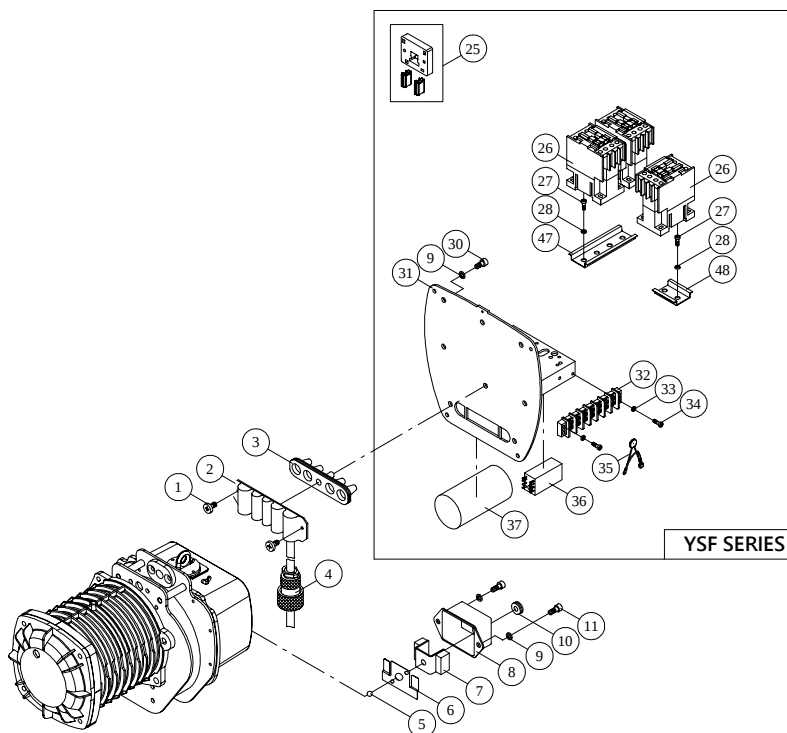
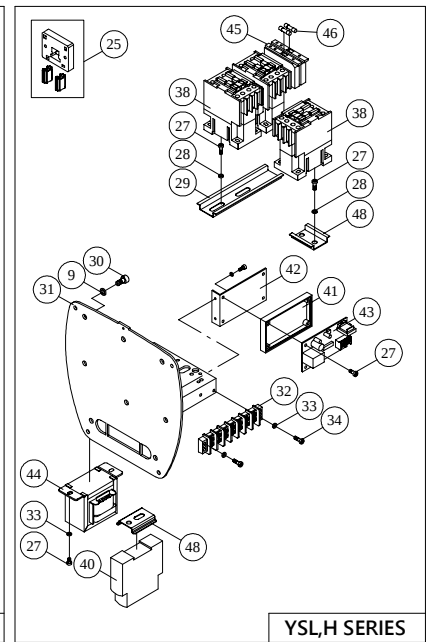
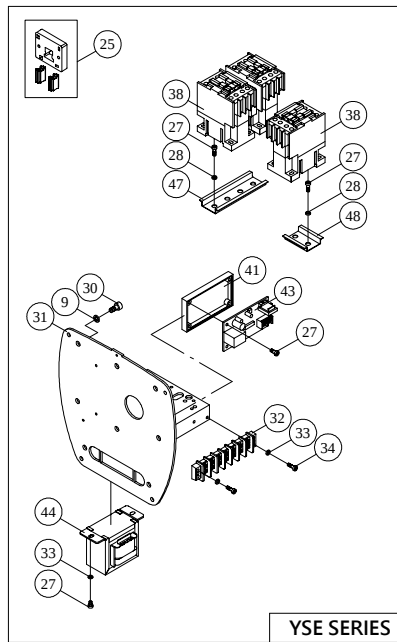
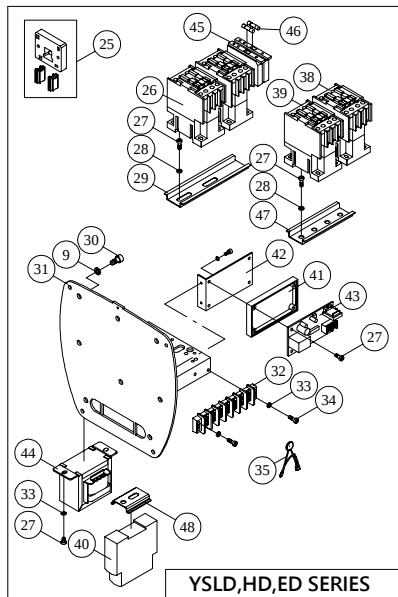
KEY NO.	PARTS CODE	DESCRIPTION	Q'TY REQ'D EACH UNIT															
			YSE(D)			YSF			YSL(D)				YSH(D)					
			380V/24V			50HZ 220V			380V/24V				380/24V					
			1/2	1	2	1/2	1	2	1/2	1	2	3	1/2	1	2	3		
1	400053	Cross Headed Screw<M5×0.8×12L>	2,2D			2			2,2D				2,2D					
2	300341	Wire Holder	1,1D			1			1,1D				1,1D					
3	400268	Wire Holder Rubber Cap	1,1D			1			1,1D				1,1D					
4	400276	Carbon Steel Ball				2			2,2D				2,2D					
5	200213	Leaf Spring				1			1				1					
6	302602	Limit Switch Ass'y				1			1,1D				1,1D					
7	300352	Limit Switch Cover				1			1,1D				1,1D					
8	400094	Spring Washer<M6>	6,6D			8			8,8D				8,8D					
9	400269	Rubber Cap				1			1,1D				1,1D					
10	400004	Hex. Recess Bolt<M6x1.0x8L>				2			2,2D				2,2D					
11	402526	Gasket 26#	1,1D			1			1,1D				1,1D					
12	300763	Electric Components Casing	1,1D			1			1,1D				1,1D					
13	400081	Hex. Nut<M8×1.25>	1,1D			1			1,1D				1,1D					
14	400095	Spring Washer<M8>	1,1D			1			1,1D				1,1D					
15	400217	Eye Bolt	1,1D			1			1,1D				1,1D					
16	400275	Shackle	1,1D			1			1,1D				1,1D					
17	400055	Cross Headed Screw<M6×1.0×12L>	3,3D			3			3,3D				3,3D					
18	300344	Power Cable Holder<Left>	1,1D			1			1,1D				1,1D					
	300345	Power Cable Holder<Right>	1,1D			1			1,1D				1,1D					
19	301253	Power Cable	3M			3M			3M				3M					
20	400297	Wire Clip<3/16">	1,1D			1			1,1D				1,1D					
21	301208	Pendant Cable With Wire Rope“Built In”	1D						1D				1D					
	301207	Pendant Cable With Wire Rope“Built In”	1			1			1				1					
22		Push Button Switch<Direct>	1															
		Push Button Switch<Indirect>				1			1				1					
		Push Button Switch<Dual speed>	1D						1D				1D					

