



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-050.100.200.300
YLT-050.100.200.300
YHT-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.



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 | 25 |
| 8.Drawings and Parts List | 26 |
| 9.Declaration Of Conformity | 54 |

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 () | | -20 to +40 | |
| Working humidity range (%) | | 85 or less | |
| Protection | Hoist | IP 42 | |
| | Push button | IP 20 | |
| 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.

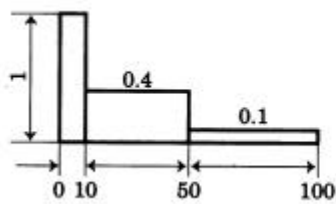
Black Bear electric chain hoists have been designed for grade 1Am in the FEM Regulations (FEM 9.5.11).

Details are provided in Table 2-2.

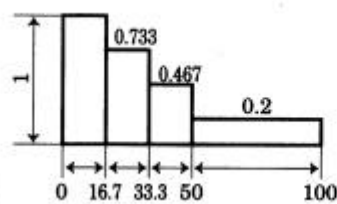
Average daily operating time and total operating time are determined by load distribution.

Table 2-2 Mechanical classification

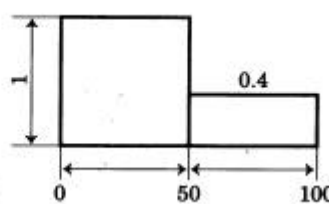
| Load Spectrum (Load distribution) | Definitions | Cubic mean value | Average daily Operation time(h) | Total operating time (h) |
|--------------------------------------|--|----------------------|---------------------------------|--------------------------|
| 1 (light) | Mechanisms or parts thereof,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



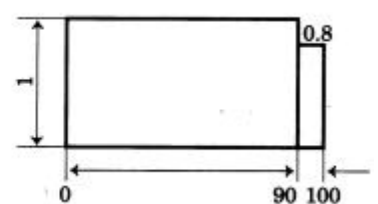
% operating time
Load spectrum 1



% 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 button 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.

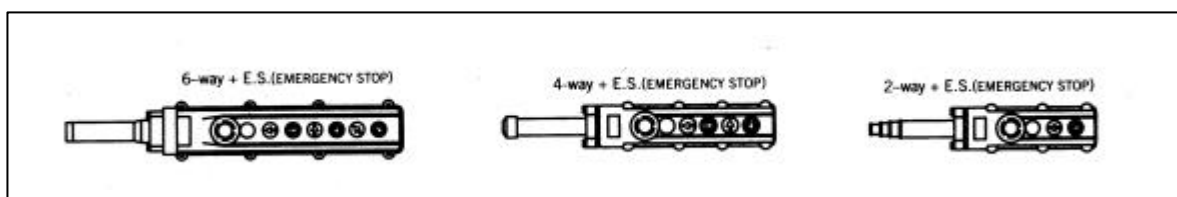
(5) Limit Switches (except YSE series)

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.

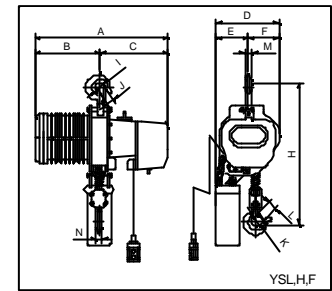
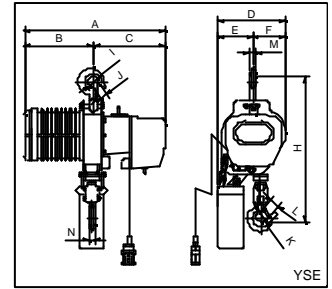
Turning it to the right will release the lock and to enable re-starting. (Illust. 1)



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) | | 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 | |
| | | 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 | |
| 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 | |

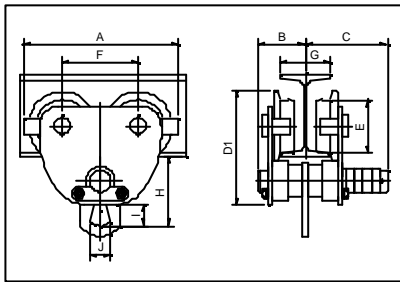


Dimension

| Type | Capacity (ton) | H | | A | | | | B | | | | C | D | E | F | I | J | K | L | M | N |
|-----------|----------------|-----|------|-----|------|-------|-------|-----|------|-------|-------|-----|-----|-----|-----|----|----|----|----|------|------|
| YSL,H,E,F | 1/2(050) | 570 | E550 | 505 | F548 | LD548 | HD548 | 245 | F288 | LD288 | HD288 | 260 | 240 | 115 | 125 | 32 | 30 | 32 | 30 | 22 | 22 |
| YSL,H,E,F | 1,(100) | 570 | E550 | 505 | F548 | LD548 | HD548 | 245 | F288 | LD288 | HD288 | 260 | 240 | 115 | 125 | 32 | 30 | 32 | 30 | 22 | 22 |
| YSL,H,E,F | 2,(200) | 700 | E665 | 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 |

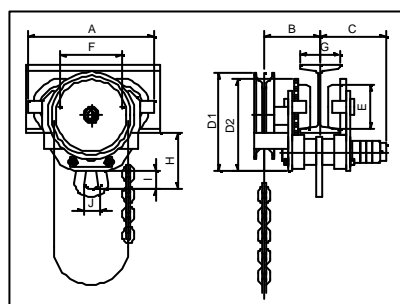
2.5 Optional Trolley Accessory

Plain Trolley



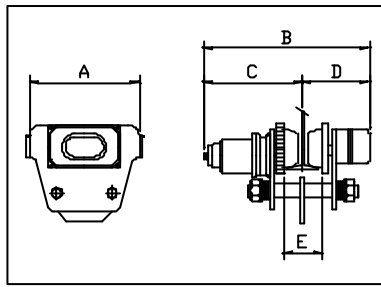
| Dimensions (mm) PT | | | | | | | | | | | | | |
|--------------------|----------------|-----|----|-----|-----|-----|-----|----------------|-----|----|----|------------|--------------------------|
| Model | Capacity (ton) | A | B | C | D1 | E | F | Flange Width G | H | I | J | N.W. (kgs) | Min. radius of curve (m) |
| PT-100 | 1 | 237 | 73 | 126 | 171 | 82 | 116 | 75-125 | 102 | 32 | 32 | 10.9 | 1 |
| PT-200 | 2 | 273 | 87 | 141 | 214 | 98 | 135 | 100-150 | 150 | 55 | 60 | 16.7 | 1.3 |
| PT-300 | 3 | 308 | 90 | 143 | 251 | 115 | 150 | 100-150 | 191 | 78 | 60 | 26.4 | 1.5 |

Geared Trolley



| Dimensions (mm) GT | | | | | | | | | | | | | | |
|--------------------|----------------|-----|-----|-----|-----|-----|-----|-----|----------------|-----|----|----|------------|--------------------------|
| Model | Capacity (ton) | A | B | C | D1 | D2 | E | F | Flange Width G | H | I | J | N.W. (kgs) | Min. radius of curve (m) |
| GT-100 | 1 | 237 | 103 | 126 | 164 | 171 | 82 | 116 | 75-125 | 102 | 32 | 32 | 15.6 | 1 |
| GT-200 | 2 | 273 | 119 | 141 | 223 | 214 | 98 | 135 | 100-150 | 150 | 55 | 60 | 22.1 | 1.3 |
| GT-300 | 3 | 308 | 122 | 143 | 234 | 251 | 115 | 150 | 100-150 | 191 | 78 | 60 | 31.1 | 1.5 |

Monorail Motorized Trolley

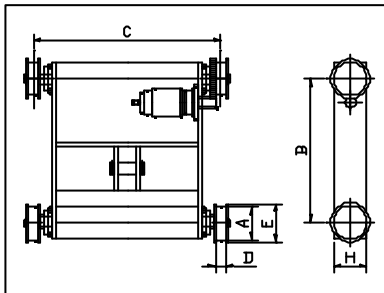


| Dimensions / Specifications (mm) | | | | | | | | | | | |
|----------------------------------|---------|-----|-----|-----|-----|----------------|---------------|--------|---------------------|------------|--------------------------|
| Capacity (ton) | Model | A | B | C | D | Flange width E | Speed (m/min) | | 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



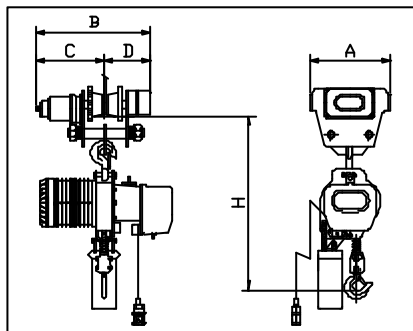
| Dimensions / Specifications (mm) | | | | | | | | | | | | |
|----------------------------------|----------|---------------|--------|-----|-----|-----|----|-----|-----|------------|----------|------------|
| Capacity (ton) | Model | Speed (m/min) | | A | B | C | D | E | H | Motor (kw) | Pole (P) | N.W. (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 x15T
- 60HZ with pinion M3.5 x12T

MST-300 - 50Hz/60Hz with pinion M3.5 x20T

2.5.1

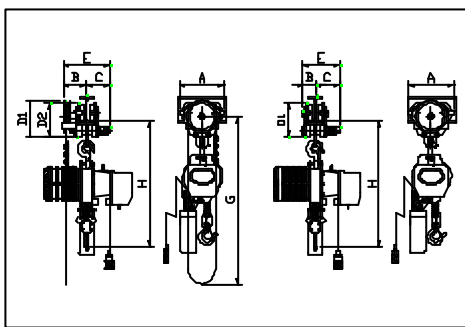
Specification of hoist with motorized trolley



| 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 | 680 | 295 | 541 | 345 | 196 | 75-125 | 1.3 |
| | MT-100 | 1 | 680 | 295 | 541 | 345 | 196 | 75-125 | 1.3 |
| | MT-200 | 2 | 890 | 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-100 | 1 | 674 | 237 | 122.5 | 126 | 164 | 171 | 248.5 | 2719 | 75-125 |
| | PT-100 | 1 | 674 | 237 | 75 | 126 | 171 | - | 201 | - | 75-125 |
| | GT-200 | 2 | 848 | 273 | 136.5 | 141 | 223 | 214 | 277.5 | 3279 | 100-150 |
| | PT-200 | 2 | 848 | 273 | 87 | 141 | 214 | - | 228 | - | 100-150 |
| YSL,H | GT-300 | 3 | 1058 | 308 | 139.5 | 143 | 234 | 251 | 282.5 | 3353 | 100-150 |
| | PT-300 | 3 | 1058 | 308 | 90 | 143 | 251 | - | 233 | - | 100-150 |

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.

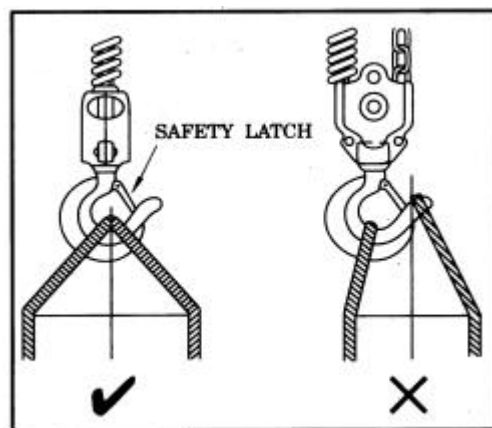


DANGER

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.

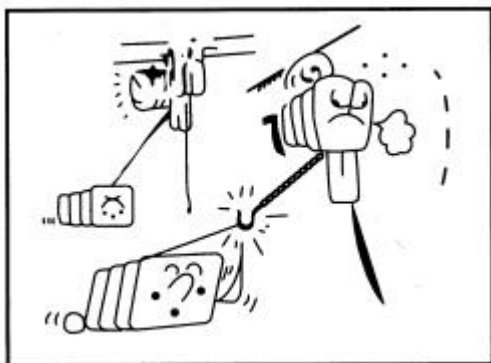
(6) Always make sure the hoist motor completely stops before reversing.

(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.

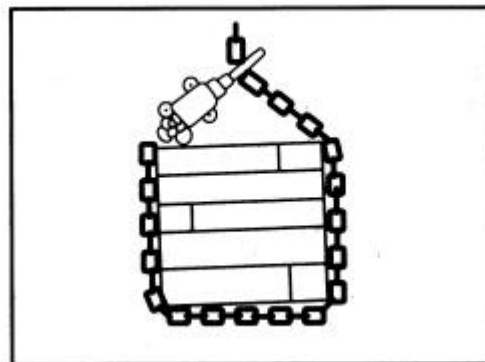
(8) Sling must be applied to load evenly and centrally to ensure correct balance. Never lift any object which is insecure or out of balance.

(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.

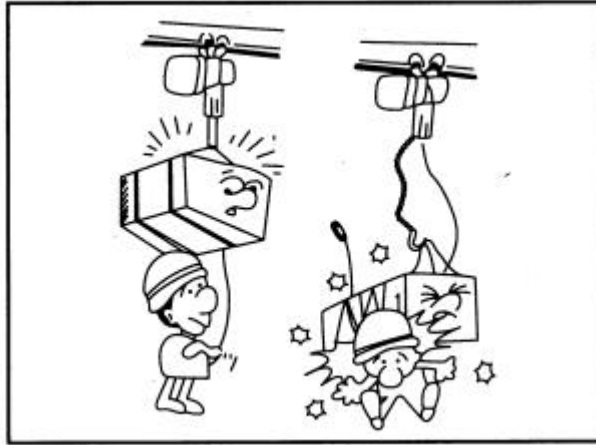
4. INSTALLATION

(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 | 150×100×250L | Canvas |
| 200773 | 3 | 7.1 | 9.0-13.5 | 150×100×380L | Canvas |
| 200774 | 4 | 7.1 | 13.6-20.5 | 150×100×470L | Canvas |
| 200775 | 5-1 | 7.1 | 18.5 | 210×140×345×t2 | Steel |
| 200776 | 5-2 | 7.1 | 18.6-25.5 | 210×140×465×t2 | Steel |
| 200777 | 5-3 | 7.1 | 25.6-30.5 | 210×160×545×t2 | Steel |
| 200778 | 5-4 | 7.1 | 30.6-40.5 | 210×160×665×t2 | Steel |
| 200779 | 5-5 | 7.1 | 40.6-50.5 | 210×170×815×t2 | Steel |
| 200780 | 5-6 | 7.1 | 50.5-60.5 | 210×170×975×t2 | Steel |

Remember to change bucket if the length of chain increased.

