



ELECTRIC CHAIN HOIST



OPERATION MANUAL ***&*** ***PART LIST***

SERIES:

- YSL(D)-050.100.200.300***
- YSH(D)-050.100.200.300***
- YSE(D)-050.100.200***
- YSF-050.100.200***
- YET(D)-050.100.200.300***
- YLT(D)-050.100.200.300***
- YHT(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 "BLACK BEAR" ELECTRIC CHAIN HOIST.



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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,

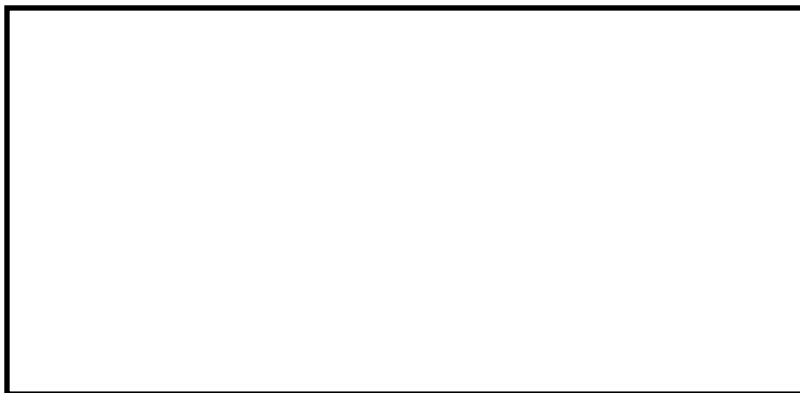
(1) Hoist model

(2) Serial number

(3) Part number, plus the description.

We trust that you will find this “Black Bear” electric chain hoist will give you many years of Satisfactory service.

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 Black Bear 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 40	
Electric power supply		Three Phase, 200~600V, 50/60 Hz	
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 Black Bear dealer for information on using the hoist outside the working temperature or humidity range.
- (2) Intended use : This hoist has been designed for vertically lifting and lowering load under normal atmospheric conditions of work place.
- (3) Noise levels were measured at a distance of 1m horizontally from the hoists during normal operation.

2.2 Mechanical Classification (Grade) and Lift

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

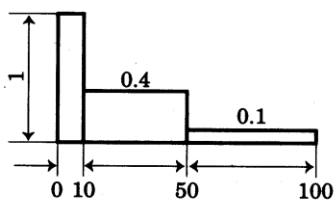
Black Bear electric chain hoists have been designed for grade 2 m except YSF-series 1Dm in the FEM Regulations (FEM 9.511).

Details are provided in Table 2-2.

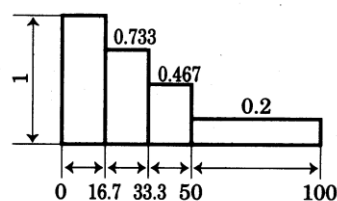
Average daily operating time and total operating time are determined by load distribution.

Table 2-2 Mechanical classification

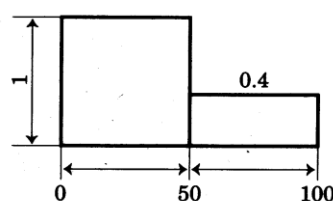
Load Spectrum (Load distribution)	Definitions	Cubic mean value	Average daily Operation time(h)				
1 (light)	Mechanisms or parts thereof, usually subject to very small loads and in exceptional cases only to maximum loads.	$k \leq 0.50$	0.25-0.5	0.5-1	1-2	2-4	4-8
2 (medium)	Mechanisms or parts thereof,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



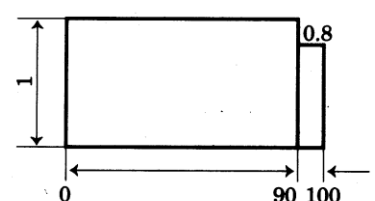
% operating time
Load spectrum 1



% 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.

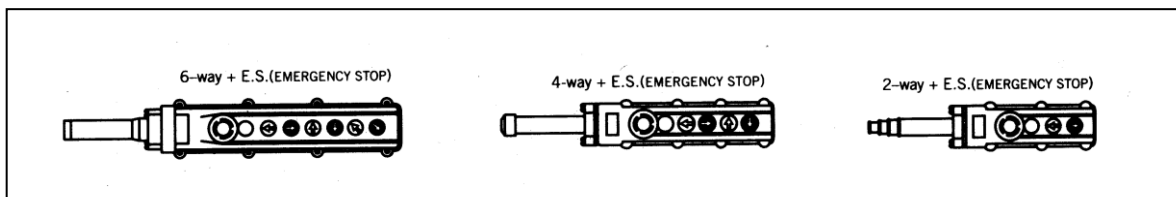
(5) Limit Switches (except YSE series)

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 in the uppermost position on the pendant. When pressed, power to the equipment is switched off and the button locks automatically.

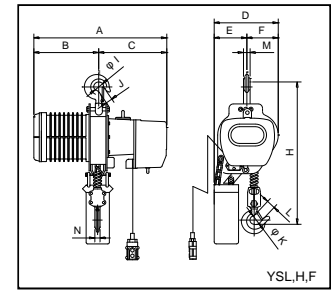
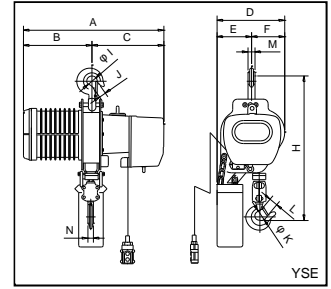
Turning it to the right will release the lock and to enable re-starting. (Illust. 1)



Illust. 1

2.4 Main Specifications and Dimensions of Hook Suspension Type Hoist:

Capacity (ton)		1/2	1	2	1/2	1	2	1/2	1	2	3	
Lift Height(m)		3(6) etc.										
Load Chain (mm)		$\phi 7.1$										
Single Speed (m/min)	50HZ	YSF	5.6	3.9	2	6.7	4.7	2.3	-	-	-	-
		YSL	-	-	-	-	-	-	6.7	4.7	2.3	1.5
		YSH	-	-	-	-	-	-	(9.2)	(6.7)	3.3	2.2
	60HZ	YSE	-	-	-	-	-	-	6.7	4.7	2.3	-
		YSF	6.7	4.7	2.3	8.0	5.6	2.8	-	-	-	-
		YSL	-	-	-	-	-	-	8.0	5.6	2.8	1.8
Dual Speed (m/min)	50HZ	YSLD	-	-	-	-	-	-	(6.7/2.2)	(4.7/1.6)	2.3/0.8	1.5/0.5
		YSHD	-	-	-	-	-	-	(9.2/3.1)	(6.7/2.2)	3.3/1.1	2.2/0.7
	60HZ	YSLD	-	-	-	-	-	-	(8.0/2.7)	(5.6/1.8)	2.8/1.0	1.8/0.6
		YSHD	-	-	-	-	-	-	(11/3.7)	(8/2.7)	4/1.3	2.6/0.9
Motor Power(kw)		1.8					1.5(1.8)			1.8		
Power Supply		Single 110V,115V			Single Phase 220V,230V			3Phase, 200V-600V				
E.D. Rating (%)		15					40					
Load Chain Fall Number		1			2			1		2		3

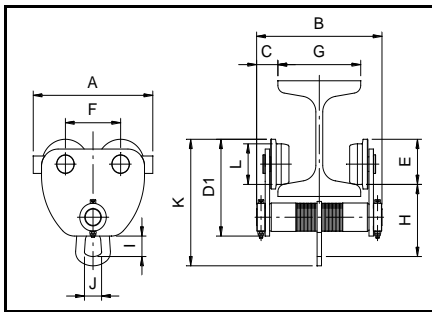


Dimension

Type	Capacity (ton)	H		A				B				C	D	E	F	I	J	K	L	M	N
YSL,H,E,F	1/2(050)	595	E560	505	F548	LD548	HD548	245	F288	LD288	HD288	260	240	115	125	32	30	32	30	22	22
YSL,H,E,F	1,(100)	595	E560	505	F548	LD548	HD548	245	F288	LD288	HD288	260	240	115	125	32	30	32	30	22	22
YSL,H,E,F	2,(200)	745	E710	505	F548	LD548	HD548	245	F288	LD288	HD288	260	240	175	65	40	30	40	30	26.5	26.5
YSL,H	3,(300)	880	-	505	-	LD548	HD548	245	-	LD288	HD288	260	280	175	105	52	45	52	45	35	35

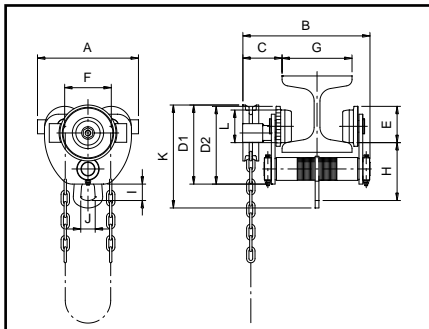
2.5 Optional Trolley Accessory

● Plain Trolley



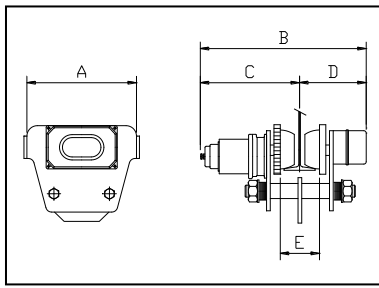
Dimensions (mm) PT													
Model	Capacity (ton)	A	B	C	D1	E	F	Flange Width G	H	I	J	N.W. (kgs)	Min. radius of curve (m)
PT-100	1	217	227	39	167	78	100	75-150	124	35	31	10.6	1
PT-200	2	247	260	43	207	91	116	100-175	171	55	56	16.8	1.3
PT-300	3	270	300	50	239	103	130	100-200	215	79	60	25.8	1.5

● Geared Trolley



Dimensions (mm) GT																
Model	Capacity (ton)	A	B	C	D1	D2	E	F	Flange Width G	H	I	J	K	L	N.W. (kgs)	Min. radius of curve (m)
GT-100	1	217	273	85	170	167	78	100	75-150	124	35	31	221	70	13.5	1
GT-200	2	247	309	92	224	207	91	116	100-175	171	55	56	301	80	19.8	1.3
GT-300	3	270	346	96	241	239	103	130	100-200	215	79	60	355	90	30.3	1.5

● Monorail Motorized Trolley

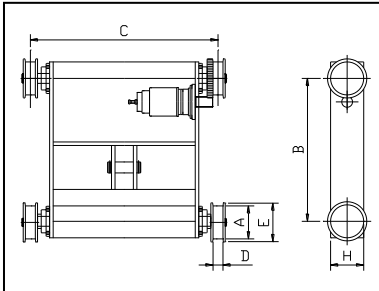


Dimensions / Specifications (mm)											
Capacity (ton)	Model	A	B	C	D	Flange width E	Speed (m/min)		Motor (kw)	N.W. (kgs)	Min. Radius of curve (m)
							50HZ	60HZ			
1	MT-100	295	541	345	196	75-125	20	24, 16	0.25, 0.17 4, 6P	40	1.3
	MTD-100						20/7	24/8			
2	MT-200	323	567	358	209	100-150	20	24, 16	0.25, 0.17 4, 6P	45	1.5
	MTD-200						20/7	24/8			
3	MT-300	359	662	417	245	125-175	20	24, 16	0.6, 0.4 4, 6P	65	1.8
	MTD-300						20/7	24/8			

MT-100~300 50HZ uses 4P motor
60HZ uses 4, 6P motor

(Please specify as ordering 6P motor.)

● Motor Saddle Trolley



Dimensions / Specifications (mm)												
Capacity (ton)	Model	Speed (m/min)		A	B	C	D	E	H	Motor (kw)	Pole (P)	N.W. (kgs)
		50HZ	60HZ									
1	MST-100	20	19	120	580	700	40	147	136	0.25	4	95
	MSTD-100	20/6.7	19/6.3									
2	MST-200	20	19	120	580	700	40	147	136	0.25	4	95
	MSTD-200	20/6.7	19/6.3									
3	MST-300	18	22	150	650	850	45	178	164	0.6	6	182
	MSTD-300	18/9	22/11									

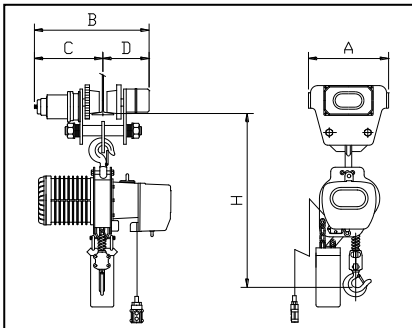
MST-200 - 50HZ with pinion M3.5×15T

- 60HZ with pinion M3.5×12T

MST-300 - 50Hz/60Hz with pinion M3.5×20T

2.5.1

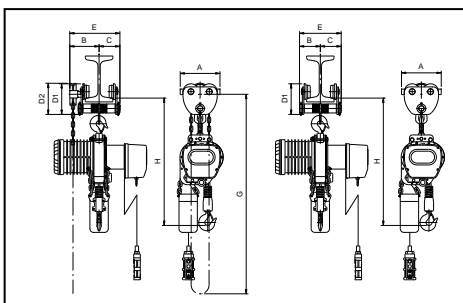
● Specification of hoist with motorized trolley



Dimensions/Specifications (mm)									
Type	Model	Capacity (ton)	H	A	B	C	D	Adjustable Span(mm)	Min Radius of Curve(m)
YSL,H, YSE	MT-050	1/2	705	295	541	345	196	75-125	1.3
	MT-100	1	705	295	541	345	196	75-125	1.3
	MT-200	2	935	323	567	358	209	100-150	1.5
YSL,H	MT-300	3	1030	359	662	417	245	125-175	1.8


2.5.2

● Specification of hoist with motorized trolley



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

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.

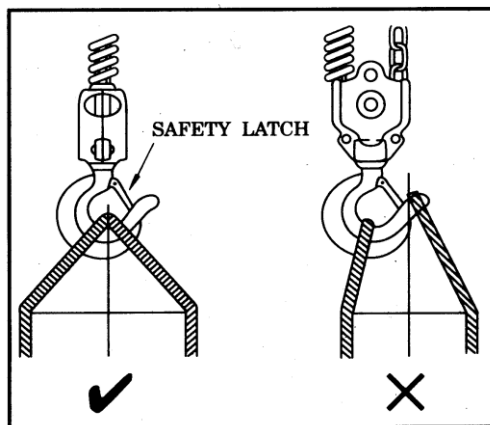
(1) Only the trained personnel are allowed to operate the hoist.