VII – 5 ELECTRIC PARTS(Standard)

D : DUAL SPEED

KEY NO.	PARTS CODE	DESCRIPTION	Q'TY REQ'D EACH UNIT															
			YSE(D)			YSF			YSL(D)				YSH(D)					
			380V/24V			50HZ 220V			380V/24V				380/24V					
			1/2	1	2	1/2	1	2	1/2	1	2	3	1/2	1	2	3		
23	300576	Emergency Stop	1			1			1				1					
24	300800	Mechanical Interlock	1,1D			1			1, 1D				1,1D					
25	301101	Magnetic Contactor<3A1a1b>	2,2D						2,2D				2,2D					
	301113					3												
26	400048	Cross Headed Screw<M4×0.7×6L>	6,6D			6			6,8D				6,8D					
27	400661	Flat Washer	4D			4			4,4D				4,4D					
28	300079	Contactor Rail	1D			1			1,1D				1,1D					
29	400005	Hex. Recess Bolt<M6×1.0×12L>	6,6D			6			6,6D				6,6D					
30	300359	Components Front late<Standard>	1															
	300358	Components Front Plate				1			1,1D				1,1D					
	300371		1,1D															
31	300228	Terminal Block	2,2D			2			2,2D				2,2D					
32	400092	Spring Washer<M4>	6,8D			4			6,8D				6,8D					
33	400051	Cross Headed Screw<M4×0.7×12L>	2,6D			4			4,6D				4,6D					
34	300143	Rectifier Ass'y	1D			1			1D				1D					
35	300211	Timer For Motor Staring				1												
36	300087	Capacitor				1												
37	300035	Magnetic Contactor<2A2B>	1D						1D				1D					
38	301003	Transformer	1,1D						1,1D				1,1D					
39	302376	Negative Phase Protector							1,1D				1,1D					
40	300078	Contactor Rail	1D			1			1,2D				1,2D					

VII-5-1 ELECTRIC EXPLOSION(USA)



VII – 5– 1 ELECTRIC PARTS(USA)

D : DUAL SPEED

KEY NO.	PARTS CODE	DESCRIPTION	Q'TY REQ'D EACH UNIT															
			YSE(D)			YSF			YSL(D)				YSH(D)					
			460V 110V			60HZ 115V			460V 110V				460V 110V					
			1/2	1	2	1/2	1	2	1/2	1	2	3	1/2	1	2	3		
1	400053	Cross Headed Screw<M5×0.8×12L>	2,2D			2			2,2D				2,2D					
2	300341	Wire Holder	1,1D			1			1,1D				1,1D					
3	400268	Wire Holder Rubber Cap	1,1D			1			1,1D				1,1D					
4	300612	Female Receptacle	1			1			1				1					
	300614		1D						1D				1D					
5	400276	Carbon Steel Ball				2			2,2D				2,2D					
6	200213	Leaf Spring				1			1				1					
7	302602	Limit Switch Ass'y				1			1,1D				1,1D					
8	300352	Limit Switch Cover				1			1,1D				1,1D					
9	400094	Spring Washer<M6>	6,6D			8			8,8D				8,8D					
10	400269	Rubber Cap				1			1,1D				1,1D					
11	400004	Hex. Recess Bolt<M6×1.0×8L>				2			2,2D				2,2D					
12	402526	Gasket 26#	1,1D			1			1,1D				1,1D					
13	300763	Electric components casing	1,1D			1			1,1D				1,1D					
14	400081	Hex. Nut<M8×1.25>	1,1D			1			1,1D				1,1D					
15	400095	Spring Washer<M8>	1,1D			1			1,1D				1,1D					
16	400217	Eye Bolt	1,1D			1			1,1D				1,1D					
17	400275	Shackle	1,1D			1			1,1D				1,1D					
18	400055	Cross Headed Screw<M6×1.0×12L>	3,3D			3			3,3D				3,3D					
19	300344	Power Cable Holder<Left>	1,1D			1			1,1D				1,1D					
	300345	Power Cable Holder<Right>	1,1D			1			1,1D				1,1D					
20	301253	Power Cable	3M			3M			3M				3M					

VII – 5– 1 ELECTRIC PARTS(USA)