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



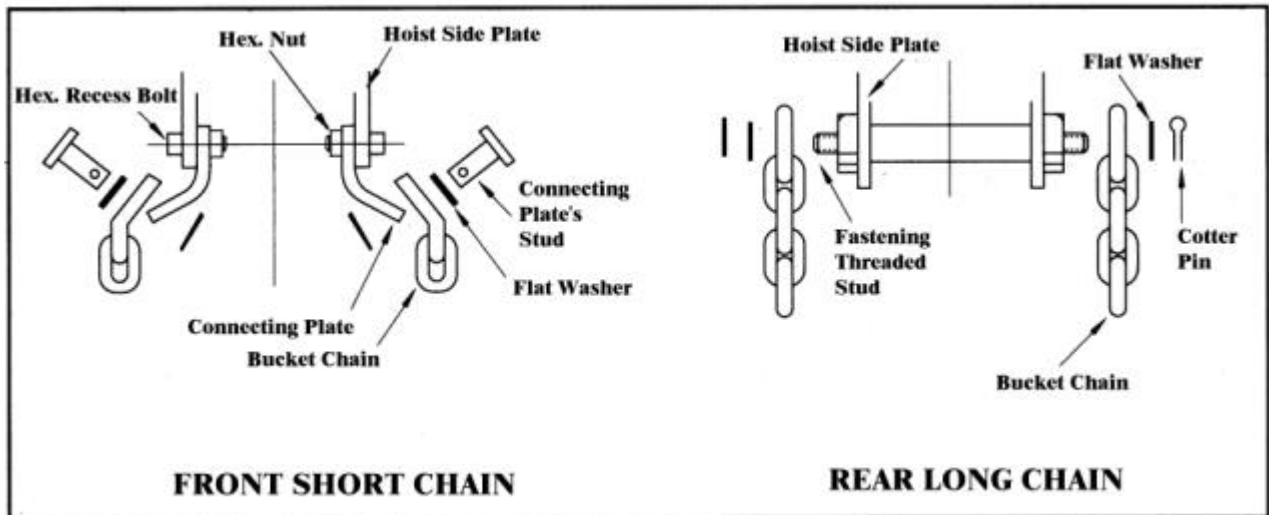
WARNING

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.

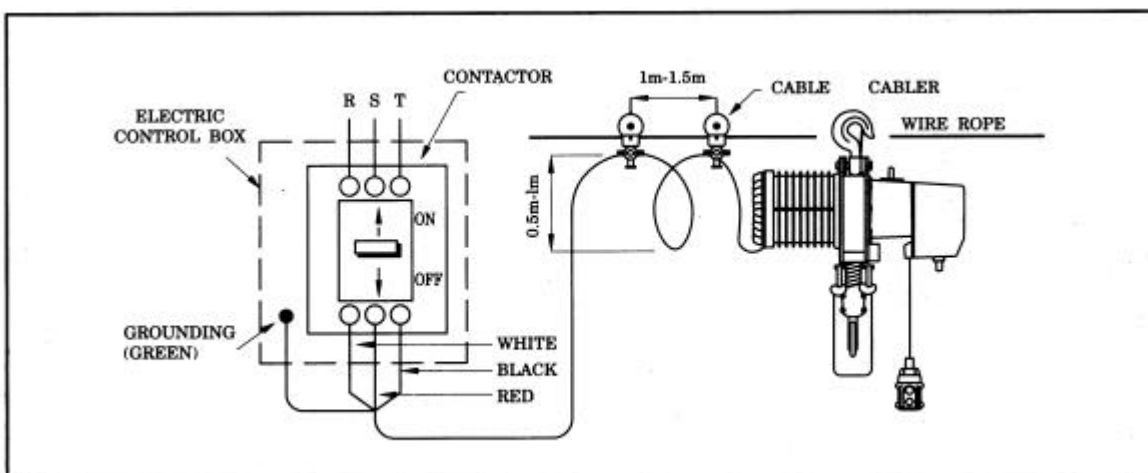
NOTE: If the hoist is to be suspended from an electric trolley, assembly may be eased by firstly removing the top hook, just attaching hoist top hook to the trolley load plate.

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

While holding down either   on 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.

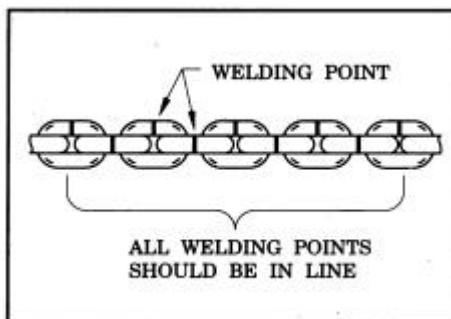
Finally, check that the emergency stop device pops out when turned to the right and that operation can be resumed thereafter. If the equipment fails to pass another above checks, check the wiring and automatic locking function of the emergency stop device.

- (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.

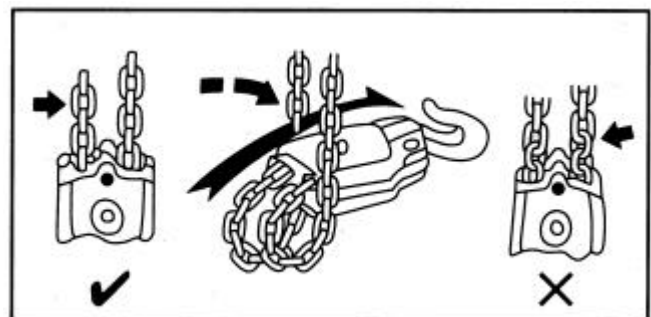
- (e) Check chain position. Weld joints on links must face the same direction (Illust. 8), correct chain operation can only be achieved when all joints are vertically in line.

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.

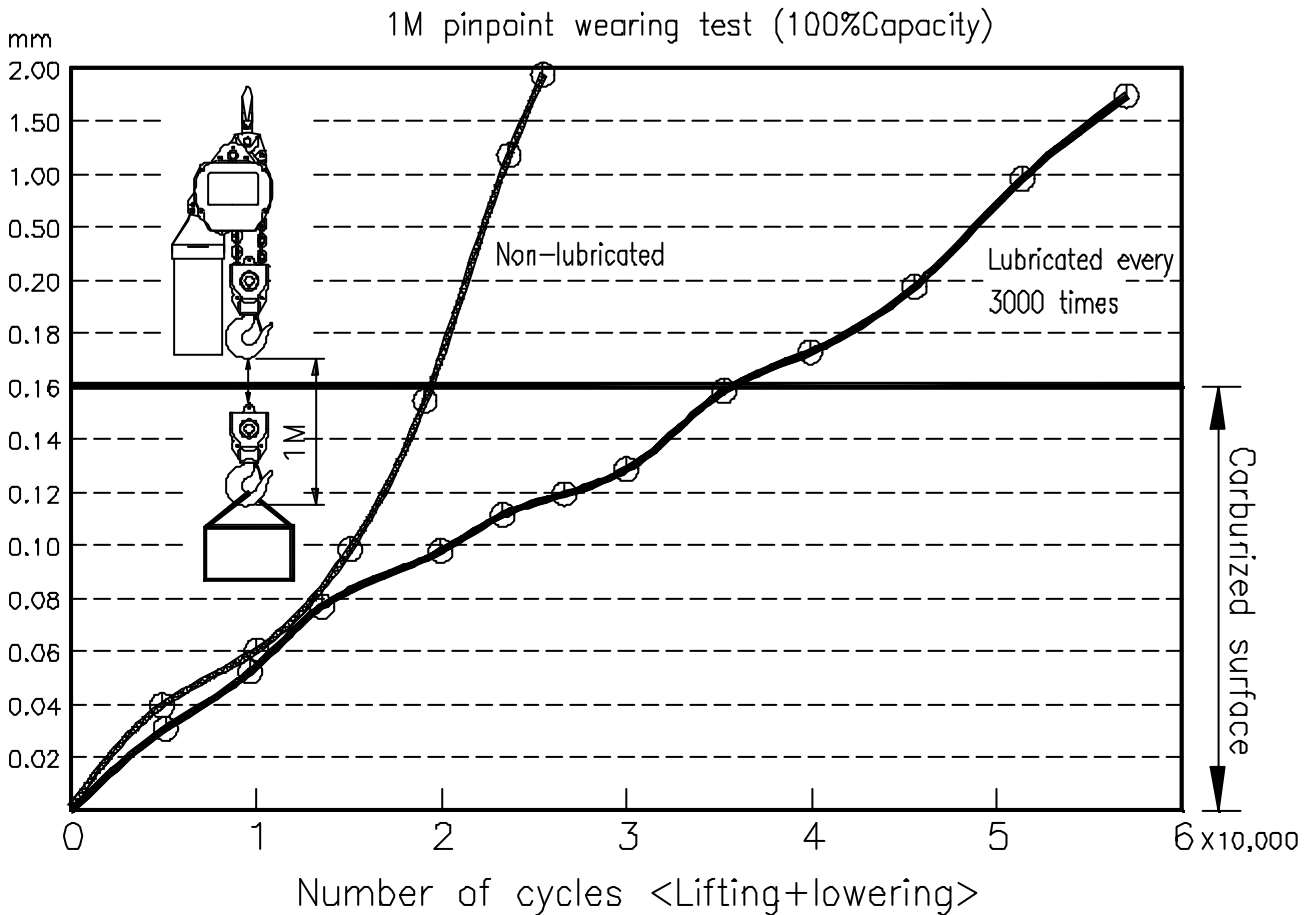
(a) Load chain:

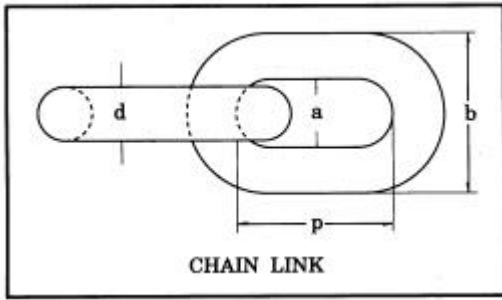
Distorted, elongated or worn chain link will not sit properly on the load sprocket wheel and may cause chain breakage and/or damage to hoist unit. To ensure safe and efficient operation, the chain links must be checked for their pitch (inside length), inside width and outside width monthly according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



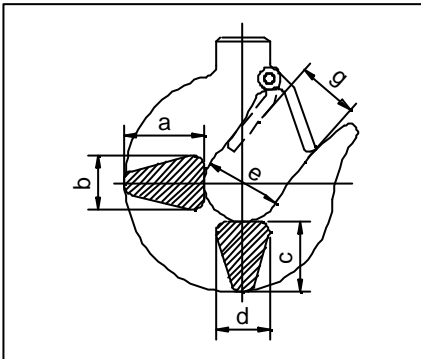


| Dia.- Meter (mm) (d) | Load (ton) | Inside Length (mm) (p) | Inside Width (mm) (a) | Outside Width (mm) (b) |
|-------------------------------|---------------|---------------------------------|--------------------------------|---------------------------------|
| 7.1 | 1/2~3 | 20.2 | 8.9 | 23.6 |

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. following table)



| 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 | | | | | | |

T :Top hook B :Bottom hook

Table 6-2-b

(c) Limit Switches:



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

(3) Annual 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.

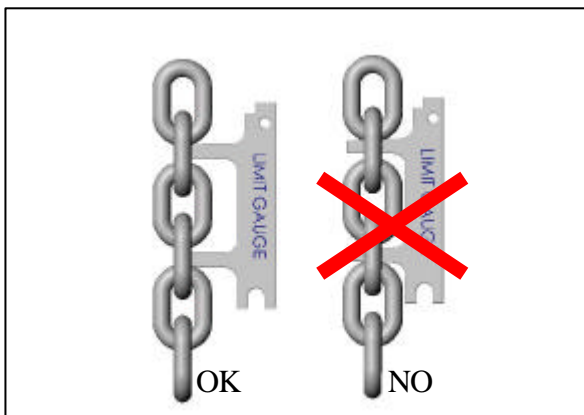


Illustration (1)
Chain pitch measure

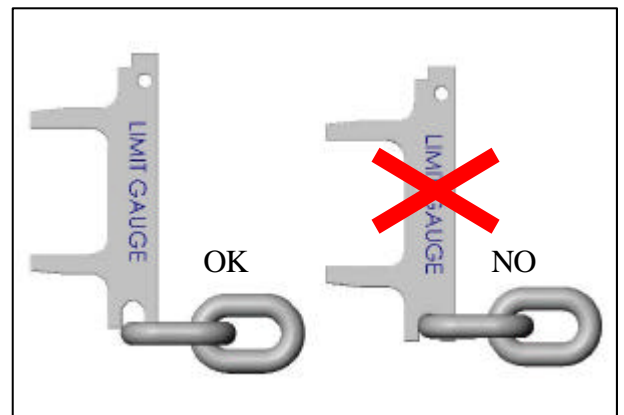


Illustration (2)
Diameter measure

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.

