

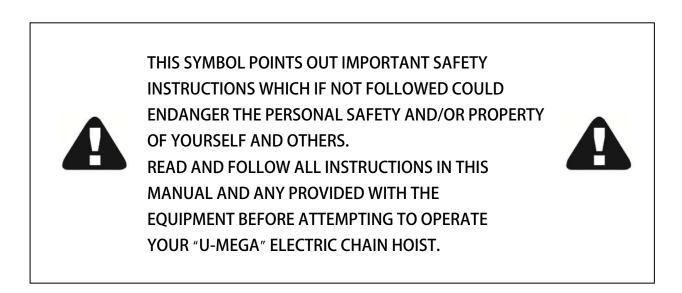


**CHENG DAY** MACHINERY WORKS CO., LTD.

# 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.



## 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 Devices ······	6
2.4 Specifications and Dimensions	7
3. Safety Rules ·····	9
4. Installation ·····	11
4.1 Unpacking Information ······	11
4.2 Voltage ·····	11
4.3 Installation ·····	11
5. Operation ·····	14
6. Maintenance and Inspection	14
6.1 Maintenance ·····	14
6.2 Inspection ·····	15
6.3 Overload clutch adjustment instruction	18
6.4 How to adjust the geared Limit Switch for NHD-200-1/NHD-300-2/NHD-500-2 ······	19
7. Troubleshooting	22
7.1 Wiring Diagrams ·····	22
7.2 Troubleshooting and Remedial Action ·····	23
8. Drawings and Parts Lists	24
9. CE Declaration Of Conformity ······	49

### 1. FOREWORD

This manual contains important information to help you properly install, operate and maintain the U-MEGA electric chain hoist and to maximize performance, economy and safety.

Please study its contents thoroughly before putting the electric chain hoist into operation. By practicing correct operating procedures and by carrying out the preventative maintenance recommendations, you will be assured of dependable service. In order to help us to supply correct spare parts quickly, please always specify -

- (1) Hoist model
- (2) Serial number
- (3) Part number, plus the description.

We will have your trust of Cheng Day's long term satisfactory service as our belief. Should you have any queries, please contact:



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

## 2. MAIN SPECIFICATIONS

### 2.1 Specifications

### The following specifications are common to all electric chain hoists.

ltem		Detail				
Working temperat	ure range (°C)	-5 to +40				
Working humidity	range (%)	85 or less				
Ducto sticu	Hoist	IP 55				
Protection	Push button	IP 65				
Electric power sup	ply	Three Phase, 50 H Three Phase, 60 H				
Noise Level (dB)	Dual speed hoist	75				
	Туре	Nominal diameter (mm)	Pitch (mm)			
	NHD-050-1	6.3	19.1			
	NHD-100-2	6.3	19.1			
Chain Size	NHD-100-1	7.1	20.2			
	NHD-200-2	7.1	20.2			
	NHD-200-1	Ø10	30.2			
	NHD-300-2	Ø10	30.2			
	NHD-500-2	Ø11.2	34			

#### Table 2-1 Specifications

**Remarks:** 

- (1) Contact an authorized dealer for information on using the hoist over the working temperature or humidity range
- (2) Intended use: This hoist has been designed for vertically lifting and lowering loads under normal atmospheric conditions.
- (3) Noise levels are measured at a distance of 1m horizontally from the hoists during normal operation.

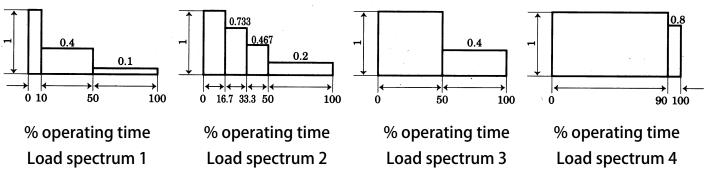
#### 2.2 Mechanical Classification (Grade) and Life

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

U-MEGA electric chain hoists have been designed for grade 2m 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.

Lood Chostrum		Cubic	Average daily	Total operating	
Load Spectrum (Load distribution)	Definitions	mean	Operation time	time	
(Load distribution)		value	(h)	(h)	
	Mechanisms or parts				
1	thereof, usually subject to				
(light)	very small loads and in	k≦0.50	4 - 8	12500	
(light)	exceptional cases only to				
	maximum loads.				
	Mechanisms or parts				
2	thereof, usually subject to	0.50 <k< td=""><td>2 - 4</td><td colspan="2" rowspan="3">6300</td></k<>	2 - 4	6300	
(medium)	small loads but rather	≦0.63	2 - 4		
	often to maximum loads.				
	Mechanisms or parts				
3	thereof, usually subject to	0.63 <k< td=""><td></td><td></td></k<>			
(heavy)	medium loads but	≤0.80	1 - 2	3200	
(neavy)	frequently to maximum	=0.00			
	loads.				
	Mechanisms or parts				
4	thereof, usually subject to	0.80 <k< td=""><td>0.5 - 1</td><td>1600</td></k<>	0.5 - 1	1600	
(very heavy)	maximum or almost	≦1.00	0.5	1000	
	maximum loads.				





#### 2.3 Safety Devices

#### (1) Motor brake

The "Electro-Magnetic Brake" unique design, it features simultaneous motor braking upon switching off power even under full load condition, quick action and high frequency use.

#### (2) Mechanical Brake w/Clutch & Overload protection device

The unique design includes mechanical brake & overload dual protection. Mechanical clutch operates with motor brake, which can offer exactly, very limited slipping & quick braking. OL device prevents over loading to damage goods, and ensure secure operation and product's life-span.

#### (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  $360^{\circ}$  rotatable and fitted with a safety latch for added security.

#### (4) Phase Error Relay

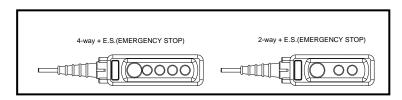
To test 3 phases if any wrong phases connection. It can stop power once any abnormal situation to protect the hoist.

(5) Limit Switch

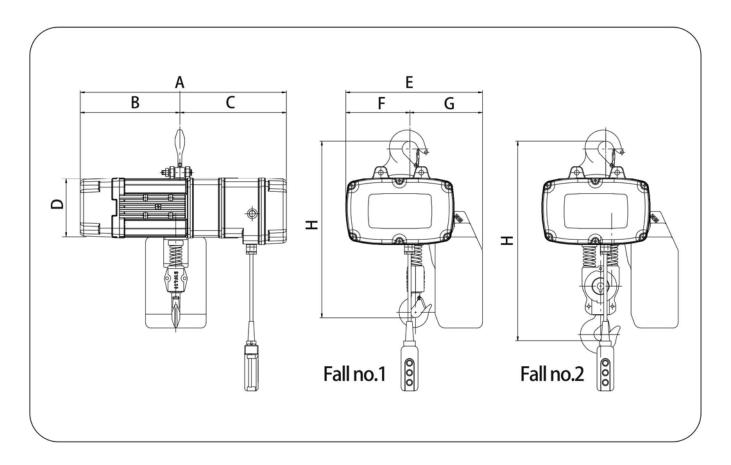
Upper and lower limit switches are fitted for switching off power automatically in case of over lifting or over lowering.

#### (6) Emergency Stop Device

This button is used to quick stop the hoist in an emergency situation. It is a red, mushroom shaped swivel button, located at the uppermost position of the pendant. When pressed, power to the equipment is switched off and the button locked automatically. Turn it clockwise can release the lock and enable re-start. (Illust. 1)



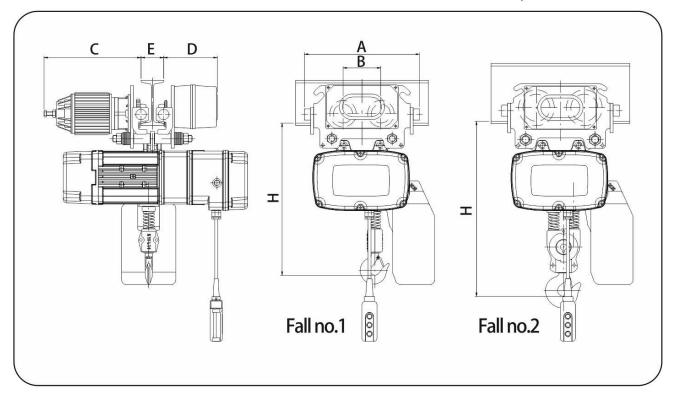
(Illust. 1)



					Hoisting			Traversing		
Model	Capacity (kg)	Lift (m)	%FD	Speed	(m/min)	Motor	Speed(m/min)		Motor	
	(	(,		60Hz	50Hz	kw x pole	60Hz	50Hz	kw x pole	
NHD-050-1	500	2	40/20	10/2.5	10/2.5	1.1/0.28	24/6	20/5	0.12/0.03 x 2/8P	
NHD-100-2	1000	5	3 40/20	5/1.25	5/1.25	x 2/8P	24/6	20/5	0.18/0.04x 2/8P	
NHD-100-1	1000	2	2	3 40/20	8/2	8/2	1.5/0.37	24/6	20/5	0.18/0.04 x 2/8P
NHD-200-2	2000	5	40/20	4/1	4/1	x 2/8P	24/6	20/5	0.37/0.09x 2/8P	
NHD-200-1	2000	3	40/20	9.6/2.4	9.6/2.4		24/6	20/5	0.37/0.09x 2/8P	
NHD-300-2	3000	3	40/20	6.4/1.6	6.4/1.6	3.7/0.9 x 2/8P	24/6	20/5	0.6/0.15x 2/8P	
NHD-500-2	5000	3	40/20	4/1	4/1		24/6	20/5	0.6/0.15x 2/8P	

	Dimension (mm)							Load Ch			
Model			-	Dime	ISIOII (III		-		Ømm Fall No.		N.W. (kg)
	H	Α	В	С	D	E	F	G	2mm	Turrio.	
NHD-050-1	500	570	270	210	165	275	100	105	Q ( 2:10 1	1	47
NHD-100-2	550	570	270	310	165	375	190	185	Ø6.3x19.1	2	50
NHD-100-1	550	(20	200	220	100	410	105	220	~74.202	1	62
NHD-200-2	620	620	300	320	180	410	195	220	Ø7.1x20.2	2	67
NHD-200-1	1020								Ø 10x30	1	102
NHD-300-2	1050	715	340	375	220	530	270	260	Ø 10x30	2	120
NHD-500-2	1100								Ø11.2x34	2	145

## Hoist with Motorized NTD Trolley



Model		Dimension (mm)								
model	Н	А	В	С	D	Е	Fall No.			
NHD-050-1+NTD-050-1	500	385	126	325	180	75~125	1			
NHD-100-2+NTD-100-2	550	385	126	325	180	75~125	2			
NHD-100-1+NTD-100-1	535	385	126	325	180	75~125	1			
NHD-200-2+NTD-200-2	610	395	159	360	185	100~150	2			
NHD-200-1+NTD-200-1	970	395	159	360	185	100~150	1			
NHD-300-2+NTD-300-2	1000	445	185	400	195	125~175	2			
NHD-500-2+NTD-500-2	1050	445	185	400	195	125~175	2			

## **3.SAFETY RULES**

## 

This hoist 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.

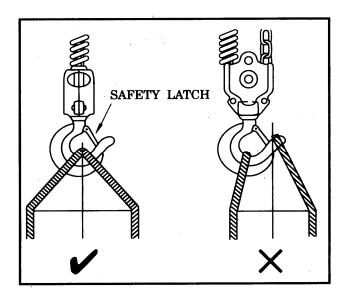
Only trained personnel are allowed to operate the hoist.

## 

Do not use the hoist in explosive atmosphere.

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)

Firm and steady button operation is required. Never push the button switch intermittently.

Always avoid excessive inching operation.

Always make sure the hoist motor completely stops before reversing.

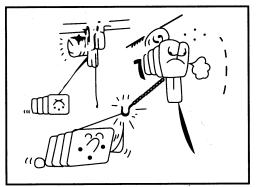
Always leave the push button switch cable and bottom hook vertically static after completion of operation, never leave them at any position which may cause swing or slip.

Slings must be applied to load evenly and centrally to ensure correct balance. Never lift any

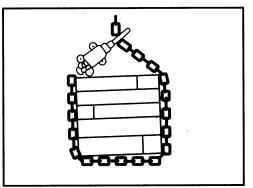
object which is insecure or out of balance.

Never use hoist to end or side pull a load. (Illust. 3)

Never wrap around and hook back the load chain as a sling to lift a load. (Illust. 4)



(Illust. 3)



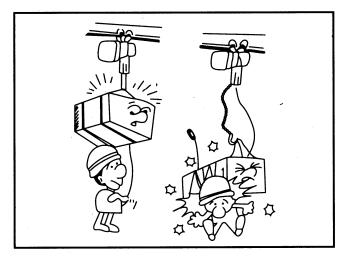
(Illust. 4)



Do not use the hoist chain as a welding electrode.



Never stand under a raised load (Illust. 5)



(Illust. 5)

Lifting must always be personally attended. Never leave a raised load unattended.

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

Never lift a load when the load chain is twisted.

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

## **4. INSTALLATION**

4.1 Unpacking Information

After removing the hoist from its packing box, carefully inspect the external condition of

the electrical cables, contactor, gearbox 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	0.5 meter
3. Push button control switch	1 piece

#### Table. 4-1

## 

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.

### 4.2 Voltage

## 

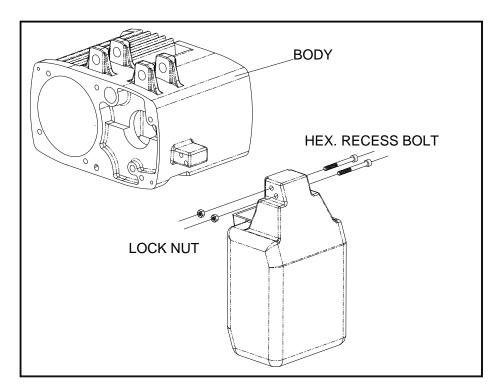
Connection to power supply before installation procedures having been completed is strictly prohibited.

### 4.3 Installation

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

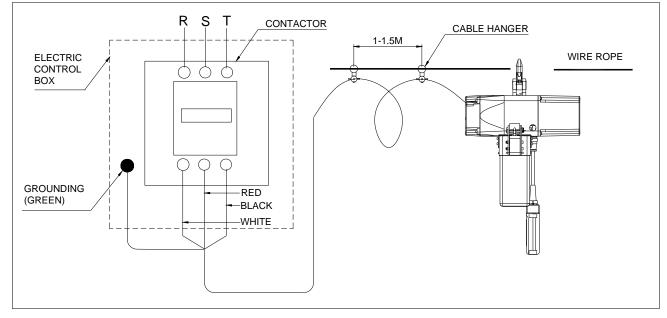
NOTE: If the hoist is to be suspended from an electric trolley, assembly may be eased by firstly removing the top hook, attaching it to the trolley load plate, them refitting the top hook to the hoist.

Assemble chain bucket -



(Illust. 6)

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



(Illust. 7)

**Operation Test** 

- (a) Please reverse any two connections while the direction is incorrect.
- (b) Firmly push ④ switch button to lower load chain until the limit spring touches the limit switch. Power should be cut off automatically.
- (c) Firmly push (f) switch button to check the collection of load chain into chain bucket.
- (d) Check the emergency stop device function :

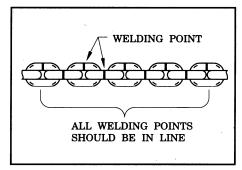
While holding down either 1 or 1 button on the push button switch, push the emergency stop button. Check that the hook stops when the emergency stop button is pushed. Also, check the hoist does not move in response to the push button switch.

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 any of the above checks, check the wiring and automatic locking function of the emergency stop device.

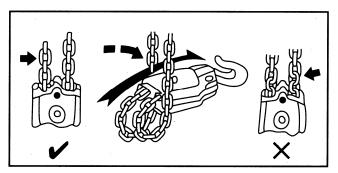
- (e) Check load chain lubrication (It has been lubricated at our works, but the lubricant may dry out during transportation). It is also advisable to keep a small amount of lubricant in the chain bucket to keep the chain in an oil bath.
- (f) Check chain position. Weld joints on links must face the same direction (Illust. 8). Correct chain operation can only be achieved when all joints are vertically in line.

## 

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



lllust. 8



Illust. 9

## **5. OPERATION**

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

# 

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 gearbox lubricant after the first 500 hours operation, thereafter check every 3 months and lubricate accordingly.
  - NOTE: We recommend using lubricant oil equivalent to SHELL S4 WE460.
  - (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.

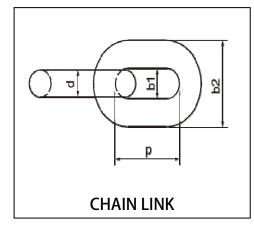
#### 6.2 Inspection

1. Daily inspection: Before starting daily operation, check the followings:

- (a) Correct power supply.
- (b) "Up", "Down" and "Emergency Stop" 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 and brake.
- (g) Well-lubricated load chain.
- 2. Monthly inspection

(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.



Model	Dia- Meter (mm) (d)	Inside Length (mm) (p)	Inside Width (mm) (b1)	Outside Width (mm) (b2)	Breaking Load (kN)
NHD-050-1 NHD-100-2	Ø6.3	19.1	7.9	21.4	50
NHD-100-1 NHD-200-2	Ø7.1	20.2	8.1	23.2	63.3
NHD-200-1 NHD-300-2	Ø10.0	30.2	12.5	33.2	128
NHD-500-2	Ø11.2	34	14	37.5	160

Table 6-2-a

## **WARNING**

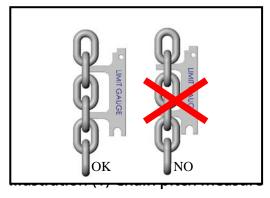
### Always use the hoist manufacture's recommended parts when repairing a hoist.

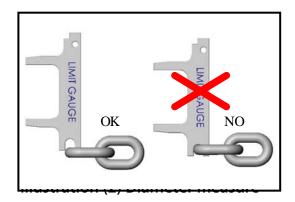
#### Measuring

- (1) The chain gauge is useful and convenience for measuring.
- (2) Please use a chain gauge to measure the chain pitch and diameter, per 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 in part.

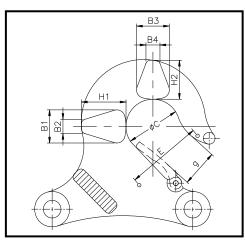
(7) The load sheave, regulator, and regulator plate wheel must be replaced the same time as you do a chain replacement.

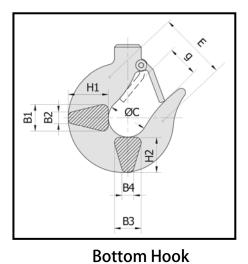
Note : Chain must be in perfect condition without any defects.





(b) Check hook with care. If hook shows cracks, deformation or excessive wear, it should be replaced.





Top Hook

		•••						2011	•••••			
Model	Capacity	Hook		Dimensions (mm)								
Model	(kg)	поок	H1	B1	B2	H2	B3	B4	C	g	E	( <b>kg/mm</b> ²)
NHD-050-1	500	Т	33	22	10	29	22	10	40	25.5	55	70
NUD-020-1	500	В	28	18	8	23	18	8	35	26	50	70
	1000	Т	33	22	10	29	22	10	40	25.5	55	70
NHD-100-2	1000	В	33	23	9	29	23	9	40	28	61	70
NHD-100-1 1000	Т	38	28	12	33	28	12	46	31	65	100	
	1000	В	33	23	9	29	23	9	40	28	61	70
NHD-200-2	2000	Т	38	28	12	33	28	12	46	31	65	100
ND-200-2	2000	В	45	31	10	41	31	10	46	36	75	70
NHD-200-1	2000	T;B	55	34	19	48	34	19	52	40	90	70
NHD-300-2	3000	T;B	55	34	19	48	34	19	52	40	90	70
NHD-500-2	5000	Т;В	66	44	23	60	44	23	62	45	100	70
an Haal T	an Usel. T. Bettem Usel. D.											

Top Hook=T Bottom Hook=B

N N

#### 3. Annual inspection

## **WARNING**

Your dealer should be asked to perform this inspection.

- (a) Check gearing for any excessive wears or damage.
- (b) Replace gearbox lubricant completely (NHD-050-1 & NHD-100-2 / 800C.C., NHD-100-1 & NHD-200-2 / 1400C.C. ,NHD-200-1& NHD-300-2 & NHD-500-2 /4000C.C.) as following table for your reference.

NOTE: We recommend using lubricant oil equivalent to SHELL S4 WE460.

### Table of recommended oils according to DIN 51354

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

ISO-VGDIN 51519 Viscosity at 40°C mm <sup>2</sup> /s (cST)	Approximate viscosity of the VG Categories 50°C mm <sup>2</sup> /s (cST)	SHELL	TEXACO	I.P.	AGIP	TOTAL
VG460	251	Omala oil S4 WE460	Meropa 460	Mellana 460	Blasia 460	Carter EP 460

Tab	le	6-2	2-b

The permissible tolerance for each VG category is  $\pm 10\%$  of the tabulated values.

- (a) Check brake lining for any wear or damage.
- (b) On completion of above checks, lift a load several times to ensure good performance of the hoist before starting duty operation.

### 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.

(ex. Galvanize plant, Chemical Plant, Dye-work, etc.)

- (d) Damage caused by operating on the wrong electric voltage.
- (e) Damage caused by user amend the product.
- (f) Damage caused by natural disaster.
- 3. Warranty Scope shall be permitted by Cheng Day Machinery and Within One Year of damaged Mechanical Spare Parts Repair and Replacement.

(circumstance stated in detail No. 2 are not included.)

#### 6.3 Overload clutch adjustment instructions

Description	Picture
Mechanical Brake and Overload Protection	
<ul> <li>Setting is 125% rated load</li> <li>1.Use rolling bearing nut fixture to tighten the clutch nut fixture.</li> <li>2.It can be able to lift in 100% rated load.</li> <li>3.Adjust the load to 125% rated load</li> <li>4.Clutch is slipping, cannot lift, setting complete.</li> <li>5.Setting the clutch does not slip when lifting a load</li> <li>6.Loosen the adjusting nut, and set the clutch slip, be unable to lift the load.</li> <li>7.Adjust load to 100% rated load, clutch does not slip and can be able to lift the load.</li> <li>8.Adjust the load to 125% rated load, clutch slip the loading material. Setting complete.</li> <li>9.Setting of overload is 100% rated load can be able to lift and 125% rated load have to slip.</li> </ul>	<image/>
After setting complete, level rolling bearing nut washer at nut groove, tap washer to secure it, to prevent loosening. Adjust load to 100% rated load, It is able to lift in 100% rated load, Setting complete.	<image/>

### 6.4How to adjust the geared Limit Switch for NHD-200-1/NHD-300-2/NHD-500-2

6.4How to adjust the geared Limit Switch for NHD-200-	
Description	Picture
1. Put in load chain from the side of chain bag and	
goes through chain sprocket, press the pendant	
(down) button, let the chain be at Lower Limit Switch position.	
2. Lower L/S flange set up to be close to the middle	
(you can see there are 3 switch, the middle one).	
Adjust Plastic screw by using #4 Hex wrench.	
3. When the chain tail at lower LS is too longer.	

	Description	Picture
clockwis adjust it tail beco back off	ower L/S plastic screw (the middle one) by se direction, the chain shortens. While by counterclockwise direction, the chain omes longer. Once touch the LS, it needs to the distance about 1 meter. After L/S trips n be re-adjust again.	
Need to	able chain tail location is 300-400mm. double check if it stops at correct location npleting the adjustment.	
right loc	ish button UP, let the bottom hook be at ration for Upper Limit Switch if the hook is too longer.	

Description	Picture
7. Counterclockwise direction to set up upper LS plastic screw, see the photo. Adjust counterclockwise direction if bottom hook at too longer position. If it's too short, clockwise to adjust it. Once touch the LS, it needs to back off the distance about 1 meter. After L/S trips off, it can be re-adjust again	
8. Adjust it till the bottom hook is at right position (about 300-400mm), double check and test to make sure it' s completed.	

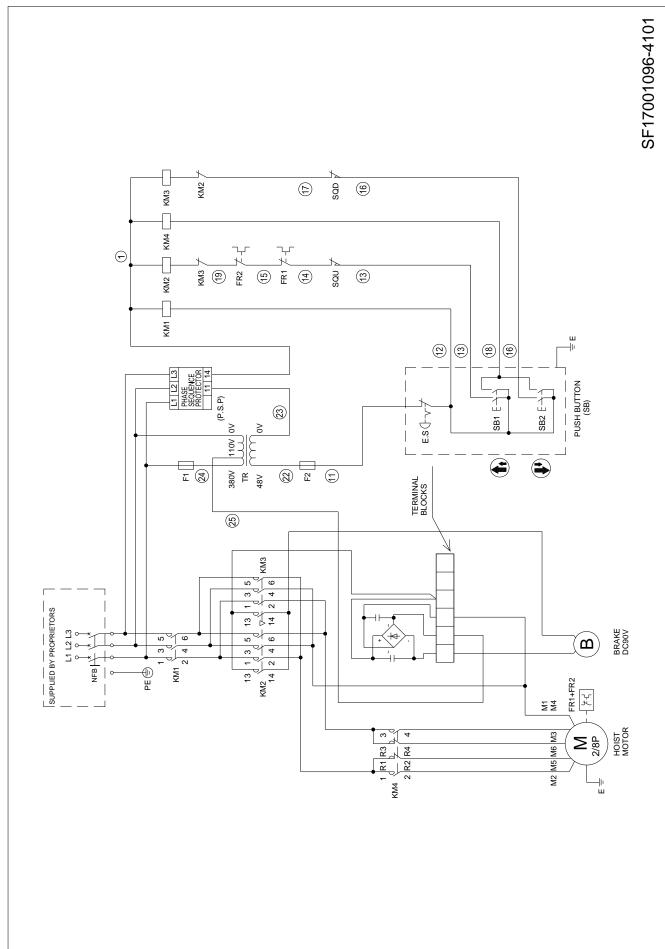
Please note

- 1. When adjust the plastic screw, face to L/S like below photo direction.
- 2. Check the plastic screw, if turning wrong direction, adjust it by opposite direction. Need to re-test and check if position is correct.
- 3. Once touch the LS, it needs to back off the distance about 1 meter. After L/S trips off, it can be re-adjust again



## 7.TROUBLESHOOTING

### 7.1 Wiring Diagrams

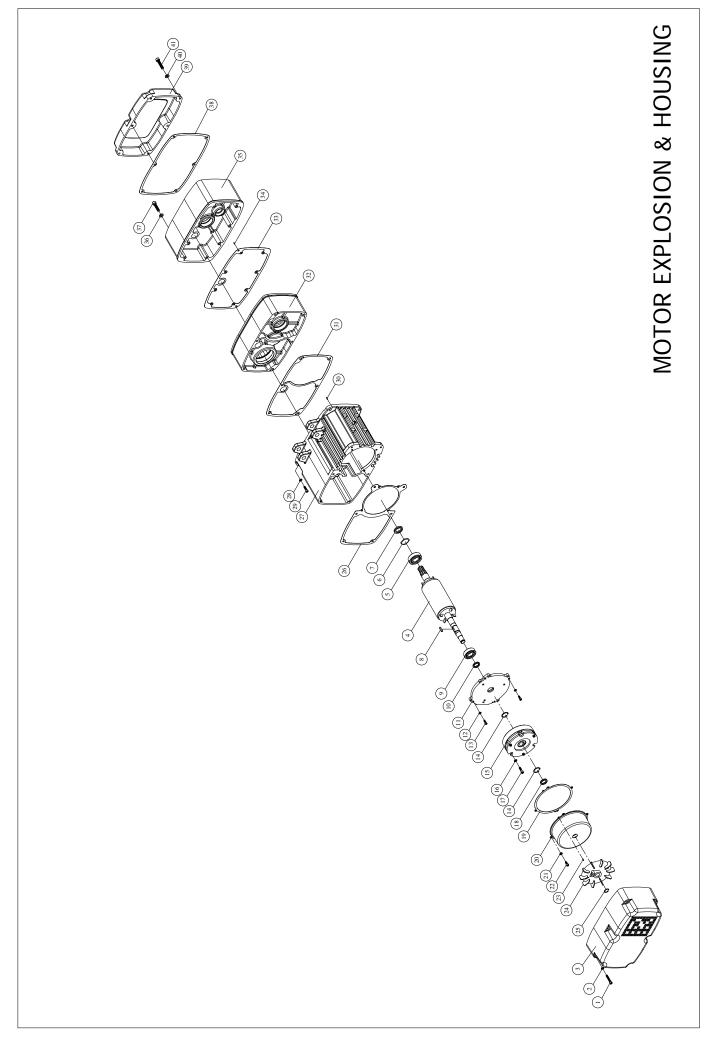


### 7.2 Troubleshooting and Remedial Action

SITUATION	CAUSE	REMEDY
Hoist will not	(1) Broken/disconnected	Locate and repair/reconnect
operate	power or control circuit wire.	
	(2) Low supply voltage	Check if 10% reduction in voltage, have main supply checked
	(3) Motor hums but does not rotate	Check phases to motor-insulate and repair
	(4) Emergency stop button release pushed	Check the cause as necessary
	(5) Faulty contactor	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	(1) Clutch slipping	Contact your authorized U-MEGA dealer $-$
does not lift		this adjustment needs to be carried out on a test rig
Abnormal sound	(1) Chain dry	Lubricate
on load	(2) Worn chain sprocket (2	Replace load chain and chain sprocket
chain/chain sprocket (2 falls)	falls)	(2 falls)
Electric shock	(1) Poor earth connection	Provide correct earth connection
	(2) Accumulated foreign matter/ moisture on electrical parts	Remove foreign matter/dry electrical parts
Oil leak	(1) No oil plug	Attach the normal oil plug
	(2) Loose fitting of oil plug	Fasten the plug tightly
	(3) No plug packing	Attach normal packing
	(4) Worn or deteriorated oil packing	Attach the new packing

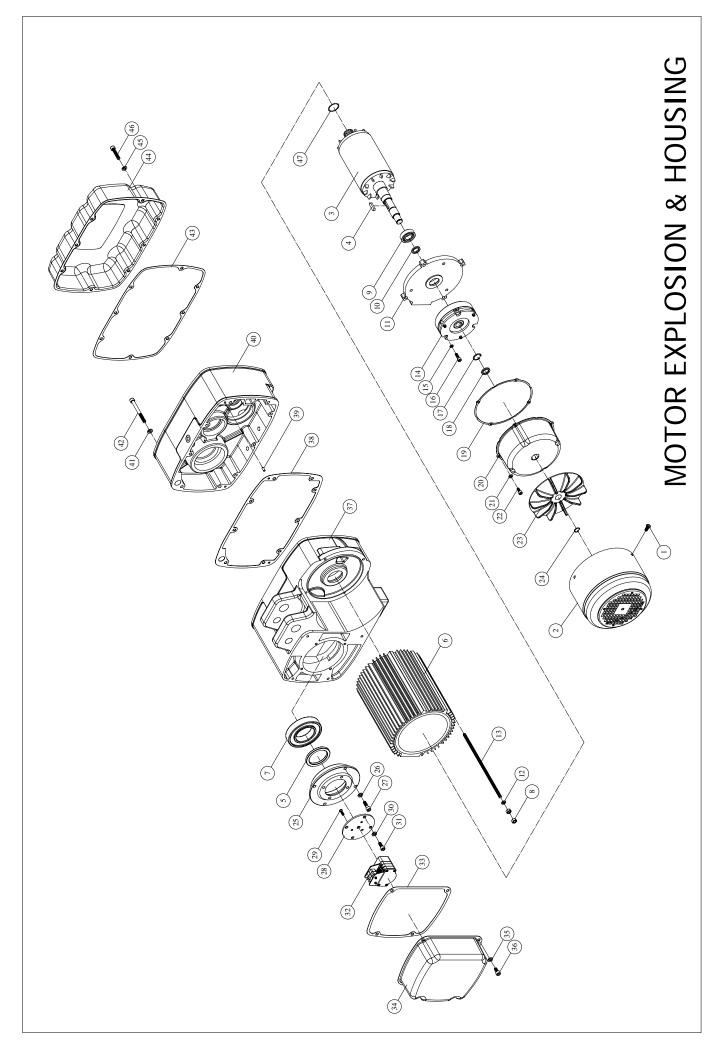
## 8. DRAWINGS AND PARTS LISTS

(1) MOTOR ASSEMBLY & HOUSING B.O.M	25~30
(2) HOOK ASSEMBLY B.O.M	··31~35
(3) LOAD CHAIN ASSEMBLY B.O.M	··36~37
(4) GEARBOX ASSEMBLY B.O.M	··38~43
(5) ELECTRIC ASSEMBLY B.O.M ······	··44~48



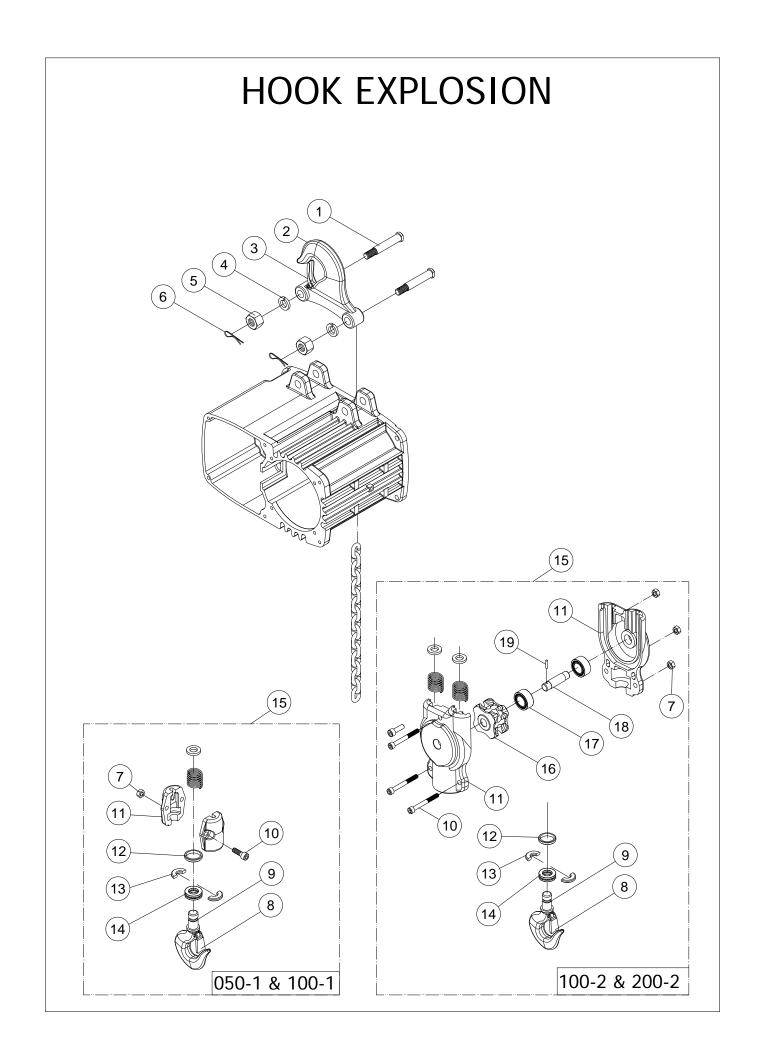
	PARTS	Q'TY REQ'D	EACH UNIT	
NO.	CODE	DESCRIPTION	050-1	100-1
	CODE		100-2	200-2
1	408330	Hex. Recess Bolt <m5×0.8×45></m5×0.8×45>	6	
1	408661	Hex. Recess Bolt <m6×1.0×75></m6×1.0×75>		6
2	400854	Spring Washer <m5></m5>	6	
Z	400855	Spring Washer <m6></m6>		6
3	115425K	-End Cover	1	
2	301458K			1
4	108279	-Motor Rotor	1	
4	108280			1
5	405577	Bearing <6204 2RS>	1	
5	400143	Bearing <6205 ZZ>		1
6	407553	Wave Washer <6205>		1
7	400186	Oil Seal < Ø20ר35×8t>	1	
/	400891	Oil Seal <Ø25ר45×8t>		1
8	405925	Key <t6×6×20l></t6×6×20l>	1	1
9	405577	Bearing <6204 2RS>	1	
9	400808	Bearing <6304 ZZ>		1
10	400186	Oil Seal < Ø20ר35×8t>	1	1
11	105920	Motor End Cover	1	
11	105918			1
10	400854	Spring Washer <m5></m5>	4	
12	400855	Spring Washer <m6></m6>		4
10	408329	Hex. Recess Bolt <m5 0.8="" 20="" ×=""></m5>	4	
13	408333	Hex. Recess Bolt <m6×1.0×25></m6×1.0×25>		4
14	404182	Retaining Ring <s-19></s-19>	2	2
15	100516	Brake Ass'y <snt-102-075></snt-102-075>	1	
15	106949	Brake Ass'y <tsb-124-150></tsb-124-150>		1
16	400855	Spring Washer <m6></m6>		3
17	408660	Hex. Recess Bolt <m6×1.0×35></m6×1.0×35>		3
18	404533	Oil Seal <va18></va18>	1	1
10	402446	Brake End Cover Cosket	1	
19	402696	Brake End Cover Gasket		1
20	108195	Brake End Cover	1	
20	108742	Brake End Cover		1
21	400854	Spring Washer <m5></m5>	4	4
22	408662	Hex. Recess Bolt <m5 0.8="" 10="" ×=""></m5>	4	4

PARTS			Q'TY REQ'D	EACH UNIT
NO.		DESCRIPTION	050-1	100-1
	CODE		100-2	200-2
23	400295	Pin < Ø3 × 10 >		2
24	100563	Fan < Ø124 × Ø14 >	1	
24	107909	Fan < Ø138 × Ø16 >		1
25	404001	Retaining Ring <s-14></s-14>	1	
25	400190	Retaining Ring <s-16></s-16>		1
26	402660	End Cover Casket	1	
26	402508	-End Cover Gasket		1
27	106400	Mastau Chatau Acalu	1	
27	106430	Motor Stator Ass'y		1
28	400856	Spring Washer <m8></m8>	6	6
20	408346	Hex. Bolt <m8 1.25="" 35="" ×=""></m8>	6	
29	408340	Hex. Bolt <m8 1.25="" 30="" ×=""></m8>		6
30	400615	Pin < Ø5 × 12>	2	2
21	402664		1	
31	402559	Motor Gasket		1
22	200830K	Gearbox	1	
32	208858K			1
22	402445		1	
33	402560	-Gearbox Gasket		1
34	400615	Pin < Ø5 × 12>	2	2
25	205610K		1	
35	205515K	-Gearbox Cover		1
36	400094	Spring Washer <m6></m6>	6	8
77	400010	Hex. Recess Bolt <m6 1.0="" 55="" ×=""></m6>	6	
37	408413	Hex. Recess Bolt <m6 1.0="" 85="" ×=""></m6>		8
20	402590	Flastric Cover Cocket	1	
38	402697	-Electric Cover Gasket		1
20	300716K	Electric Cover	1	
39	300306K	-Electric Cover		1
40	400855	Spring Washer <m6></m6>	8	6
л1	408335	Hex. Recess Bolt <m6×1.0×40></m6×1.0×40>	8	
41	408660	Hex. Recess Bolt <m6×1.0×35></m6×1.0×35>		6



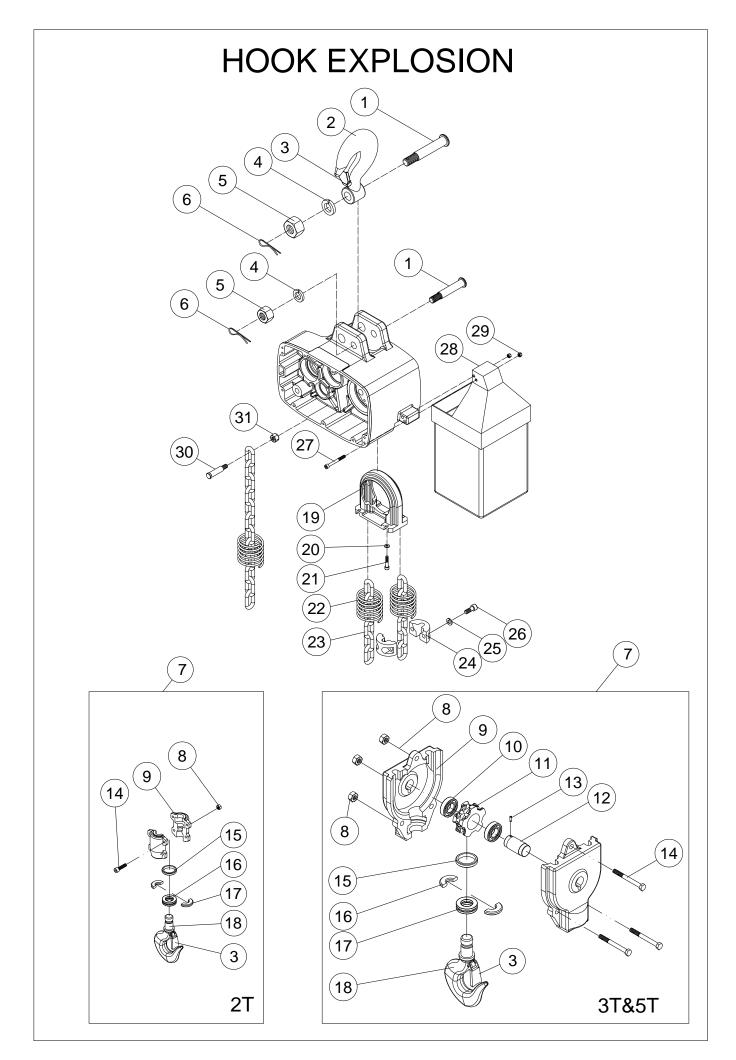
NO.	DECODITION	Q'TY		IUNIT	
NO.	CODE	DESCRIPTION	200-1	300-2	500-2
1	400620	Cross Headed Screw <m5 0.8="" 8="" ×=""></m5>	4	4	4
2	105444K	End Cover	1	1	1
3	100306	Motor Rotor	1	1	1
4	405926	Key <t7×7×25l></t7×7×25l>	1	1	1
5	400944	Oil Seal <Ø45ר60×8t>	1	1	1
6	106450	Motor Stator Ass'y <3.7/0.9kw 2/8P>	1	1	1
7	407821	Bearing <6310 ZZ>	1	1	1
8	400081	Nut. < M8 × 1.25>	8	8	8
9	400113	Bearing <6206 2RU>	1	1	1
10	400934	Oil Seal < Ø30ר50×8t>	1	1	1
11	105919	Motor End Cover	1	1	1
12	400095	Spring Washer <m8></m8>	4	4	4
13	408209	Threaded bar <m8×1.25×290l></m8×1.25×290l>	4	4	4
14	105538	Brake Ass'y TSB-165-370	1	1	1
15	400095	Spring Washer <m8></m8>	3	3	3
16	400016	Hex. Recess Bolt <m8×1.25×60l></m8×1.25×60l>	3	3	3
17	404183	Retaining Ring <s-24></s-24>	1	1	1
18	404556	Oil Seal <va22></va22>	1	1	1
19	402583	Brake End Cover Gasket	1	1	1
20	108755	Brake End Cover	1	1	1
21	400094	Spring Washer <m6></m6>	4	4	4
22	400421	Hex. Recess Bolt <m6 0.8="" 10l="" ×=""></m6>	4	4	4
23	105490	Fan < Ø165ר19 odd>	1	1	1
24	404182	Retaining Ring <s-19></s-19>	1	1	1
25	268550	Bearing Housing	1	1	1
26	400095	Spring Washer <m8></m8>	4	4	4
27	400012	Hex. Recess Bolt <m8 1.25="" 20l="" ×=""></m8>	4	4	4
28	217220	Limit Plate	1	1	1
29	406848	Socket Head Cap Screws <m5 0.8="" 10="" ×=""></m5>	3	3	3
30	400095	Spring Washer <m8></m8>	4	4	4
31	400011	Hex. Recess Bolt <m8 1.25="" 12l="" ×=""></m8>	4	4	4
32	268511	Limit Switch	1	1	1
33	402448	Limit Cover Gasket	1	1	1

	PARTS	DESCRIPTION	Q'TY	REQ'D EACH	I UNIT
NO.	CODE	DESCRIPTION	200-1	300-2	500-2
34	217240K	Limit Cover	1	1	1
35	400856	Spring Washer <m8></m8>	4	4	4
36	408580	Hex. Recess Bolt <m8×1.25×16l></m8×1.25×16l>	4	4	4
37	209000K	–Gearbox	1	1	
57	209487K	Gearbox			1
38	402580	Gearbox Gasket	1	1	1
39	407472	Parallel Pin < Ø6ר15>	2	2	2
40	209488K	Gearbox Cover	1	1	1
41	400095	Spring Washer <m8></m8>	9	9	9
42	408457	Hex. Recess Bolt <m8×1.25×90l></m8×1.25×90l>	9	9	9
43	402450	Electric Cover Gasket	1	1	1
44	300380K	Electric Cover	1	1	1
45	400856	Spring Washer <m8></m8>	8	8	8
46	408580	Hex. Recess Bolt <m8×1.25×16l></m8×1.25×16l>	8	8	8
47	404510	O-Ring <p-25></p-25>	1	1	1



## HOOK ASSEMBLY

	PARTS	DESCRIPTION	Q'TY REQ'D EACH UNIT			
NO.	CODE DESCRIPTION	050-1	100-2	100-1	200-2	
1	201310	Lock Bolt <Ø14×83>	2	2	2	2
2	208812K	Top Hook Ass'y	1	1		
2	200018K				1	1
3	400300	Safety Latch Ass'y	1	1	1	1
4	400097	Spring Washer <m12></m12>	2	2	2	2
5	400084	Nut <m12×1.75></m12×1.75>	2	2	2	2
6	400610	Cotter Pin < Ø3 × 30>	2	2	2	2
7	400088	Nylon Nut <m8×1.25></m8×1.25>	2		2	3
/	400087	Nylon Nut <m6×1.0></m6×1.0>		3		
8	400487	Safety Latch Ass'y	1	1	1	
0	400488					1
	209315K		1			
9	209352K	Bottom Hook Ass'y		1	1	
	209353K					1
	408340	Hex. Recess Bolt <m8 1.25="" 30="" ×=""></m8>	2		2	
10	408334	Hex. Recess Bolt <m6 1.0="" 30="" ×=""></m6>		3		
	408345	Hex. Recess Bolt <m8 1.25="" 35="" ×=""></m8>				3
	200102K	Bottom Block Cover	1			
	207073K				1	
11	200103K	Bottom Block Cover A Bottom Block Cover B		1		
	207074K					1
	200104K			1		
	207075K					1
12	200131	End Spacer	1	1	1	
12	200132					1
13	200127	Half Spacer	2	2	2	
15	200128					2
14	400157	Thrust Bearing <2904>	1	1	1	
	400158	Thrust Bearing <2905>				1
	200020K	4	1			
15	200019K	Bottom Hook Cover Ass'y		1		
	201377K				1	
	200029K		ļ			1
16	200954	Sprocket		1		
	200108		ļ			1
17	408055	Needle Bearing <hk1612></hk1612>	ļ	2		
	400171	Needle Bearing <hk 25="" 26=""></hk>	ļ			1
18	200953	Sprocket Axle		1		
	200114		ļ			1
19	400211	Spring Pin <Ø3×14>	ļ	1		
	400212	Spring Pin < $\emptyset$ 5 × 16>				1

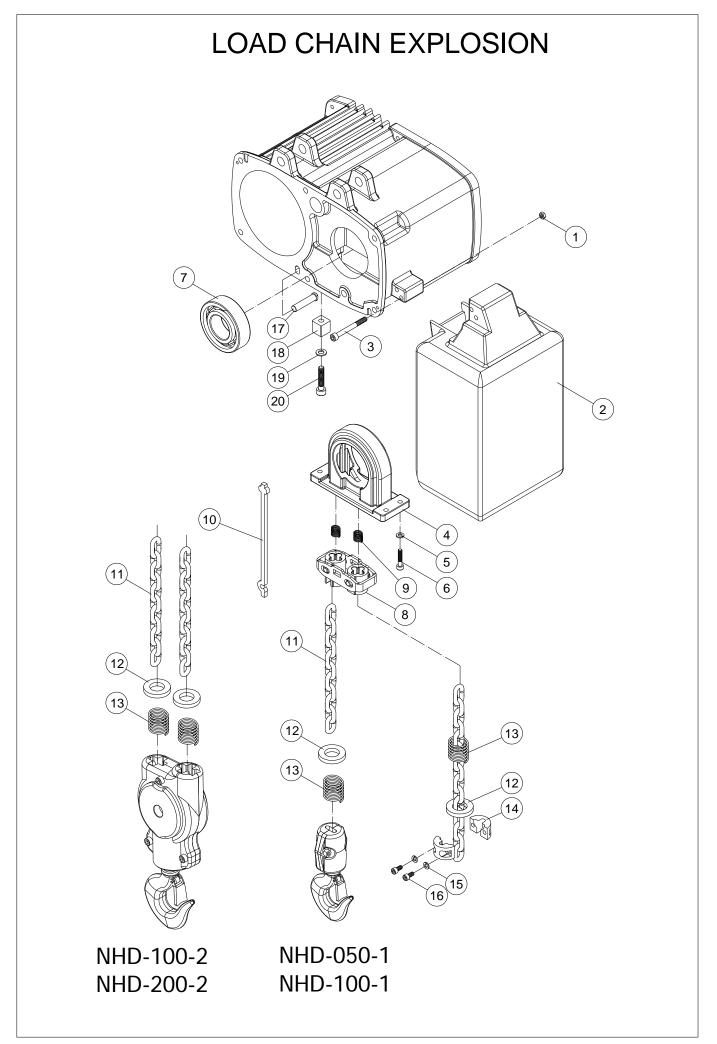


## HOOK ASSEMBLY

	PARTS	DECODIDION	Q′TY	REQ'D EACH	I UNIT
NO.	CODE	DESCRIPTION	200-1	300-2	500-2
1	268549	Top Hook Pin <Ø25×159L>	2	2	1
1	200460	Top Hook Pin <Ø34×159L>			1
	209346K		1		
2	209345K	Top Hook Ass'y		1	
	209348K				1
2	400488	Cofety Lotal Apple	2		
3	400489	Safety Latch Ass'y		2	2
	400098	Spring Washer <m16></m16>	2	2	1
4	400099	Spring Washer <m20></m20>			1
_	400085	Lock Nut <m16×1.5></m16×1.5>	2	2	1
5	400086	Lock Nut <m20×2.0></m20×2.0>			1
6	400603	Cotter Pin <3/32"×1"L>	2	2	2
	200759K	Bottom Hook Ass'y	1		
7	200025K			1	
	200027K				1
0	400088	Lock Nut <m8×1.25></m8×1.25>	4		
8	400089	Lock Nut <m10×1.5></m10×1.5>		3	3
	200099K		2		
9	200100K	Bottom Hook Housing		2	
	200101K				2
10	408052	Needle Bearing <ta 3020="" z=""></ta>		2	
10	400174	Needle Bearing <ta 4025="" z=""></ta>			2
11	200170	Sprocket <Ø40×42L>		1	
11	200111	Sprocket <Ø50×51L>			1
10	200813	Bottom Hook Idle Wheel Axle <Ø30×71L>		1	
12	200116	Bottom Hook Idle Wheel Axle <Ø40×78L>			1
13	400212	Spring Pin <Ø5×16L>		1	1
	400015	Hex. Recess Bolt <m8×1.25×40l></m8×1.25×40l>	4		
14	400018	Hex. Recess Bolt <m10 1.5="" 40l="" ×=""></m10>		3	
	400019	Hex. Recess Bolt <m10×1.5×45l></m10×1.5×45l>			3
15	200133	Pottom Llook Dataining Ding	1	1	
15	200134	Bottom Hook Retaining Ring			1

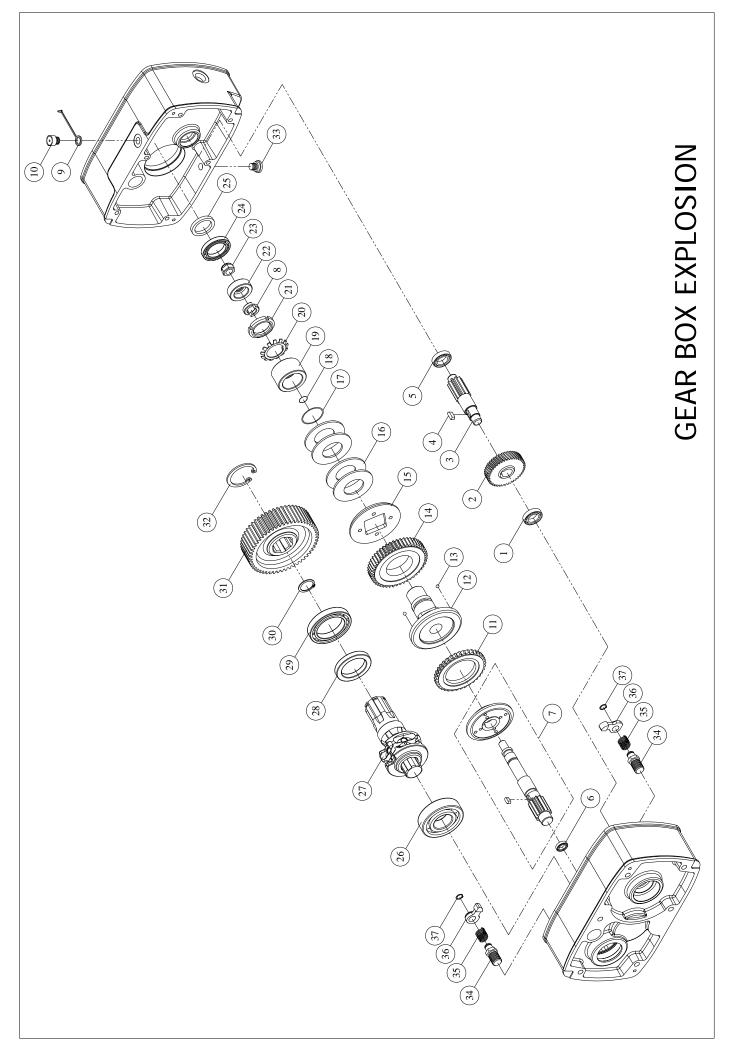
## HOOK ASSEMBLY

NO.	PARTS	DECONDICAL	Q'TY REQ'D EACH UNIT		
	CODE	DESCRIPTION	200-1	300-2	500-2
16	200129	Bottom Hook Half Spacer	2	2	
	200130				2
17	400159	Thrust Bearing <51106>	1	1	
	400160	Thrust Bearing <51207>			1
18	209356K	Bottom Hook	1		
	209355K			1	
	209358K				1
19	209483	-Chain Regulator	1	1	
	209120				1
20	400095	Spring Washer <m8></m8>	4	4	4
21	400012	Hex. Recess Bolt <m8 1.25="" 20l="" ×=""></m8>	4	4	4
22	400233	-Limit Spring	2	3	
	400234				3
23	400543	Load Chain <Ø10.0>	3.8	7.6	
	400544	Load Chain <Ø11.2>			7.6
24	200201	Chain Stopper <Ø10>	2	2	
	200202	Chain Stopper <Ø11.2>			2
25	400095	Spring Washer <m8></m8>	2	2	2
26	400014	Hex. Recess Bolt <m8 1.25="" 30l="" ×=""></m8>	2	2	2
27	400427	Hex. Recess Bolt <m8 1.25="" 80l="" ×=""></m8>	2	2	2
28	265563	Chain Bucket	1	1	1
29	400088	Nylon Nut < M8×1.25>	2	2	2
30	268552	Chain Connecting Pin<Ø19×86L>	-	1	
	203219	Chain Connecting Pin<Ø19×86L>			1
31	400091	Nylon Nut < M12×1.75>	-	1	1



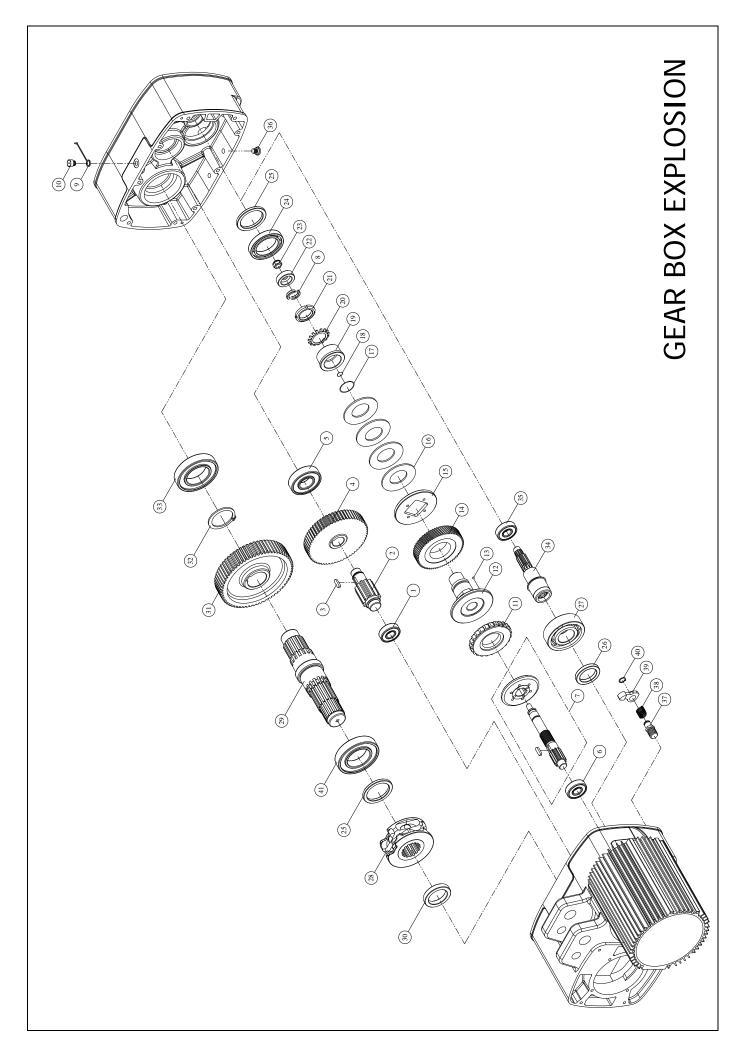
## LOAD CHAIN ASSEMBLY

NO.	PARTS	DESCRIPTION		Q'TY REQ'D EACH UNIT				
	CODE	DESCRIPTION	050-1	100-2	100-1	200-2		
1	400646	Nylon Nut <m5></m5>	2	2				
1	400087	Nylon Nut <m6></m6>			2	2		
2	201386	Chain Bucket <Ø6.3-2#>	1	1				
Z	208807	Chain Bucket <Ø7.1-3#>			1	1		
3	408487	Hex. Recess Bolt <m5 0.8="" 80="" ×=""></m5>	2	2				
2	408470	Hex. Recess Bolt <m6×1.0×80></m6×1.0×80>			2	2		
Л	208860	Chain Dogulator	1	1				
4	209279	-Chain Regulator			1	1		
5	400094	Spring Washer <m6></m6>	4	4	4	4		
6	400006	Hex. Recess Bolt <m6x1.0x16></m6x1.0x16>	4	4	4	4		
7	407851	Bearing <6306 ZZ>			1			
0	262500		1	1				
8	262576	–Guide Tube Ass'y			1	1		
0	408622		2	2				
9	408640	–Spring			2	2		
10	400513	Substitute Chain <Ø6.3×19.1>	1	1				
10	400511	Substitute Chain <Ø7.1×20.2>			1	1		
11	408708	Chain < Ø6.3 × 19.1>	3.5M	7M				
11	408707	Chain <Ø7.1×20.2>			3.5M	7M		
12	200310	Limit Stopper Ass'y	2	3	2	3		
13	408502	Spring	2	3	2	3		
14	200200	Chain Stopper	2	2	2	2		
15	400094	Spring Washer <m6></m6>	2	2	2	2		
16	400007	Hex. Recess Bolt <m6×1.0×20></m6×1.0×20>	2	2	2	2		
17	201382	Chain Connecting Pin $< \emptyset 14 \times 50 >$	1	1				
17	201274	Chain Connecting Pin $< \emptyset 16 \times 80 >$			1	1		
10	201381	Fixed Plack	1	1				
18	201379	-Fixed Block			1	1		
10	400854	Spring Washer <m5></m5>	1	1				
19	400094	Spring Washer <m6></m6>			1	1		
20	408329	Hex. Recess Bolt <m5 0.8="" 20="" ×=""></m5>	1	1				
20	400006	Hex. Recess Bolt <m6 1.0="" 16="" ×=""></m6>			1	1		



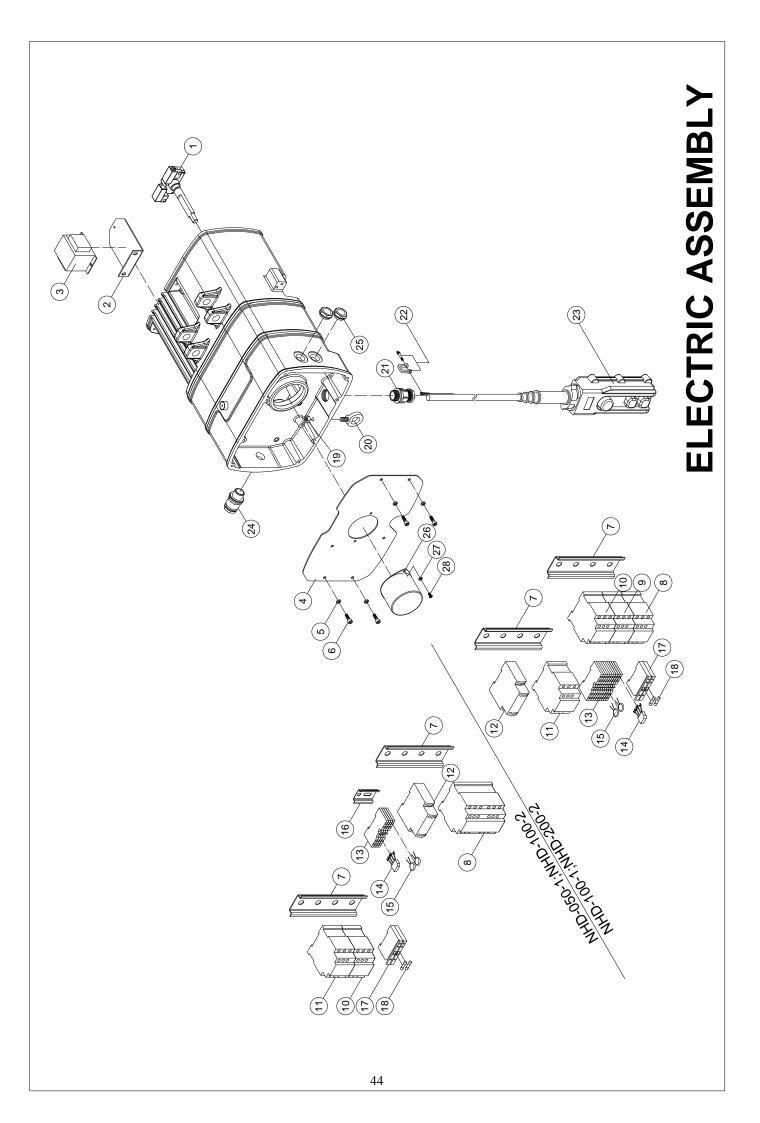
	DADTC			Q'TY REQ'D	EACH UNIT
NO. PARTS CODE		DESCRIPTION		050-1	100-1
			100-2	200-2	
1	407869	Bearing <6002 ZZ>		1	
I	405711	Bearing <6002 22> Bearing <6202>			1
2	202190	2nd Gear <m1.25 14l="" 50t="" ×=""></m1.25>		1	
Z	222314	2nd Gear $<$ M1.5 $\times$ 42T $\times$ 17L $>$			1
3	202191	3rd Gear <m2×12t×88l></m2×12t×88l>		1	
د	202265	3rd Gear <m2 105l="" 10t="" ×=""></m2>			1
4	400962	Key <t6×6×12l></t6×6×12l>		1	
4	400963	Key <t6×6×15l></t6×6×15l>			1
5	407869	Bearing <6002 ZZ>		1	
J	405711	Bearing <6202>			1
6	400132	Bearing <6204>		1	
6	400136	Bearing <6304>			1
	268793	5th Gear Ass'y <m2×12t></m2×12t>	60HZ	1	
-	268900	5th Gear Ass'y <m2×13t></m2×13t>	50HZ		
7	222379	5th Gear Ass'y <m2.25×13t></m2.25×13t>	60HZ		1
	222380	5th Gear Ass'y <m2.25×15t></m2.25×15t>	50HZ		1
0	200272	Load Brake Gear Spacer		2	
ð	8 200273				2
9	200927	Air Plug		1	1
10	200926	Hex. Oil Plug		1	1
11	208843	-		1	
11	209126	-Ratchet Ass'y			1
10	201280	Proko Pushing		1	
12	209129	Brake Bushing			1
13	400289	Ball < Ø6>		3	3
14	202192	4th Gear Ass'y <m2×49t×18></m2×49t×18>		1	
14	222307	4th Gear Ass'y <m2 21="" 54t="" ×=""></m2>			1
15	209440	Brake Body <Ø90 × 7.6L>		1	
15	209273	Brake Body <Ø101 × 7L>			1
16	400799	Disc Spring <Ø70 × Ø35.5 × 3t>		3	
10	408643	Disc Spring <Ø80 × Ø36 × 3t>			4
17	404519	O-Ring <p-29></p-29>		1	1
10	404509	O-Ring <p-14></p-14>			
18	404453	O-Ring <p-18></p-18>			1
19	209460	Disc Spring Pushing		1	
19	209274		Disc Spring Bushing		1
20	406511	Spacer <aw06></aw06>		1	
20	400681	Spacer <aw07></aw07>			1
21	406438	Nut <km 6=""></km>		1	
21	406435	Nut <km 7=""></km>			1

	DADTC			Q'TY REQ'D	Q'TY REQ'D EACH UNIT		
NO.	PARTS CODE	DESCRI	PTION	050-1	100-1		
	CODE			100-2	200-2		
22	209393	End Spacer <Ø40ר14×	13L>	1			
22	209275	End Spacer <Ø45ר14×	13L>		1		
23	400091	Lock Nut <m12×1.75></m12×1.75>		1	1		
24	405593	Bearing < 6910 ZZ >		1			
24	405712	Bearing < 6912 >			1		
25	404460	Oil Seal < Ø50ר68×9t>		1			
25	404534	Oil Seal < Ø60ר80×8t>			1		
26	400108	Bearing < 6006ZZ >		1			
20	407851	Bearing < 6306 ZZ>	-		1		
27	200007	Load Sheave <Ø68.5×144	IL>	1			
27	209276	Load Sheave < Ø73 × 158.	5L>		1		
20	400187	Oil Seal < Ø35 × Ø50 × 8t>		1			
28	404532	Oil Seal < Ø45 × Ø72 × 10t	>		1		
20	400108	Bearing < 6006ZZ >					
29	407759	Bearing < 6208 >			1		
20	400192	Retaining Ring <s-25></s-25>		1			
30	404161	Retaining Ring <s-38></s-38>			1		
	202199	60HZ 60HZ		1			
21	202201	6th Gear <m2×42t></m2×42t>	50HZ	1			
31	222313	6th Gear <m2.25 54t="" ×=""></m2.25>	60HZ		1		
	222312	6th Gear <m2.25 52t="" ×=""></m2.25>	50HZ		1		
22	400906	Retaining Ring <r-55></r-55>		1			
32	400202	Retaining Ring <r-80></r-80>			1		
33	300523	Lubricant Drain Bolt		1	1		
24	200440			2			
34	200410	-Ratchet Pawl Pin			1		
25	400038			2			
35	200439	-Ratchet Pawl Spring			1		
	200415			2			
36	200287	-Ratchet Pawl			1		
37	400907	Retaining Ring <s-11></s-11>		2	1		



NO. PARTS CODE		DECOUDTION	Q′TY	Q'TY REQ'D EACH UNIT			
		DESCRIPTION	200-1	300-2	500-2		
1	400721	Bearing <6307 ZZ>	1	1	1		
2	202158	5nd Gear <m3×15t×149.5l></m3×15t×149.5l>	1	1	1		
3	405908	Key <t12×8×30l></t12×8×30l>	1	1	1		
	202169	4rd Gear <m2×73t×32l></m2×73t×32l>	1				
4	202166	4rd Gear <m2×68t×32l></m2×68t×32l>		1			
	202157	4rd Gear <m2×77t×32l></m2×77t×32l>			1		
5	405711	Bearing <nf306></nf306>	1	1	1		
6	400136	Bearing <6304>	1	1	1		
	269100	3th Gear Ass'y <m2×19t×210></m2×19t×210>	1				
7	269315	3th Gear Ass'y <m2×24t×210></m2×24t×210>		1			
	269317	3th Gear Ass'y <m2×15t×210></m2×15t×210>			1		
8	200273	Load Brake Gear Spacer	2	2	2		
9	200927	Air Plug	1	1	1		
10	200926	Hex. Oil Plug	1	1	1		
11	208999	Ratchet Ass'y	1	1	1		
12	209284	Brake Bushing	1	1	1		
13	400522	Ball < Ø8>	3	3	3		
14	202160	2th Gear Ass'y <m1.75 24="" 68t="" ×=""></m1.75>	1	1	1		
15	209330	Brake Body <Ø112×8>	1	1	1		
16	408590	Disc Spring <Ø90ר45×3.5t>	4	4	4		
17	404433	O-Ring <p-38></p-38>	1	1	1		
18	404453	O-Ring <p-18></p-18>	1	1	1		
19	209340	Disc Spring Bushing	1	1	1		
20	400681	Spacer <aw07></aw07>	1	1	1		
21	406435	Nut <km 7=""></km>	1	1	1		
22	268480	End Spacer <Ø45ר14×13L>	1	1	1		
23	400091	Lock Nut <m12×1.75></m12×1.75>	1	1	1		
24	405712	Bearing < 6912 >	1	1	1		
25	404472	Oil Seal <Ø60ר78×7t>	2	2	2		
26	400944	Oil Seal <Ø45ר60×8t>	1	1	1		
27	400140	Bearing < 6009 ZZ>	1	1	1		
20	208680	Load Chaque	1	1			
28	268070	Load Sheave			1		

NO.         CODE         DESCRIPTION         200-1         300-2         500-2           29         268499         Load Sheave B < $070 \times 288.5L>$ 1         1         1           30         268373         Spacer < $070 \times 950 \times 12L>$ 1         1         1         1           31         202159         6th Gear < M3 × 64T>         1         1         1         1           32         400197         Retaining Ring <s-50>         1         1         1         1           33         407704         Bearing &lt; 6309 ZZ&gt;         1         1         1         1           34         202161         1st Gear &lt; M1.75 × 12&gt;         1         1         1         1           35         400732         Bearing &lt; 6203 ZZ&gt;         1         1         1         1           36         400600         Lubricant Drain Bolt         1         1         1         1           37         200286         Ratchet Pawl Spring         1         1         1         1           39         200288         Ratchet Pawl         1         1         1         1           400190         Retaining Ring <s-16>         1         1         1&lt;</s-16></s-50>		PARTS	DECOUDTION	Q'TY	Q'TY REQ'D EACH UNIT			
30         268373         Spacer < Ø70 × Ø50 × 12L>         1         1         1           31         202159         6th Gear <m3 64t="" ×="">         1         1         1         1           32         400197         Retaining Ring <s-50>         1         1         1         1           33         407704         Bearing &lt; 6309 ZZ&gt;         1         1         1         1           34         202161         1st Gear <m1.75 12="" ×="">         1         1         1         1           35         400732         Bearing &lt; 6203 ZZ&gt;         1         1         1         1           36         400600         Lubricant Drain Bolt         1         1         1         1           37         200286         Ratchet Pawl Pin         1         1         1         1           38         400241         Ratchet Pawl Spring         1         1         1         1           39         200288         Ratchet Pawl         1         1         1         1           40         400190         Retaining Ring <s-16>         1         1         1         1</s-16></m1.75></s-50></m3>	NO.	CODE	DESCRIPTION	200-1	300-2	500-2		
31       202159       6th Gear <m3×64t>       1       1       1         32       400197       Retaining Ring <s-50>       1       1       1         33       407704       Bearing &lt; 6309 ZZ&gt;       1       1       1         34       202161       1st Gear <m1.75 12="" ×="">       1       1       1         35       400732       Bearing &lt; 6203 ZZ&gt;       1       1       1         36       400600       Lubricant Drain Bolt       1       1       1         37       200286       Ratchet Pawl Pin       1       1       1         38       400241       Ratchet Pawl Spring       1       1       1         39       200288       Ratchet Pawl       1       1       1         40       400190       Retaining Ring <s-16>       1       1       1</s-16></m1.75></s-50></m3×64t>	29	268499	Load Sheave B < $\emptyset$ 70 × 288.5L>	1	1	1		
32       400197       Retaining Ring <5-50>       1       1       1         33       407704       Bearing < 6309 ZZ>       1       1       1         34       202161       1st Gear <m1.75 12="" ×="">       1       1       1         35       400732       Bearing &lt; 6203 ZZ&gt;       1       1       1         36       400600       Lubricant Drain Bolt       1       1       1         37       200286       Ratchet Pawl Pin       1       1       1         38       400241       Ratchet Pawl Spring       1       1       1         39       200288       Ratchet Pawl       1       1       1         40       400190       Retaining Ring <s-16>       1       1       1</s-16></m1.75>	30	268373	Spacer < Ø70 × Ø50 × 12L>	1	1	1		
33       407704       Bearing < 6309 ZZ>       1       1       1         34       202161       1st Gear <m1.75 12="" ×="">       1       1       1         35       400732       Bearing &lt; 6203 ZZ&gt;       1       1       1         36       400600       Lubricant Drain Bolt       1       1       1         37       200286       Ratchet Pawl Pin       1       1       1         38       400241       Ratchet Pawl Spring       1       1       1         39       200288       Ratchet Pawl       1       1       1         40       400190       Retaining Ring <s-16>       1       1       1</s-16></m1.75>	31	202159	6th Gear <m3×64t></m3×64t>	1	1	1		
34       202161       1st Gear <m1.75×12>       1       1       1         35       400732       Bearing &lt; 6203 ZZ&gt;       1       1       1         36       400600       Lubricant Drain Bolt       1       1       1         37       200286       Ratchet Pawl Pin       1       1       1         38       400241       Ratchet Pawl Spring       1       1       1         39       200288       Ratchet Pawl       1       1       1         40       400190       Retaining Ring <s-16>       1       1       1</s-16></m1.75×12>	32	400197	Retaining Ring <s-50></s-50>	1	1	1		
35         400732         Bearing < 6203 ZZ>         1         1         1           36         400600         Lubricant Drain Bolt         1         1         1           37         200286         Ratchet Pawl Pin         1         1         1           38         400241         Ratchet Pawl Spring         1         1         1           39         200288         Ratchet Pawl         1         1         1           40         400190         Retaining Ring <s-16>         1         1         1</s-16>	33	407704	Bearing < 6309 ZZ>	1	1	1		
36         400600         Lubricant Drain Bolt         1         1         1           37         200286         Ratchet Pawl Pin         1         1         1           38         400241         Ratchet Pawl Spring         1         1         1           39         200288         Ratchet Pawl         1         1         1           40         400190         Retaining Ring <s-16>         1         1         1</s-16>	34	202161	1st Gear <m1.75×12></m1.75×12>	1	1	1		
37       200286       Ratchet Pawl Pin       1       1       1         38       400241       Ratchet Pawl Spring       1       1       1         39       200288       Ratchet Pawl       1       1       1         40       400190       Retaining Ring <s-16>       1       1       1</s-16>	35	400732	Bearing < 6203 ZZ>	1	1	1		
38         400241         Ratchet Pawl Spring         1         1         1           39         200288         Ratchet Pawl         1         1         1           40         400190         Retaining Ring <s-16>         1         1         1</s-16>	36	400600	Lubricant Drain Bolt	1	1	1		
39         200288         Ratchet Pawl         1         1         1           40         400190         Retaining Ring <s-16>         1         1         1</s-16>	37	200286	Ratchet Pawl Pin	1	1	1		
40         400190         Retaining Ring <s-16>         1         1         1</s-16>	38	400241	Ratchet Pawl Spring	1	1	1		
	39	200288	Ratchet Pawl	1	1	1		
41       400723       Bearing < 6212 ZZ>       1       1       1         I       I       I       I       I       I         I       I       I       I       I       I         I       I       I       I       I       I         I       I       I       I       I       I         I       I       I       I       I       I         I       I       I       I       I       I         I       I       I       I       I       I         I       I       I       I       I       I         I       I       I       I       I       I       I         I       I       I       I       I       I       I       I         I       I       I       I       I       I      I       I       I         I       I       I       I       I       I       I       I       I       I       I       I         I       I       I       I       I       I       I       I       I       I       I       I       I	40	400190	Retaining Ring <s-16></s-16>	1	1	1		
Image: section of the section of th	41	400723	Bearing < 6212 ZZ>	1	1	1		
Image: second								
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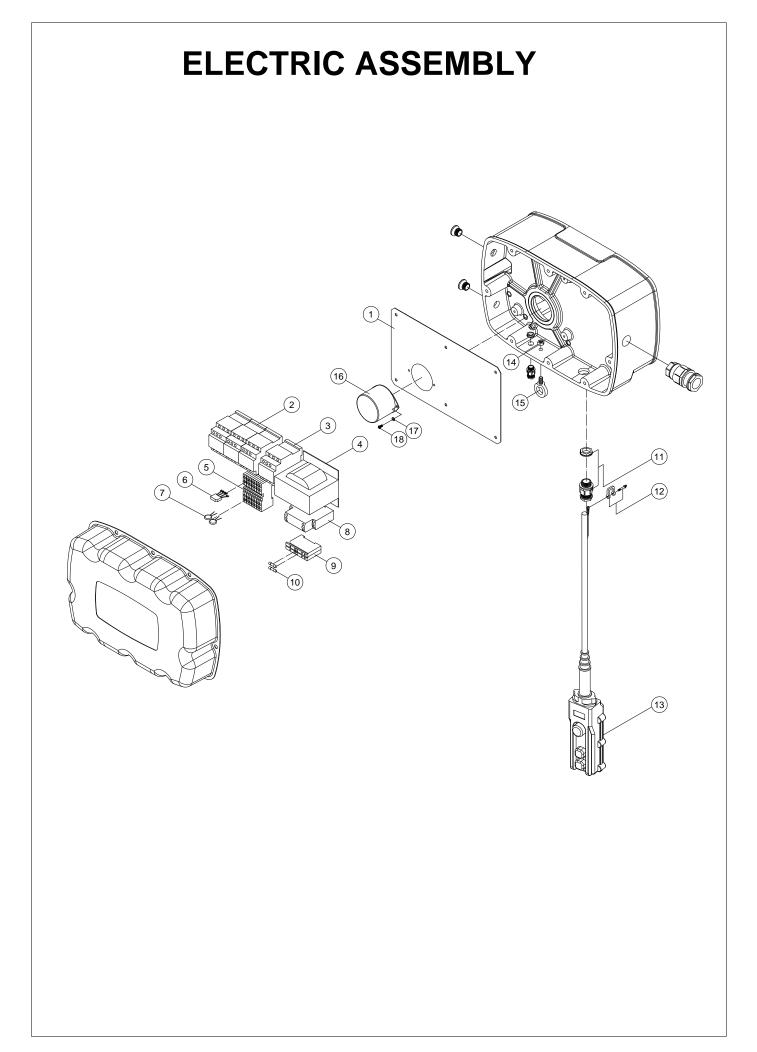


## **ELECTRIC ASSEMBLY**

DADTS				Q'TY REQ'D EACH UNIT		
NO.	PARTS CODE	DESCRIPTION		050-1	100-1	
	CODE			100-2	200-2	
1	302500	-Upper & Lower Limit Switch		1		
1	302337	-opper & Lower Linit Switch			1	
2	300628	-Transformer Bracket		1		
2	300630				1	
	300436	Transformer PS-116	-48V	1		
3	301325	Transformer PS-16206N	-40V		1	
5	300436	Transformer PS-116	241/	1		
	300989	Transformer PS-16205N	-24V		1	
л	300760	Ele stuis Due skat		1		
4	300859	Electric Bracket			1	
5	400093	Spring Washer <m5></m5>			4	
6	408361	Hex. Recess Bolt <m5 0.8="" td="" ×="" ×<=""><td>10L&gt;</td><td></td><td>4</td></m5>	10L>		4	
-7	300092	Contactor Rail		2		
7	300091				2	
	300045		401/	1		
0	301107		48V		1	
8	300065	Contactor	241/	1		
	301106		24V		1	
	301107		48V	-	1	
9	301106	Contactor	24V	-	1	
	300046		401/	1		
10	301107		48V		1	
10	300066	Contactor	2414	1		
	301106		24V		1	
	300044		40)/	1		
	300036		48V		1	
11	300064	Contactor	2414	1		
	300035	1	24V		1	
12	302376	Phase Sequence Protector <	RM17-TG00>	1	1	
13	302342	Terminal Block (PT 2,5-QUAT	TRO)	4	10	
14	300150	Rectifier KBC10		1	1	
15	300148	Varistor 14K471U		2	2	

## ELECTRIC ASSEMBLY

PARTS			Q'TY REQ'D	Q'TY REQ'D EACH UNIT		
NO.		DESCRIPTION	050-1	100-1		
CODE			100-2	200-2		
16	300078	Contactor Rail	1	-		
17	300995	Fuse Holder	2	2		
18	300993	Fuse	2	2		
19	400080	Nut <m6×1.0></m6×1.0>	1	1		
20	404803	Eye Bolt <m6×1.0></m6×1.0>	1	1		
21	400941	Cable Gland <m25-18></m25-18>	1	1		
22	400297	Shackle <3/16">	1	1		
23	300484	Push Button Switch	1	1		
24	400222	Cable Gland <m20-13></m20-13>	1	1		
25	408436	Cable Gland < SPG-M20B M20×1.5>	2	2		
26	262709	Course	1			
26	272862	-Cover		1		
27	400092	Spring Washer <m4></m4>	2	2		
28	408394	Cross Headed Screw <m4×0.7×6l></m4×0.7×6l>	2	2		



## **ELECTRIC ASSEMBLY**

NO	PARTS	DESCRIPTION		Q'TY R	Q'TY REQ'D EACH UNIT		
NO.	CODE			200-1	300-2	500-2	
1	300089	Electric Bracket		1	1	1	
2	301115	Contactor < 48V 3A1a1b LC1-D25	-E7>	3	2	2	
2	301114	Contactor < 24V 3A1a1b LC1-D25	-B7>	3	3	3	
3	300041	Contactor <48V 2A2B LC1-D258-E	7>	1	1	1	
З	300040	Contactor <24V 2A2B LC1-D258-B	37>			1	
4	301369	Transformer PS-16211N	380V	1	1	1	
4	301585	Transformer PS-16210N	400V,415V			1	
5	302342	Terminal Block (PT 2,5-QUATTRO)		12	12	12	
6	300150	Rectifier KBC10		1	1	1	
7	300148	Varistor 14K471U		2	2	2	
8	302376	Phase Sequence Protector < RM1	7-TG00>	1	1	1	
9	300995	Fuse Holder		2	2	2	
10	300999	Fuse		2	2	2	
11	400941	Cable Gland <m25-18></m25-18>	1	1	1		
12	400297	Shackle <3/16">		1	1	1	
13	312402	Push Button Switch(Dual speed)		1	1	1	
14	400081	Nut <m8×1.25></m8×1.25>		1	1	1	
15	400217	Eye Bolt <m8×1.25></m8×1.25>		1	1	1	
16	272862	Cover		1	1	1	
17	400092	Spring Washer <m4></m4>		2	2	2	
18	408394	Cross Headed Screw <m4×0.7×6< td=""><td>šL&gt;</td><td>2</td><td>2</td><td>2</td></m4×0.7×6<>	šL>	2	2	2	



### SGS Reference No: RA/2016/90004C-01

Page 1 of 1

### VERIFICATION OF COMPLIANCE to the requirements of Machinery Directive 2006/42/EC

Verification Report No.	:	RA/2016/90004C-01
Representative Model	:	NHD-200-2
Series Model(s)	:	NHTD-025-1, -050-2, -050-1, -100-2, -100-1, -200-2;
		NHD-025-1, -050-2, -050-1, -100-2, -100-1;
		NT-050-1, -050-2, -100-1, -100-2, -200-2;
		NTD-050-1, -050-2, -100-1, -100-2, -200-2;
		SH-025-1, -050-1, -100-1, -200-2; WNH-012, -025, -050, -100;
		WNT-012, -025, -050, -100; BLFD-008, -012, -016, -024, -032, -048
Product Name	:	Electric Chain Hoist and Trolley
Applicant	:	Cheng Day Machinery Works Co., Ltd.
Address of Applicant	:	No. 173, Wen Chiu Rd., Dajia Dist., Taichung City 437, Taiwan.
TCF Number	:	CHENGDAY(UMEGA)-2016-B1
Date of Issue	:	September 12, 2016
Date of Expiry	:	September 12, 2021
Applicable Standard(s)	:	EN ISO 12100:2010, EN 14492-2 :2006+A1 :2009/AC :2010

### Conclusion

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Based upon a review of the Technical Construction File, the apparatus is deemed to meet the requirements of the above standard(s) and hence fulfill the requirements of:

### Machinery Directive 2006/42/EC

Note : This verification is only valid for the apparatus and configuration described and in conjunction with the technical data detailed above.

The CE mark as shown below can be used, under the responsibility of the manufacture, after completion an EC Declaration of Conformity and compliances with all relevant EC Directives. Authorized Signatory:

Jason L

SGS TAIWAN LTD. Jason Lin Technical Manager



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008

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### SGS Reference No: RA/2016/90005C-01

Page 1 of 1

## VERIFICATION OF COMPLIANCE

Verification Report No.	:	RA/2016/90005C-01
Representative Model	;	NHD-200-2
Series Model(s)	:	NHTD-025-1, -050-2, -050-1, -100-2, -100-1, -200-2;
		NHD-025-1, -050-2, -050-1, -100-2, -100-1;
		NT-050-1, -050-2, -100-1, -100-2, -200-2;
		NTD-050-1, -050-2, -100-1, -100-2, -200-2;
		SH-025-1, -050-1, -100-1, -200-2; WNH-012, -025, -050, -100;
3		WNT-012, -025, -050, -100; BLFD-008, -012, -016, -024, -032, -048
Product Name	<u>;</u> :	Electric Chain Hoist and Trolley
Applicant	:	Cheng Day Machinery Works Co., Ltd.
Address of Applicant	:	No. 173, Wen Chiu Rd., Dajia Dist., Taichung City 437, Taiwan.
TCF Number	:	CHENGDAY(UMEGA)-2016-B1
Date of Issue	:	September 12, 2016
Applicable Standard(s)	:	EN 60204-32:2008

### Conclusion

Based upon a review of the Technical Construction File, the apparatus is deemed to meet the requirements of the above standard(s) and hence fulfill the requirements of:

### Low Voltage Directive 2014/35/EU

Note : This verification is only valid for the apparatus and configuration described and in conjunction with the technical data detailed above.

The CE mark as shown below can be used, under the responsibility of the manufacture, after completion an EC Declaration of Conformity and compliances with all relevant EC Directives.

Authorized Signatory:

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SGS TAIWAN LTD. Jason Lin Technical Manager



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SGS Reference No: RA/2015/50031C

Page 1 of 1

VERIFICATION OF COMPLIANCE to the requirements of Machinery Directive 2006/42/EC

Verification Report No. Representative Model	::	RA/2015/50031C NHD-500-2
Series Model(s)	:	NHD-012-1, NHD-024-2, NHD-200-1, NHD-300-2, NH-012-1, NH-024-2, NH-200-1, NH-300-2, NH-500-2, NTD-012-1, NTD-24-2, NTD-200-1, NTD-300-2, NTD-500-2, NT-012-1, NT-024-2, NT-200-1, NT-300-2, NT-500-2
Product Name	:	Electric Chain Hoist and Trolley
Applicant	:	Cheng Day Machinery Works Co., Ltd.
Address of Applicant	1	No. 173, Wen Chu Rd., Tachia, Taichung City, Taiwan
TCF Number	2	CHENGDAY(UMEGA)-2015-B1
Date of Issue	:	July 15, 2015
Date of Expiry	:	July 14, 2020
Applicable Standard(s)	:	EN ISO 12100 :2010, EN 14492-2:2006+A1:2009/AC:2010

### Conclusion

Based upon a review of the Technical Construction File, the apparatus is deemed to meet the requirements of the above standard(s) and hence fulfill the requirements of:

### Machinery Directive 2006/42/EC

Note : This verification is only valid for the apparatus and configuration described and in conjunction with the technical data detailed above. The CE mark as shown below can be used, under the responsibility of the manufacture, after

completion an EC Declaration of Conformity and compliances with all relevant EC Directives.

CE

### Authorized Signatory:

Jason L .

SGS TAIWAN LTD. Jason Lin Technical Manager



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### SGS Reference No: RA/2015/50032C

Page 1 of 1

**VERIFICATION OF COMPLIANCE** 

Verification Report No.		RA/2015/50032C
Representative Model	11	NHD-500-2
Series Model(s)	:	NHD-012-1, NHD-024-2, NHD-200-1, NHD-300-2, NH-012-1,
		NH-024-2, NH-200-1, NH-300-2, NH-500-2, NTD-012-1, NTD-24-2,
		NTD-200-1, NTD-300-2, NTD-500-2, NT-012-1, NT-024-2, NT-200-1,
		NT-300-2, NT-500-2
Product Name	:	Electric Chain Hoist and Trolley
Applicant	:	Chang Day Machinery Works Co., Ltd.
Address of Applicant	:	No. 173, Wen Chu Rd., Tachia, Taichung City, Taiwan
TCF Number	:	CHENGDAY(UMEGA)-2015-B1
Date of Issue	:	July 15, 2015
Applicable Standard(s)	:	EN 60204-32:2008

### Conclusion

Based upon a review of the Technical Construction File, the apparatus is deemed to meet the requirements of the above standard(s) and hence fulfill the requirements of:

### Low Voltage Directive 2006/95/EC

Note: This verification is only valid for the apparatus and configuration described and in conjunction with the technical data detailed above.

The CE mark as shown below can be used, under the responsibility of the manufacture, after completion an EC Declaration of Conformity and compliances with all relevant EC Directives.

Authorized Signatory:

Jason L

SGS TAIWAN LTD. Jason Lin **Technical Manager** 



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 SGS Taiwan Ltd.
 134, Wu Kung Road, Wu Ku District, New Taipei City, Taiwan /新北市五股區五工路134號

 台灣檢驗科技股份有限公司
 t (886-2) 2299-3939
 f (886-2) 2298-2698
 www.sgs.tw

Member of SGS Group