D : DUAL SPEED

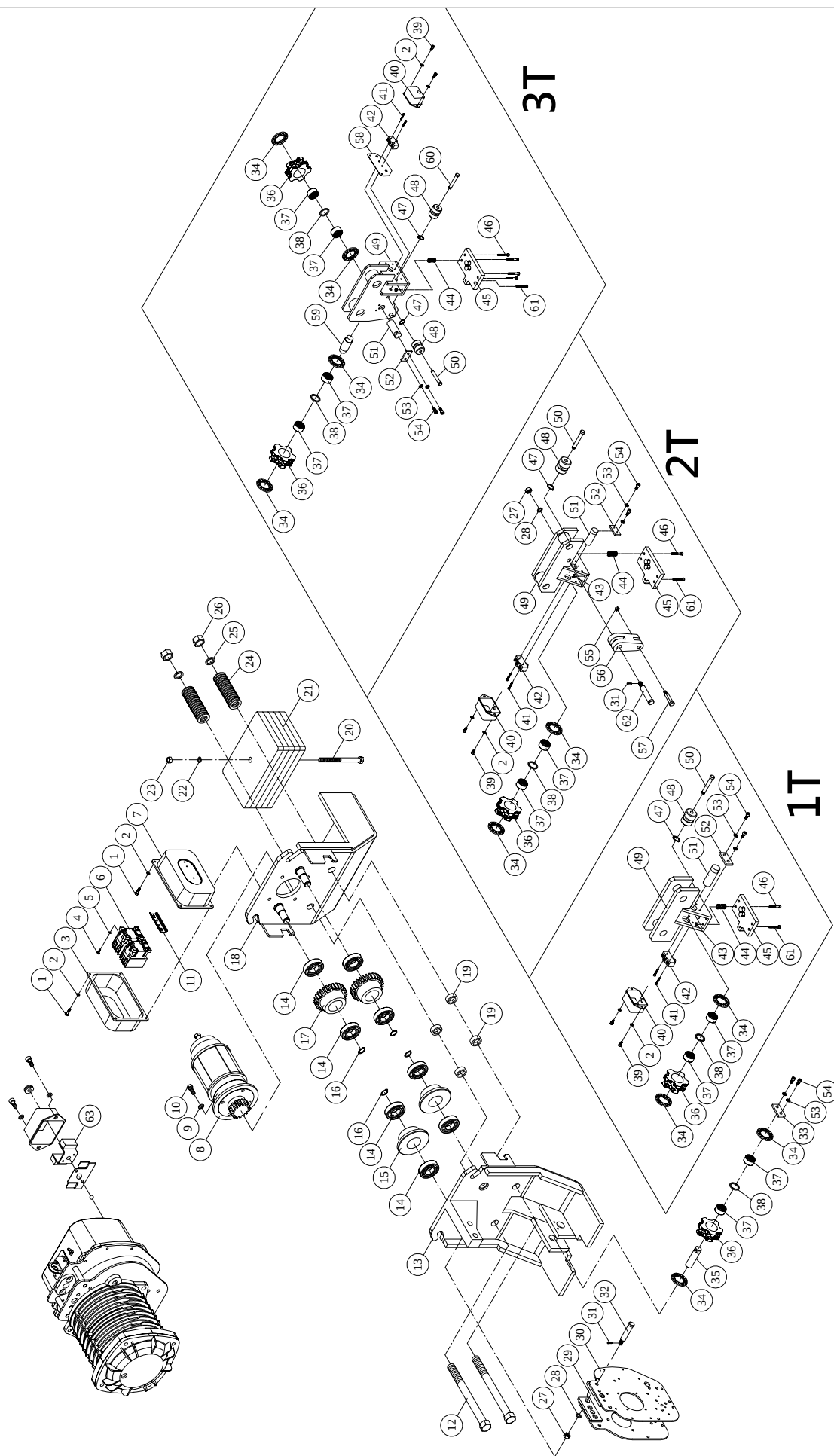
KEY NO.	PARTS CODE	DESCRIPTION	Q'TY REQ'D EACH UNIT															
			YSE(D)			YSF			YSL(D)				YSH(D)					
			460V 110V			60HZ 115V			460V 110V				460V 110V					
			1/2	1	2	1/2	1	2	1/2	1	2	3	1/2	1	2	3		
21	300611	Male Receptacle	1			1			1				1					
	300616		1D						1D				1D					
22	301208	Pendant Cable With Wire Rope“Built In”	1			1			1				1					
	301209	Pendant Cable With Wire Rope“Built In”	1D						1D				1D					
23		Push Button Switch<Direct>	1															
		Push Button Switch<Indirect>				1			1				1					
		Push Button Switch<Dual speed>	1D						1D				1D					
24	300576	Emergency Stop	1			1			1				1					
25	300800	Mechanical Interlock	1			1			1				1					
26	301173	Magnetic Contactor<110V 4A>	1D						1D				1D					
	301108					3												
27	400048	Cross Headed Screw<M4×0.7×6L>	10,12D			8			10,12D				10,12D					
28	400661	Flat Washer	4D			4			4,4D				4,4D					
29	300092	Contactor Rail							1,1D				1,1D					
30	400005	Hex. Recess Bolt<M6×1.0×12L>	6,6D			6			6,6D				6,6D					
31	300358	Components Front Plate				1			1,1D				1,1D					
	300371		1,1D															
32	300228	Terminal Block	2,2D			2			2,2D				2,2D					
33	400092	Spring Washer<M4>	6,8D			4			6,8D				6,8D					
34	400051	Cross Headed Screw<M4×0.7×12L>	2,6D			4			4,6D				4,6D					
35	300143	Rectifier Ass'y	1D			1			1D				1D					
36	300210	Timer For Motor Staring				1												
37	300087	Capacitor				1												