(2)  **DANGER**

Do not use the hoist in explosive atmosphere.

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

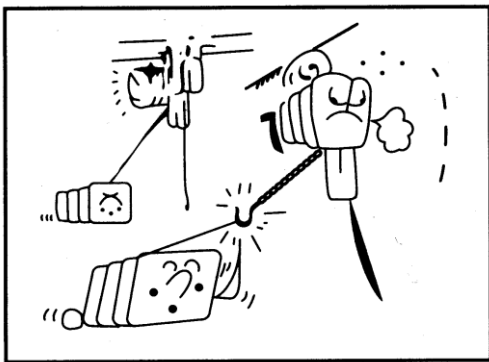
- (a) the correct lifting sling is being used.
- (b) the lifting sling is located in the hook as shown below (Illust. 2) and that a safety latch has been fitted.



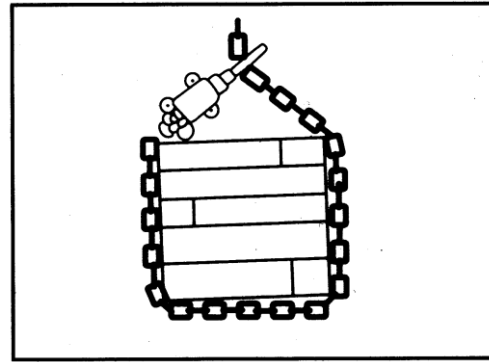
Illust. 2

- (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 pendant button switch cable and bottom hook load chain vertically static after completion of operation, never leave them at any position, which may allow them 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

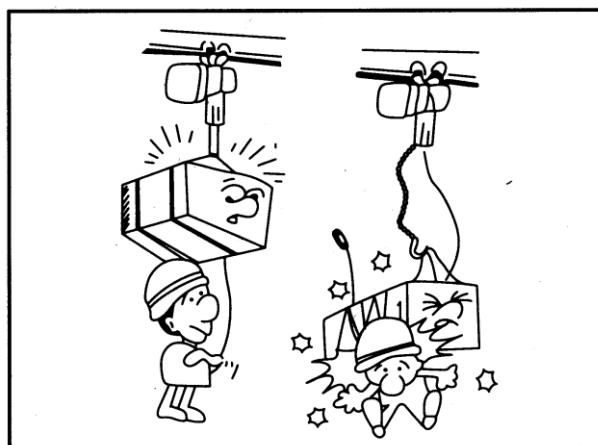
Do not use the hoist chain as a welding electrode.

(12)



DANGER

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

Table. 4-1

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



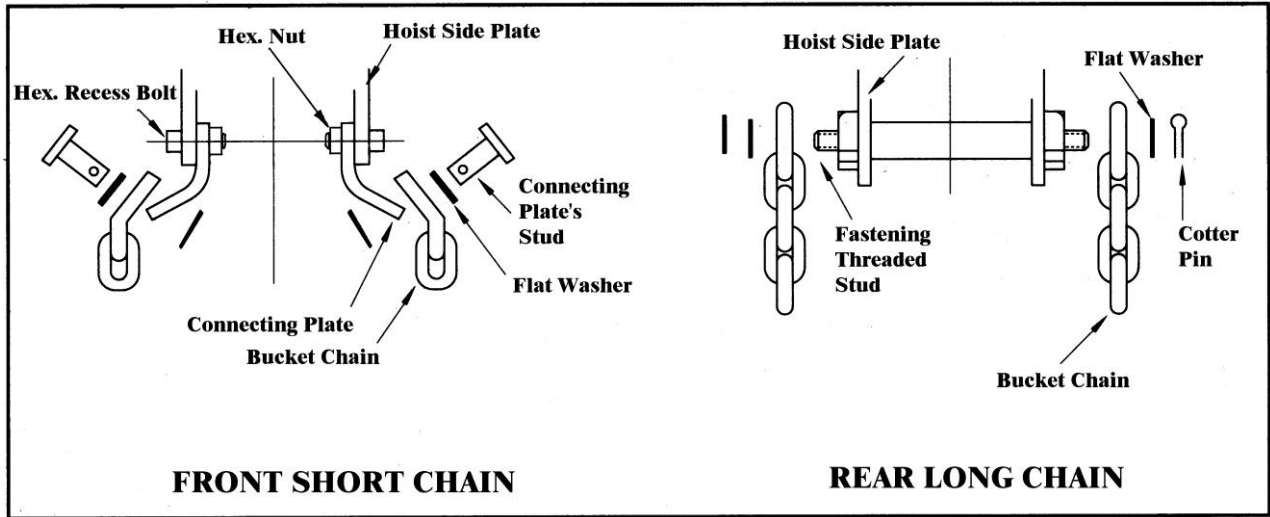
WARNING

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

(1) Prior to installation check and ensure that the top hook assembly is securely attached to the hoist by means of the lock bolt.

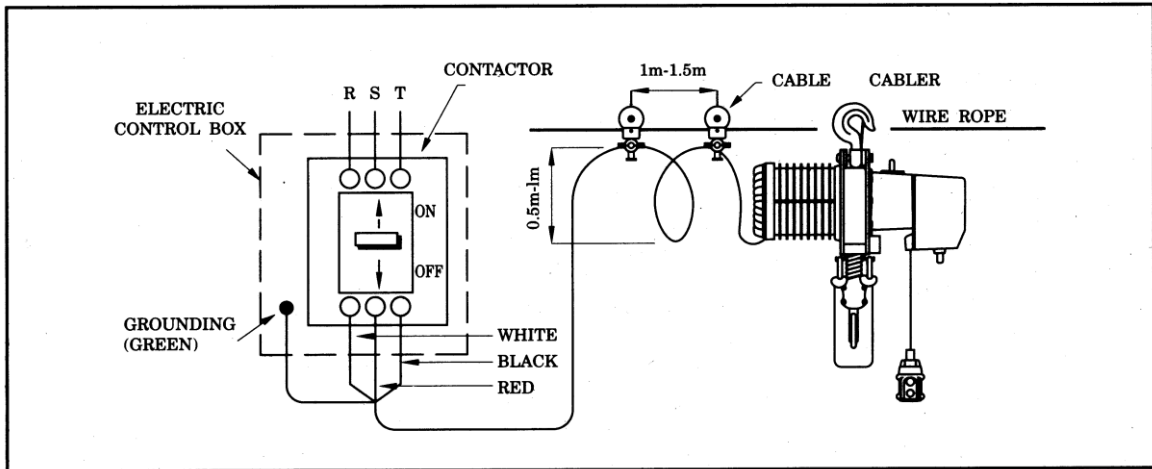
NOTE: If the hoist is to be suspended from an electric trolley, assembly may be eased by firstly removing the top hook, just attaching hoist top hook to the trolley load plate.

(2) Assemble chain bucket.







Illust. 6

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

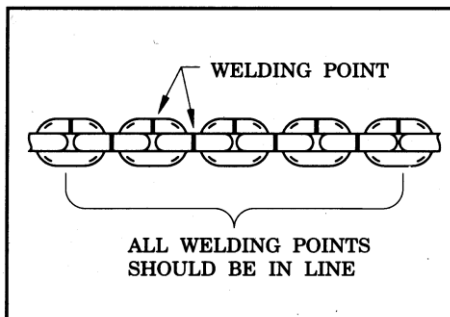


(4) Operation Test

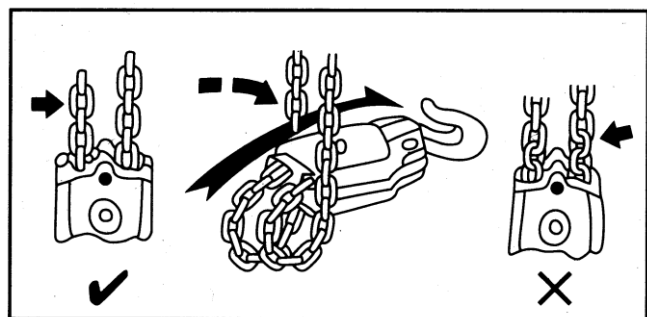
- (a) Firmly push  switch button to lower load chain until the limit spring touches the limit switch. Power should be cut off automatically.
- (b) Firmly push  switch button to check the collection of load chain into chain bucket.
- (c) Check the emergency stop device function (if fitted):
While holding 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



DANGER

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



DANGER

**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 first 500 hours of operation, thereafter every 3 months and lubricant 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.

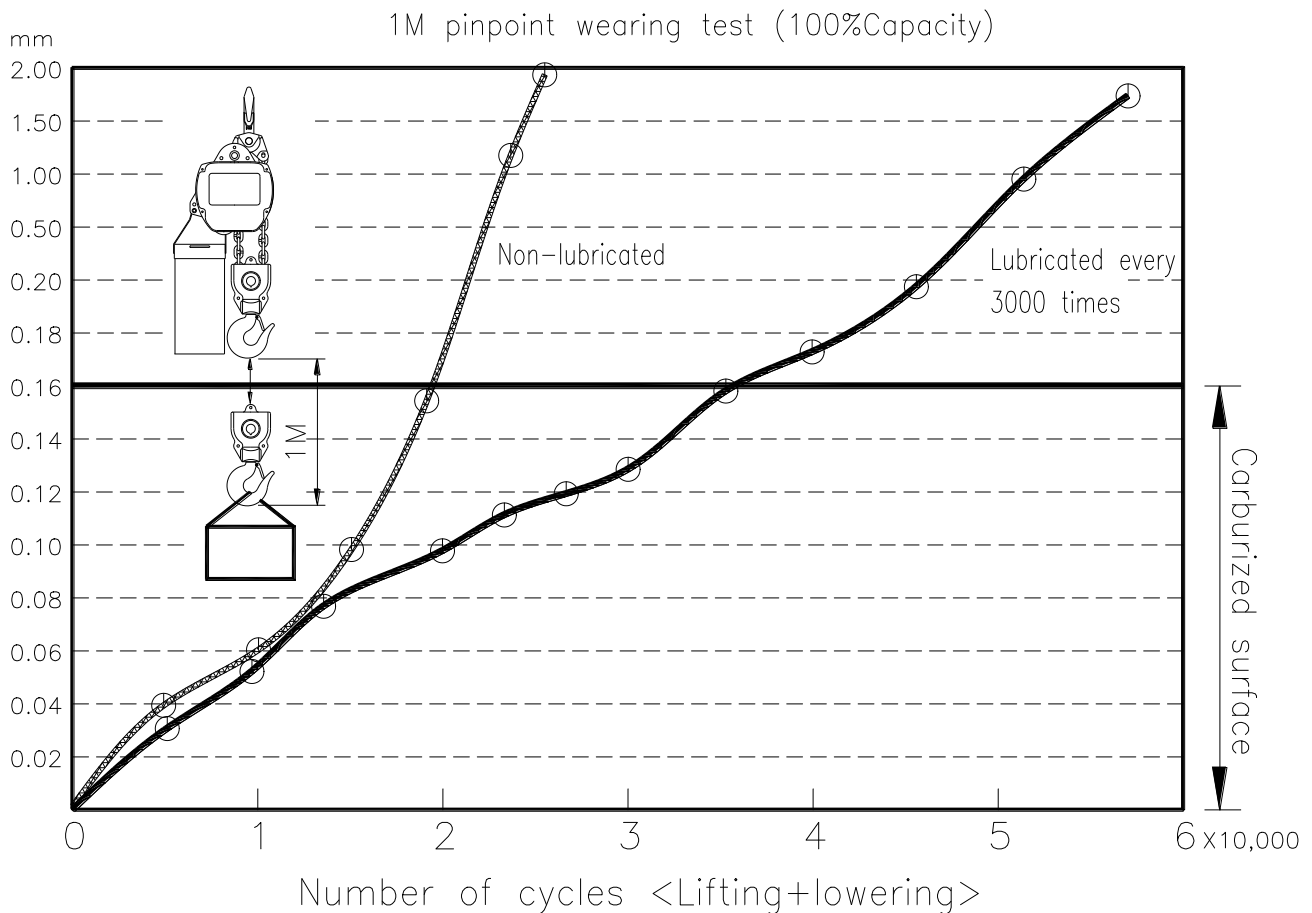
(a) Load chain:

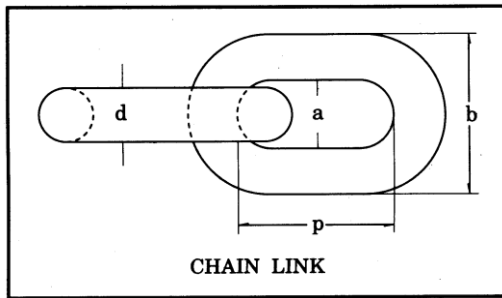
Distorted, elongated or worn chain link will not sit properly on the load sprocket wheel and may cause chain breakage and/or damage to hoist unit. To ensure safe and efficient operation, the chain links must be checked for their pitch (inside length), inside width and outside width monthly according 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%	75000	175000
2 (Medium)	63%	55500	129500
3 (Heavy)	85%	30000	70000
4 (Very heavy)	100%	15000	35000

Above testing data under lifting height 1M



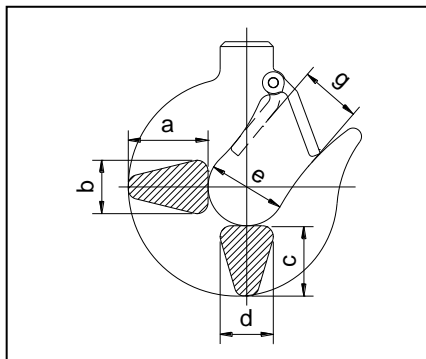


Dia.-Meter (mm) (d)	Load (ton)	Inside Length (mm) (p)	Inside Width (mm) (a)	Outside Width (mm) (b)
7.1	1/2~3	20.2	8.9	23.6

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.



Capacity	T	Dimensions(mm)					
	B	a	b	c	d	e	g
1/2 Ton	T	33	23	29	23	40	28
	B						
1 Ton	T	33	23	29	23	40	28
	B						
2 Ton	T	45	31	41	31	46	36
	B						
3 Ton	T	55	34	48	34	52	43
	B						

following table)

T :Top hook

B :Bottom hook

Table 6-2-b

(c) Limit Switches:




WARNING

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



WARNING

Your dealer should be asked to perform this inspection.

