



Pacific Electric Chain Hoist

U-MEGA Series

OPERATION MANUAL & PARTS LIST



Model: PEH025

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 "Pacific" ELECTRIC CHAIN HOIST.



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1. FOREWORD

This manual contains important information to help you properly install, operate and maintain the Pacific 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 trust that you will find the Pacific hoists will give you many years of satisfactory service. Should you have any queries, please contact:

Pacific Hoists Australia	Pacific Hoists New Zealand
24 Foundry Road	11 Druces Road
Seven Hills NSW 2147	Wiri Auckland NZ 2104
P +61 2 8825 6900	P +64 9 263 5566
E sales@pacifichoists.com.au	E sales@pacifichoists.co.nz
W www.pacifichoists.com.au	W www.pacifichoists.com.au

2.MAIN SPECIFICATIONS

2.1 Specifications

The following specifications are common to all electric chain hoists.

Item		Detail	
Working temperature range (°C)		-5 to +40	
Working humidity range (%)		85 or less	
Protection	Hoist	IP 54	
	Push button	IP 65	
Electric power supply		Three Phase, 415V, 50 Hz	
Noise Level (dB)	Dual speed hoist	75	
Chain Size	Type	Nominal diameter (mm)	Pitch (mm)
	PEH025	4.0	12.0

Table 2-1 Specifications

NB. Reverse phase relay on all models except 250kg hoist

Remarks:

- (1) Contact Pacific Hoist 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 loads under normal atmospheric conditions.
- (3) Noise levels are measured at a distance of 1m horizontally from the hoists during normal operation.

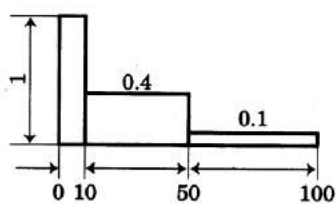
2.2 Mechanical Classification (Grade) and Life

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

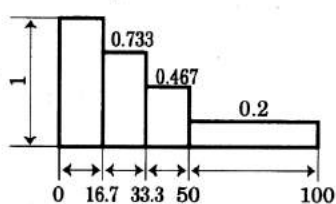
Pacific electric chain hoists have been designed for grade 2m in the FEM Regulations (FEM 9.5.11). Details are provided in Table 2-2. Average daily operating time and total operating time are determined by load distribution.

Table 2-2 Mechanical classification

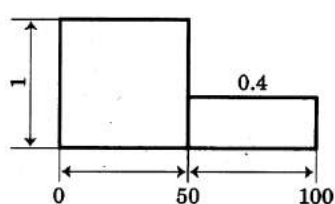
Load Spectrum (Load distribution)	Definitions	Cubic mean value	Average daily Operation time (h)	Total operating time (h)
1 (light)	Mechanisms or parts thereof, usually subject to very small loads and in exceptional cases only to maximum loads.	$k \leq 0.50$	4 - 8	12500
2 (medium)	Mechanisms or parts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



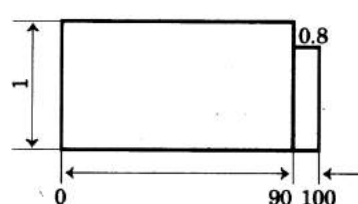
% operating time



% operating time



% operating time



% operating time

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° 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.

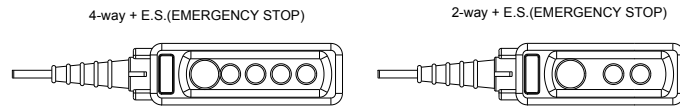
(5) Limit Switch

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)

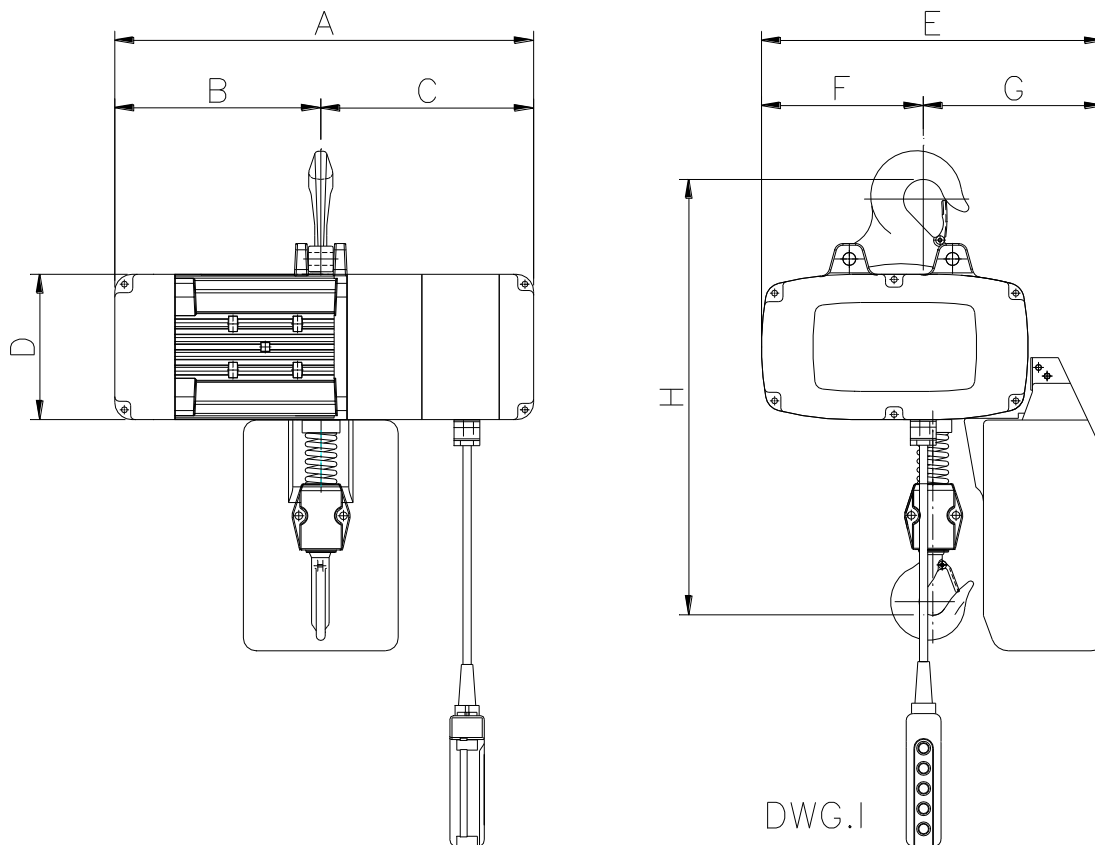
2.4 Specifications and Dimensions

a. Specifications:

Model		PEH025
Capacity (kg)		250
Lift Height(m)		3etc.
Load Chain (mm)		Ø4.0×12.0
Hoisting Speed (m/min)	50HZ	12/3
Motor Power (kw)	50HZ	0.6/0.15 2/8P
Motorized Trolley Mode N.W./G.W.(kg)		68/84
Top Hook Mode N.W./G.W.(kg)		30/32
Power Supply		3Phase, 415V-24V,50Hz
E.D. Rating (%)		40/20
Load Chain Fall Number		1

b. Dimensions:

Model	Dimensions(mm)							
	A	B	C	D	E	F	G	H
PEH025	380	175	205	135	299	143	156	376



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.