VII – 5– 1 ELECTRIC PARTS(USA)

D : DUAL SPEED

KEY NO.	PARTS CODE	DESCRIPTION	Q'TY REQ'D EACH UNIT															
			YSE(D)			YSF			YSL(D)				YSH(D)					
			460V 110V			60HZ 115V			460V 110V				460V 110V					
			1/2	1	2	1/2	1	2	1/2	1	2	3	1/2	1	2	3		
38	301171	Magnetic Contactor<3A1b>	1D						1D				1D					
	301103	Magnetic Contactor<3A1a1b>	3						3				3					
39	301172	Magnetic Contactor<2A2B>	1D						1D				1D					
40	302376	Negative Phase Protector							1,1D				1,1D					
41	300363	N.P.P/E.O Box	1,1D						1,1D				1,1D					
42	300340	N.P.P Holding Plate	1,1D						1,1D				1,1D					
43	300726	Electric Overload<E.O>	1,1D						1,1D				1,1D					
44	301058	Transformer	1,1D						1,1D				1,1D					
45	300995	Fuse Holder							2,2D				2,2D					
46	300993	Fuse							2,2D				2,2D					
47	300079	Contactor Rail	1			1			1D				1D					
48	300078	Contactor Rail	1			1			2,1D				2,1D					

VII-6 LOW HEADROOM MODEL'S TROLLEY EXPLOSION



VII – 6 LOW HEADROOM MODEL'S TROLLEY

D : DUAL SPEED

KEY NO.	PARTS CODE	DESCRIPTION	Q'TY REQ'D EACH UNIT											
			YET(D)				YLT(D)				YHT(D)			
			1/2	1	2	3	1/2	1	2	3	1/2	1	2	3
1	400006	Hex. Recess Bolt<M6×1.0×16L>	6				6				6			
2	400094	Spring Washer<M6>	12				12				12			
3	300394	Electric Components Casing Cover	1				1				1			
4	400048	Cross Headed Screw<M4×0.7×6L>	3				3				3			
5	400661	Flat Washer<M4>	2				2				2			
6		Magnetic Contactor	2				2				2			
7	300782	Electric Components Casing	1				1				1			
	300415		1D				1D				1D			
8		Reducing Gear Motor For Trolley	1				1				1			
9	400096	Spring Washer<M10>	4				4				4			
10	400046	Hex. Headed Bolt<M10×1.5×25L>	4				4				4			
11	300079	Contactor Rail(2PC)	1				1				1			
12	400491	Hex. Headed Bolt<7/8"×9UNC×10"L>	2	2			2	2			2	2		
	400498	Hex. Headed Bolt<1"×8UNC×12"L>			2				2				2	
	400493	Hex. Headed Bolt<11/4"×7UNC×13"L>				2				2				2
13	202898	Hoist Mounting Side Plate	1	1			1	1			1	1		
	202899				1				1				1	
	202764					1				1				1
14	407835	Bearing<6204Z>	8	8			8	8			8	8		
	407830	Bearing<6205 Z>			8				8				8	
	407824	Bearing<6206 Z>				8				8				8
15	203131	Idler Wheel	2	2			2	2			2	2		
	203132				2				2				2	
	203133					2				2				2
16	400191	Retaining Ring<S-20>	4	4			4	4			4	4		
	400192	Retaining Ring<S-25>			4				4				4	
	400193	Retaining Ring<S-30>				4				4				4
17	203111	Drive Wheel	2	2			2	2			2	2		
	203112				2				2				2	
	203113					2				2				2