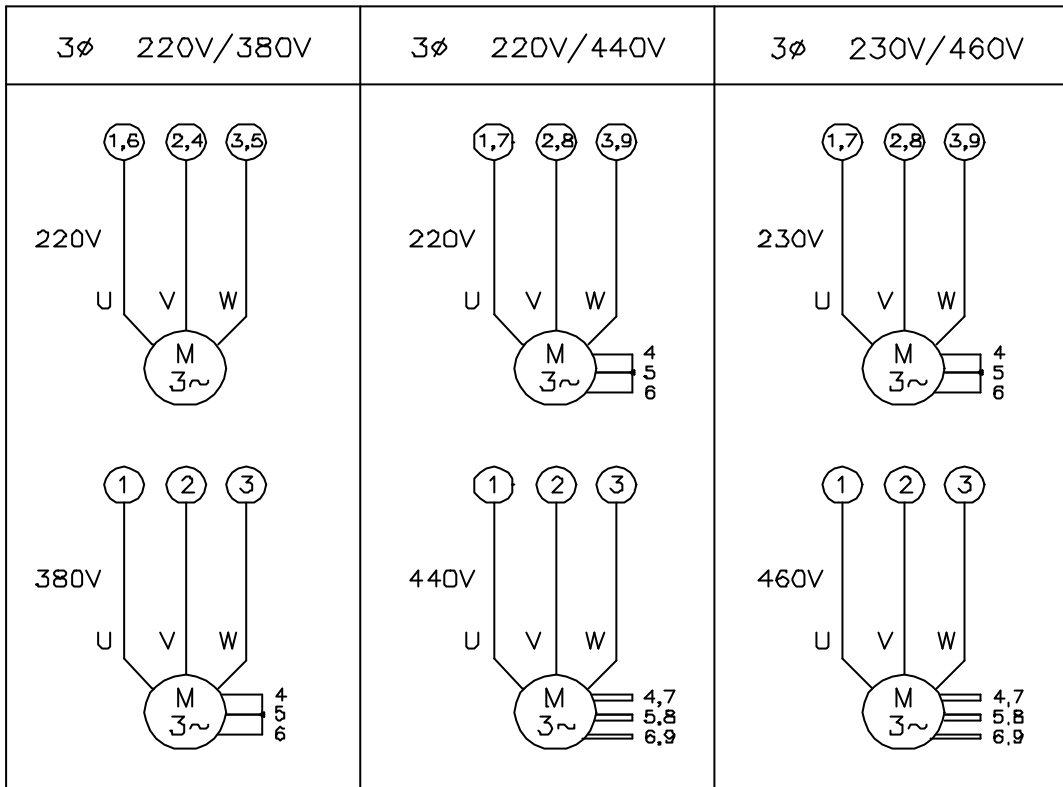
Our electric specifications can be done according to followings:

- (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 | |

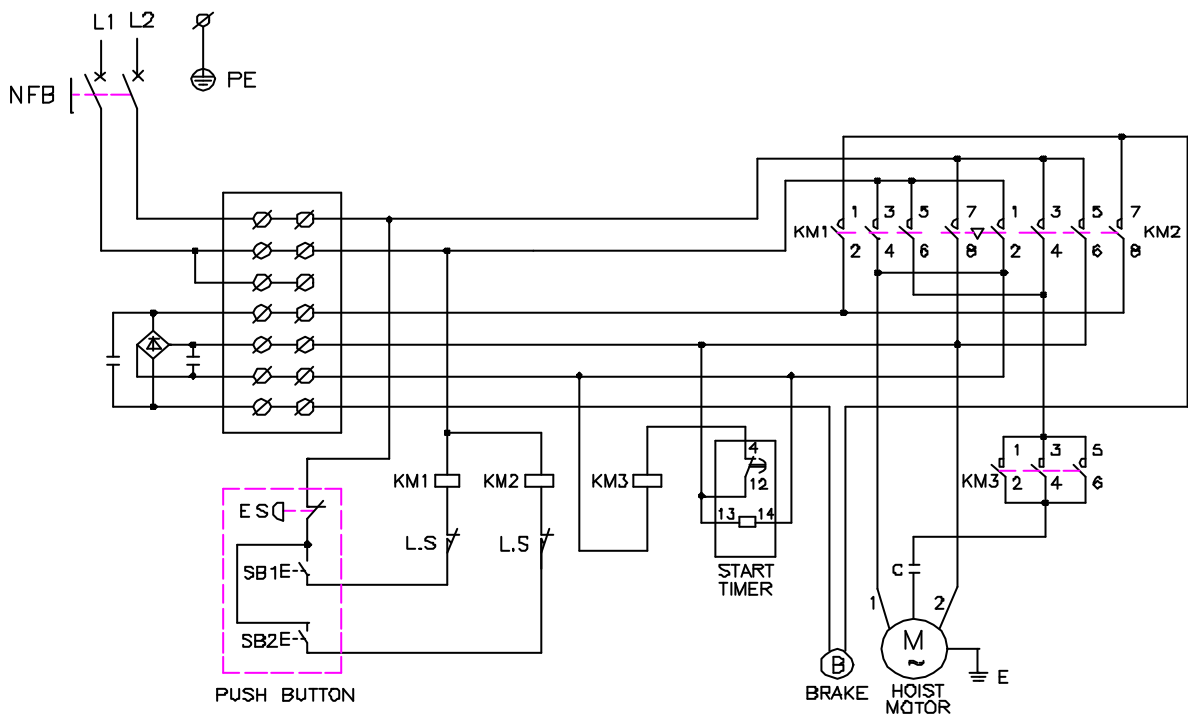
Table 7-1

DUAL VOLTAGE CONNECTION OF MOTOR LEADS



C10011

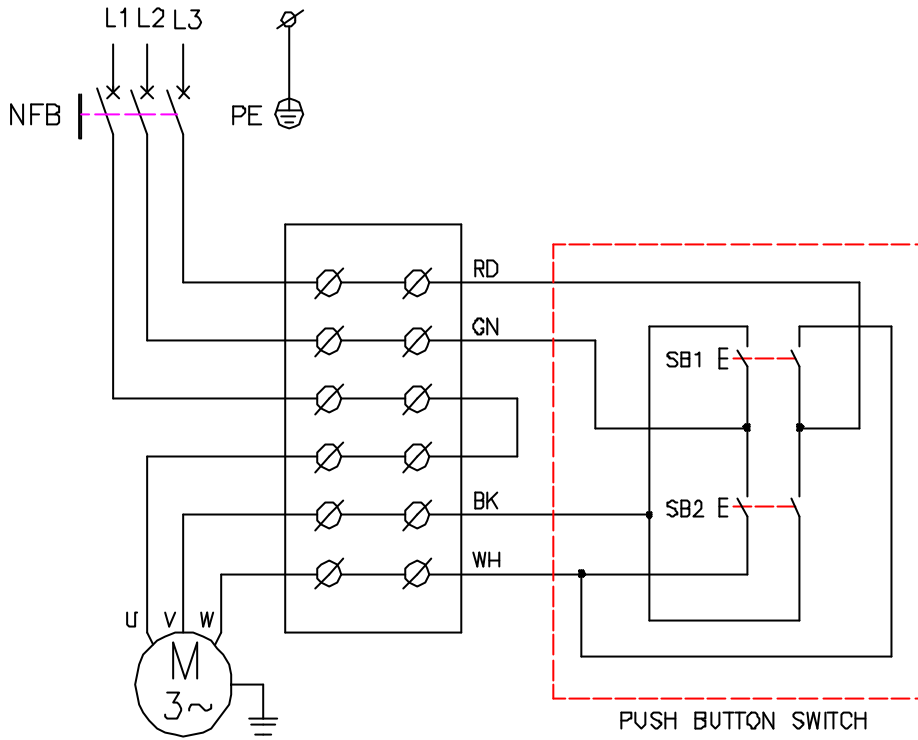
YSF SERIES



- 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

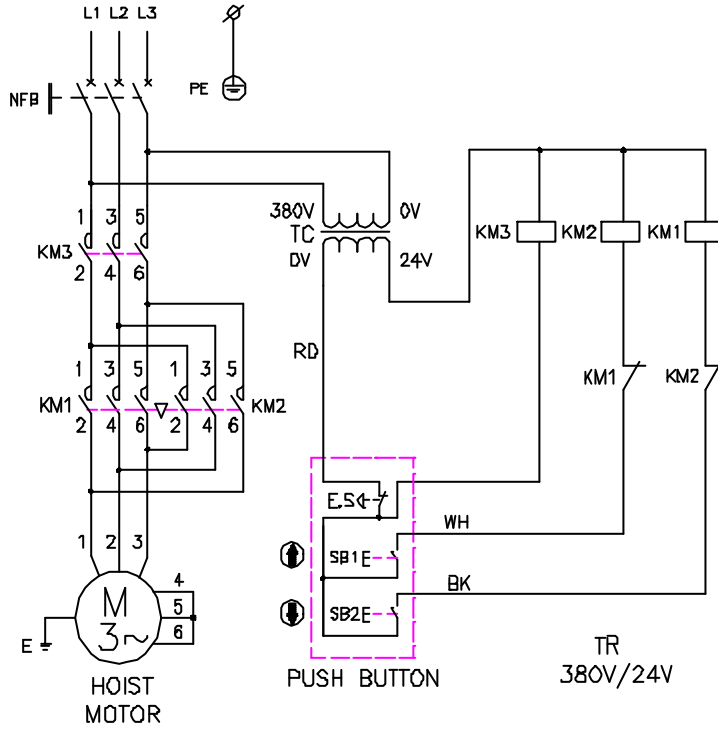
YSE DIRECT ON LINE SERIES



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

A40054

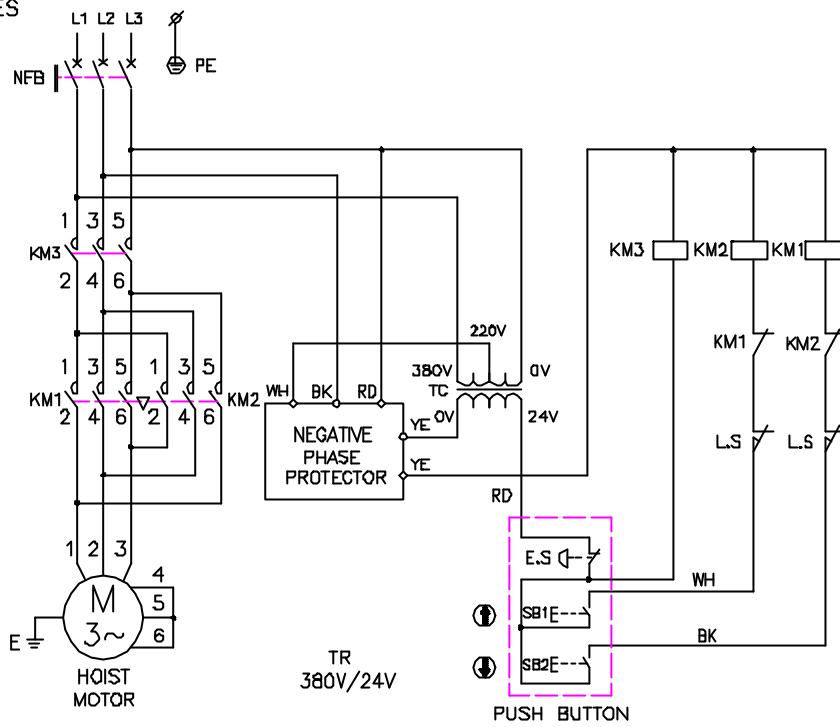
YSE LOW VOLTAGE CONTROL SERIES



- 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

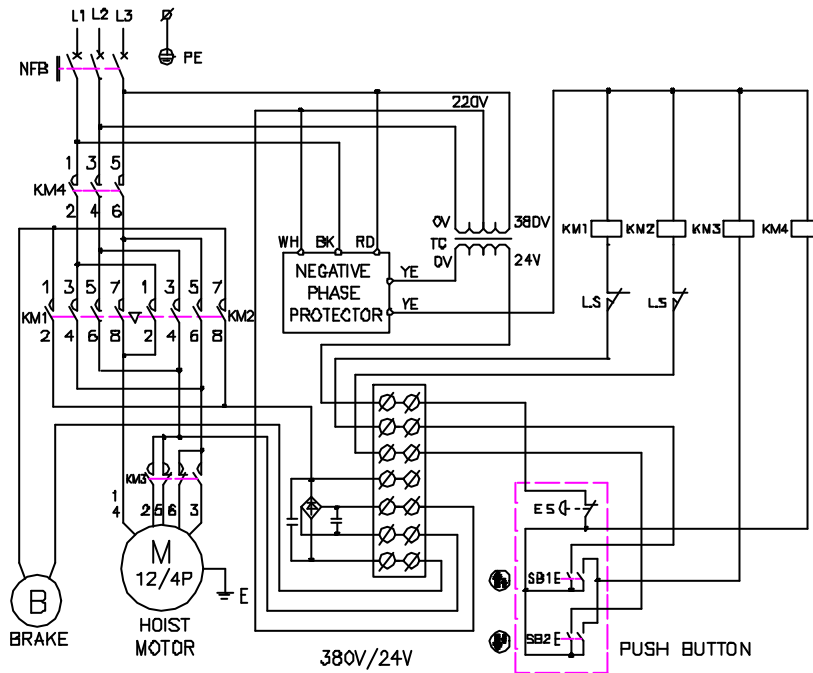
YSL/YSH SERIES



- 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

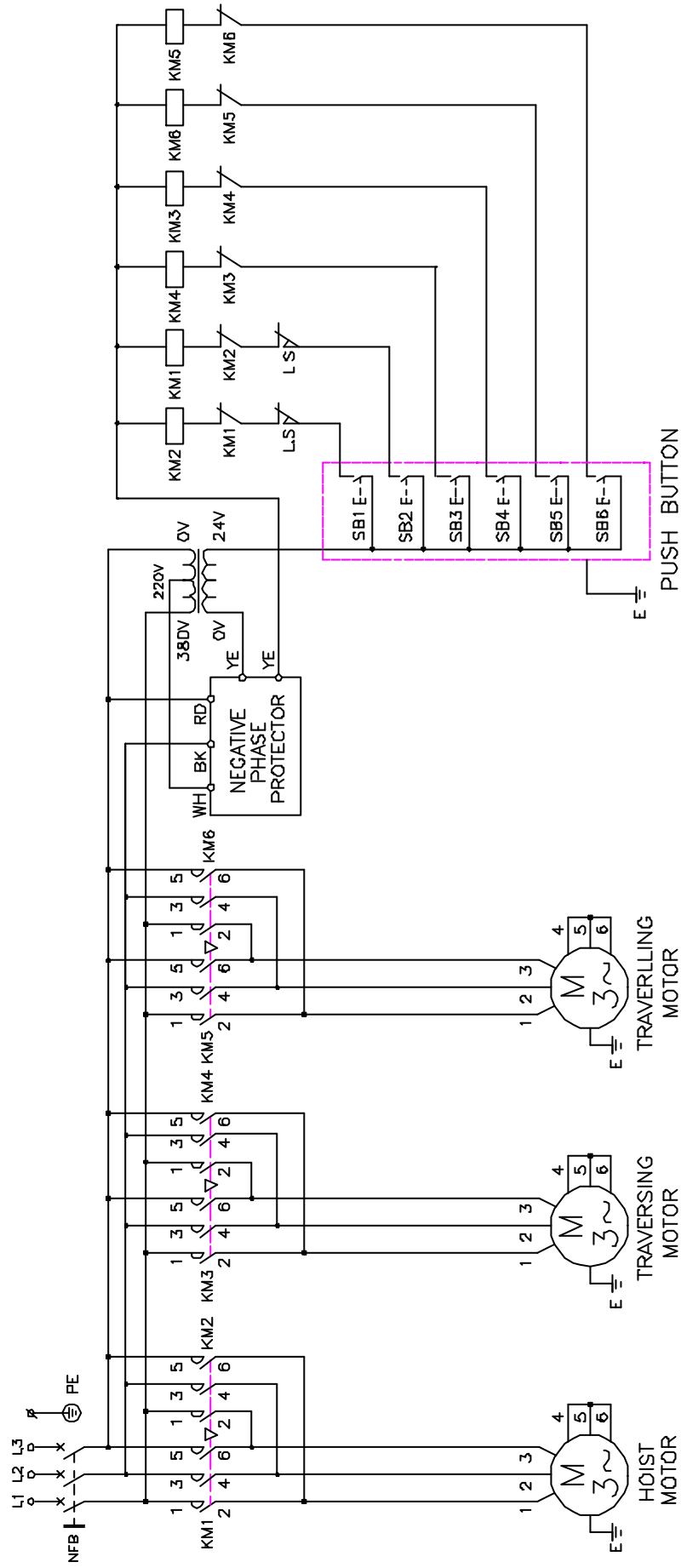
YSLD/YSHD SERIES



- 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
- B BRAKE COIL

A20015

HOIST, TROLLEY AND BRIDGE CARRIER



A40057

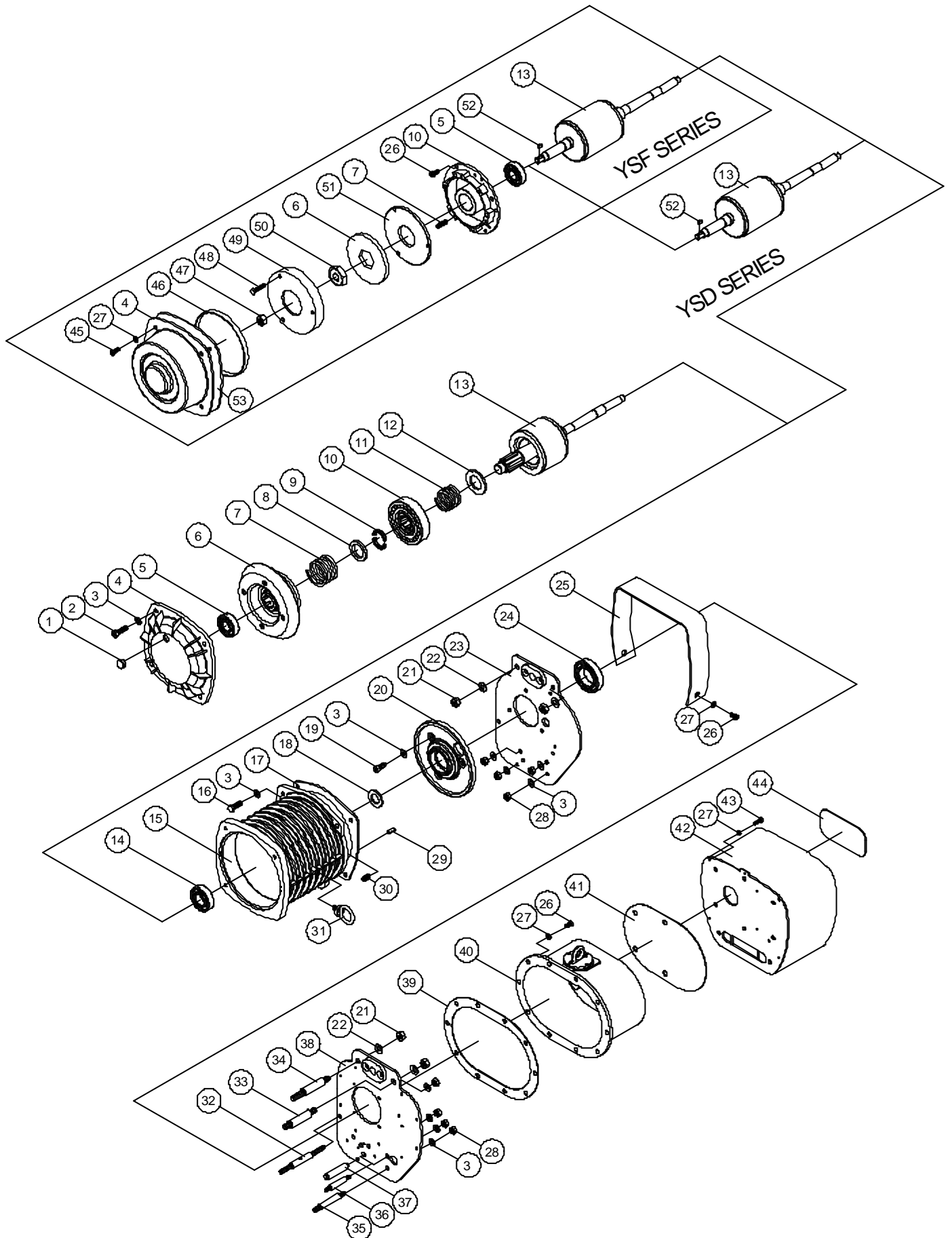
7.2 Troubleshooting and Remedial Action

| 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

| | |
|--|----|
| (1)VII-1 MOTOR EXPLOSION & HOUSING DRAWING | 27 |
| (2)VII-1 MOTOR ASSEMBLY & HOUSING B.O.M | 28 |
| (3)VII-2 HOOK EXPLOSION DRAWING | 32 |
| (4)VII-2 HOOK ASSEMBLY B.O.M | 33 |
| (5)VII-3 LOAD CHAIN SECTION EXPLOSION DRAWING | 35 |
| (6)VII-3 LOAD CHAIN SECTION ASSEMBLY B.O.M | 36 |
| (7)VII-4 REDUCING GEARBOX EXPLOSION DRAWING | 38 |
| (8)VII-4 REDUCING GEARBOX ASSEMBLY B.O.M | 39 |
| (9)VII-5 ELECTRIC EXPLOSION (STANDARD) DRAWING | 42 |
| (10)VII-5 ELECTIRC PARTS ASSEMBLY(STANDARD) B.O.M | 43 |
| (11)VII-5 ELECTRIC EXPLOSION (USA) DRAWING | 45 |
| (12)VII-5 ELECTIRC PARTS ASSEMBLY(USA) B.O.M | 46 |
| (13)VII-6 LOW HEADROOM MODEL'S TROLLEY EXPLOSION DRAWING | 49 |
| (14)VII-6 LOW HEADROON MODEL'S TROLLEY ASSEMBLY B.O.M | 50 |

VII-1 MOTOR EXPLOSION & 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 |
| 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 | | 3D | | | 3 | | | 3D | | | 3D | | |
| 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 | | | |
| | 100327 | 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 |
| 15 | A | Motor Stator Ass'y | 1 | | | | | | 1 | | | | | |
| | B | | | | | 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 | 100381 | 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 | 400213 | Spring Pin< 6×16L> | 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 | | | 1,1D | | | | 1,1D | | | |
| | 200239 | Lock Stud G | 1,1D | | | | | | | | | | | | | |
| 37 | 200240 | Lock Pin | | | | 1 | | | 1,1D | | | | 1,1D | | | |
| 38 | 200039 | 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 | 300350A | Electric Comp Oneness Casing | 1,1D | | | 1 | | | 1,1D | | | | 1,1D | | | |
| 43 | 400006 | Hex. Recess Bolt<M6×16L> | 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

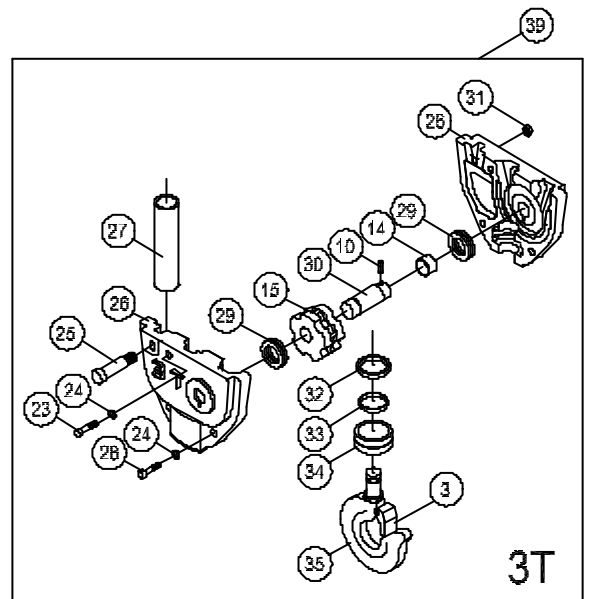
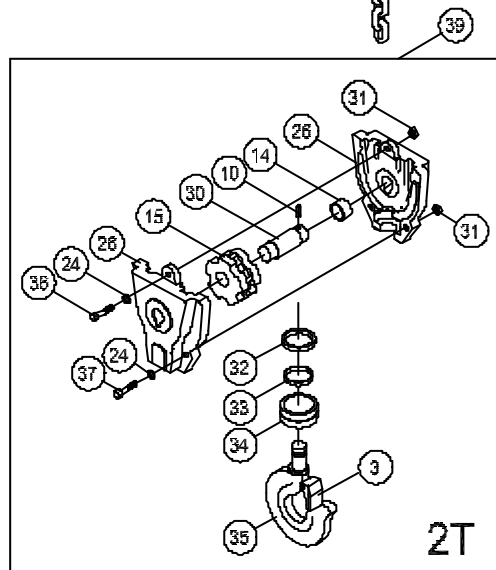
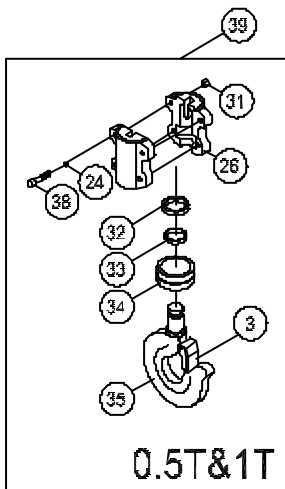
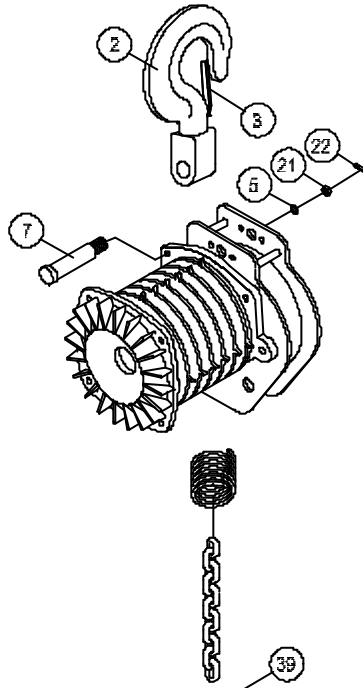
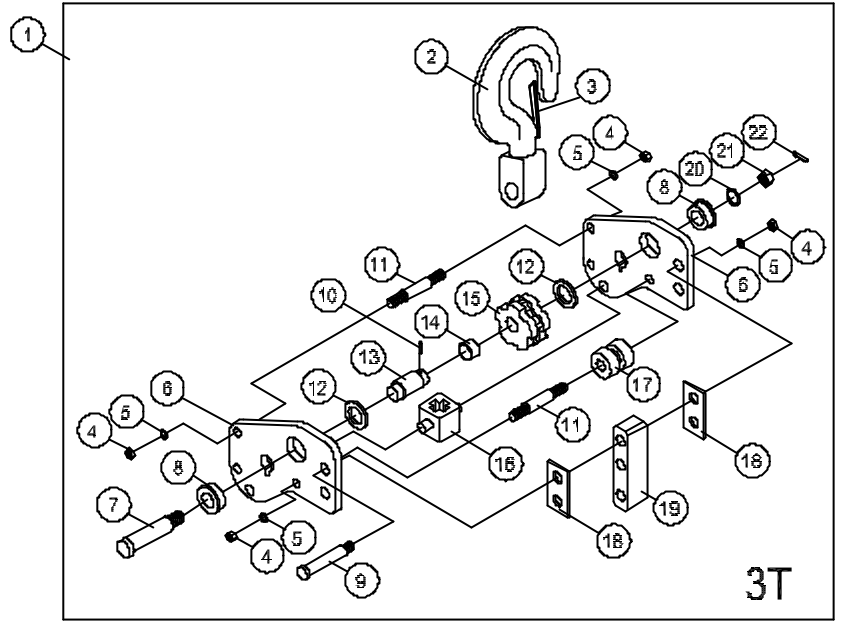
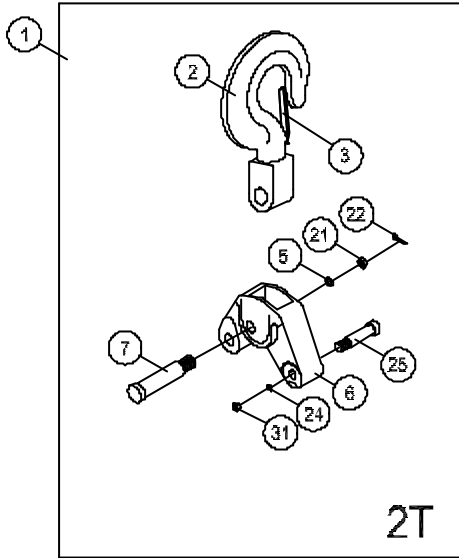
D : DUAL SPEED