- (a) Check gearing for any excessive wear or damage.
- (b) Replace gearbox lubricant completely.
- (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.

Chain Gauge – Wear and Stretch Measuring

- (1) The chain gauge is useful and convenience for measuring.
- (2) Please use a chain gauge to measure the chain pitch and diameter, such as illustrations (1) and (2).
- (3) Every chain ring must be measured, and the chain must be replaced when one of chain ring is wear or stretch.
- (4) It will be a cutting-out possibility if you use a chain fall either wear or stretch during operation.
- (5) Do not replace a chain fall by yourself and do please contact specific either service centers or contractors to help you out.
- (6) The chain fall must be replaced whole instead of a partial part.
- (7) 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.

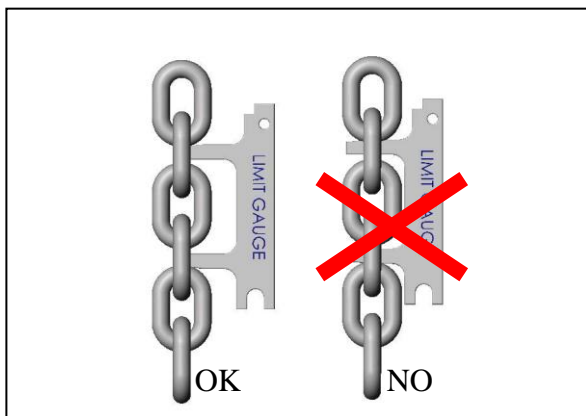


Illustration (1)
Chain pitch measure

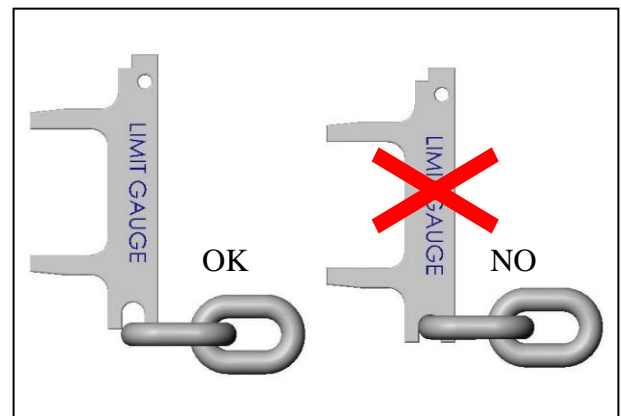


Illustration (2)
Diameter measure

7. TROUBLESHOOTING

7.1 Wiring Diagrams

- (1) C10011 for dual voltage connection of motor leads and A30004 for YSF series.....21
- (2) A40054 for YSE direct on line series and A40055 for YSE low voltage control series.....22
- (3) A10019 for YSL/YSH series and A20015 for YSLD/YSHD series.....23
- (4) A40057 for hoist, trolley and bridge carrier.....24

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

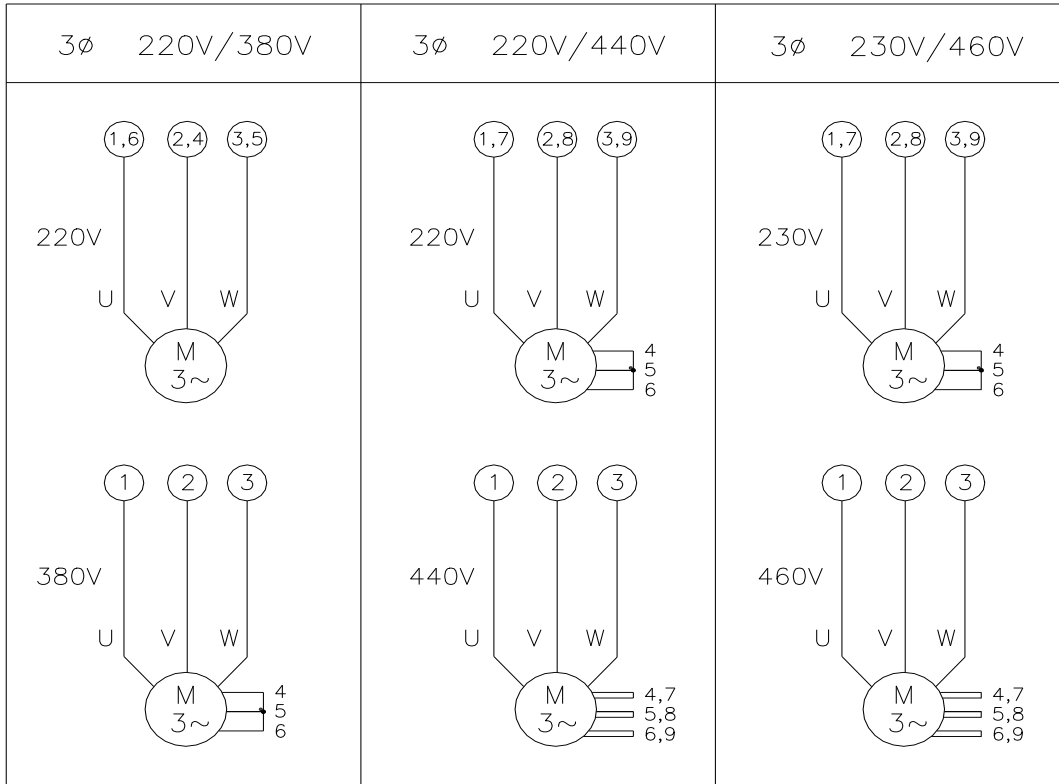
Voltage Hertz	Dual Voltage	Single Voltage
50 Hz	220V/380V 220V/440V	220 to 600
60 Hz	230V/460V	

Table 7-1

Warranty Details:

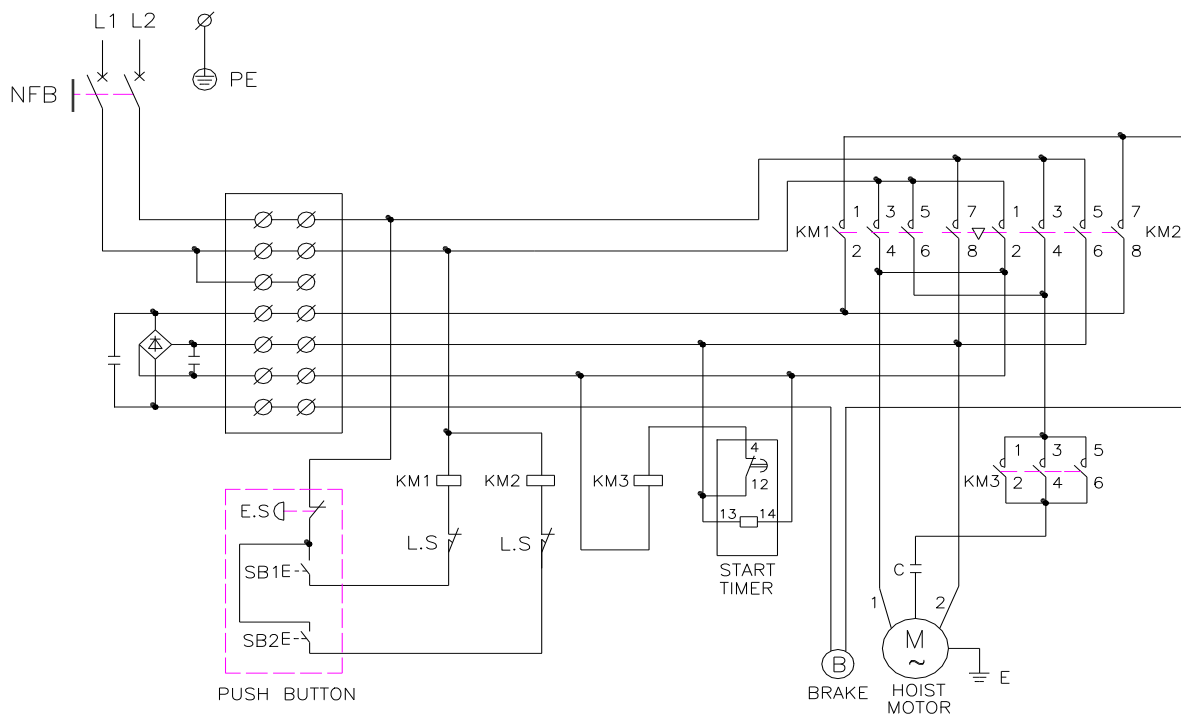
1. Warranty Period : One year for Mechanical Spare Parts after purchase the product.
2. Non-Warranty Scope:
 - a. Electrical Spare Parts (ex. Contactor, Pendant, Phase Error Relay, etc.)
 - b. Expense Spare Parts (ex. Chain Bucket, Brake Lining, etc.)
 - c. Damage caused by unsuitable operation.
(galvanize 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 compensation shall be no more than the value of hoist.

DUAL VOLTAGE CONNECTION OF MOTOR LEADS



C10011

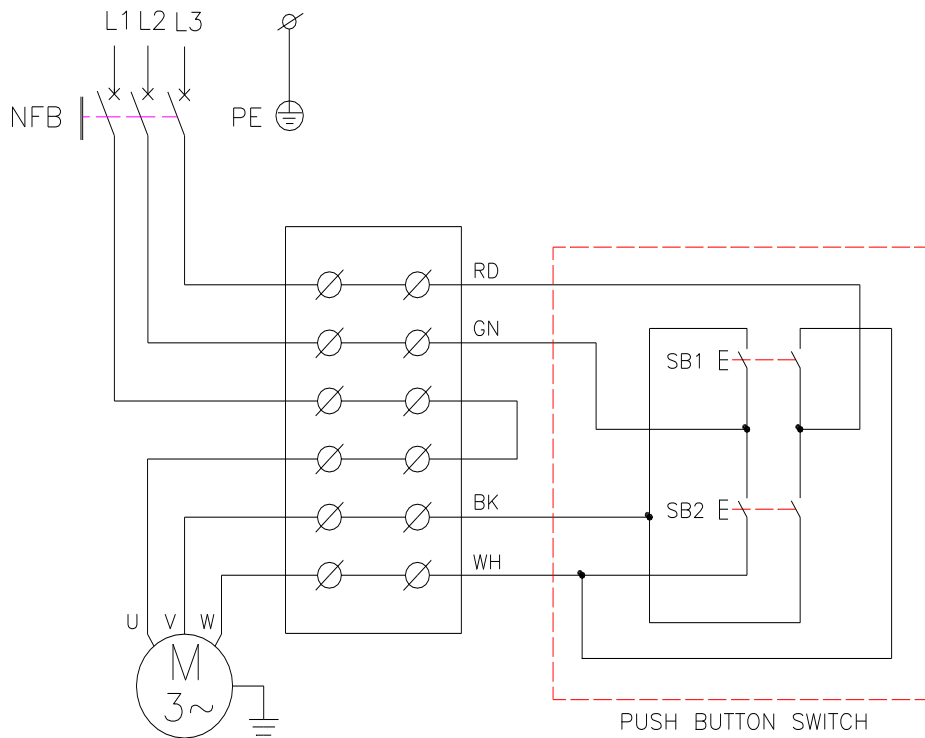
YSF SERIES



- NFB NO FUSE BRAKE, SUPPLY BY CUSTOMER
- PE PROTECTION EARTH
- E.S EMERGENCY STOP
- SB1 PUSH BUTTON LIFTING
- SB2 PUSH BUTTON LOWERING
- C START CAPACITOR
- KM1 CONTACTOR LIFTING
- KM2 CONTACTOR LOWERING
- KM3 CONTACTOR STARTER

A30004

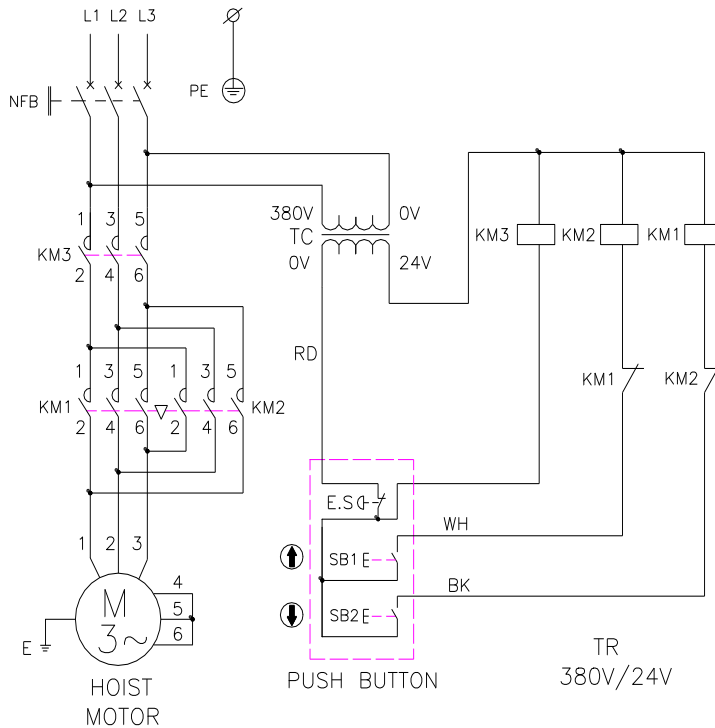
YSE DIRECT ON LINE SERIES



- NFB NO FUSE BRAKE, SUPPLY BY CUSTOMER
- PE PROTECTION EARTH
- SB1 PUSH BUTTON LIFTING
- SB2 PUSH BUTTON LOWERING

A40054

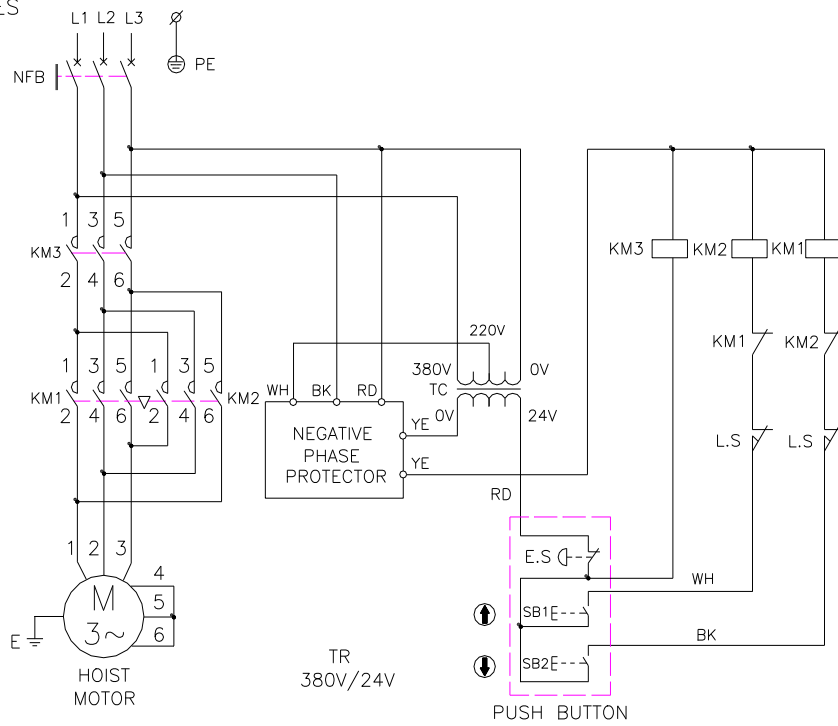
YSE LOW VOLTAGE CONTROL SERIES



- NFB NO FUSE BRAKE, SUPPLY BY CUSTOMER
- PE PROTECTION EARTH
- E.S EMERGENCY STOP
- SB1 PUSH BUTTON LIFTING
- SB2 PUSH BUTTON LOWERING
- TC TRANSFORMER FOR CONTROL POWER
- KM1 CONTACTOR LIFTING
- KM2 CONTACTOR LOWERING
- KM3 POWER SOURCE, CONTACTOR MAIN