VII – 6 LOW HEADROOM MODEL'S TROLLEY

D : DUAL SPEED

KEY NO.	PARTS CODE	DESCRIPTION	Q'TY REQ'D EACH UNIT											
			YET(D)				YLT(D)				YHT(D)			
			1/2	1	2	3	1/2	1	2	3	1/2	1	2	3
18	202861	Trolley Motor End Side Plate	1	1			1	1			1	1		
	202862				1				1				1	
	202765					1				1				1
19	205591	Spacer Tube	4	4			4	4			4	4		
	205592				4				4				4	
	205594					4				4				4
20	408584	Hex. Bolt<M12×1.75×170L>	1				1				1			
21	207402	Counter Weight Block	5				5				5			
22	400663	Flat Washer<M12>	4				4				4			
23	400091	Lock Nut<M12×1.75>	1				1				1			
24	203221	Spacer Washer	32	32			32	32			32	32		
	203222				32				32				32	
	203223					32				32				32
25	400102	Spring Washer<7/8">	4	4			4	4			4	4		
	400103	Spring Washer<1">			2				2				2	
	400105	Spring Washer<11/4">				2				2				2
26	400070	Hex. Nut<1/8"×9UNC>	2	2			2	2			2	2		
	400071	Hex. Nut<1"×8UNC>			2				2				2	
	400072	Hex. Nut<11/4"×7UNC>				2				2				2
27	400084	Hex. Nut<M12×1.75>	2	2	3	2	2	2	3	2	2	2	3	2
28	400097	Spring Washer<M12>	2	2	3	2	2	2	3	2	2	2	3	2
29	100382	Motor Front Plate	1				1				1			
30	200042	Gear Box End Plate	1				1				1			
31	400603	Cotter Pin<3/32"×1"L>	2	2	3	2	2	2	3	2	2	2	3	2
32	202857	Lock Pin	2	2	2	2	2	2	2	2	2	2	2	2
33	200636	Stopper Plate	1				1				1			
34	400176	Needle Bearing<AXK/2AS 2542>	4	4	4	6	4	4	4	6	4	4	4	6
35	217355	Sprocket Axle B	1				1				1			
36	200109	Sprocket	2	2	2	3	2	2	2	3	2	2	2	3