| 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 | 2 | 3 |
| 50 | 100412 | Brake Bushing | 1D | | | 1 | | | 1D | | | | 1D | | | |
| 51 | 100405 | Fixed Brake Plate | 1D | | | 1 | | | 1D | | | | 1D | | | |
| 52 | 400958 | Key<5×5×10L> | | | | 1 | | | 1D | | | | 1D | | | |
| 53 | 402578 | Gasket 51# | 1D | | | 1 | | | 1D | | | | 1D | | | |

| NO. | PARTS CODE | DESCRIPTION | - HZ- V | | | | |
|--------|------------|-------------|---------|------|-------------|-------|-------------|
| 15 | A | 132551 | 3 | 60HZ | 220 / 380 V | | |
| | | 132552 | | | 220 / 440 V | | |
| | | 132553 | | | 230 / 460 V | | |
| | | 132555 | | | 600 V | | |
| | | 132561 | | | 3 | 50HZ | 220 / 380 V |
| | | 132562 | | | | | 400 V |
| | | 132563 | | | | | 415 V |
| | B | 132581 | 3 | 60HZ | 220 / 380 V | | |
| | | 132583 | | | 220 / 440 V | | |
| | | 132584 | | | 230 / 460 V | | |
| | | 132586 | | | 600 V | | |
| | | 132591 | | | 3 | 50HZ | 220 / 380 V |
| | | 132592 | | | | | 415 V |
| | C | 132623 | 1 | 60HZ | 115V | | |
| | | 132621 | | | 220 V | | |
| | | 132622 | | | 230 V | | |
| | | 132626 | | | 1 | 50HZ | 110 V |
| | | 132627 | | | | | 220 V |
| | | 132628 | | | | | 230 V |
| | D | 132651 | 3 | 60HZ | 220 V | | |
| | | 132661 | | | 230 V | | |
| | | 132652 | | | 380 V | | |
| | | 132653 | | | 460 V | | |
| | | 132654 | | | 600 V | | |
| 132656 | | 3 | | | 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 | 1 | | | 1 | | | 1 | | | | 1 | | | |
| | 400358 | | | | 1 | | 1 | | | 1 | | | 1 | | | |
| | 400301 | | | | | | | | | | 1 | | | 1 | | |
| 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 Right | | | | | | | | | | | 2 | | 2 | |
| 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 | 200180 | Chain Guide | | | | | | | | | | | 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 |

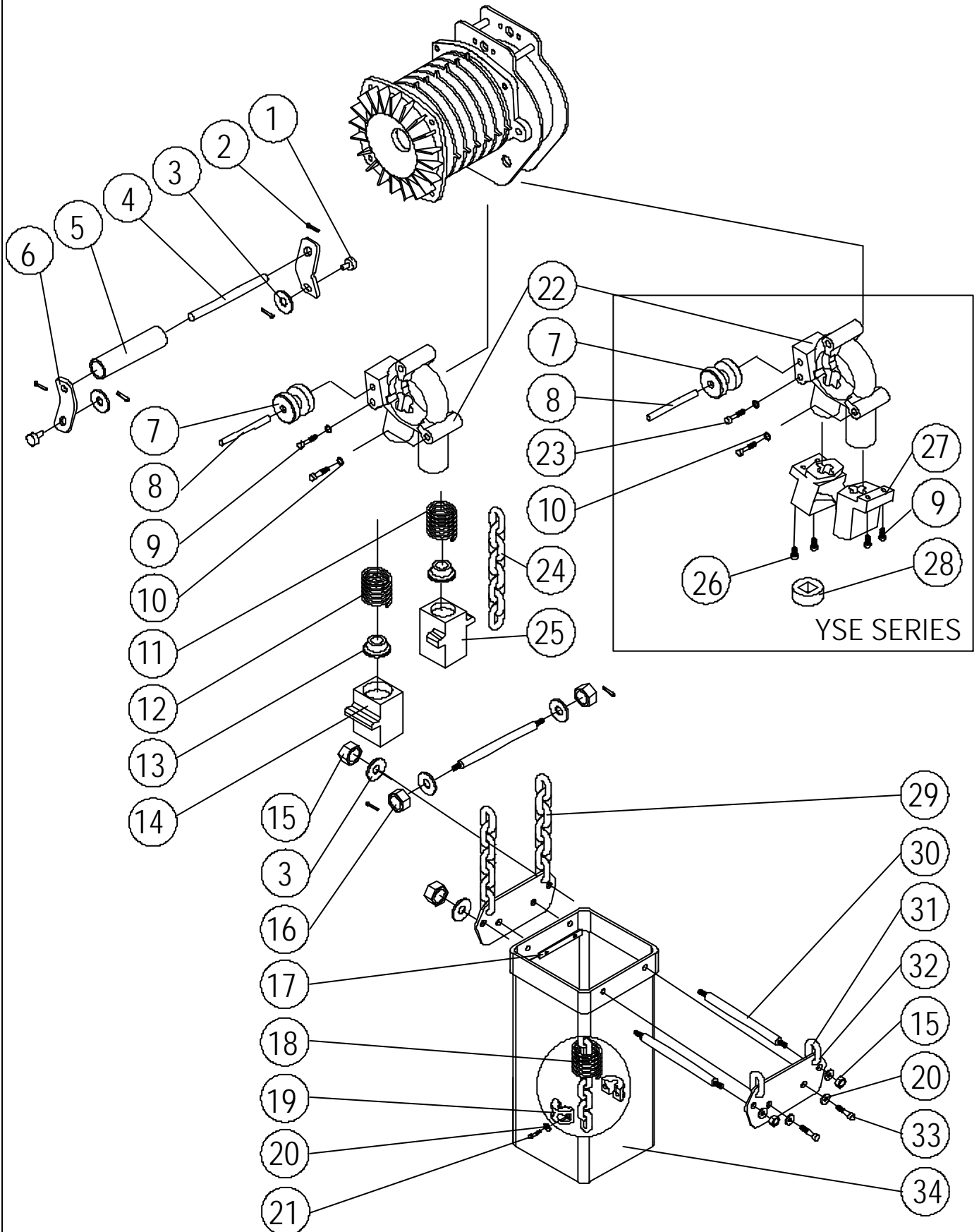
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VII – 2 HOOK ASSEMBLY

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 | | |
| 24 | 400094 | Spring Washer<M6> | 4 | | | 4 | | | 4 | | | | | 4 | | | | |
| | 400095 | Spring Washer<M8> | | | 4 | | | 4 | | | 4 | 3 | | | 4 | 3 | | |
| 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 | 1 | | |
| 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 | |

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" x L> | 6 | | | 6 | | | 6 | | | | 6 | | | | | |
| 3 | 400670 | Flat Washer< 22 x 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 x 0.0 x 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 x 0.0> | 4 | | | 4 | | | 4 | | | | 4 | | | | | |
| 16 | 400081 | Nut<M8 x 0.25> | 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 | | | | | |
| 19 | 200200 | Chain Stopper | 2 | | 4 | | 2 | | 4 | | 2 | | 4 | | 2 | | 4 | |
| 20 | 400094 | Spring Washer<M6> | 8 | | | 8 | | | 8 | | | | 8 | | | | | |

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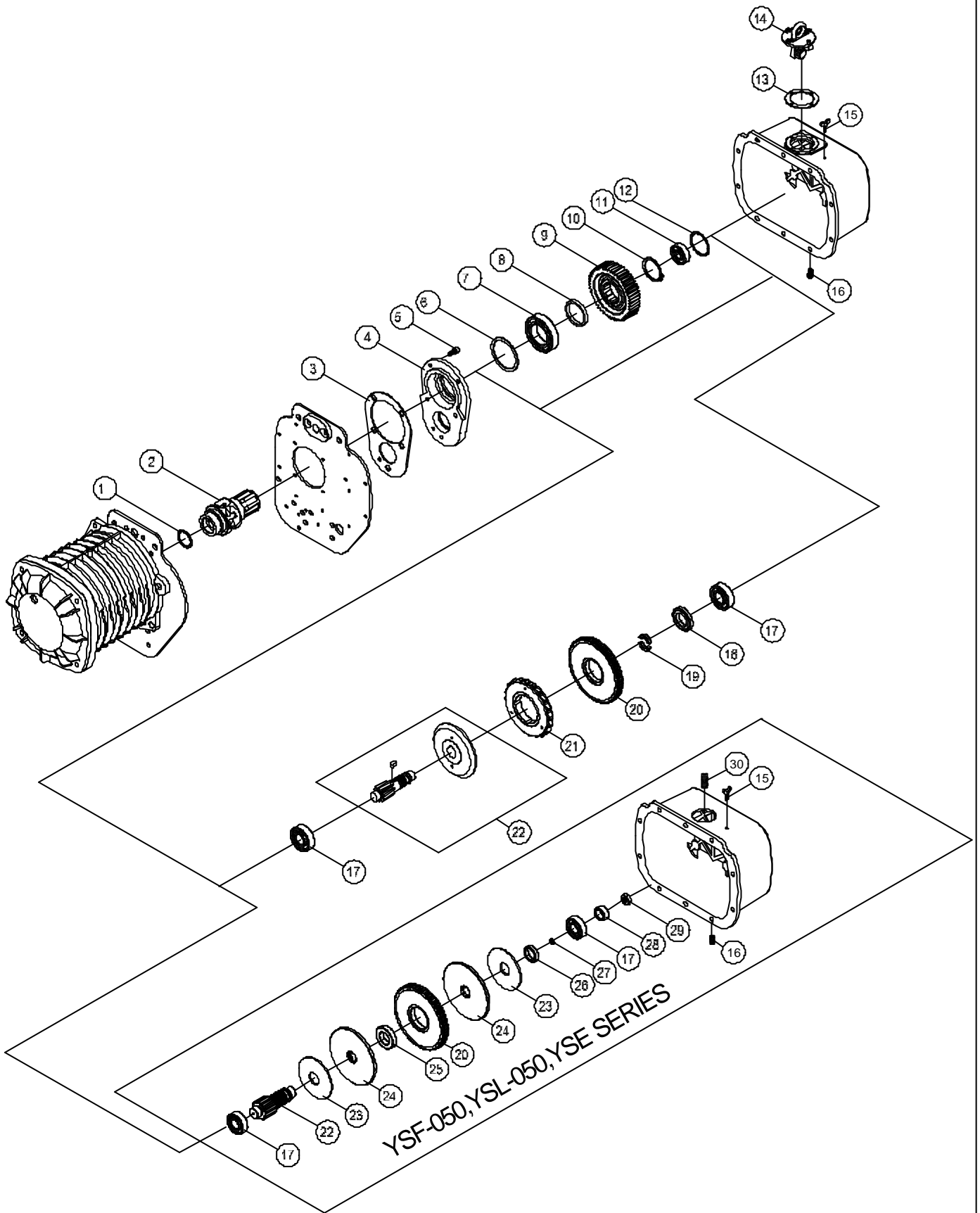
VII – 3 LOAD CHAIN SECTION

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 |
| 21 | 400007 | Hex. Recess Bolt <M6 \times 1.0 \times 20L> | 2 | | | 2 | | | 2 | | | | 2 | | |
| 22 | 200158 | Regulator | | | | 1 | | | 1 | | | | 1 | | |
| | 200157 | | 1 | | | | | | | | | | | | |
| 23 | 400012 | Hex. Recess Bolt <M8 \times 1.25 \times 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 \times 1.0 \times 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 \times 1.0 \times 2L> | 4 | | | 4 | | | 4 | | | | 4 | | |
| 34 | | Chain Bucket Ass'y | 1 | | | 1 | | | 1 | | | | 1 | | |
| | | | | | | | | | | | | | | | |
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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 x28 x6t> | 1 | | | 1 | | | 1 | | | | | | | |
| | 400180 | Oil Seal<18 x28 x8t> | | | | | | | | | | | 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 x1.0 x6L> | 5 | | | 5 | | | 5 | | | | 5 | | | |
| 6 | 400184 | Oil Seal<42 x55 x9t> | 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 x40 x6t> | 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 x0.7> | 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 | | | |