A40055

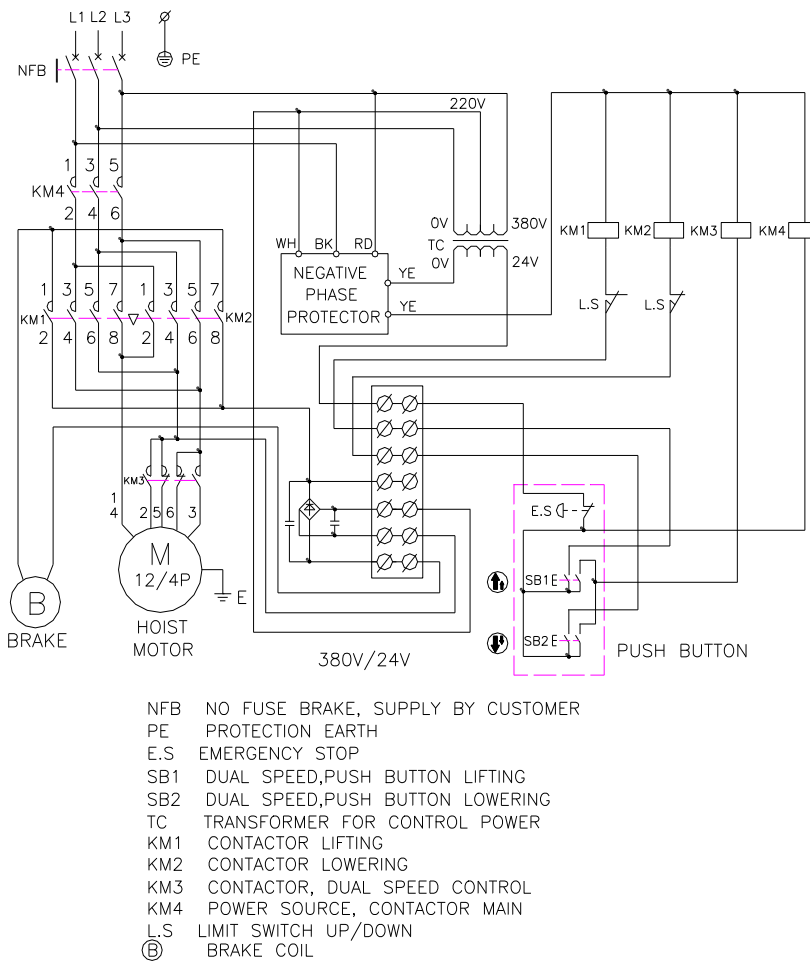
YSL/YSH SERIES



- NFB NO FUSE BRAKE, SUPPLY BY CUSTOMER
- PE PROTECTION EARTH
- E.S EMERGENCY STOP
- SB1 PUSH BUTTON LIFTING
- SB2 PUSH BUTTON LOWERING
- TC TRANSFORMER FOR CONTROL POWER
- KM1 CONTACTOR LIFTING
- KM2 CONTACTOR LOWERING
- KM3 POWER SOURCE, CONTACTOR MAIN
- L.S LIMIT SWITCH UP/DOWN

A10019

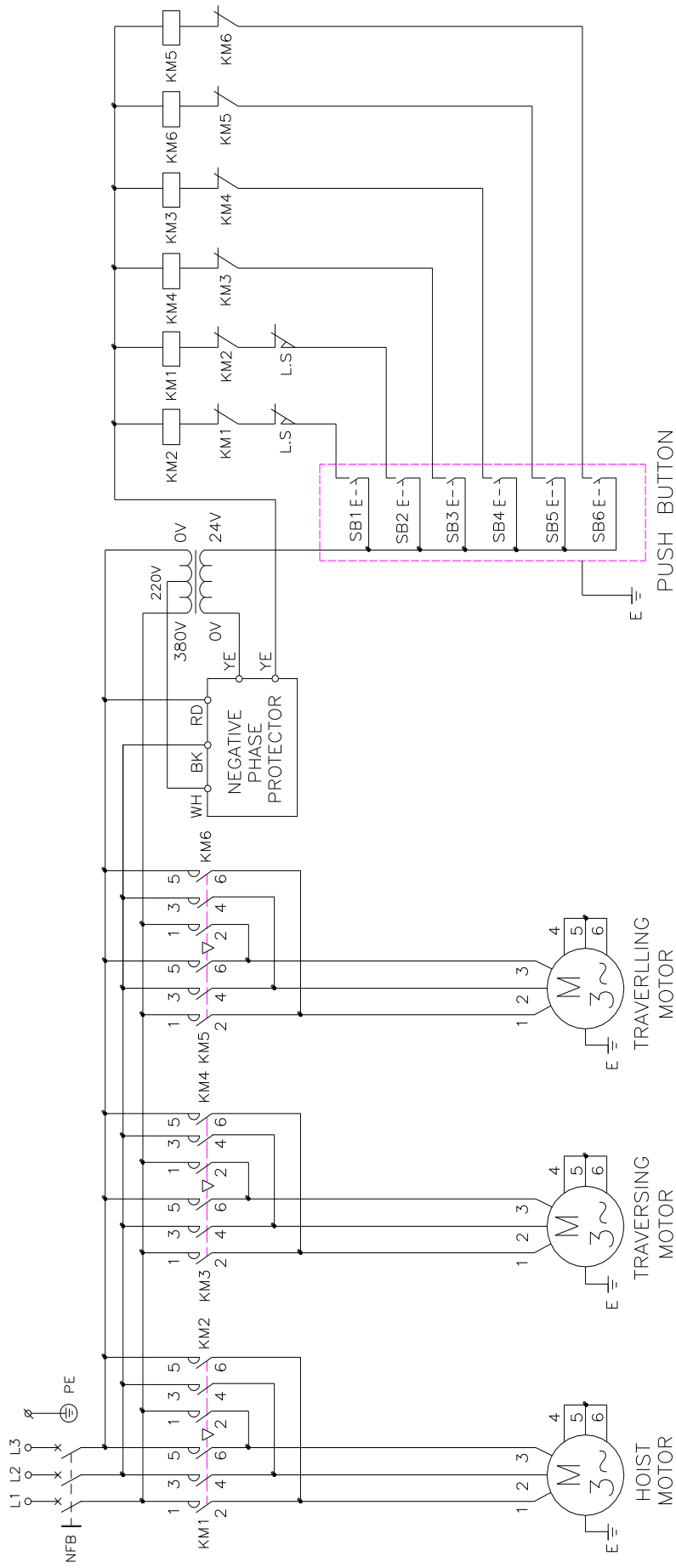
YSLD/YSHD SERIES



- NFB NO FUSE BRAKE, SUPPLY BY CUSTOMER
- PE PROTECTION EARTH
- E.S EMERGENCY STOP
- SB1 DUAL SPEED,PUSH BUTTON LIFTING
- SB2 DUAL SPEED,PUSH BUTTON LOWERING
- TC TRANSFORMER FOR CONTROL POWER
- KM1 CONTACTOR LIFTING
- KM2 CONTACTOR LOWERING
- KM3 CONTACTOR, DUAL SPEED CONTROL
- KM4 POWER SOURCE, CONTACTOR MAIN
- L.S LIMIT SWITCH UP/DOWN
- Ⓟ BRAKE COIL

A20015

HOIST, TROLLEY AND BRIDGE CARRIER



A40057

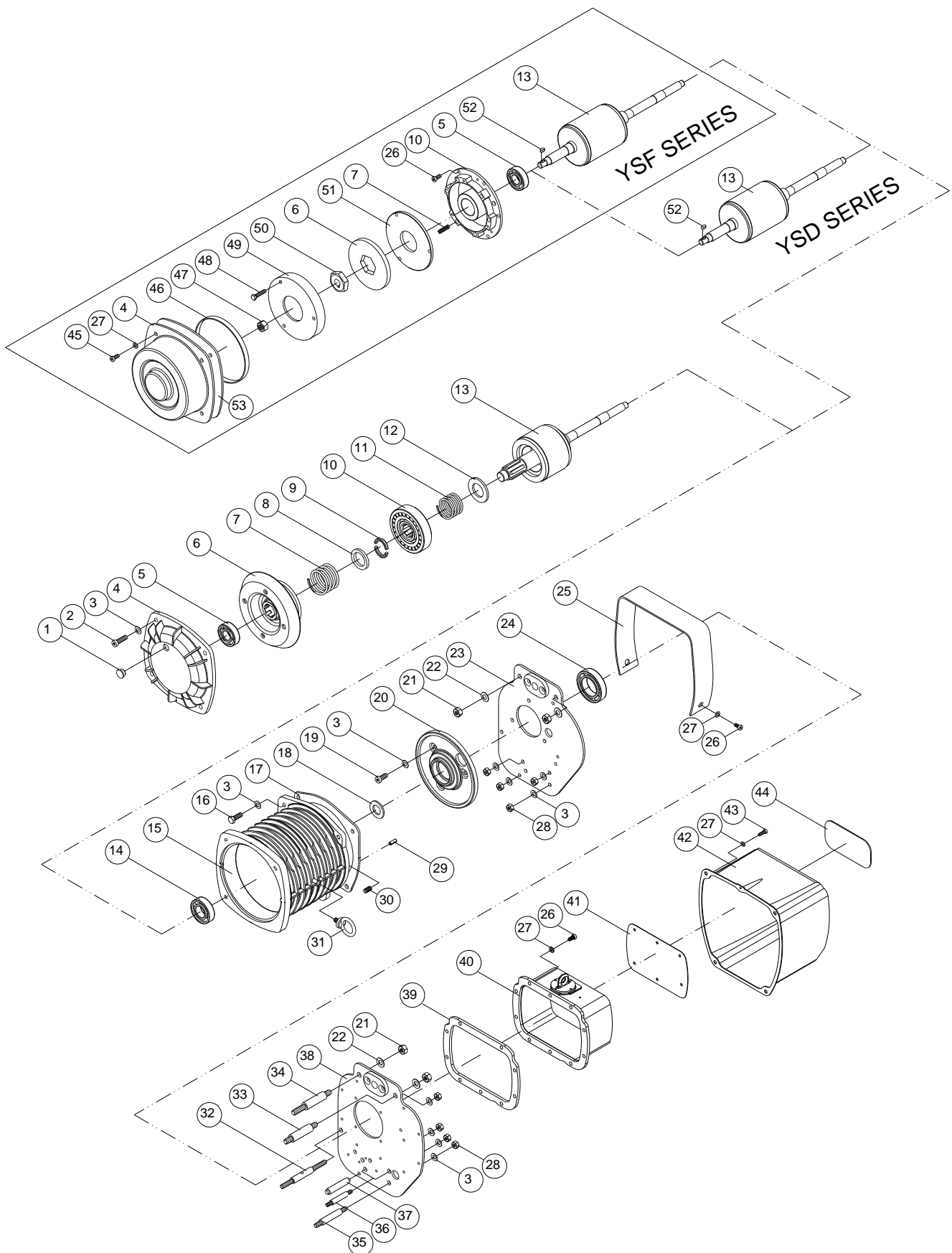
7.2 Troubleshooting and Remedial Action

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 refuse/reset breaker to meet requirements Check fuse for correct rating and replace Locate and repair/reconnect Check if 10% reduction in voltage, have mains supply checked Check phases to 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) Loose fitting of oil plug (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

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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			YSF			YSL			YSH			
			1/2	1	2	1/2	1	2	1/2	1	2	3	1/2	1	2
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	100431	Motor End Cover	1						1			1			
	100423		1D			1			1D			1D			
5	400130	Bearing<6204 ZZ>	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			
	400238		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						
	100321										1			1	
	100322					1									
	100323		1D						1D				1D		
	100318										1D				
	100319										1				
	100302	Motor Rotor (110V, 115V)				1									
14	400129	Bearing<6005 ZZ>	1,1D			1			1,1D			1,1D			

YS1

VII – 1 MOTOR ASSEMBLY & HOUSING

D : DUAL SPEED

KEY NO.	PARTS CODE	DESCRIPTION	Q'TY REQ'D EACH UNIT													
			YSE			YSF			YSL				YSH			
			1/2	1	2	1/2	1	2	1/2	1	2	3	1/2	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				1,1D			1,1D		
19	400012	Hex. Recess Bolt<M8×20L>	3,3D				3				3,3D			3,3D		
20	100421	Flange	1				1				1			1		
	100460		1D								1D			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	400005	Hex. Recess Bolt<M6×12L>	12,18D				18				12,18D			12,18D		
27	400094	Spring Washer<M6>	20,26D				26				20,26D			20,26D		
28	400081	Hex. Nut<M8×1.25>	8,8D				8				8,8D			8,8D		
29	400295	Spring Pin<φ 3×16L>	1,1D				1				1,1D			1,1D		
30	400585	Threaded Stud<M8×16L>	1,1D				1				1,1D			1,1D		
31	400217	Eye Bolt<M8×1.25>	1,1D				1				1,1D			1,1D		