VII – 6 LOW HEADROOM MODEL'S TROLLEY

D : DUAL SPEED

KEY NO.	PARTS CODE	DESCRIPTION	Q'TY REQ'D EACH UNIT											
			YET(D)				YLT(D)				YHT(D)			
			1/2	1	2	3	1/2	1	2	3	1/2	1	2	3
37	400170	Needle Bearing<NK 25/16>	4	4	4	6	4	4	4	6	4	4	4	6
38	200354	Sprocket Spacer	2	2	2	3	2	2	2	3	2	2	2	3
39	400004	Hex. Recess Bolt<M6×1.0×8L>	-				2				2			
40	300353	Limit Switch Box	-				1				1			
41	400617	Cross Headed Screw <M4×0.7×25L>	-				2				2			
42	300532	Limit Switch<A-20GD-B>	-				1				1			
43	400087	Lock Nut<M6×1.0>	4				4				4			
44	400340	Spring	4				4				4			
45	203030	Limit Plate	1				1				1			
46	400009	Hex. Recess Bolt<M6×1.0×35L>	4				4				4			
47	400188	Retaining Ring<S-10>	1				1				1			
48	200189	Chain Pressing Roller	1	1	1	2	1	1	1	2	1	1	1	2
49	203014	Load Bracket Ass'y	1	1			1	1			1	1		
	203044				1				1				1	
	202766					1				1				1
50	200356	Pressing Roller Axle	1				1				1			
51	200355	Sprocket Axle	1				1				1			
52	200636	Stopper Plate	1				1				1			
53	400095	Spring Washer<M8>	4				4				4			
54	400011	Hex. Recess Bolt<M8×1.25×12L>	4				4				4			
55	400088	Lock Nut<M8×1.25>			1				1				1	
56	200184	Chain Connector			1				1				1	
57	200176	Chain Connecting Pin			1				1				1	
58	200350	Shaft Stopper				1				1				1
59	203307	Sprocket Axle A				1				1				1
60	203308	Pressing Roller Axle A				1				1				1
61	400422	Hex. Recess Bolt<M6×1.0×35L>	1				1				1			
62	217118	Lock Pin			1				1				1	
63	302601	Limit Switch Ass'y	-				1				1			

Oil Quality Table

For Load Chain / All Model						
Model	Lubricate Method	Lubricant Adding		Lubricant Changing		Recommended oils
		Period	Q'ty / c.c.	Period	Q'ty / c.c.	
All Model	Smear oil on load chain surface	Weekly	-	-	-	ISO VG460
For Gear Box						
YSF-050	Soak in oil	Monthly	Suitable	Annual	700 ~ 800	ISO VG460
YSL-050	Soak in oil	Monthly	Suitable	Annual	700 ~ 800	ISO VG460
YSLD-050	Soak in oil	Monthly	Suitable	Annual	700 ~ 800	ISO VG460
YLT-050	Soak in oil	Monthly	Suitable	Annual	700 ~ 800	ISO VG460
YLTD-050	Soak in oil	Monthly	Suitable	Annual	700 ~ 800	ISO VG460
YSE-050, 100, 200	Soak in oil	Monthly	Suitable	Annual	700 ~ 800	ISO VG460
YSL-100, 200, 300	Soak in oil	Monthly	Suitable	Annual	700 ~ 800	ISO VG460
YSLD-100, 200, 300	Soak in oil	Monthly	Suitable	Annual	700 ~ 800	ISO VG460
YLT-100, 200	Soak in oil	Monthly	Suitable	Annual	700 ~ 800	ISO VG460
YLTD-100, 200	Soak in oil	Monthly	Suitable	Annual	700 ~ 800	ISO VG460
YSH-050,100-200,300	Soak in oil	Monthly	Suitable	Annual	700 ~ 800	ISO VG460
YSHD-050, 100, 200,300	Soak in oil	Monthly	Suitable	Annual	700 ~ 800	ISO VG460
YHT-050, 100, 200	Soak in oil	Monthly	Suitable	Annual	700 ~ 800	ISO VG460
YHTD-050, 100, 200	Soak in oil	Monthly	Suitable	Annual	700 ~ 800	ISO VG460
YET-050, 100, 200	Soak in oil	Monthly	Suitable	Annual	700 ~ 800	ISO VG460
YSF-100, 200	Soak in oil	Monthly	Suitable	Annual	700 ~ 800	ISO VG460
YSFD-024, 320	Soak in oil	Monthly	Suitable	Annual	300	ISO VG460
YSS-200, 300, 500, 750, 1000	Soak in oil	Monthly	Suitable	Annual	1400 ~ 1500	ISO VG460
YSSD-200,300, 500, 750, 1000	Soak in oil	Monthly	Suitable	Annual	1400 ~ 1500	ISO VG460