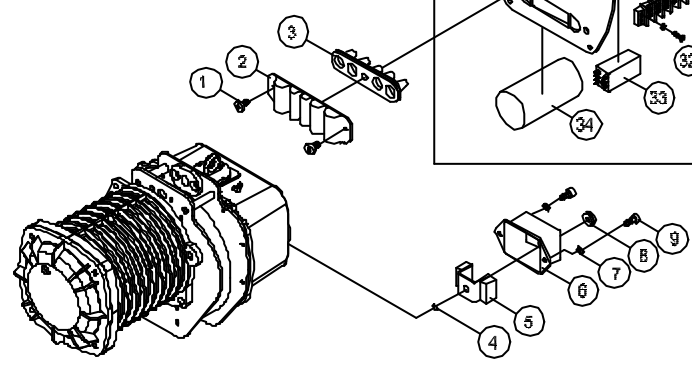
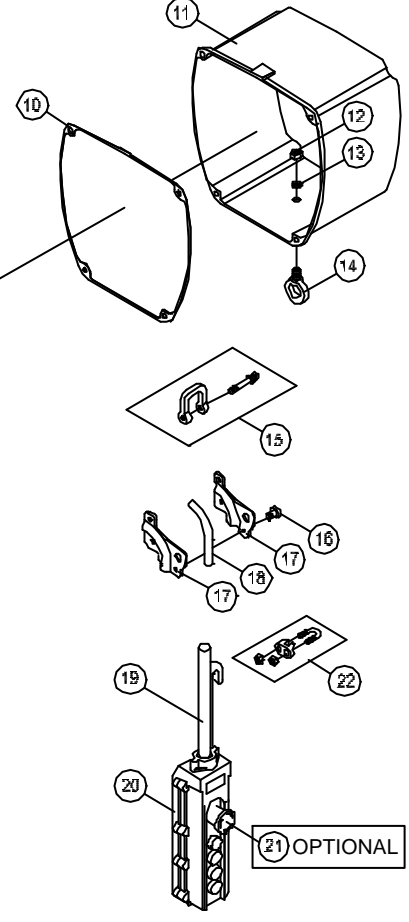
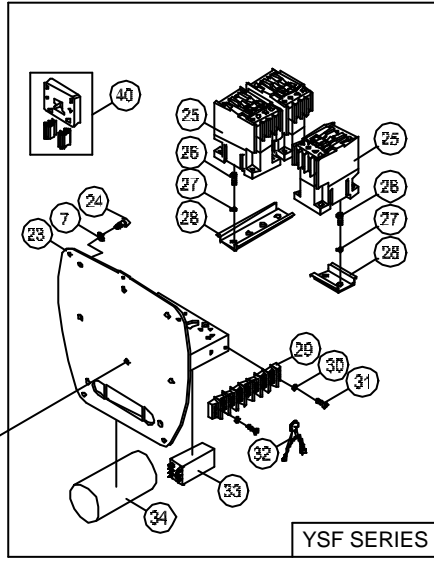
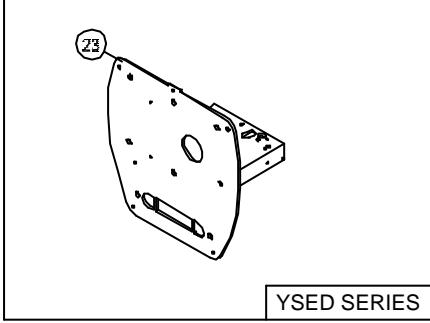
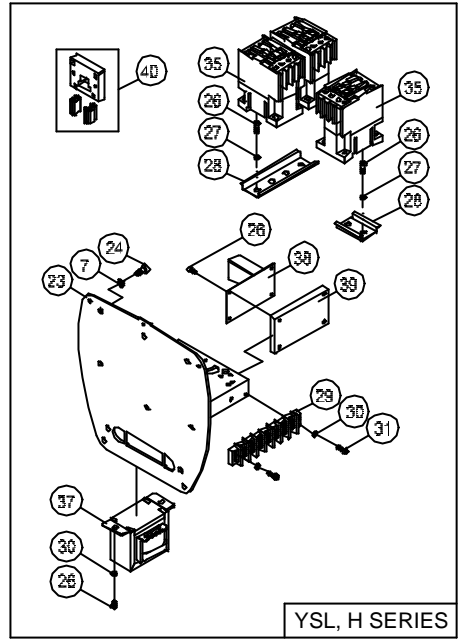
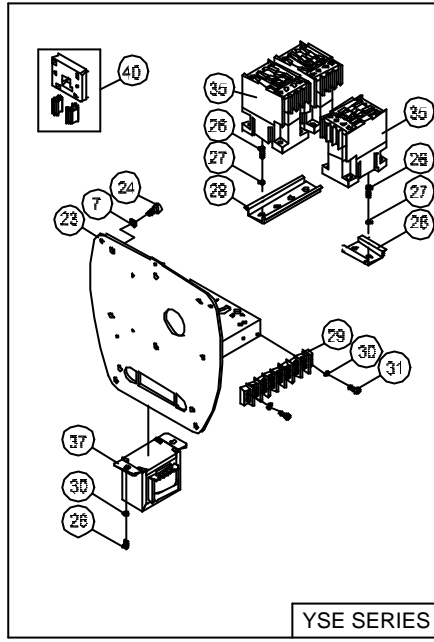
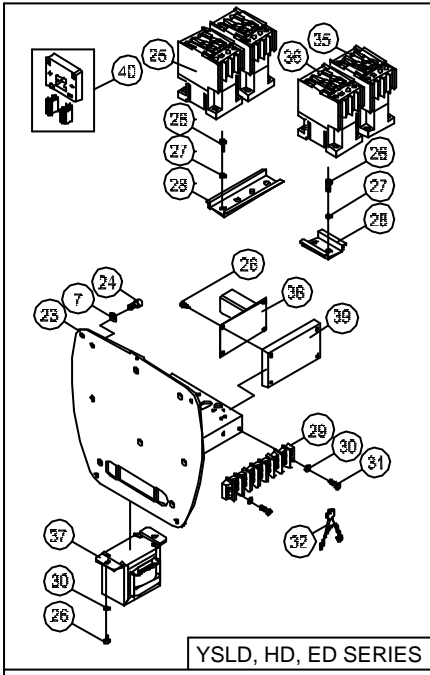
VII – 4 REDUCING GEARBOX

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 |
| 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 | | | | | | | | | | | | | |

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VII-5 ELECTRIC EXPLOSION(Standard)



VII – 5 ELECTRIC PARTS(Standard)

D : DUAL SPEED

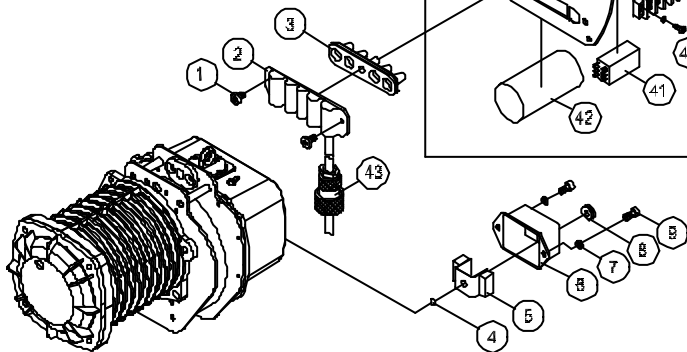
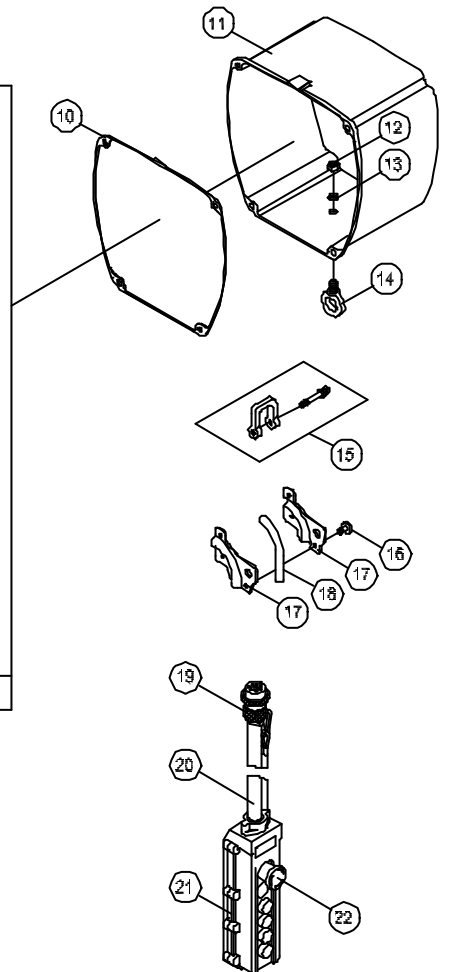
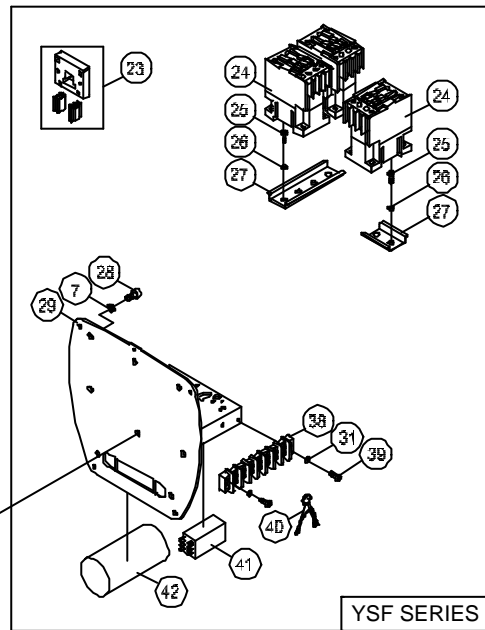
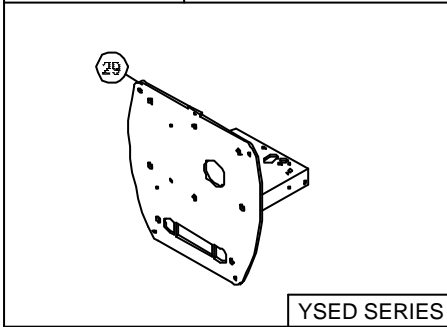
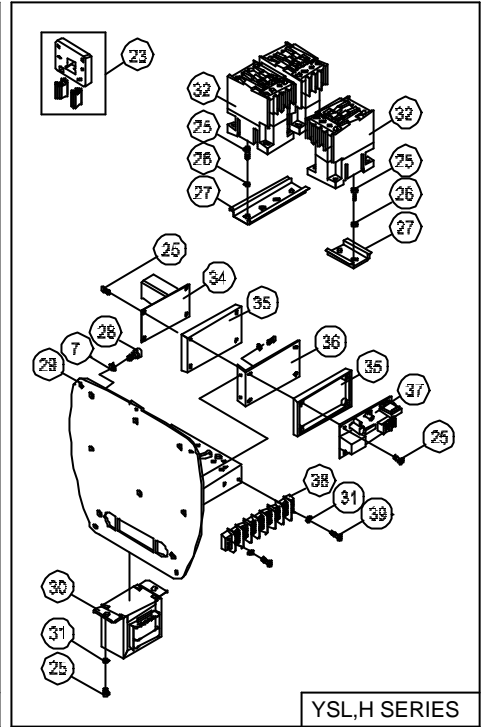
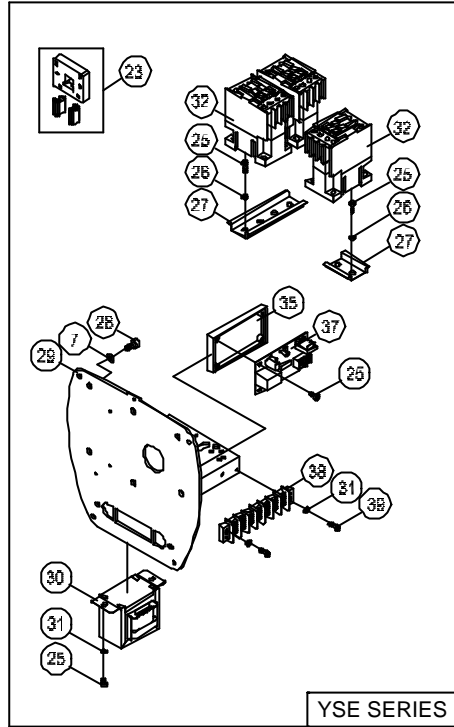
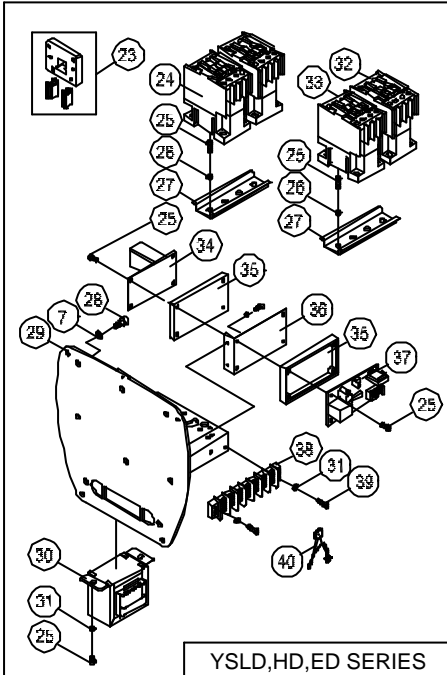
| KEY NO. | PARTS CODE | DESCRIPTION | Q'TY REQ'D EACH UNIT | | | | | | | | | | | | |
|---------|------------|--|----------------------|---|---|------------------|---|---|-----------------|---|---|---|----------------|---|---|
| | | | YSE 380V/24V | | | YSF 50HZ 220V | | | YSL 380V/24V | | | | YSH 380/24V | | |
| | | | 1/2 | 1 | 2 | 1/2 | 1 | 2 | 1/2 | 1 | 2 | 3 | 1/2 | 1 | 2 |
| 1 | 400053 | Cross Headed Screw <M5 x0.8 x2L> | 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 | 302602 | Limit Switch Ass'y | | | | 1 | | | 1,1D | | | | 1,1D | | |
| 6 | 300352 | Limit Switch Cover | | | | 1 | | | 1,1D | | | | 1,1D | | |
| 7 | 400094 | Spring Washer<M6> | 8,8D | | | 8 | | | 8,8D | | | | 8,8D | | |
| 8 | 400269 | Rubber Cap | | | | 1 | | | 1,1D | | | | 1,1D | | |
| 9 | 400004 | Hex. Recess Bolt <M6x1.0x8L> | | | | 2 | | | 2,2D | | | | 2,2D | | |
| 10 | 402526 | Gasket 26# | 1,1D | | | 1 | | | 1,1D | | | | 1,1D | | |
| 11 | 300350A | Electric Comp Oneness Casing | 1,1D | | | 1 | | | 1,1D | | | | 1,1D | | |
| 12 | 400081 | Hex. Nut<M8 x.25> | 1,1D | | | 1 | | | 1,1D | | | | 1,1D | | |
| 13 | 400095 | Spring Washer<M8> | 1,1D | | | 1 | | | 1,1D | | | | 1,1D | | |
| 14 | 400217 | Eye Bolt | 1,1D | | | 1 | | | 1,1D | | | | 1,1D | | |
| 15 | 400275 | Shackle | 1,1D | | | 1 | | | 1,1D | | | | 1,1D | | |
| 16 | 400055 | Cross Headed Bolt <M6 x.0 x2L> | 3,3D | | | 3 | | | 3,3D | | | | 3,3D | | |
| 17 | 300344 | Power Cable Holder(Left) | 1,1D | | | 1 | | | 1,1D | | | | 1,1D | | |
| | 300345 | Power Cable Holder(Right) | 1,1D | | | 1 | | | 1,1D | | | | 1,1D | | |
| 18 | 301253 | Power Cable | 3M | | | 3M | | | 3M | | | | 3M | | |
| 19 | 301208 | Pendant Cable With Wire Rope "Built In" | 1D | | | | | | 1D | | | | 1D | | |
| | 301207 | Pendant Cable With Wire Rope "Built In" | 1 | | | 1 | | | 1 | | | | 1 | | |
| 20 | | Push Button Switch(Direct) | 1,1D | | | | | | | | | | | | |
| | | Push Button Switch(Indirect) | | | | 1 | | | 1,1D | | | | 1,1D | | |