#15Ref. Page31

YS1

VII – 1 MOTOR ASSEMBLY & HOUSING

D : DUAL SPEED

KEY NO.	PARTS CODE	DESCRIPTION	Q'TY REQ'D EACH UNIT													
			YSE			YSF			YSL				YSH			
			1/2	1	2	1/2	1	2	1/2	1	2	3	1/2	1	2	3
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			
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							
	200044A		1,1D													
	200045A					1			1,1D							
	200046A													1,1D		
41	402525	Gasket 25#	1,1D													
	402524	Gasket 24#				1			1,1D				1,1D			
42	300763	Electric Comp Oneness 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	400026	Hex. Bolt<M6×30L>	3D			3			3D				3D			
49	100411	Brake Drum Cover	1D			1			1D				1D			

YS1

VII – 1 MOTOR ASSEMBLY & HOUSING

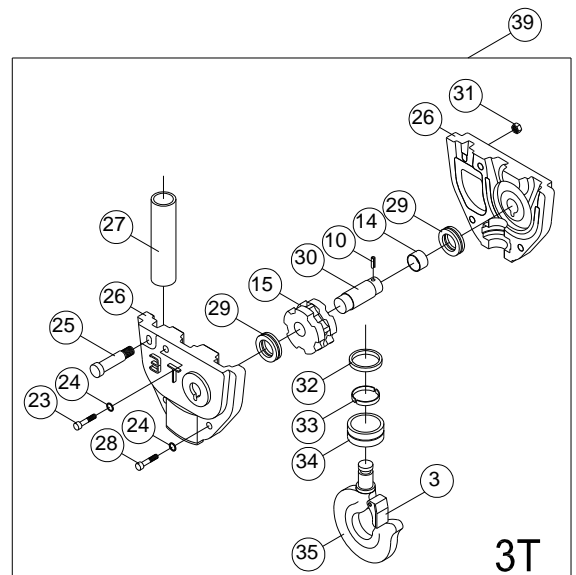
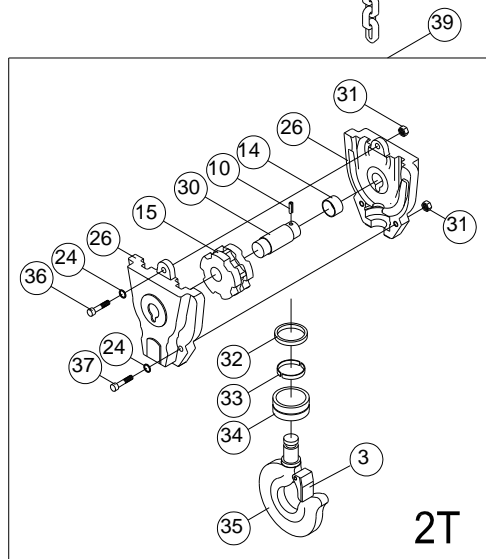
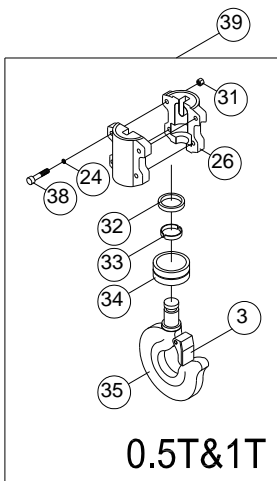
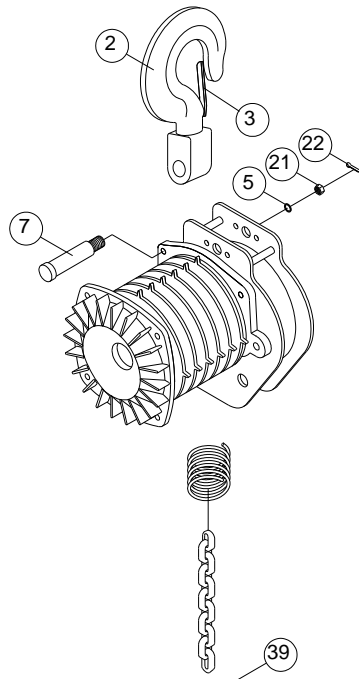
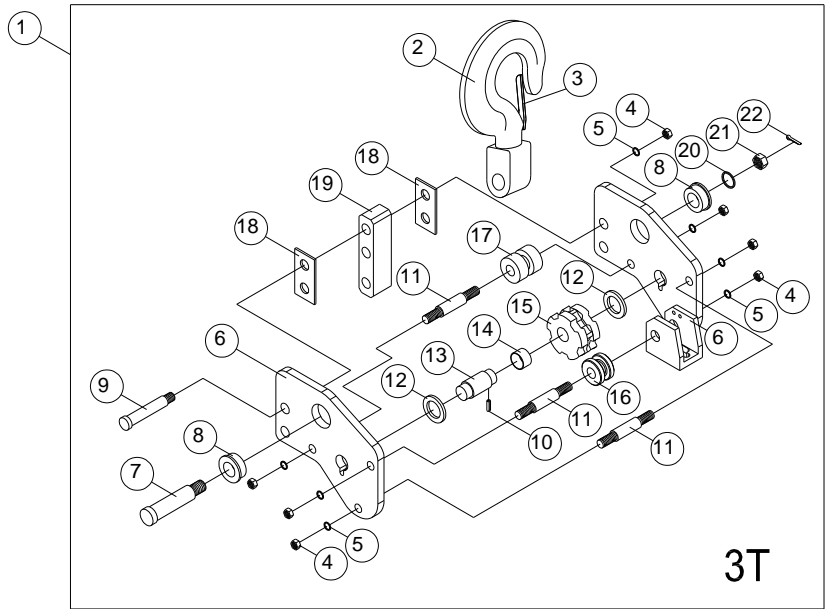
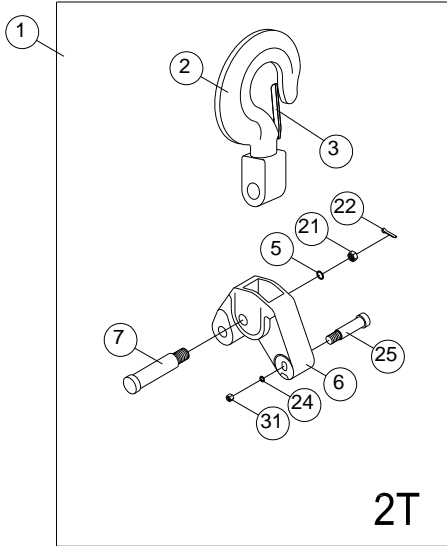
D : DUAL SPEED

NO.	PARTS CODE	DESCRIPTION	Q'TY REQ'D EACH UNIT											
			YSE			YSF			YSL			YSH		
			1/2	1	2	1/2	1	2	1/2	1	2	3	1/2	1
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	402578	Gasket 51#	1D			1			1D			1D		

NO.	PARTS CODE	DESCRIPTION	φ - HZ- V		
15	A	132551	3φ 60HZ	220 / 380 V	
		132552		220 / 440 V	
		132553		230 / 460 V	
		132555		600 V	
		132561	3φ 50HZ	220 / 380 V	
		132562		400 V	
		132563		415 V	
	B	132581	3φ 60HZ	220 / 380 V	
		132583		220 / 440 V	
		132584		230 / 460 V	
		132586		600 V	
		132591	3φ 50HZ	220 / 380 V	
		132592		415 V	
	C	132623	Motor Stator Ass'y	1φ 60HZ	115V
		132621			220 V
		132622			230 V
		132626	1φ 50HZ	110 V	
		132627		220 V	
		132628		230 V	
	D	132651	3φ 60HZ	220 V	
		132661		230 V	
		132652		380 V	
		132653		460 V	
		132654		600 V	
		132656		3φ 50HZ	220 V
		132657	380 V		
		132658	415 V		

YS1

VII-2 HOOK EXPLOSION



VII – 2 HOOK ASSEMBLY

D : DUAL SPEED

NO.	PARTS CODE	DESCRIPTION	Q'TY REQ'D EACH UNIT													
			YSE(D)			YSF			YSL(D)				YSH(D)			
			1/2	1	2	1/2	1	2	1/2	1	2	3	1/2	1	2	3
1	200049	Top Hook Frame Ass'y			1			1			1			1		
	200050									1				1		
2	200009	Top Hook	1			1			1				1			
	200010			1			1			1			1			
	200011				1		1			1			1			
	200012										1			1		
3	400300	Safety Latch Ass'y	2			2			2				2			
	400358			2		2			2			2				
	400301										2		2			
4	400091	Lock Nut<M12×1.75>									8			8		
5	400097	Spring Washer<M12>	1			1			1			9	1	9		
6	200154	Hook Bracket		1		1			1				1			
	200726	Hook Bracket Disc Plate									1			1		
	200516	Hook Bracket Disc Plate Ass'y									1			1		
7	200093	Lock Bolt	1			1			1				1			
	200094										1			1		
8	200172	Lock Bolt Sleeve										2		2		
9	200169	Beam Connector Pin										2		2		
10	400212	Spring Pin<ø5×16L>		1		1			1	2		1	2			
11	200147	Stay Bolt									3			3		
12	200633	Sprocket Spacer Ring									2			2		
13	200115	Sprocket Axle									1			1		
14	400171	Needle Bearing<HK 25/26>		1		1			1	2		1	2			
15	200108	Sprocket		1		1			1	2		1	2			
16	200518	Chain Pressing Roller									1			1		
17	200190	Chain Pressing Roller									1			1		
18	200173	Beam Connector Pad									2			2		
19	200721	Beam Connector									1			1		
20	400098	Spring Washer<M16>									1			1		
21	400084	Hex. Nut<M12×1.75>	1			1			1			1				
	400085	Hex. Nut<M16×1.5>									1		1			
22	400603	Cotter Pin<3/32" ×1"L>	1			1			1			1				
23	400015	Hex. Recess Bolt <M8×1.25×40L>									1			1		

YS1

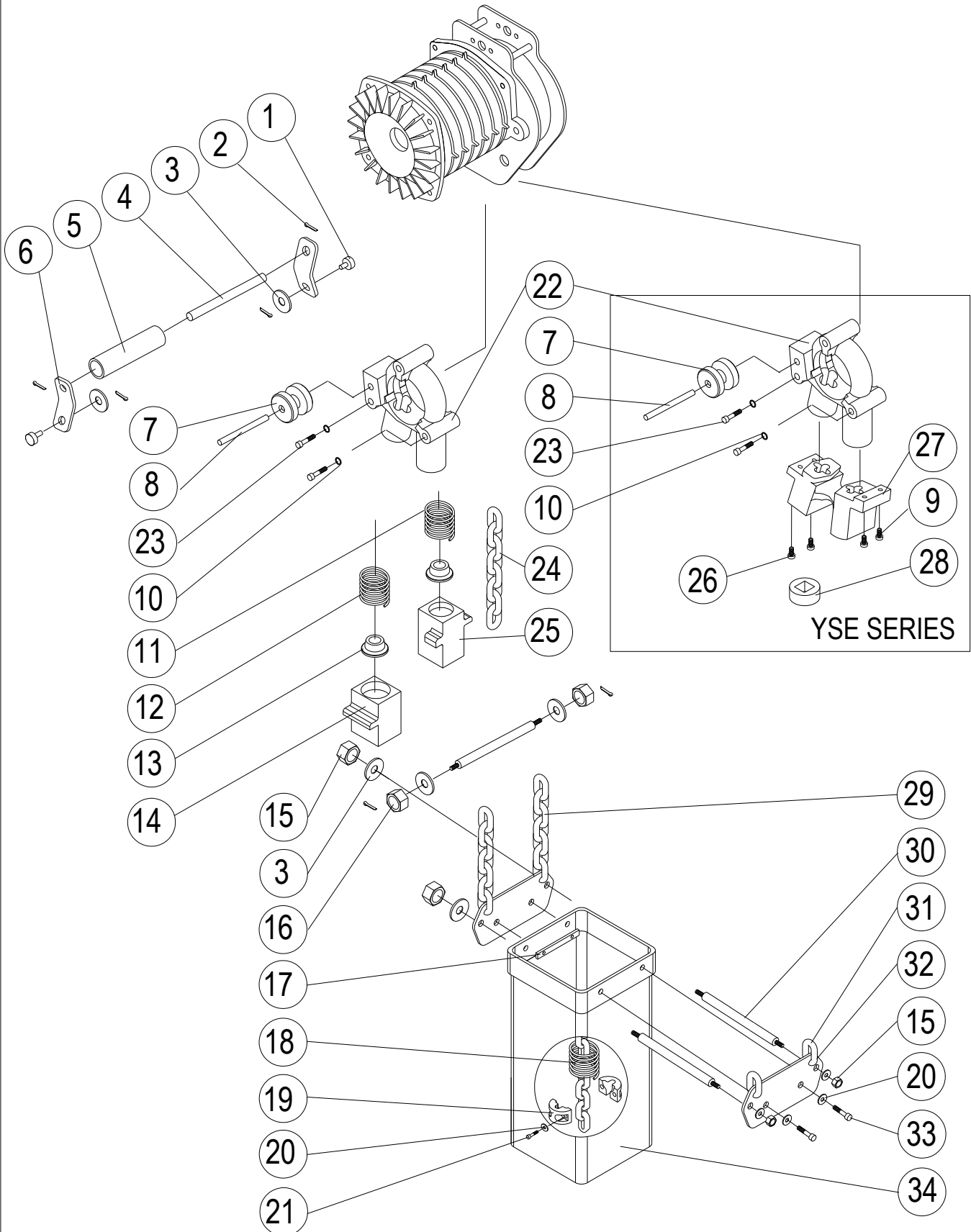
VII – 2 HOOK ASSEMBLY

D : DUAL SPEED

NO.	PARTS CODE	DESCRIPTION	Q'TY REQ'D EACH UNIT											
			YSE(D)			YSF			YSL(D)			YSH(D)		
			1/2	1	2	1/2	1	2	1/2	1	2	3	1/2	1
24	400094	Spring Washer<M6>	4			4			4			4		
	400095	Spring Washer<M8>			4			4			4	3		4
25	200176	Chain Connecting Pin			1			1			1			1
26	200096	Bottom Hook Cover Set	2			2			2			2		
	200097				2			2			2		2	
	200098										2			2
27	200351	Limit Tube									1			1
28	400017	Hex. Recess Bolt <M8×1.25×35L>									2			2
29	400176	Needle Bearing <AXK/2AS 2542>									2			2
30	200114	Sprocket Axle			1			1			1			1
	200123									1			1	
31	400087	Lock Nut<M6×1>	4			4			4			4		
	400088	Lock Nut<M8×1.25>			4			4			4	1		4
32	200131	End Spacer	1			1			1			1		
	200132				1			1			1		1	
	200133										1			1
33	200127	Load Brake Gear Spacer	2			2			2			2		
	200128				2			2			2		2	
	200129										2			2
34	400157	Thrust Bearing<2904>	1			1			1			1		
	400158	Thrust Bearing<2905>			1			1			1		1	
	400159	Thrust Bearing<51106>									1			1
35	200005	Bottom Hook	1			1			1			1		
	200001				1			1				1		
	200002				1			1			1		1	
	200003										1			1
36	400014	Hex. Recess Bolt <M8×1.25×30L>			1			1			1		1	
37	400015	Hex. Recess Bolt <M8×1.25×40L>			2			2			2		2	
38	400418	Hex. Recess Bolt <M6×1.0×30L>	4			4			4			4		
39	200028	Bottom Hook Ass'y	1			1			1			1		
	200021				1			1				1		
	200022				1			1			1		1	
	200023										1			1

YS1

VII-3 LOAD CHAIN EXPLOSION



VII – 3 LOAD CHAIN SECTION

D : DUAL SPEED

NO.	PARTS CODE	DESCRIPTION	Q'TY REQ'D EACH UNIT																
			YSE(D)			YSF			YSL(D)				YSH(D)						
			1/2	1	2	1/2	1	2	1/2	1	2	3	1/2	1	2	3			
1	200230	Pin	2			2			2				2						
2	400603	Cotter Pin<3/32"×1"L>	6			6			6				6						
3	400670	Flat Washer<φ 22×1.5mm>	4			4			4				4						
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>	8			8			8				8						

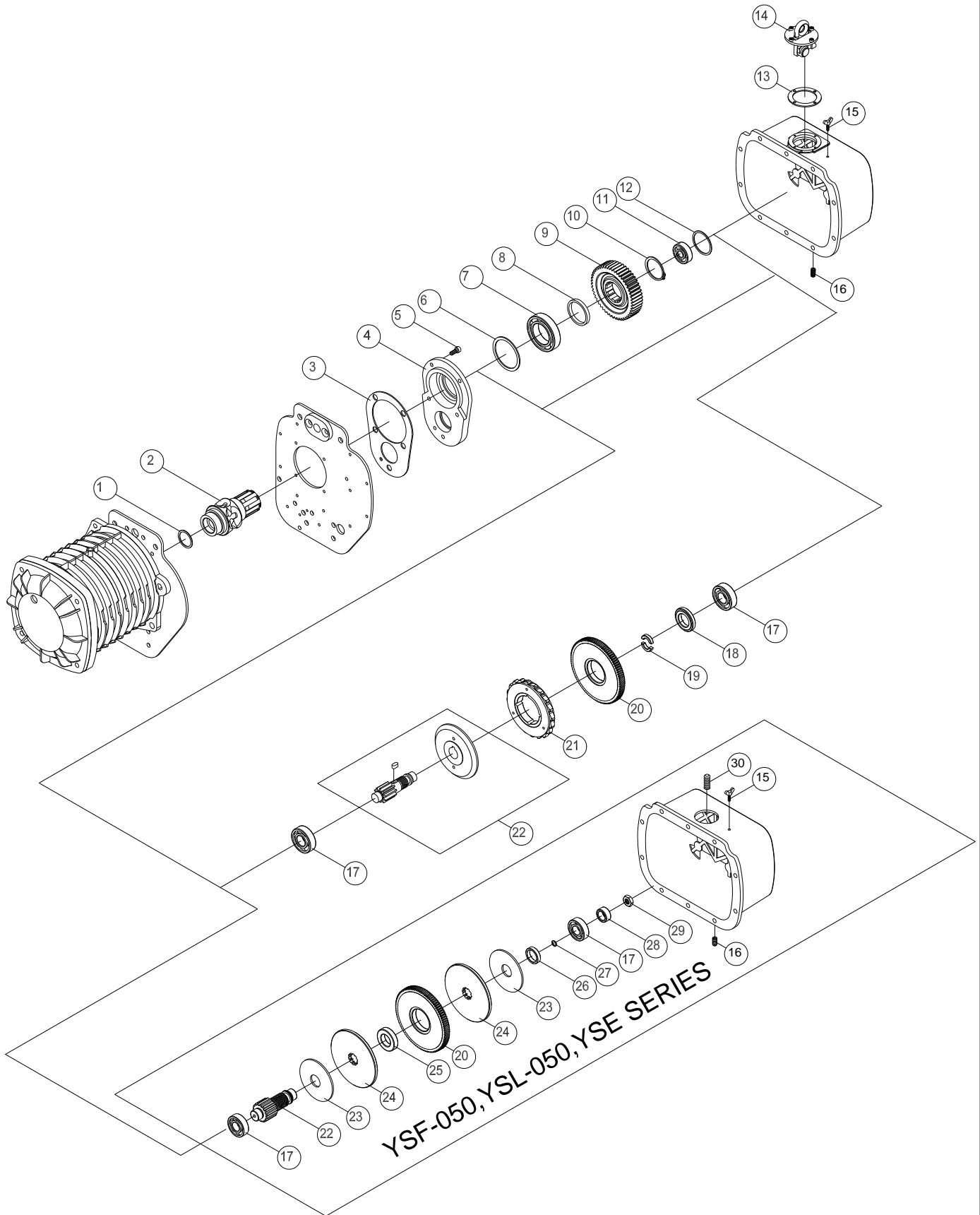
YS1

VII – 3 LOAD CHAIN SECTION

D : DUAL SPEED

NO.	PARTS CODE	DESCRIPTION	Q'TY REQ'D EACH UNIT													
			YSE(D)			YSF			YSL(D)				YSH(D)			
			1/2	1	2	1/2	1	2	1/2	1	2	3	1/2	1	2	3
21	400007	Hex. Recess Bolt <M6×1.0×20L>	2			2			2				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	400564	Bucket Chain	2			2			2				2			
30	200228	Holding Stud	2			2			2				2			
31	400565	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			

VII-4 REDUCING GEARBOX EXPLOSION



VII – 4 REDUCING GEARBOX

D : DUAL SPEED

NO.	PARTS CODE	DESCRIPTION	Q'TY REQ'D EACH UNIT													
			YSE(D)			YSF			YSL(D)				YSH(D)			
			1/2	1	2	1/2	1	2	1/2	1	2	3	1/2	1	2	3
1	400181	Oil Seal<17×28×6t>	1			1			1							
	400180	Oil Seal<18×28×8t>											1			
2	200196	Load Sheave	1			1			1							
	200197												1			
3	402503	Gasket 3#	1			1			1				1			
4	200210	Flange											1			
	200211		1			1			1							
5	400006	Hex. Recess Bolt <M6×1.0×16L>	5			5			5				5			
6	400184	Oil Seal<42×55×9t>	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	407764	Bearing<6301>	1			1			1				1			
12	400182	Oil Seal<25×40×6t>	1			1			1				1			
13	402504	Gasket 4#				1			1				1			
14	200060	Ratchet Pawl Bracket Ass'y				1			1				1			
15	400631	Wing Nut<M4×0.7>	1			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			

YS1

VII – 4 REDUCING GEARBOX

D : DUAL SPEED

NO.	PARTS CODE	DESCRIPTION	Q'TY REQ'D EACH UNIT											
			YSE(D)			YSF			YSL(D)			YSH(D)		
			1/2	1	2	1/2	1	2	1/2	1	2	3	1/2	1
18	200275	End Spacer					1			1				
	200276												1	
19	200271	Load Brake Gear Spacer			2				2					
	200272					2			2					
	200273												2	
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										

YS1

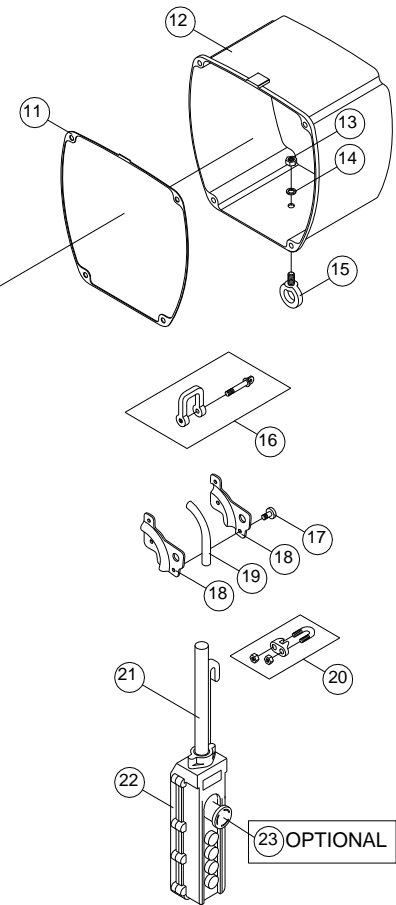
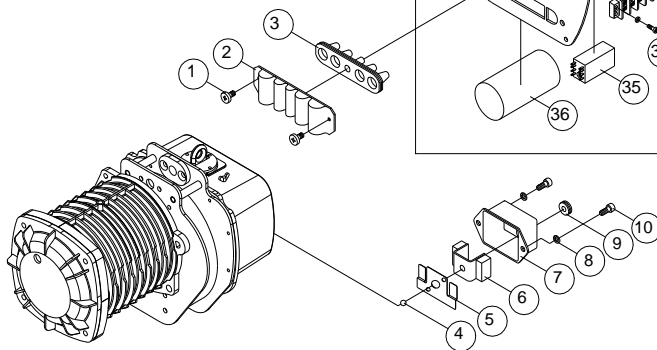
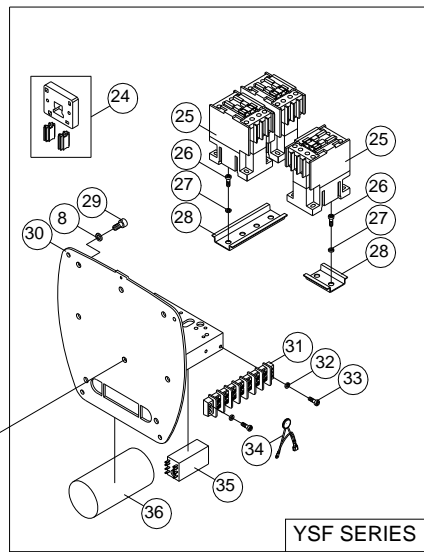
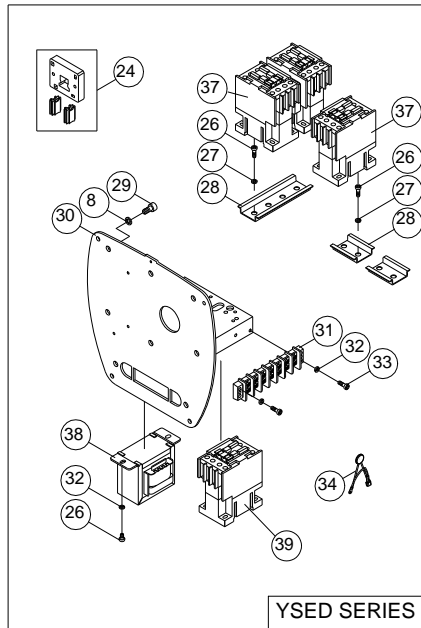
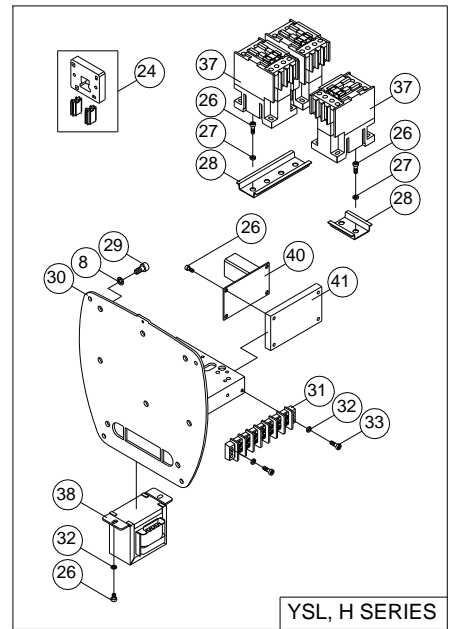
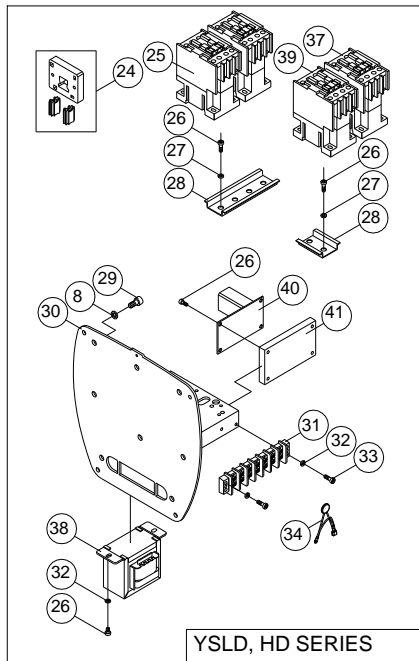
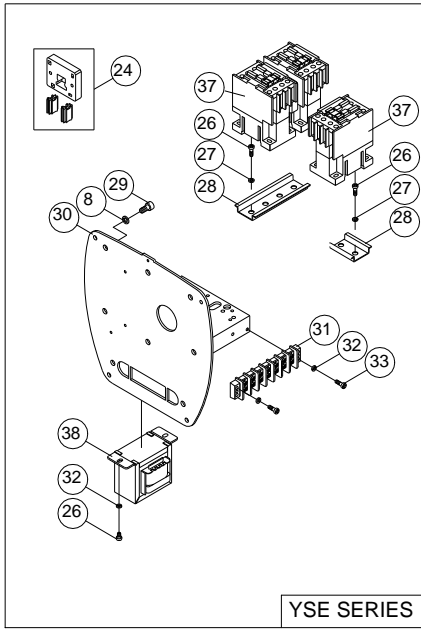
VII – 4 REDUCING GEARBOX

D : DUAL SPEED

NO.	PARTS CODE	DESCRIPTION	Q'TY REQ'D EACH UNIT													
			YSE(D)			YSF			YSL(D)				YSH(D)			
			1/2	1	2	1/2	1	2	1/2	1	2	3	1/2	1	2	3
27	400226	O-Ring<ø12xø17x2.5t>	1													
28	200289	Oil Seal Bushing	1													
29	400090	Lock Nut<M12x1.25>	1													
30	400208	Oil Plug<3/8"PT>	1			1				1						

YS1

VII-5 ELECTRIC EXPLOSION(Standard)



VII – 5 ELECTRIC PARTS(Standard)

D : DUAL SPEED

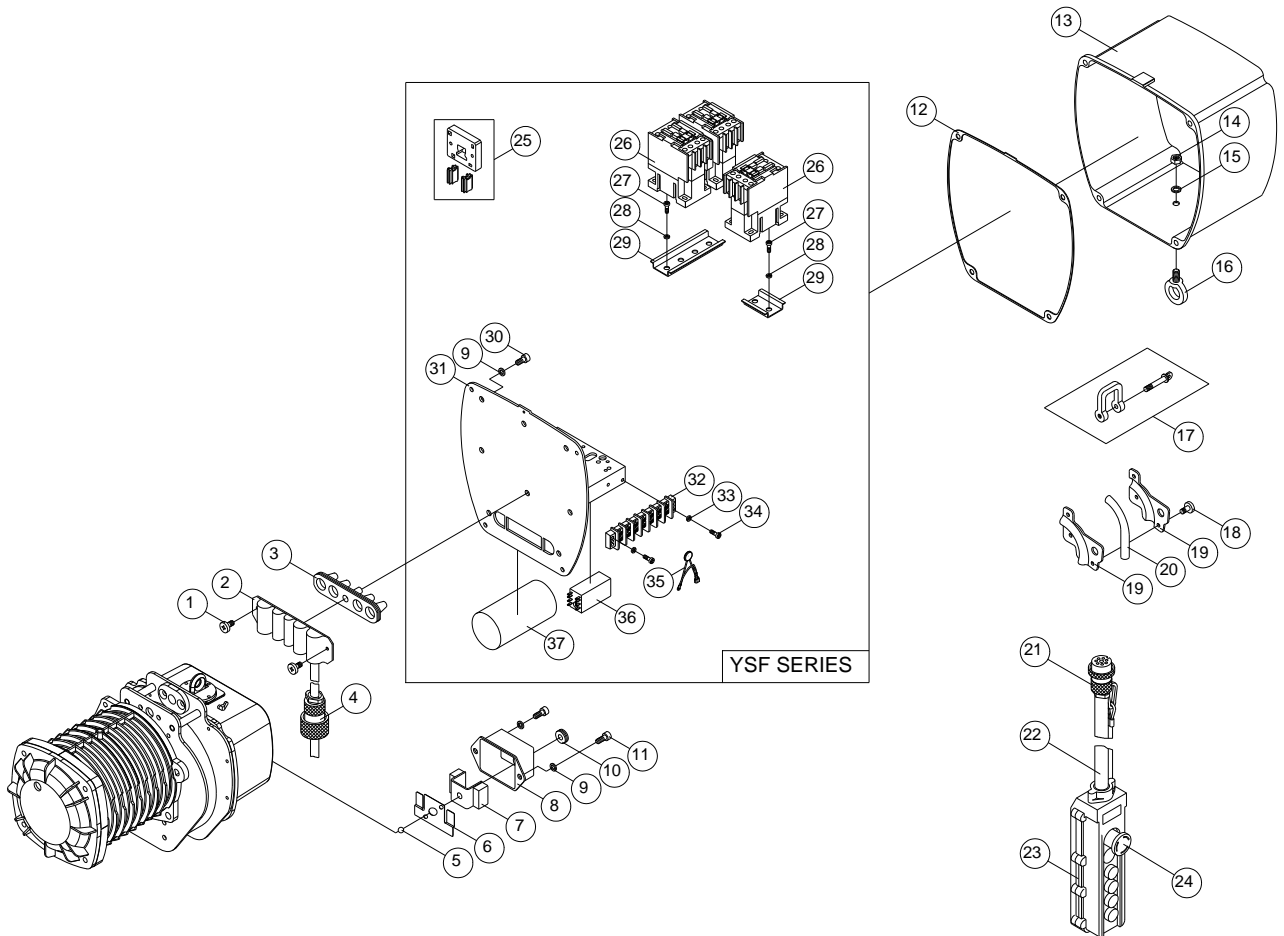
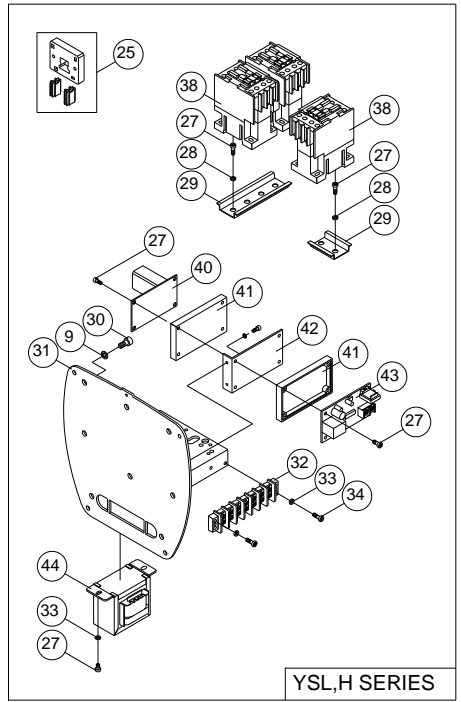
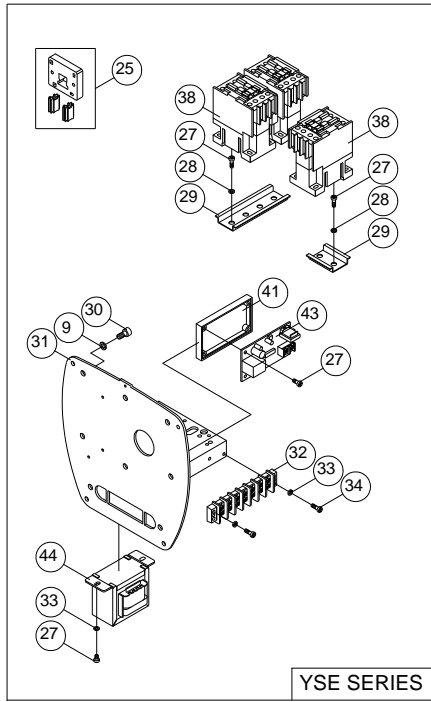
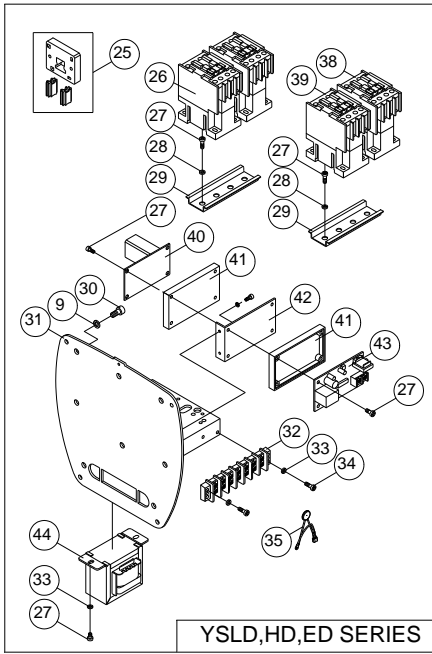
KEY NO.	PARTS CODE	DESCRIPTION	Q'TY REQ'D EACH UNIT															
			YSE 380V/24V			YSF 50HZ 220V			YSL 380V/24V				YSH 380/24V					
			1/2	1	2	1/2	1	2	1/2	1	2	3	1/2	1	2	3		
1	400053	Cross Headed Screw <M5×0.8×12L>	2,2D			2			2,2D				2,2D					
2	300341	Wire Holder	1,1D			1			1,1D				1,1D					
3	400268	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 <M6×1.0×8L>				2			2,2D				2,2D					
11	402526	Gasket 26#	1,1D			1			1,1D				1,1D					
12	300763	Electric Comp Oneness 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 Bolt <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

NO.	PARTS CODE	DESCRIPTION	Q'TY REQ'D EACH UNIT													
			YSE 380V/24V			YSF 50HZ 220V			YSL 380V/24V				YSH 380V/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	300065	Magnetic Contactor(24V 4A)							1D				1D			
	301109	Magnetic Contactor(220V 4A)				3										
26	400048	Cross Headed Bolt <M4×0.7×6L>	10,12D			8			10,12D				10,12D			
27	400661	Flat Washer	4D			4			4,4D				4,4D			
28	300079	Contactor Rail(2PC)	1,1D			1			1,2D				1,2D			
	300078	Contactor Rail(1PC)	1,2D			1			1				1			
29	400005	Hex. Recess Bolt <M6×1.0×12L>	6,6D			6			6,6D				6,6D			
30	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 Bolt <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	301101	Magnetic Contactor(3A1a1b)	3,3D						3				3			
	300064	Magnetic Contactor(3A1b)							1D				1D			
38	301003	Transformer	1,1D						1,1D				1,1D			
39	300066	Magnetic Contactor(2A2B)	1						1D				1D			
40	300205	Negative Phase Protector (N.P.P)							1,1D				1,1D			
41	300363	N.P.P/E.O Box							1,1D				1,1D			

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 460V/110V			YSF 60HZ 115V			YSL 460V/110V				YSH 460/110V			
			1/2	1	2	1/2	1	2	1/2	1	2	3	1/2	1	2	3
1	400053	Cross Headed Screw <M5x0.8x12L>	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	Male 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 <M6x1.0x8L>				2			2,2D				2,2D			
12	402526	Gasket 26#	1,1D			1			1,1D				1,1D			
13	300763	Electric Comp Oneness Casing	1,1D			1			1,1D				1,1D			
14	400081	Hex. Nut<M8x1.25>	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 Bolt <M6x1.0x12L>	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

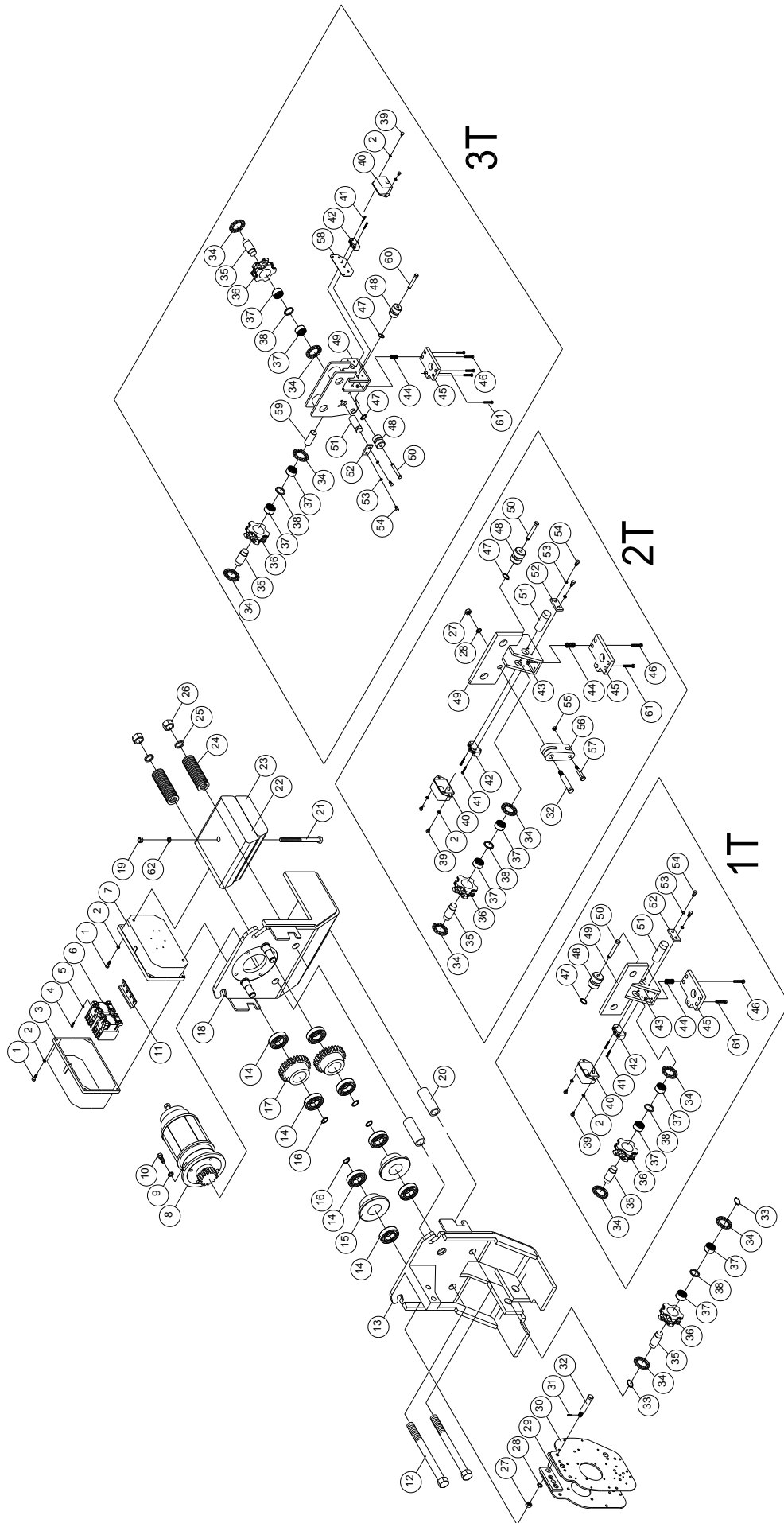
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			YSE 460V/110V			YSF 60HZ 115V			YSL 460V/110V				YSH 460/110V			
			1/2	1	2	1/2	1	2	1/2	1	2	3	1/2	1	2	3
21	300611	Female Receptacle	1			1			1				1			
	300613		1D						1D				1D			
22	301208	Pendant Cable With Wire Rope "Built In"	1			1			1				1			
	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 Bolt <M4×0.7×6L>	10,12D			8			10,12D				10,12D			
28	400661	Flat Washer	4D			4			4,4D				4,4D			
29	300079	Contacto Rail(2PC)	1,2D			1			1,2D				1,2D			
	300078	Contacto Rail(1PC)	1			1			1				1			
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 Bolt <M4×0.7×12L>	2,6D			4			4,6D				4,6D			
35	300143	Rectifier Ass'y	1D			1			1D				1D			
36	300211	Timer For Motor Staring				1										

VII – 5– 1 ELECTRIC PARTS(USA)

D : DUAL SPEED

NO.	PARTS CODE	DESCRIPTION	Q'TY REQ'D EACH UNIT															
			YSE 460V/110V			YSF 60HZ 115V				YSL 460V/110V				YSH 460/110V				
			1/2	1	2	1/2	1	2	3	1/2	1	2	3	1/2	1	2	3	
37	300087	Capacitor				1												
38	301171	Magnetic Contactor(3A1b)	1D					1D						1D				
	301103	Magnetic Contactor(3A1a1b)	3					3						3				
39	301172	Magnetic Contactor(2A2B)	1D					1D						1D				
40	300203	Negative Phase Protector (N.P.P)												1,1D		1,1D		
41	300363	N.P.P/E.O Box	1,1D											2,2D		2,2D		
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		

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	300415	Electric Components Casing	1	1	1		1	1	1		1	1	1	
	300395					1				1				1
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 <1 1/4"×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	Universal Plain Wheel	2	2			2	2			2	2		
	203132				2			2					2	
	203133					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
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	Universal Gear Wheel	2	2			2	2			2	2		
	203112				2				2				2	
	203113					2				2				2
18	202861	Trolley Motor End Side Plate	1	1			1	1			1	1		
	202862				1				1				1	
	202765					1				1				1
19	400091	Lock Nut <M12x1.75>	1				1				1			
20	205590	Spacer Tube	2	2			2	2			2	2		
	205591		2	2			2	2			2	2		
	205592				4				4				4	
	205594					4				4				4
21	400033	Hex. Bolt <M12x1.75x150L>	1				1				1			
22	200401	Counter Weight Block B	1				1				1			
23	200400	Counter Weight Block A	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 <1 1/4">				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
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	200041	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	200093	Top Hook Pin	2	2	3	2	2	2	3	2	2	2	3	2
33	400192	Retaining Ring <S-25>	2	2	2	2	2	2	1	2	2	2	2	2
34	400176	Needle Bearing <AXK/2AS 2542>	4	4	4	6	4	4	4	6	4	4	4	6
35	202886	Sprocket Axle	1				1				1			
36	200109	Sprocket	2	2	2	3	2	2	2	3	2	2	2	3
37	400170	Needle Bearing <NK 25/26>	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>	1				1				1			
40	300353	Limit Switch Box	1				1				1			
41	400617	Cross Headed Screw <M4×0.7×25L>	2				2				2			
42	302601	Limit Switch Ass'y	1				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

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
49	203014	Load Plate 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>	2				2				2			
54	400011	Hex. Recess Bolt <M8x1.25x12L>	2				2				2			
55	400088	Lock Nut <M8x1.25>			1				1				1	
56	200184	Chain Fixer			1				1				1	
57	200176	Chain Fixing 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 <M6x1.0x35L>	1				1				1			
62	400663	Flat Washer <M12>	1				1				1			



DNV

DET NORSKE VERITAS

CERTIFICATE OF CONFORMITY

Application of: Council Directive 98/37/EEC of 22 June 1998, issued as "Forskrift for Maskiner" by the Norwegian Directorate of Labour Inspection.

Certificate no.: 99-OSL-SM-0293

This is certify that the technical documentation for the product:

Electrical Chain Hoist

Identification: Model BLACK BEAR, variants as listed in Annex I

Manufactured by

Cheng Day Machinery Works Co., Ltd.

at

No. 173, Wen Chu Rd., Ta Chia, Taichung, Taiwan

complies with the requirements applicable to it

The manufacturer's Technical Construction File (TCF) has been reviewed and found to comply with the requirements in Annex V, section 3a. Further description of the product and the TCF are given in the Annex I to this certificate.

Limitations:

Any modifications made to the machine shall immediately be reported to Det Norske Veritas Region Norge AS in order to examine whether this Certificate remains valid.

Bergen, 18. October, 1999

for Det Norske Veritas Region Norge AS

Terje Lien
Head of section

Replaces certificate no.

98-OSL-SM-0164

Valid from 1998-06-22

Gunnar Matre
Project Engineer



Any significant changes in design or construction of the product, or amendments to the Directive or Standards referenced above may render this receipt invalid. The product liability rests with the manufacturer or his representative in accordance with Council Directive 85/374/EEC.



EC TYPE-EXAMINATION

ANNEX I

Annex to Certificate no.: 98-OSL-SM-0164

Manufacturer : Cheng Day Machinery Works Co., Ltd. /Black Bear
Machinery : Electric Chain Hoist, Models: YSF-050,-100,-200, YSL-050,-100,-200,-300, YSH-050,-100,-200,-300, YSS-200,-250,-300,-500,-750,-1000, YSLD-050,-100,-200,-300, YSHD-050,-100,-200,-300, YSSD-200,-250,-300,-500,-750,-1000, YSFD-024, YB-100,-150,-200,-300,-500, PT-100,-200,-300,-500, GT-100,-200,-300,-500, MT-100,-200,-300,-500,-750,-1000, MST-100,-200,-300,-500,-750,-1000.

Date of Examination :

Place of Examination :

Surveyor : Dennis Lin

1 Description of the Machinery (Black Bear)

Model	Capacity (Ton)	Lifting Height (m)	Speed (m/min)	Motor Power (kW)	Power supply 50Hz	I-Beam size (mm)
YSF-050	0.5	3(6)ctc	6.7	1.5	1-Ph, 110V, 220V, 230V	-
YSF-100	1	3(6)ctc	4.7	1.5	-as above-	-
YSF-200	2	3(6)ctc	2.3	1.8	-as above-	-
YSL-050	1.5	3(6)ctc	6.7	1.5	3-Ph, 220V-600V	-
YSL-100	1	3(6)ctc	4.7	1.5	-as above-	-
YSL-200	2	3(6)ctc	2.3	1.8	-as above-	-
YSL-300	3	3(6)ctc	1.5	1.8	-as above-	-
YSH-050	0.5	3(6)ctc	9.2	1.8	-as above-	-
YSH-100	1	3(6)ctc	6.7	1.8	-as above-	-
YSH-200	2	3(6)ctc	3.3	1.8	-as above-	-
YSH-300	3	3(6)ctc	2.2	1.8	-as above-	-
YSS-200	2	3(6)ctc	6.6	3.7	-as above-	-
YSS-250	2.5	3(6)ctc	5.2	3.7	-as above-	-
YSS-300	3	3(6)ctc	4.3	3.7	-as above-	-
YSS-500	5	3(6)ctc	2.6	3.7	-as above-	-
YSS-750	7.5	3(6)ctc	1.8	3.7	-as above-	-
YSS-1000	10	3(6)ctc	2.6	3.7*2	-as above-	-
YSLD-050	0.5	3(6)ctc	6.7/2.2	1.8	-as above-	-
YSLD-100	1	3(6)ctc	4.7/1.6	1.8	-as above-	-
YSLD-200	2	3(6)ctc	2.3/0.8	1.8	-as above-	-
YSLD-300	3	3(6)ctc	1.5/0.5	1.8	-as above-	-
YSHD-050	0.5	3(6)ctc	6.7/2.2	1.8	-as above-	-
YSHD-100	1	3(6)ctc	6.7/2.2	1.8	-as above-	-

Det Norske Veritas Region Norge AS, Head office: Veritas v. 1, 1322 HØVIK, Norway
 Form no.: 89/392-140a-a

Annex to Certificate no.: 98-OSL-SM-0164

holst/sertifik/Cheng Day1bb.ans Page 1/3



DNV

EC TYPE-EXAMINATION PROGRAM

ANNEX I

Model	Capacity (Ton)	Lifting Height (m)	Speed (m/min)	Motor Power (kW)	Power supply 50Hz	I-Beam size (mm)
YSHD-200	2	3(6)ctc	3.3/1.1	1.8	-as above-	-
YSHD-300	3	3(6)ctc	2.2/0.7	1.8	-as above-	-
YSSD-200	2	3(6)ctc	6.6/2.2	3.7	-as above-	-
YSSD-250	2.5	3(6)ctc	5.2/1.7	3.7	-as above-	-
YSSD-300	3	3(6)ctc	4.3/1.4	3.7	-as above-	-
YSSD-500	5	3(6)ctc	2.6/0.9	3.7	-as above-	-
YSSD-750	7.5	3(6)ctc	1.8/0.6	3.7	-as above-	-
YSSD-1000	10	3(6)ctc	2.6/0.9	3.7*2	-as above-	-
YSFD-024	0.24	3	13.5/3.4	0.6	1-Ph., 110V,220V	-
YB-100	1	2.5	-	-	-	-
YB-150	1.5	3	-	-	-	-
YB-200	2	3	-	-	-	-
YB-300	3	3	-	-	-	-
YB-500	5	3	-	-	-	-
PT-100	1	-	-	-	-	75-100
PT-200	2	-	-	-	-	100-125
PT-300	3	-	-	-	-	125-150
PT-500	5	-	-	-	-	150-175
GT-100	1	-	-	-	-	75-125
GT-200	2	-	-	-	-	100-150
GT-300	3	-	-	-	-	125-175
GT-500	5	-	-	-	-	125-175
MT-100	1	-	20	0.25	3-Ph., 110V- 600V	75-125
MT-200	2	-	20	0.25	-as above-	100-150
MT-300	3	-	20	0.6	-as above-	125-175
MT-500	5	-	20	0.6	-as above-	125-175
MT-750	7.5	-	13	0.9	-as above-	150-200
MT-1000	10	-	14	1.5	-as above-	150-200
MST-100	1	-	20	0.25	-as above-	-
MST-200	2	-	20	0.25	-as above-	-
MST-300	3	-	20	0.6	-as above-	-
MST-500	5	-	20	0.6	-as above-	-
MST-750	7.5	-	19	0.9	-as above-	-
MST-1000	10	-	21	0.9*2	-as above-	-

Further description of the [machinery] is given in DNV Region Norge file 412 10533 and TCF No. CEM-054-1.



EC TYPE-EXAMINATION PROGRAM

ANNEX I

2 Conditions

Before the above described machinery is placed on the market and/or put into service the manufacturer has to ensure that all other relevant EEC/EC Directives are complied with.

The examination has not considered optional accessories.

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DECLARATION OF CONFORMITY



CHENG DAY MACHINERY WORKS CO., LTD.
173 WEN CHIU ROAD, TA CHIA CHEN, TAICHUNG HSIEN, TAIWAN R.O.C.

We declare under our sole responsibility that the products:

- Electric chain hoist: YSE-050, 100, 200
- YSF-050, 100, 200
- YSL/YSLD-050, 100, 200,300
- YSH/YSHD-050, 100, 200,300
- YSS/YSSD-200, 250,300,500,750,1000

- Electric chain hoist: YSFMT-050,100,200
- YSLMT/YSLDMT-050,100, 200, 300
- YSHMT/YSHDMT-050,100, 200,300

- With motorized trolley: YSSMT/YSSDMT-200,300,500,750,1000
- YLT/YLTD-050, 100,200,300
- YHT/YHTD-050, 100,200,300
- YST/YSTD-200, 250,300,500

Working load limit : for all types from 240 kgs to 10,000 kgs.

To which this declaration relates is in conformity with the following Machinery Directive and Standard:

- Machinery Directive 89 / 392 / EEC 1989.
- Low Voltage Directive 73 / 23 / EEC.
- EMC Directive 89 / 336 / EEC.
- ISO 12100-1 (E) (Basic terminology, methodology)
- ISO 12100-2 (E) (Technical principles)
- EN 418 (Emergency stop equipment, functional aspects)
- EN 60204-1 (Electrical equipment of machines)
- FEM 9.511 (Classification of mechanisms)
- FEM 9.681 (Selection of travel motors)
- FEM 9.682 (Selection of lifting motors)
- FEM 1.001 (Rules for the design of hoisting appliances)

We will keep the technical documents listed below at our Head Office Factory above mentioned for any concerned national authorities inspection purposes.

- Operation manual for the products.
- Overall drawings of the products.
- Description of methods adopted to meet the Machinery Directive.
- Other technical materials.

We declare moreover as required by the annex IV of Machine Directive 98 / 37 / EC:

- The Marking is placed on the machine

Hoist type / Trolley:.....

Capacity (Ton):.....Serial No:.....

CHENG DAY MACHINERY WORKS CO., LTD.

C. F. HUANG

C. F. HUANG
MANAGER
QUALITY ASSURANCE DEPT.

DATE:

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 VG320
YSLD-100, 200, 300	Soak in oil	Monthly	Suitable	Annual	700 ~ 800	ISO VG320
YLT-100, 200	Soak in oil	Monthly	Suitable	Annual	700 ~ 800	ISO VG320
YLTD-100, 200	Soak in oil	Monthly	Suitable	Annual	700 ~ 800	ISO VG320
YSH-050,100-200,300	Soak in oil	Monthly	Suitable	Annual	700 ~ 800	ISO VG320
YSHD-050, 100, 200,300	Soak in oil	Monthly	Suitable	Annual	700 ~ 800	ISO VG320
YHT-050, 100, 200	Soak in oil	Monthly	Suitable	Annual	700 ~ 800	ISO VG320
YHTD-050, 100, 200	Soak in oil	Monthly	Suitable	Annual	700 ~ 800	ISO VG320
YET-050, 100, 200	Soak in oil	Monthly	Suitable	Annual	700 ~ 800	ISO VG320
YSF-100, 200	Soak in oil	Monthly	Suitable	Annual	700 ~ 800	ISO VG320
YSFD-024, 320	Soak in oil	Monthly	Suitable	Annual	300	ISO VG320
YSS-200, 300, 500, 750, 1000	Soak in oil	Monthly	Suitable	Annual	1400 ~ 1500	ISO VG320
YSSD-200,300, 500, 750, 1000	Soak in oil	Monthly	Suitable	Annual	1400 ~ 1500	ISO VG320