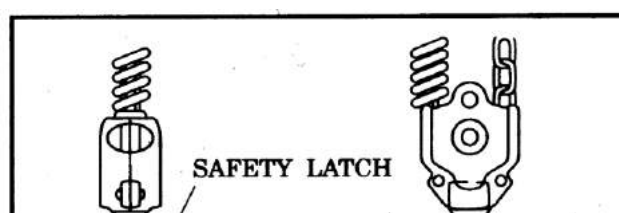
Only trained personnel are allowed to operate the hoist.



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.



WARNING

Do not use the hoist chain as a welding electrode.

Always avoid excessive inching operation.

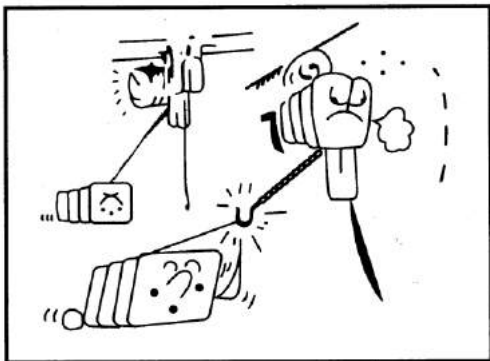
Always make sure the hoist motor completely stops before reversing.

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.

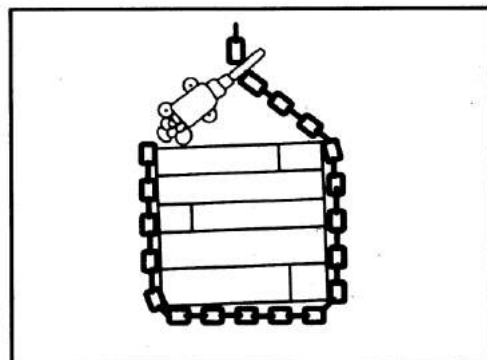
Slings must be applied to load evenly and centrally to ensure correct balance. Never lift any object which is insecure or out of balance.

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

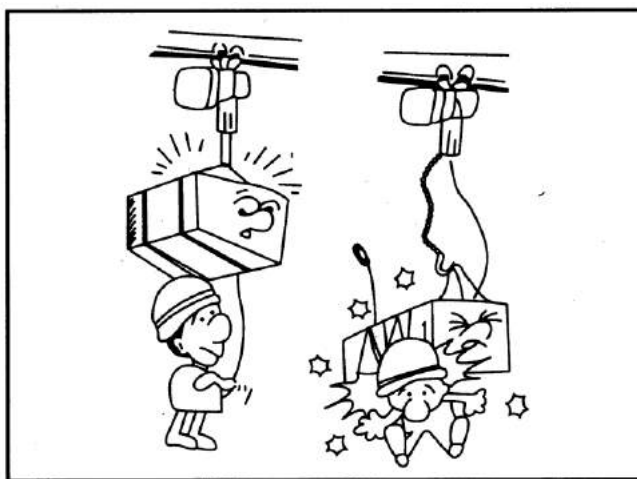
Never wrap around and hook back the load chain as a sling to lift a load. (Illust. 4)



(Illust. 3)



(Illust. 4)



(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.



Never stand under a raised load (Illust. 5)

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

4.2 Voltage

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, then refitting the

CAUTION

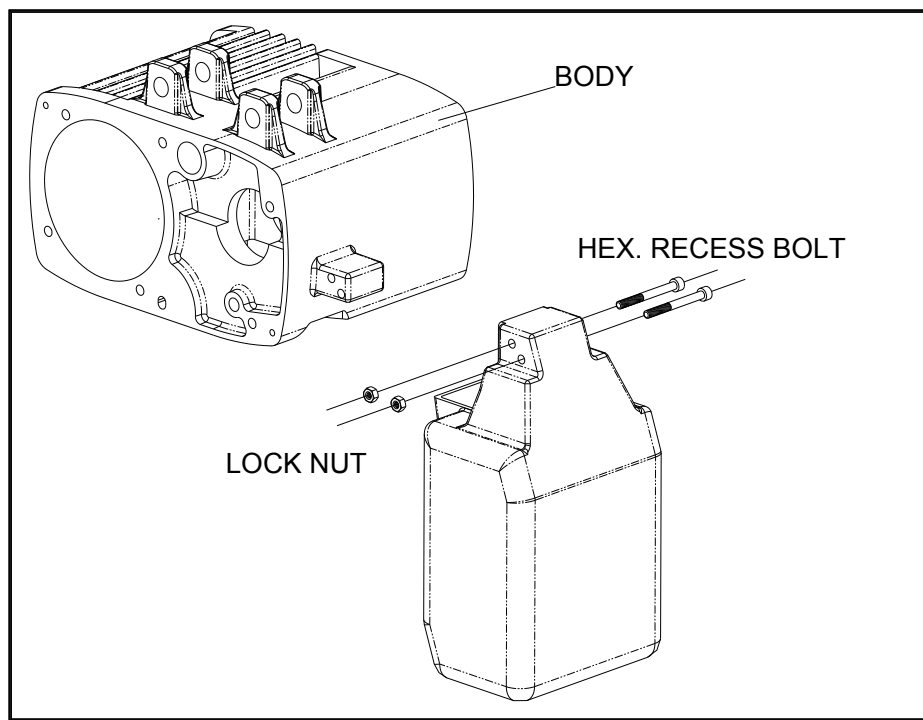
If power supply deviates from standard by more than $\pm 10\%$ abnormal operation or damage to the motor may result. It is imperative to ensure correct voltage supply before commencing operation.

top hook to the hoist.

WARNING

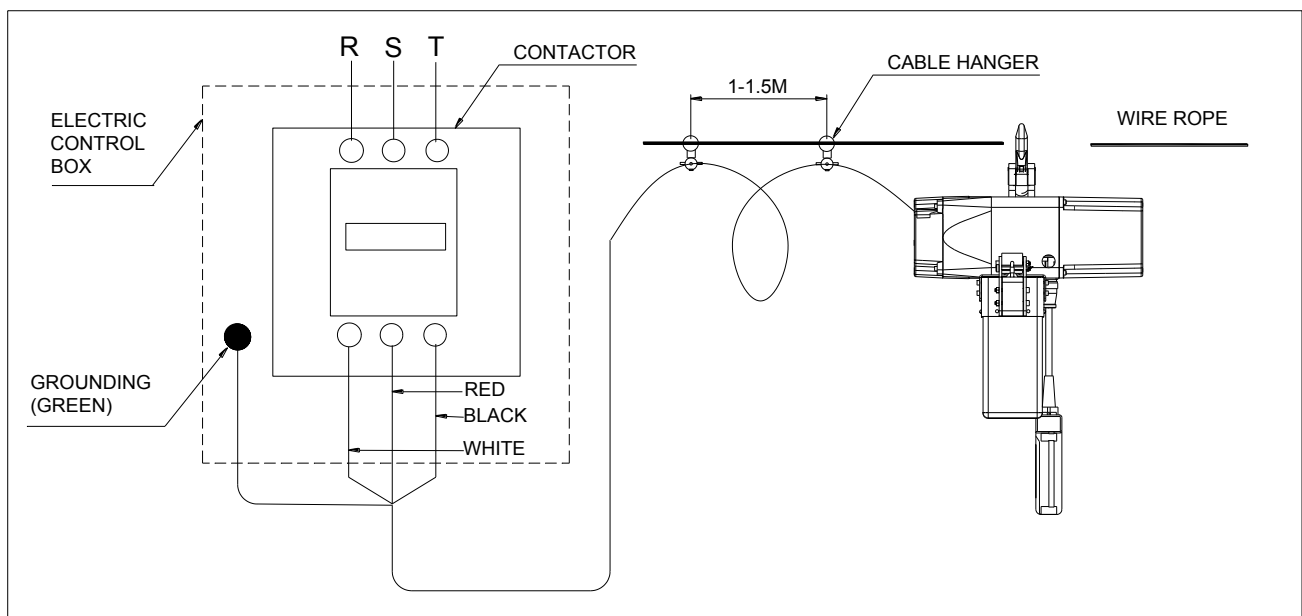
Connection to power supply before installation procedures having been completed is strictly prohibited.

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  switch button to lower load chain until the limit spring touches the limit switch. Power should be cut off automatically.
- (c) Firmly push  switch button to check the collection of load chain into chain bucket.

(d) Check the emergency stop device function :

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

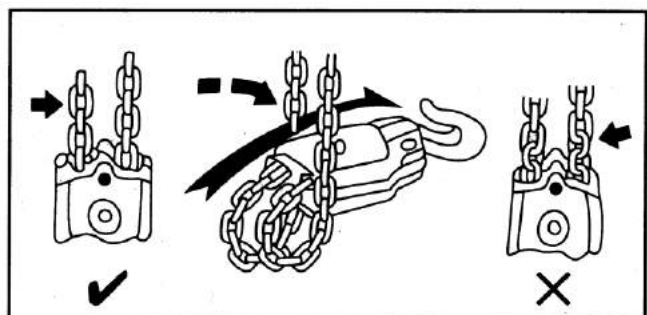
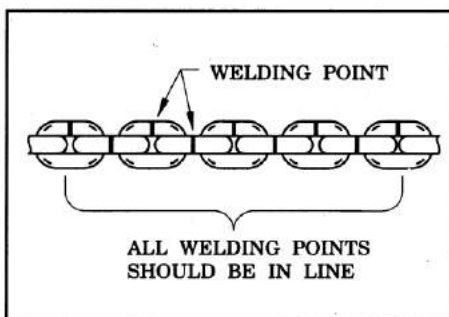
Finally, check that the emergency stop device pops out when turned to the right and that operation can be resumed thereafter. If the equipment fails to pass any of the above checks, check the wiring and automatic locking function of the emergency stop device.

(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.

CAUTION

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

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. MAINTENANCE AND INSPECTION

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

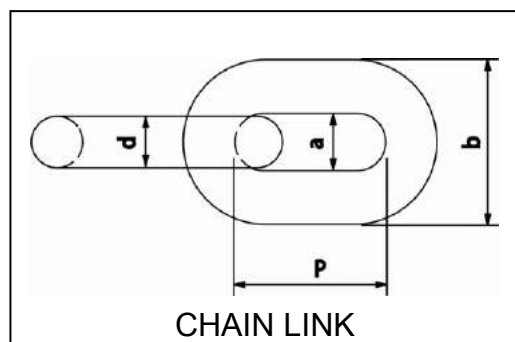
1. Daily inspection: Before starting daily operation, check the followings:

- (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.



WARNING

Use the manufacturer's recommended parts when repairing a hoist.

Dia-Meter (m/m) (d)	Model	Inside Length (m/m) (p)	Inside Width (m/m) (a)	Outside Width (m/m) (b)	Breaking Load (kn)
Ø4.0	PEH025	12.0	13.7	5.0	20

Table 6-2-a

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 w

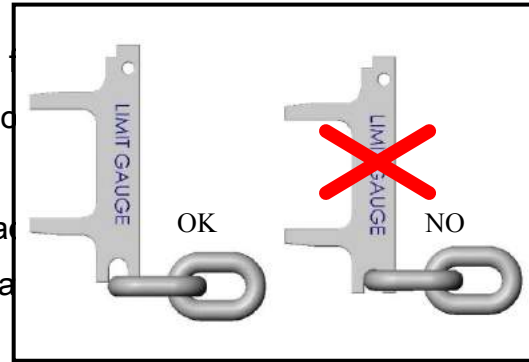
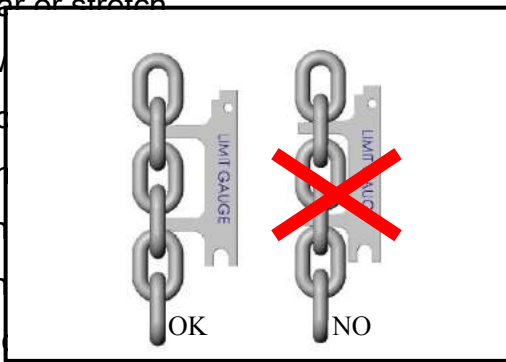
(5) Do

or cor

(6) Th

(7) Th

you d

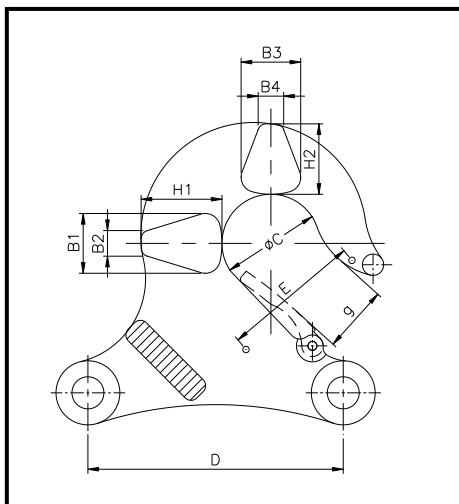


Note : Chain must be in perfect condition without any defects.

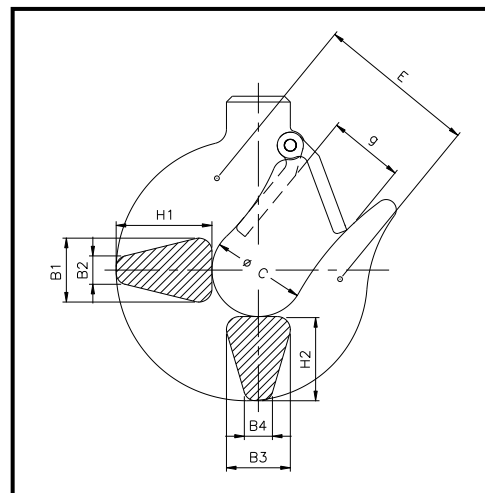
Illustration (1) Chain pitch measure

Illustration (2) Diameter measure

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



Top Hook



Bottom Hook

Model	Capacity (kg)	Hook	Dimensions (mm)										Allow Stress (kg/mm ²)
			H1	B1	B2	H2	B3	B4	C	D	g	E	
PEH025	250	T	26.5	17	8	22	17	8	35	120	19	45	70
		B	20	12	6	20	12	6	36	-	25	42	70

Top Hook=T Bottom Hook=B

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 (PEH025 / 400C.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 ² /s (cST)	Approximate viscosity of the VG Categories 50°C mm ² /s (cST)	ARAL	BP	ESSO	MOBIL OIL	
VG460	251	Aral Degol BG 460-BMB 460	BP Energol GR-XP 460	Spartan EP-460	Mobilgear 634	
ISO-VGDIN 51519 Viscosity at 40°C mm ² /s (cST)	Approximate viscosity of the VG Categories 50°C mm ² /s (cST)	SHELL	TEXACO	I.P.	AGIP	TOTAL
VG460	251	Omala oil S4 WE460	Meropa 460	Mellana 460	Blasia 460	Carter EP 460

Table 6-2-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

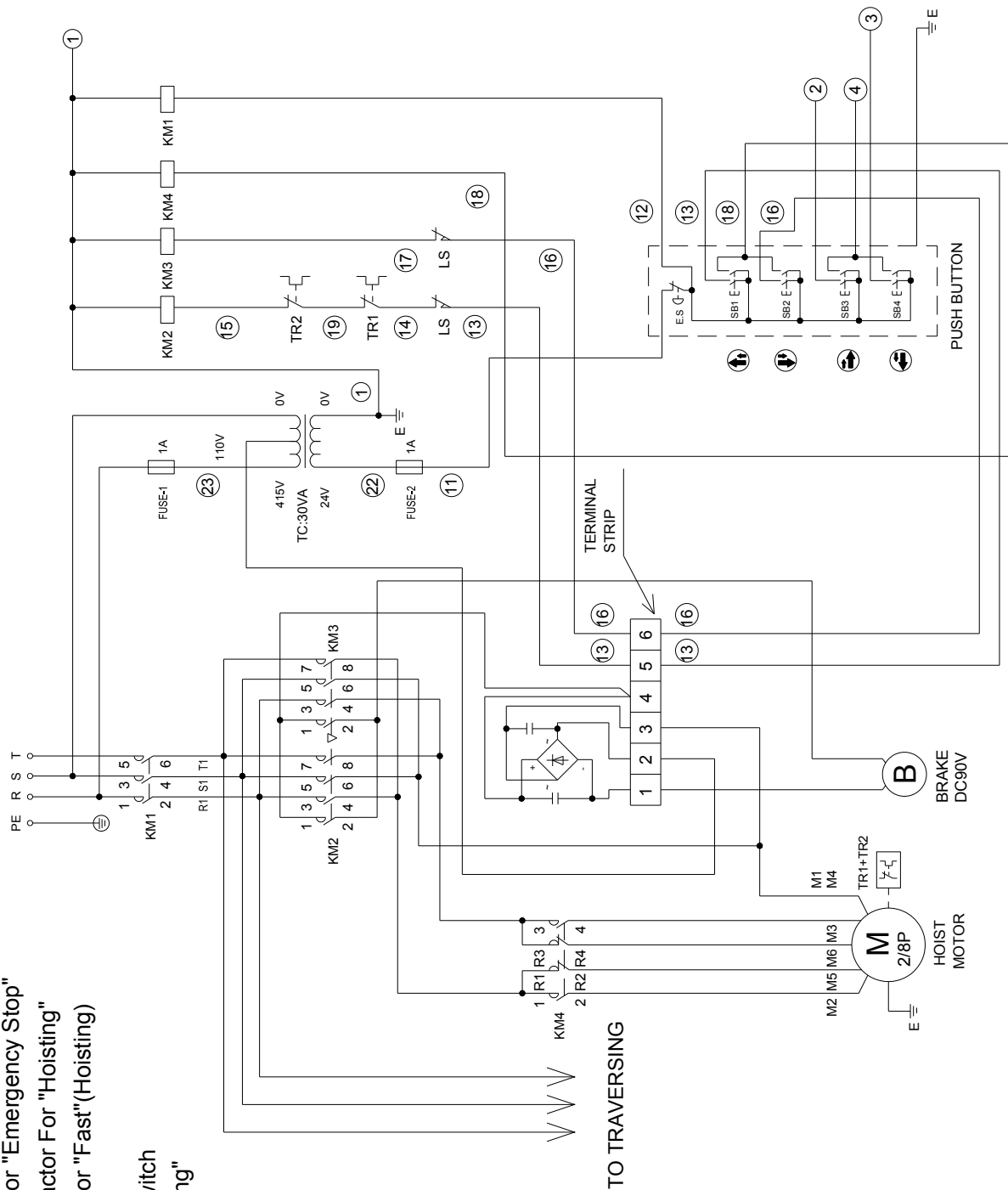
1. Warranty Period : One year for Mechanical Spare Parts after purchase the product.
2. Non-Warranty Scope:
 - (a) Electrical Spare Parts (ex. Contactor, Pendant, Phase Error Relay, etc.)

- (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.)

7.TROUBLESHOOTING

7.1 Wiring Diagrams

KM1: Magnetic Contactor For "Emergency Stop"
 KM2&KM3: Magnetic Contactor For "Hoisting"
 KM4: Magnetic Contactor For "Fast"(Hoisting)
 TC: Control Transformer
 TR1&TR2: Temperature Switch
 LS: Limit Switch For "Hoisting"



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7.2 Troubleshooting and Remedial Action

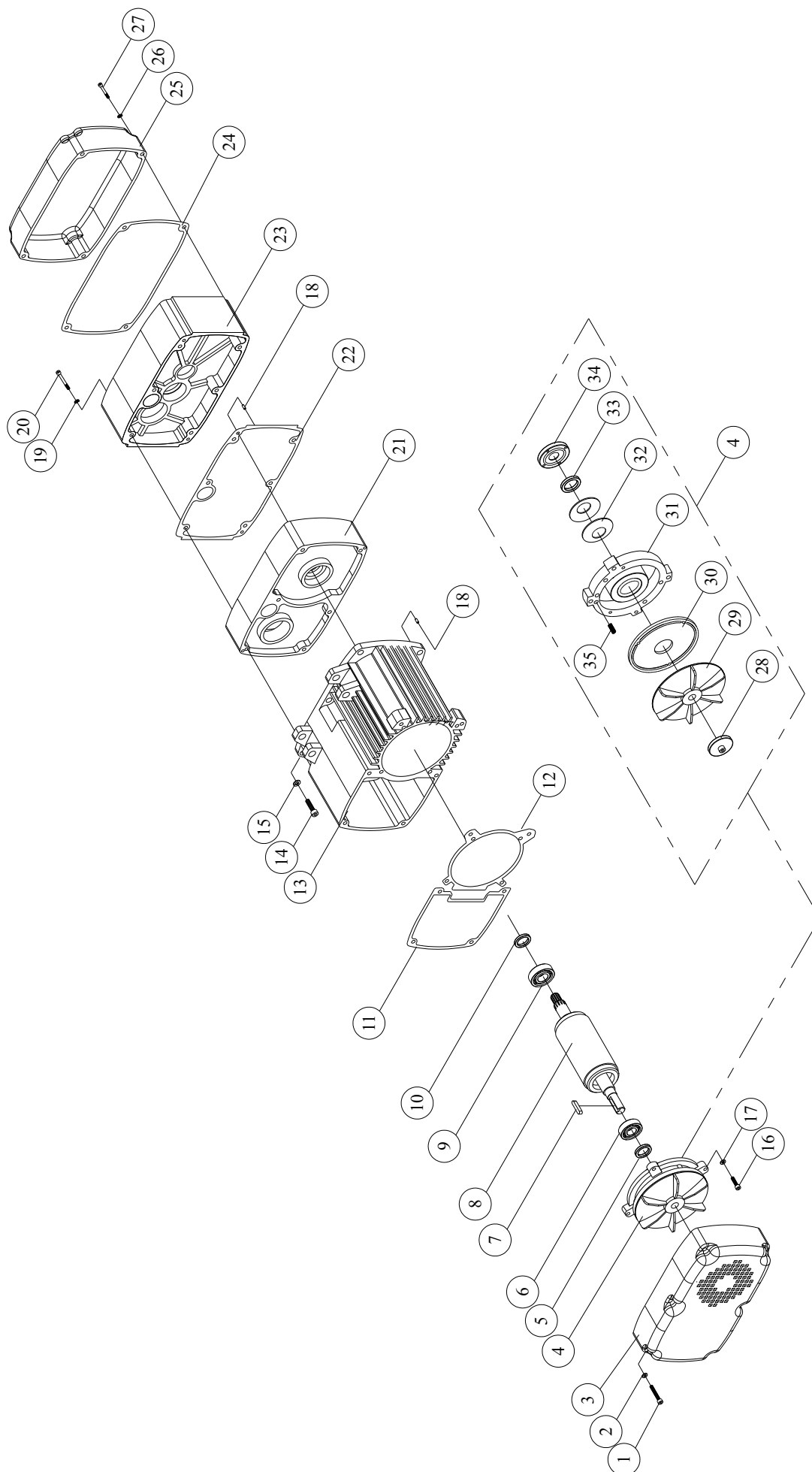
SITUATION	CAUSE	REMEDY
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Hoist will not operate	(1) Broken/disconnected power or control circuit wire.	Locate and repair/reconnect
	(2) Low supply voltage	Check if 10% reduction in voltage, have main supply checked
	(3) Motor hums but does not rotate	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 does not lift	(1) Clutch slipping	Contact your authorized PACIFIC dealer – this adjustment needs to be carried out on a test rig
Abnormal sound on load chain/chain sprocket (2 falls)	(1) Chain dry	Lubricate
	(2) Worn chain sprocket (2 falls)	Replace load chain and chain sprocket (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	2	0
(2) H O O K A S S E M B L Y B.O.M		22
(3) LOAD CHAIN ASSEMBLY B.O.M	2	4
(4) GEARBOX ASSEMBLY B.O.M	2	6
(5) ELECTRIC ASSEMBLY B.O.M	2	8

MOTOR EXPLOSION & HOUSING

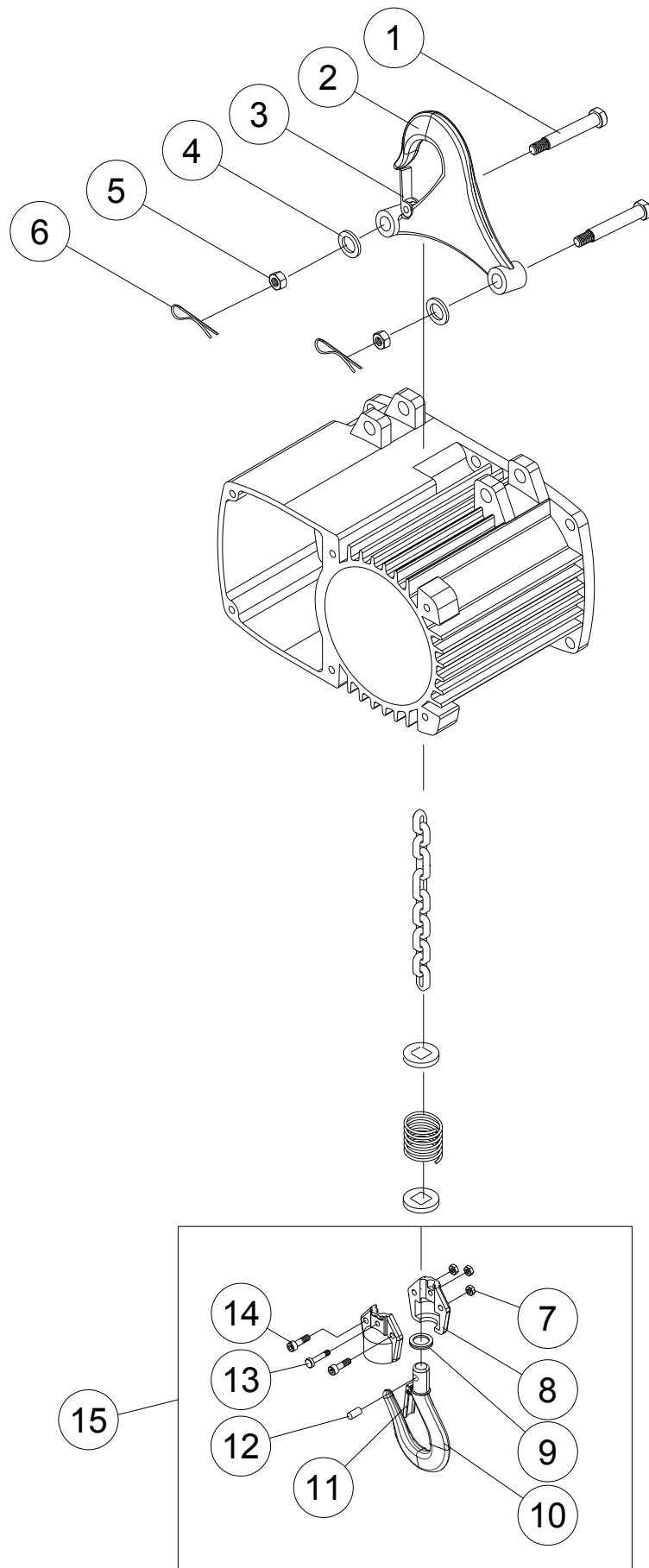


MOTOR ASSEMBLY & HOUSING

NO.	PARTS CODE	DESCRIPTION	Q'TY REQ'D EACH UNIT
			PEH025
1	408330	Hex. Recess Bolt <M5×0.8×45L>	6
2	400854	Spring Washer <M5>	6
3	301410L	End Cover	1
4	100448	Brake Ass'y	1
5	400932	Oil Seal <Ø15×Ø30×7t>	1
6	400111	Bearing <6202 ZZ>	1
7	400947	Key <t5×5×25L>	1
8	100315	Motor Rotor	1
9	400732	Bearing <6203 ZZ>	1
10	404487	Oil Seal <Ø17×Ø28×6t>	1
11	402562	End Cover Gasket	1
12	402565	Brake Gasket	1
13	106453N	Motor Stator Ass'y	1
14	408342	Hex. Recess Bolt <M8×1.25×20L>	6
15	400856	Spring Washer <M8>	6
16	400417	Hex. Recess Bolt <M5×0.8×20L>	4
17	400093	Spring Washer <M5>	4
18	400615	Pin	4
19	400094	Spring Washer <M6>	6
20	405022	Hex. Recess Bolt <M6×1.0×40L>	6
21	200960N	Gearbox	1
22	402597	Gearbox Gasket	1
23	200959L	Gearbox Cover	1
24	402568	Electric Cover Gasket	1
25	300834L	Electric Cover	1
26	400854	Spring Washer <M5>	4
27	408330	Hex. Recess Bolt <M5×0.8×45L>	4
28	207266	Adjust Screw	1
29	207263	Brake Plate	1
30	100141	Brake Rotor	1
31	201435	Brake Coil Ass'y <SBV-YS063>	1
32	408505	Bauer Disc Spring	2
33	207268	Spacer	1
34	207271	Bearing Cap	1
35	408504	Brake Spring	6

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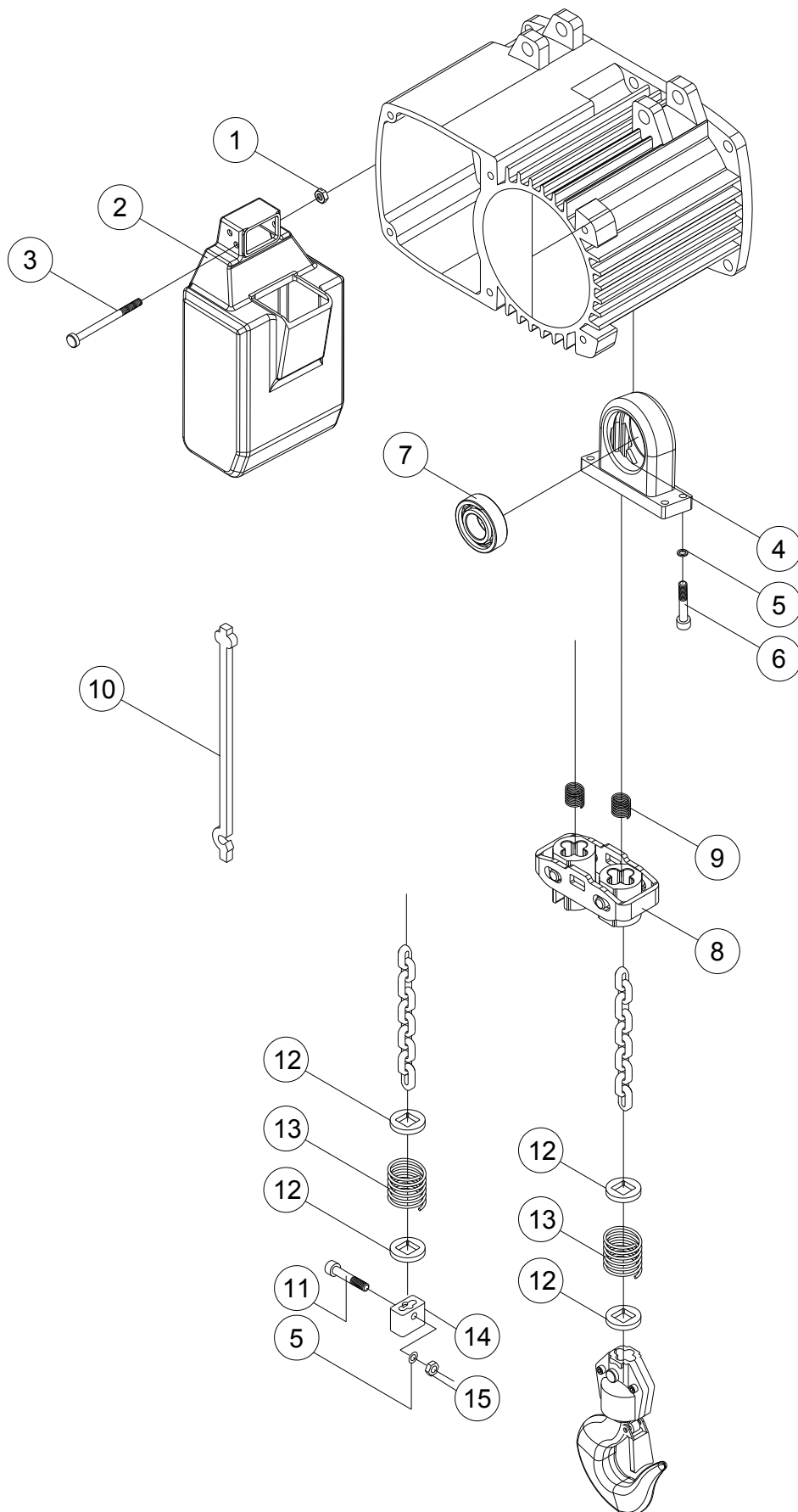
HOOK EXPLOSION



HOOK ASSEMBLY

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LOAD CHAIN EXPLOSION

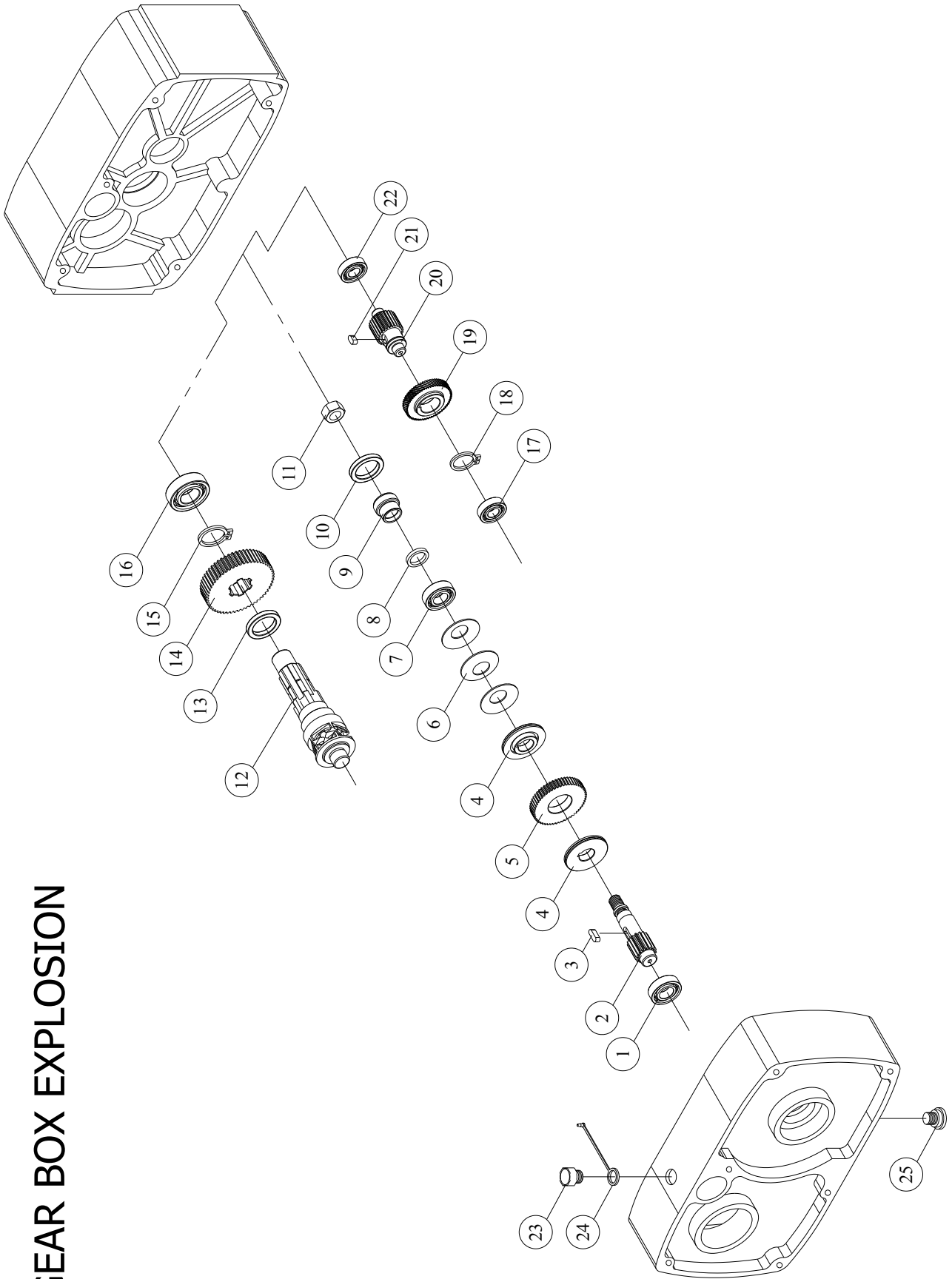


LOAD CHAIN ASSEMBLY

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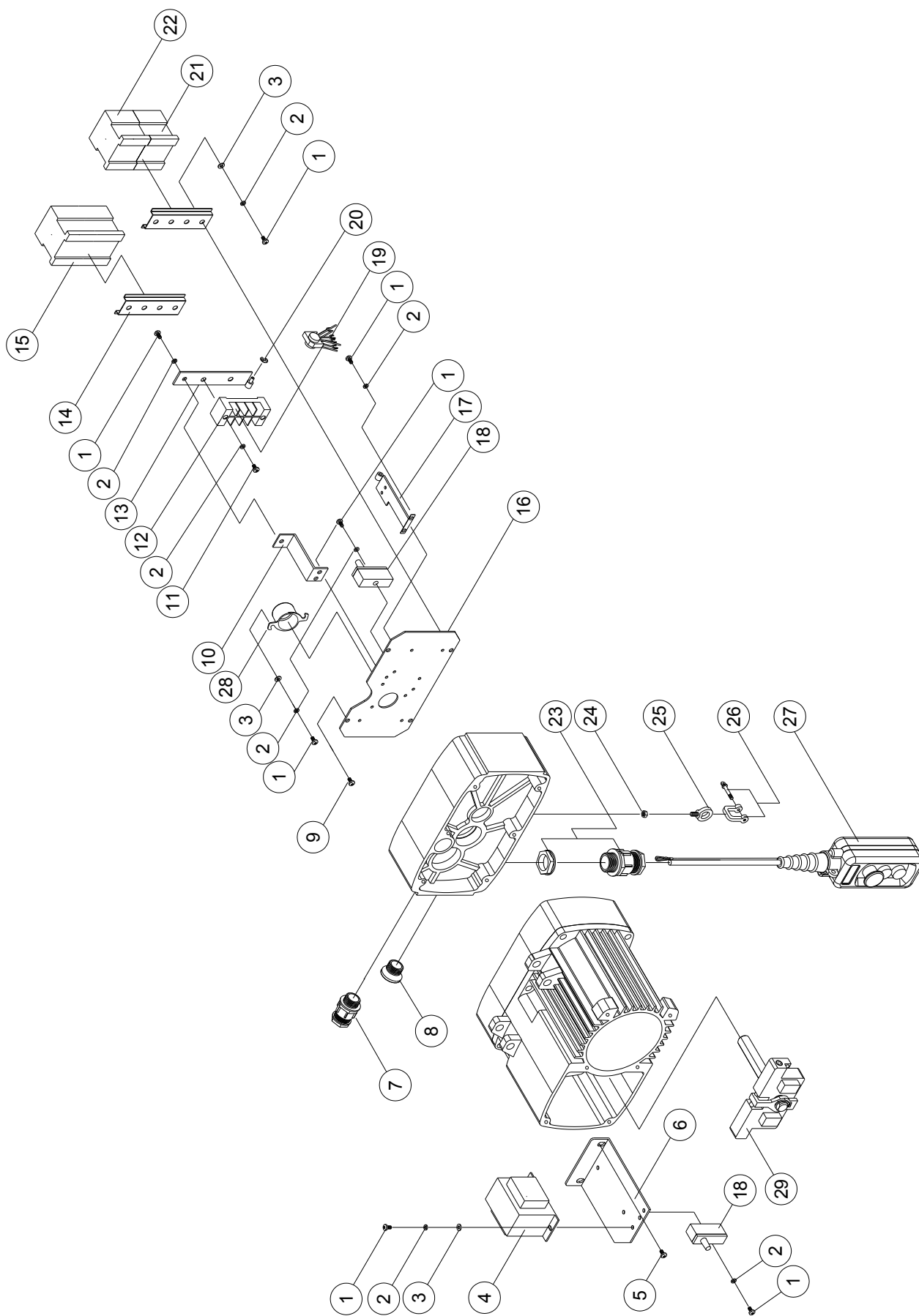
GEAR BOX EXPLOSION



GEAR BOX ASSEMBLY

NO.	PARTS CODE	DESCRIPTION	Q'TY REQ'D EACH UNIT
			PEH025
1	407869	Bearing <6002 ZZ>	1
2	201301	5th Gear <M1.25x18Tx91.5L>	1
3	405933	Key <t5×5×15L>	1
4	201362	Brake Disc	2
5	268434	4th Gear <M1×55T×9L>	1
6	407324	Disc Spring <Ø34×Ø16.3×2.0t>	3
7	407868	Bearing <6904 ZZ>	1
8	404343	O-Ring <Ø9×Ø15×3>	1
9	201363	Oil Seal Bushing <Ø25×21L>	1
10	400943	Oil Seal <Ø25×Ø35×5t>	1
11	404552	Nylon Nut <M12×1.25>	1
12	201364	Load Sheave	1
13	400893	Oil Seal <Ø30×Ø42×8t>	1
14	201302	6th Gear <M1.25x53Tx16L>	1
15	400192	Retaining Ring <S-25>	1
16	407840	Bearing <6004 ZZ>	1
17	407867	Bearing <6001 ZZ>	1
18	400191	Retaining Ring <S-20>	1
19	201357	2nd Gear <M0.8×60T×12L>	1
20	201358	3rd Gear <M1×26T×56.1L>	1
21	400961	Key <t6×6×10L>	1
22	407867	Bearing <6001 ZZ>	1
23	200926	Hex. Oil Plug	1
24	200927	Air Plug	1
25	300523	Lubricant Drain Bolt	1

ELECTRIC EXPLOSION



ELECTRIC ASSEMBLY

NO.	PARTS CODE	DESCRIPTION	Q'TY REQ'D EACH UNIT
			PEH025
1	400048	Cross Headed Screw <M4×0.7×6L>	12
2	400092	Spring Washer <M4>	18
3	400661	Flat Washer <M4>	8
4	303766	Transformer	1
5	408361	Cross Headed Screw <M5×0.8×8L>	2
6	300625	Transformer Bracket	1
7	400222	Cable Gland <M20>	1
8	408436	Rotation Plug	1
9	408360	Cross Headed Screw <M5×0.8×10L>	4
10	201391	Terminal Plate A	1
11	400051	Cross Headed Screw <M4×0.7×12L>	2
12	300646	Terminal Block	1
13	201392	Bracket Ass'y	1
14	300079	Contactor Rail	2
15	300065	Magnetic Contactor <4A>	1
16	201394	Electric Bracket Ass'y	1
17	201393	Bracket Located Seat	1
18	300589	Fuse Ass'y	2
19	300143	Rectifier	1
20	404252	E-Retaining Ring<Ø5>	1
21	300066	Magnetic Contactor <2A2B>	1
22	300064	Magnetic Contactor <3A1b>	1
23	400941	Cable Gland <M25>	1
24	400087	Nylon Nut <M6>	1
25	404803	Eye Bolt <M6×1.0>	1
26	400595	Shackle <3/16">	1
27	312401	Push Button Switch	1
28	208836	Cover	1
29	302514	Upper & Lower Limit Switch	1

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EC Declaration of Conformity



According to the following EU Directives:

- Machinery Directive: 2006/42/EC
- Low Voltage Directive: 2014/35/EU
- EMC Directive: 2014/30/EC

We, Cheng Day Machinery Works Co., Ltd.

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declare that the machines mentioned hereafter:

◎Product : Electric Chain Hoist

◎Model No.(s) : PEH025, PEH050, PEH100, PEH200-2, PEH200-1, PEH300-2, PEH500-2

◎Product : Electric Motorized

◎Model No.(s) : PET050, PET055, PET100, PET105, PET200, PET205

PET210, PET215, PET310, PET315, PET510, PET515

◎Functions: They are designed to be used for lifting and lowering of goods.

which are designed and manufactured in compliance with the essential health and safety requirements of the Machinery Directive and Low Voltage Directive, and are based on the following European harmonized standards:

- EN ISO 12100:2010, Safety of machinery - General principles for design - Risk assessment and risk reduction
- ISO/TR 14121-2:2012, Safety of machinery - Risk assessment - Part 2: Practical guidance examples of methods
- EN 14492-2:2006+A1:2009/AC:2010, Cranes - Power driven winches and hoists - Part 2: Power driven hoists
- EN 60204-32:2008, Safety of machinery - Electrical equipment of machines - Part 32: Requirements for hoisting 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)

Representative :

C. F. HUANG

Place / Date :

*C.F. Huang / Quality Assurance Manager
Taichung City, Taiwan. / Feb. 10, 2017.*