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 |
| 21 | 300576 | Emergency Stop | 1 | | | 1 | | | 1 | | | | 1 | | |
| 22 | 400297 | Wire Clip<3/16"> | 1,1D | | | 1 | | | 1,1D | | | | 1,1D | | |
| 23 | 300358 | Components Front Plate | | | | 1 | | | 1,1D | | | | 1,1D | | |
| | 300371 | | 1,1D | | | | | | | | | | | | |
| 24 | 400005 | Hex. Recess Bolt <M6 \times 1.0 \times 2L> | 6,6D | | | 6 | | | 6,6D | | | | 6,6D | | |
| 25 | 300065 | Magnetic Contactor(24V 4A) | 1D | | | | | | 1D | | | | 1D | | |
| | 300032 | Magnetic Contactor(220V 4A) | | | | 3 | | | | | | | | | |
| 26 | 400048 | Cross Headed Bolt <M4 \times 0.7 \times 6L> | 10,12D | | | 8 | | | 10,12D | | | | 10,12D | | |
| 27 | 400661 | Flat Washer | 4D | | | 4 | | | 4,4D | | | | 4,4D | | |
| 28 | 300079 | Contacto Rail(2PC) | 1,2D | | | 1 | | | 1,2D | | | | 1,2D | | |
| | 300078 | Contacto Rail(1PC) | 1 | | | 1 | | | 1 | | | | 1 | | |
| 29 | 300228 | Terminal Block | 2,2D | | | 2 | | | 2,2D | | | | 2,2D | | |
| 30 | 400092 | Spring Washer<M4> | 6,8D | | | 4 | | | 6,8D | | | | 6,8D | | |
| 31 | 400051 | Cross Headed Bolt <M4 \times 0.7 \times 2L> | 2,6D | | | 4 | | | 4,6D | | | | 4,6D | | |
| 32 | 300143 | Rectifier Ass'y | 1D | | | 1 | | | 1D | | | | 1D | | |
| 33 | 300211 | Timer For Motor Staring | | | | 1 | | | | | | | | | |
| 34 | 300087 | Capacitor | | | | 1 | | | | | | | | | |
| 35 | 301101 | Magnetic Contactor(3A1a1b) | 3 | | | | | | 3 | | | | 3 | | |
| | 300064 | Magnetic Contactor(3A1b) | 1D | | | | | | 1D | | | | 1D | | |
| 36 | 300066 | Magnetic Contactor(2A2B) | 1D | | | | | | 1D | | | | 1D | | |
| 37 | 301003 | Transformer | 1,1D | | | | | | 1,1D | | | | 1,1D | | |
| 38 | 300205 | Phase Error Relay(P.E.R) | | | | | | | 1,1D | | | | 1,1D | | |
| 39 | 300363 | P.E.R/E.O Box | | | | | | | 1,1D | | | | 1,1D | | |
| 40 | 300800 | Mechanical Interlock | 1 | | | | | | 1 | | | | 1 | | |
| | 300075 | | 1D | | | 1 | | | 1D | | | | 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 <M5 x0.8 x2L> | 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 | 302602 | Limit Switch Ass'y | | | | 1 | | | 1,1D | | | | 1,1D | | | |
| 6 | 300352 | Limit Switch Cover | | | | 1 | | | 1,1D | | | | 1,1D | | | |
| 7 | 400094 | Spring Washer<M6> | 8,8D | | | 8 | | | 8,8D | | | | 8,8D | | | |
| 8 | 400269 | Rubber Cap | | | | 1 | | | 1,1D | | | | 1,1D | | | |
| 9 | 400004 | Hex. Recess Bolt <M6 x1.0 x8L> | | | | 2 | | | 2,2D | | | | 2,2D | | | |
| 10 | 402526 | Gasket 26# | 1,1D | | | 1 | | | 1,1D | | | | 1,1D | | | |
| 11 | 300350A | Electric Comp Oneness Casing | 1,1D | | | 1 | | | 1,1D | | | | 1,1D | | | |
| 12 | 400081 | Hex. Nut<M8 x1.25> | 1,1D | | | 1 | | | 1,1D | | | | 1,1D | | | |
| 13 | 400095 | Spring Washer<M8> | 1,1D | | | 1 | | | 1,1D | | | | 1,1D | | | |
| 14 | 400217 | Eye Bolt | 1,1D | | | 1 | | | 1,1D | | | | 1,1D | | | |
| 15 | 400275 | Shackle | 1,1D | | | 1 | | | 1,1D | | | | 1,1D | | | |
| 16 | 400055 | Cross Headed Bolt <M6 x1.0 x2L> | 3,3D | | | 3 | | | 3,3D | | | | 3,3D | | | |
| 17 | 300344 | Power Cable Holder(Left) | 1,1D | | | 1 | | | 1,1D | | | | 1,1D | | | |
| | 300345 | Power Cable Holder(Right) | 1,1D | | | 1 | | | 1,1D | | | | 1,1D | | | |
| 18 | 301253 | Power Cable | 3M | | | 3M | | | 3M | | | | 3M | | | |
| 19 | 300611 | Female Receptacle | 1 | | | 1 | | | 1 | | | | 1 | | | |
| | 300613 | | 1D | | | | | | 1D | | | | 1D | | | |

VII – 5– 1 ELECTRIC PARTS(USA)

D : DUAL SPEED

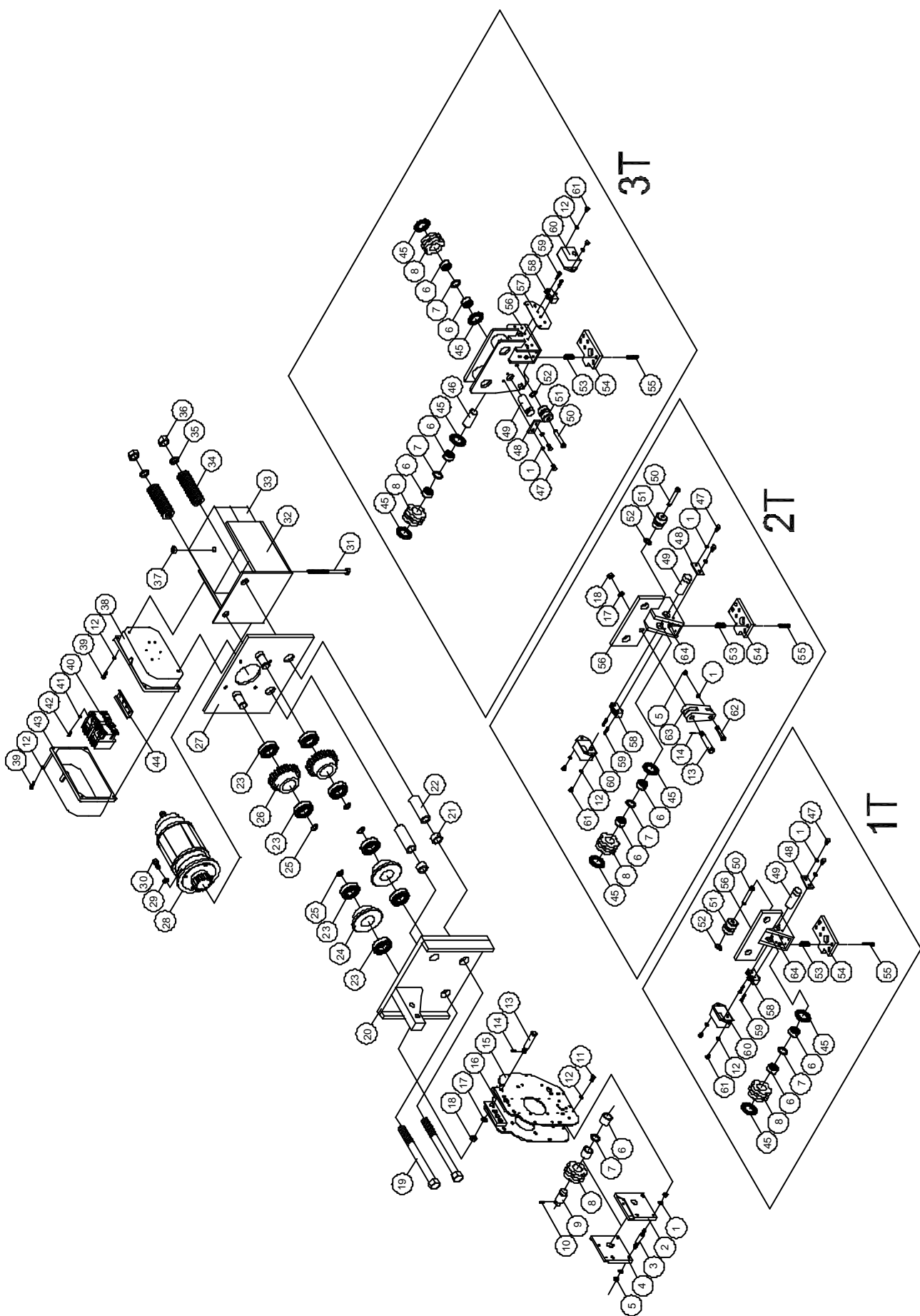
| NO. | PARTS CODE | DESCRIPTION | Q'TY REQ'D EACH UNIT | | | | | | | | | | | | |
|-----|------------|--|----------------------|---|---|------------------|---|---|------------------|---|---|---|-----------------|---|---|
| | | | YSE 460V/110V | | | YSF 60HZ 115V | | | YSL 460V/110V | | | | YSH 460/110V | | |
| | | | 1/2 | 1 | 2 | 1/2 | 1 | 2 | 1/2 | 1 | 2 | 3 | 1/2 | 1 | 2 |
| 20 | 301208 | Pendant Cable With Wire Rope "Built In" | 1 | | | 1 | | | 1 | | | | 1 | | |
| | 301209 | Pendant Cable With Wire Rope "Built In" | 1D | | | | | | 1D | | | | 1D | | |
| 21 | | Push Button Switch(Direct) | 1,1D | | | | | | | | | | | | |
| | | Push Button Switch(Indirect) | | | | 1 | | | 1,1D | | | | 1,1D | | |
| 22 | 300576 | Emergency Stop | 1 | | | 1 | | | 1 | | | | 1 | | |
| 23 | 300800 | Mechanical Interlock | 1 | | | | | | 1 | | | | 1 | | |
| | 300075 | | | | | 1 | | | | | | | | | |
| 24 | 301173 | Magnetic Contactor(110V 4A) | 1D | | | | | | 1D | | | | 1D | | |
| | 300031 | | | | | 3 | | | | | | | | | |
| 25 | 400048 | Cross Headed Bolt <M4 x0.7 x6L> | 10,12D | | | 8 | | | 10,12D | | | | 10,12D | | |
| 26 | 400661 | Flat Washer | 4D | | | 4 | | | 4,4D | | | | 4,4D | | |
| 27 | 300079 | Contactor Rail(2PC) | 1,2D | | | 1 | | | 1,2D | | | | 1,2D | | |
| | 300078 | Contactor Rail(1PC) | 1 | | | 1 | | | 1 | | | | 1 | | |
| 28 | 400005 | Hex. Recess Bolt <M6 x1.0 x2L> | 6,6D | | | 6 | | | 6,6D | | | | 6,6D | | |
| 29 | 300358 | Components Front Plate | | | | 1 | | | 1,1D | | | | 1,1D | | |
| | 300371 | | 1,1D | | | | | | | | | | | | |
| 30 | 301058 | Transformer | 1,1D | | | | | | 1,1D | | | | 1,1D | | |
| 31 | 400092 | Spring Washer<M4> | 6,8D | | | 4 | | | 6,8D | | | | 6,8D | | |
| 32 | 301171 | Magnetic Contactor(3A1b) | 1D | | | | | | 1D | | | | 1D | | |
| | 301103 | Magnetic Contactor(3A1a1b) | 3 | | | | | | 3 | | | | 3 | | |
| 33 | 301172 | Magnetic Contactor(2A2B) | 1D | | | | | | 1D | | | | 1D | | |
| 34 | 300205 | Phase Error Relay(P.E.R) | | | | | | | 1,1D | | | | 1,1D | | |
| 35 | 300363 | P.E.R/E.O Box | 1,1D | | | | | | 2,2D | | | | 2,2D | | |
| 36 | 300340 | R.E.P Holding Plate | 1,1D | | | | | | 1,1D | | | | 1,1D | | |
| 37 | 300726 | Electric Overload(E.O) | 1,1D | | | | | | 1,1D | | | | 1,1D | | |

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 | |
| 38 | 300228 | Terminal Block | 2,2D | | | 2 | | | | 2,2D | | | | 2,2D | | | | |
| 39 | 400051 | Cross Headed Bolt <M4 x0.7 x2L> | 2,6D | | | 4 | | | | 4,6D | | | | 4,6D | | | | |
| 40 | 300143 | Rectifier Ass'y | 1D | | | 1 | | | | 1D | | | | 1D | | | | |
| 41 | 300211 | Timer For Motor Staring | | | | 1 | | | | | | | | | | | | |
| 42 | 300087 | Capacitor | | | | 1 | | | | | | | | | | | | |
| 43 | 300612 | Male Receptacle | 1 | | | 1 | | | | 1 | | | | 1 | | | | |
| | 300614 | | 1D | | | | | | | 1D | | | | 1D | | | | |
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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 | 400095 | Spring Washer<M8> | 8 | 9 | 8 | 8 | 9 | 8 | 8 | 9 | 8 | | | | |
| 2 | 200352 | Sprocket Side Plate A | 1 | | | | 1 | | | | 1 | | | | |
| 3 | 200307 | Stay Bolt B | 3 | | | | 3 | | | | 3 | | | | |
| 4 | 200396A | Sprocket Side Plate B | 1 | | | | 1 | | | | 1 | | | | |
| 5 | 400081 | Hex. Nut<M8 \times .25> | 6 | | | | 6 | | | | 6 | | | | |
| 6 | 400170 | Needle Bearing<NK 25/26> | 4 | | 6 | 4 | | 6 | 4 | | 6 | | | | |
| 7 | 200354 | Sprocket Spacer | 1 | | | | 1 | | | | 2 | | | | |
| 8 | 200109 | Sprocket | 1 | | | | 1 | | | | 2 | | | | |
| 9 | 200114 | Sprocket Axle | 1 | | | | 1 | | | | 1 | | | | |
| 10 | 400212 | Spring Pin< 5 \times 6L> | 1 | | | | 1 | | | | 1 | | | | |
| 11 | 400006 | Hex. Recess Bolt<M6 \times .0 \times 6L> | 4 | | | | 4 | | | | 4 | | | | |
| 12 | 400094 | Spring Washer<M6> | 10 | | | | 12 | | | | 12 | | | | |
| 13 | 200093 | Top Hook Pin | 2 | 3 | 2 | 2 | 3 | 2 | 2 | 3 | 2 | 2 | 3 | 2 | |
| 14 | 400603 | Cotter Pin<3/32" \times "L> | 2 | 3 | 2 | 2 | 3 | 2 | 2 | 3 | 2 | 2 | 3 | 2 | |
| 15 | 200042 | Gear Box End Plate | 1 | | | | 1 | | | | 1 | | | | |
| 16 | 100384 | Motor Front Plate | 1 | | | | 1 | | | | 1 | | | | |
| 17 | 400097 | Spring Washer<M12> | 2 | 3 | 2 | 2 | 3 | 2 | 2 | 3 | 2 | 2 | 3 | 2 | |
| 18 | 400084 | Hex. Nut<M12 \times .75> | 2 | 3 | 2 | 2 | 3 | 2 | 2 | 3 | 2 | 2 | 3 | 2 | |
| 19 | 400491 | Hexagon Headed Bolt <7/8" \times UNC \times 10"L> | 2 | | | | | 2 | | | | | 2 | | |
| | 400492 | Hexagon Headed Bolt <1" \times UNC \times 1"L> | | | 2 | | | 2 | | | | | 2 | | |
| | 400493 | Hexagon Headed Bolt <1 1/4" \times UNC \times 3"L> | | | | 2 | | | | 2 | | | | 2 | |
| 20 | 202906 | Hoist Mounting Side Plate | 1 | | | | | 1 | | | | | 1 | | |
| | 202907 | | | | 1 | | | 1 | | | | | 1 | | |
| | 202908 | | | | | 1 | | | | 1 | | | | 1 | |

YS1

VII – 6 LOW HEADROOM MODEL'S TROLLEY

D : DUAL SPEED

| 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 |
| 21 | 203166 | Spacer Tube B | 2 | | | | 2 | | | | 2 | | | |
| 22 | 203161 | Spacer Tube A | 2 | | | | 2 | | | | 2 | | | |
| | 203162 | | | 4 | | | | 4 | | | | 4 | | |
| | 203163 | | | | 4 | | | | 4 | | | | | 4 |
| 23 | 400695 | Bearing<6204 Z> | 8 | | | | 8 | | | | 8 | | | |
| | 400803 | Bearing<6205 Z> | | 8 | | | | 8 | | | | 8 | | |
| | 400817 | Bearing<6206 Z> | | | 8 | | | | 8 | | | | | 8 |
| 24 | 203131 | Universal Plain Wheel | 2 | | | | 2 | | | | 2 | | | |
| | 203132 | | | 2 | | | | 2 | | | | 2 | | |
| | 203133 | | | | 2 | | | | 2 | | | | | 2 |
| 25 | 400191 | Retaining Ring<S-20> | 4 | | | | 4 | | | | 4 | | | |
| | 400192 | Retaining Ring<S-25> | | 4 | | | | 4 | | | | 4 | | |
| | 400193 | Retaining Ring<S-30> | | | 4 | | | | 4 | | | | | 4 |
| 26 | 203111 | Universal Gear Wheel | 2 | | | | 2 | | | | 2 | | | |
| | 203112 | | | 2 | | | | 2 | | | | 2 | | |
| | 203113 | | | | 2 | | | | 2 | | | | | 2 |
| 27 | 202916 | Trolley Motor End Side Plate | 1 | | | | 1 | | | | 1 | | | |
| | 202917 | | | 1 | | | | 1 | | | | 1 | | |
| | 202918 | | | | 1 | | | | 1 | | | | | 1 |
| 28 | | Reducing Gear Motor For Trolley | | 1 | | | | 1 | | | | 1 | | |
| 29 | 400096 | Spring Washer<M10> | | 4 | | | | 4 | | | | 4 | | |
| 30 | 400046 | Hex. Headed Bolt<M10 x .5 x 25L> | | 4 | | | | 4 | | | | 4 | | |
| 31 | 400033 | Hex. Bolt<M12 x .75 x 50L> | | 1 | | | | 1 | | | | 1 | | |

YS1

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 |
| 32 | 203214 | Counter Weight Block Frame | 1 | | | | 1 | | | | 1 | | | |
| | 203215 | | | 1 | | | | 1 | | | | 1 | | |
| | 203216 | | | | 1 | | | | 1 | | | | 1 | |
| 33 | 200313 | Counter Weight Block | 2 | | | | 2 | | | | 2 | | | |
| 34 | 203221 | Spacer Washer | 32 | | | | 32 | | | | 32 | | | |
| | 203222 | | | 32 | | | | 32 | | | | 32 | | |
| | 203223 | | | | 32 | | | | 32 | | | | 32 | |
| 35 | 400102 | Spring Washer<7/8"> | 2 | | | | 2 | | | | 2 | | | |
| | 400103 | Spring Washer<1"> | | 2 | | | | 2 | | | | 2 | | |
| | 400105 | Spring Washer<1 1/4"> | | | 2 | | | | 2 | | | | 2 | |
| 36 | 400070 | Hex. Nut<7/8" 8UNC> | 2 | | | | 2 | | | | 2 | | | |
| | 400071 | Hex. Nut<1" 8UNC> | | 2 | | | | 2 | | | | 2 | | |
| | 400072 | Hex. Nut<1 1/4" 7UNC> | | | 2 | | | | 2 | | | | 2 | |
| 37 | 400091 | Lock Nut<M12 1.75> | 1 | | | | 1 | | | | 1 | | | |
| 38 | 300317 | Electric Components Casing | | | | | 1 | | | | 1 | | | |
| | 300316 | | 1 | | | | | | | | | | | |
| 39 | 400007 | Hex. Recess Bolt<M6 1.0 20L> | 6 | | | | 6 | | | | 6 | | | |
| 40 | | Magnetic Contactor | | | | | 2 | | | | 2 | | | |
| 41 | 400661 | Flat Washer<M4> | | | | | 2 | | | | 2 | | | |
| 42 | 400048 | Cross Headed Screw<M4 0.7 6L> | | | | | 3 | | | | 3 | | | |
| 43 | 300348 | Electric Components Casing Cover | 1 | | | | 1 | | | | 1 | | | |
| 44 | 300079 | Contactor Rail(2PC) | 1 | | | | 1 | | | | 1 | | | |
| 45 | 400176 | Needle Bearing<AXK/2AS 2542> | 2 | | 4 | | 2 | | 4 | | 2 | | 4 | |
| 46 | 200360 | Pressing Roller Axle | | | | | 1 | | | | 1 | | | |

YS1

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 |
| 47 | 400011 | Hex. Recess Bolt<M8 x.25 x2L> | 2 | | | | 2 | | | | 2 | | | |
| 48 | 200636 | Stopper Plate | 1 | | | | 1 | | | | 1 | | | |
| 49 | 200355 | Sprocket Axle | 1 | | | | 1,1D | | | | 1,1D | | | |
| | 200359 | | | | | | | | | | 1 | | | |
| 50 | 200356 | Pressing Roller Axle | 1 | | | | 1 | | | | 1 | | | |
| 51 | 200189 | Chain Pressing Roller | 1 | | | | 1 | | | | 1 | | | |
| 52 | 400188 | Retaining Ring<S-10> | 1 | | | | 1 | | | | 1 | | | |
| 53 | 400340 | Spring | | | | | 4 | | | | 4 | | | |
| 54 | 200357 | Limit Plate | | | | | 1 | | | | 1 | | | |
| 55 | 400009 | Hex. Recess Bolt<M6 x.0 x35L> | | | | | 4 | | | | 4 | | | |
| 56 | 203176 | Load Plate Ass'y | 1 | | | | 1 | | | | 1 | | | |
| | 203177 | | | | | | | | | | 1 | | | |
| | 203178 | | | | | | | | | | 1 | | | |
| 57 | 200350 | Stop Plate | | | | | | | | | 1 | | | |
| 58 | 302602 | Limit Switch Ass'y | | | | | 1 | | | | 1 | | | |
| 59 | 400617 | Cross Headed Screw<M4 x0.7 x25L> | | | | | 2 | | | | 2 | | | |
| 60 | 300353 | Limit Switch Box | | | | | 1 | | | | 1 | | | |
| 61 | 400004 | Hex. Recess Bolt<M6 x.0 x8L> | | | | | 2 | | | | 2 | | | |
| 62 | 200176 | Chain Fixing Pin | | | | | | | | | 1 | | | |
| 63 | 200184 | Chain Fixer | | | | | | | | | 1 | | | |
| 64 | 400087 | Lock Nut<M6 x.0> | | | | | 4 | | | | 4 | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
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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)etc | 6.7 | 1.5 | 1-Ph, 110V, 220V, 230V | - |
| YSF-100 | 1 | 3(6)etc | 4.7 | 1.5 | -as above- | - |
| YSF-200 | 2 | 3(6)etc | 2.3 | 1.8 | -as above- | - |
| YSL-050 | 1.5 | 3(6)etc | 6.7 | 1.5 | 3-Ph, 220V-600V | - |
| YSL-100 | 1 | 3(6)etc | 4.7 | 1.5 | -as above- | - |
| YSL-200 | 2 | 3(6)etc | 2.3 | 1.8 | -as above- | - |
| YSL-300 | 3 | 3(6)etc | 1.5 | 1.8 | -as above- | - |
| YSH-050 | 0.5 | 3(6)etc | 9.2 | 1.8 | -as above- | - |
| YSH-100 | 1 | 3(6)etc | 6.7 | 1.8 | -as above- | - |
| YSH-200 | 2 | 3(6)etc | 3.3 | 1.8 | -as above- | - |
| YSH-300 | 3 | 3(6)etc | 2.2 | 1.8 | -as above- | - |
| YSS-200 | 2 | 3(6)etc | 6.6 | 3.7 | -as above- | - |
| YSS-250 | 2.5 | 3(6)etc | 5.2 | 3.7 | -as above- | - |
| YSS-300 | 3 | 3(6)etc | 4.3 | 3.7 | -as above- | - |
| YSS-500 | 5 | 3(6)etc | 2.6 | 3.7 | -as above- | - |
| YSS-750 | 7.5 | 3(6)etc | 1.8 | 3.7 | -as above- | - |
| YSS-1000 | 10 | 3(6)etc | 2.6 | 3.7*2 | -as above- | - |
| YSLD-050 | 0.5 | 3(6)etc | 6.7/2.2 | 1.8 | -as above- | - |
| YSLD-100 | 1 | 3(6)etc | 4.7/1.6 | 1.8 | -as above- | - |
| YSLD-200 | 2 | 3(6)etc | 2.3/0.8 | 1.8 | -as above- | - |
| YSLD-300 | 3 | 3(6)etc | 1.5/0.5 | 1.8 | -as above- | - |
| YSHD-050 | 0.5 | 3(6)etc | 6.7/2.2 | 1.8 | -as above- | - |
| YSHD-100 | 1 | 3(6)etc | 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.anx Page 1/3



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.

- oQo -



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 : 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.
- EN 292-1 and EN 292-2 (Safety of Machines)
- 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 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: