

April 2009



**SM SAMSUNG MACHINERY**

# ELECTRIC CHAIN HOIST INSTRUCTION MANUAL

for  
Installation  
Operation  
Maintenance  
Parts

## **⚠ WARNING**

This equipment should not be installed, operated or maintained by any person who has not read **all** the contents of these instructions. Failure to read and comply with these instructions or any one of the limitations noted herein can result in serious bodily injury or death, and/or property damage.

There are no other warranties which extend beyond the description on the Order Acknowledgement and as it may apply to the specifications provided in this publication. The **IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE EXCLUDED**. SAMSUNG shall in no event be liable for any special, direct, indirect, incidental or consequential damages to anyone beyond the cost of replacement of the goods sold hereby.

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**NOTICE**

TO ORDER PARTS : Provide part number, part description, quantity required, and Product Number or Serial Number of Hoist.

## SAFETY ALERT SYMBOL

The Safety Alert Symbol is used in this manual to indicate hazards and to alert the reader to information that should be known, understood, and followed in order to avoid DEATH or SERIOUS INJURY.

Read and understand this manual before using the hoist

Important issues to remember during operation are provided at the hoist control stations, at various locations on the hoist and in this manual by DANGER, WARNING, or CAUTION instructions or placards, that alert personnel to potential hazards, proper operation, load limitations, and more.



Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.



Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.



Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.



These general instructions deal with the normal installation, operation, and maintenance situations encountered with the equipment described herein. The instructions should not be interpreted to anticipate every possible contingency or to anticipate the final system, crane, or configuration that uses this equipment.

This manual includes instructions and parts information for a variety of hoist types. Therefore, all instructions and parts information may not apply to any one type or size of specific hoist. Disregard those portions of the instructions that do not apply.

Record hoist serial number on the front cover of this manual for identification and future reference to avoid referring to the wrong manual for information or instructions on installation, operation, maintenance, or parts.

Use only the authorized replacement parts in the service and maintenance of this hoist.

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**⚠ WARNING**

Equipment described herein is designed for and should not be used for lifting, supporting, or transporting humans.

Equipment described herein should not be used in conjunction with other equipment unless necessary and/or required safety devices applicable to the system or application are installed by the system designer, system manufacturer, crane manufacturer, installer, or user.

Modifications to upgrade, rerate, or otherwise alter this equipment shall be authorized only by the original equipment manufacturer or qualified professional engineer.

Equipment described herein may be used in the design and manufacture of cranes or monorails. Additional equipment or devices may be required for the crane or monorail to comply with applicable crane design and safety standards.

The system designer, system manufacturer, crane designer, crane manufacturer, installer, or user is responsible to assure that the installation and associated wiring of these electrical components is in compliance with the electric standards of the applied country.

Failure to read and comply with any one of the limitations noted herein can result in serious bodily injury or death, and/or property damage.

**⚠ DANGER**

HAZARDOUS VOLTAGES ARE PRESENT IN THE CONTROL BOX, OTHER ELECTRICAL COMPONENTS,  
AND CONNECTIONS BETWEEN THESE COMPONENTS

Before performing ANY mechanical or electrical maintenance on the equipment, de-energize (disconnect) the main switch supplying power to the equipment, and lock and tag the main switch in the de-energized position.

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## **⚠ DANGER**

Do not operate the equipment without control enclosure cover or covers in place.

Only trained and competent personnel should inspect and repair this equipment

## **NOTICE**

This manual contains information for safe operation of an overhead hoist. Taking precedence over and specific rule, however, is the most important rule of all - "USE COMMON SENSE." Operation of an overhead hoist involves more than operating the controls. The operator must consider and anticipate the motions and actions that will occur as a result of operating the controls.

If the hoist owner/user requires additional information, or if any information in the manual is not clear, contact the manufacturer or the distributor of the hoist. Do not install, inspect, test, maintain, or operate this hoist unless this information is fully understood.

When contacting the manufacturer or the distributor of the hoist, always make reference to the serial number of the hoist.

A regular schedule of inspection of the hoist should be established and records maintained.

## **⚠ WARNING**

Before installing, removing, inspecting, or performing any maintenance on a hoist, the main switch shall be de-energized. Lock and tag the main switch in the de-energized position. Follow other maintenance procedures outlined in this manual.

Additional WARNINGS are listed in various portions of this manual. Personnel shall read and follow these WARNINGS. Failure to read and comply with these WARNINGS as well as other instructions or any limitations noted in this manual could result in serious bodily injury or death, and/or property damage.

**1. Features**

**Samsung** heavy-duty hoists feature faster speeds and higher capacities than conventional hoists. Workers in automotive plants, heavy equipment manufacturing, paper mills, and related rugged working environments will experience dependability and versatility. Careful consideration has been given to optimize performance.

All hoists are equipped with quality parts and mechanisms to provide proper lifting and traversing of the load. Components undergo numerous and inspections, while our production processes meet stringent quality requirements.

- Slip Clutch System**.....by Mechanical overload Limiter
- Overload Alert Sound Limiter**.....with "beep" sound when overloaded.
- Double Action Over-winding Limiter**.....preventing over-lifting or lowering of chain
- Push Button Pendant Control Switch**.....with emergency stop button
- Preventive Incorrect Phase Limiter**.....automatically checking a possible wrong power supply (Option)

**1.1. Mechanism group**

**Samsung** Electric Chain Hoists are allocated to mechanism groups in accordance with the following regulations. Under the allowance of the following mechanism groups, the hoist should be operated and should not exceed the nominal values. On each identification plate, the following is indicated.

- Hook suspension chain hoist : FEM9.511 (Hoist = FEM 3m 40% ED)
- Motor trolley mounted series : FEM9.511 (Hoist/Trolley = FEM 3m/ 1Bm 40 / 25% ED)

**■ FEM Mechanism Group 9.511  
(Rules for Design of Serial Lifting Equipment : Classification of Mechanism)**

Mechanism group	1Bm	1Am	2m	3m	4m	5m
Load group	Average operating period per day (h)					
Light k < 0.50	<2	2-4	4-8	8-16	>16	-
Medium 0.50 < k < 0.63	<1	1-2	2-4	4-8	8-16	>16
Heavy 0.30 < k < 0.80	<0.5	0.5-1	1-2	2-4	4-8	8-16
Very Heavy 0.80 < k < 1.00	<0.25	<0.5	0.5-1	1-2	2-4	4-8

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## NOTICE

Under the allowance of the above FEM determination, **Samsung** electric chain hoist should be operated. After checking the operating conditions, the operator shall operate the products. The above mechanism group is valid for the entire period of operation and for reasons of operational safety shall not Remove This Word be modified or altered.

### 1.2. Working environment data

Ambient temperature : from -20°C to +40°C

Protection class : IP54 as standard

Side pulling angle : max. 3 degrees

Sound level : 85dB (A) below

## ! WARNING

**Samsung** electric chain hoists are designed for indoor use. For outdoor use, the hoist shall be located under roof to assure rainproof operation. The operator SHALL

- ▶ NOT expose the hoist to rain or condensation.
  - ▶ NOT store the hoist in a humid place.
- ▶ COVER the hoist or MOVE it back under roof after use, when it is used outdoors.
  - ▶ HANG the hoist on a suitable beam or crane or from the ceiling.

## ! CAUTION

If the above operation conditions are exceeded, or the electric hoist is operated often under adverse conditions, the information in the operating instructions must be adapted accordingly. In this case the manufacturer is to be consulted.



### 1.3. Hook Suspension Series

Fig-A 250/490/500KG

Fig-B 1,000~3,000(2Falls)KG

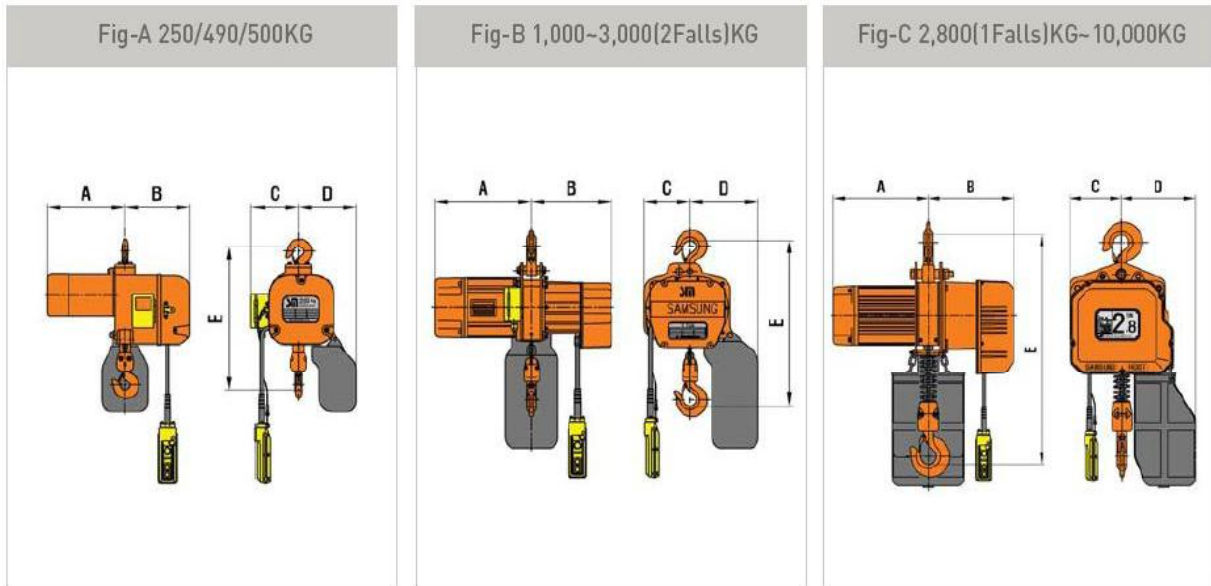
Fig-C 2,800(1Falls)KG~10,000KG



#### ■ Specifications

Fig.	Model	Capacity (KG)	Hoisting Motor-Single				Hoisting Motor-Double				Load Chain (mm*Falls)	Net.Weight (kgs)	
			Power(kw)		Speed(m/min)		Power(kw)		Speed(m/min)				
			50Hz	60Hz	50Hz	60Hz	50Hz	60Hz	50Hz	60Hz			
A	SC-S025	250	0.21	0.25	3.5	4.2	-	-	-	-	Φ5 x 1	25	
			0.31	0.4	4.7	5.6	-	-	-	-	Φ5 x 1		
			0.42	0.5	7.0	8.4	-	-	-	-	Φ5 x 1		
	SC-S049	490	0.42	0.5	3.5	4.2	-	-	-	-	Φ5 x 2	30	
			0.92	1.1	7.0	8.4	-	-	-	-	Φ5 x 1		
SC-S050	500	1.25	1.5	9.0	10.8	1.25/0.63	1.5/0.75	9/4.5	10.8/5.4	Φ7.1 x 1	65		
B	SMO-S(D)1000	1000	0.83	1.0	3.8	4.6	0.83/0.42	1.0/0.5	3.8/1.9	4.6/2.3	Φ7.1 x 1	65	
			1.25	1.5	5.8	7.0	1.25/0.63	1.5/0.75	5.8/2.9	7/3.5	Φ7.1 x 1		
			1.25	1.5	6.4	7.7	1.25/0.63	1.5/0.75	6.4/3.2	7.7/3.9	Φ7.1 x 1		
	SMO-S(D)1250	1250	1.08	1.3	3.8	4.6	1.08/0.54	1.3/0.65	3.8/1.9	4.6/2.3	Φ7.1 x 1	65	
			1.67	2.0	5.8	7.0	1.67/0.83	2.0/1.0	5.8/2.9	7/3.5	Φ7.1 x 1		
				1.67	2.0	6.4	7.7	1.67/0.83	2.0/1.0	6.4/3.2	7.7/3.9	Φ7.1 x 1	
				1.33	1.6	4.4	5.3	1.33/0.67	1.6/0.8	4.4/2.2	5.3/2.7	Φ8.0 x 1	
	SMO-S(D)1500	1500	2.08	2.5	6.7	8.0	2.08/1.04	2.5/1.3	6.7/3.3	8/4	Φ8.0 x 1	70	
			2.08	2.5	7.3	8.8	2.08/1.04	2.5/1.3	7.3/3.7	8.8/4.4	Φ8.0 x 1		
	SMO-S(D)2000	2000	0.83	1.0	1.9	2.3	0.83/0.42	1.0/0.5	1.9/1	2.3/1.2	Φ7.1 x 2	75	
			1.25	1.5	2.9	3.5	1.25/0.63	1.5/0.75	2.9/1.5	3.5/1.8	Φ7.1 x 2		
			1.25	1.5	3.2	3.8	1.25/0.63	1.5/0.75	3.2/1.6	3.8/1.9	Φ7.1 x 2		
	SMO-S(D)2500	2500	1.08	1.3	1.9	2.3	1.08/0.54	1.3/0.65	1.9/1	2.3/1.2	Φ7.1 x 2	75	
1.67			2.0	2.9	3.5	1.67/0.83	2.0/1.0	2.9/1.5	3.5/1.8	Φ7.1 x 2			
			1.67	2.0	3.2	3.8	1.67/0.83	2.0/1.0	3.2/1.6	3.8/1.9	Φ7.1 x 2		
			1.33	1.6	2.2	2.6	1.33/0.67	1.6/0.8	2.2/1.1	2.6/1.3	Φ8.0 x 2		
SMO-S(D)2800	2800	2.08	2.5	3.3	4.0	2.08/1.04	2.5/1.25	3.3/1.7	4/2	Φ8.0 x 2	80		
		2.08	2.5	3.7	4.4	2.08/1.04	2.5/1.25	3.7/1.8	4.4/2.2	Φ8.0 x 2			
C	SMO-S(D)2800	2800	2.9	3.5	5.0	6.0	2.9/1.45	3.5/1.75	5/2.5	6/3	Φ11.2 x 1	120	
			3000										
	SMO-S(D)5000	5000	2.9	3.5	2.5	3.0	2.9/1.45	3.5/1.75	2.5/1.25	3/1.5	Φ11.2 x 2	160	
			7500										
SMO-S(D)7500	7500	2.9	3.5	1.7	2.0	2.9/1.45	3.5/1.75	1.7/0.8	2/1	Φ11.2 x 3	240		
		10000											
SMO-S(D)10000	10000	2.9	3.5	1.3	1.5	2.9/1.45	3.5/1.75	1.3/0.6	1.5/0.8	Φ11.2 x 4	280		

STANDARD



■ Dimension (mm)

Fig.	Model	Capacity (KG)	Dimension					
			Single					Double
			A	B	C	D	E	
A	SC-S025	250	245	238	150	175	432	-
	SC-S049	490	245	238	150	175	485	-
	SC-S050	500	245	238	150	175	485	-
B	SMO-S(D)1000	1000	295	245	106	210	510	325
	SMO-S(D)1250	1250	295	245	106	210	510	325
	SMO-S(D)1500	1500	315	245	106	210	530	345
	SMO-S(D)2000	2000	295	245	106	243	580	325
	SMO-S(D)2500	2500	295	245	106	243	580	325
	SMO-S(D)2800 SMO-S(D)3000	2800 3000	315	245	106	243	720	345
C	SMO-S(D)2800 SMO-S(D)3000	2800 3000	350	320	190	275	830	380
	SMO-S(D)5000	5000	350	320	115	350	1100	380
	SMO-S(D)7500	7500	350	320	250	460	1400	380
	SMO-S(D)10000	10000	350	320	380	460	1450	380

■ STANDARD

## 1.4. Motor Trolley Mounted Series

Fig-A 250/490/500KG



Fig-B 1,000~3,000(2Falls)KG



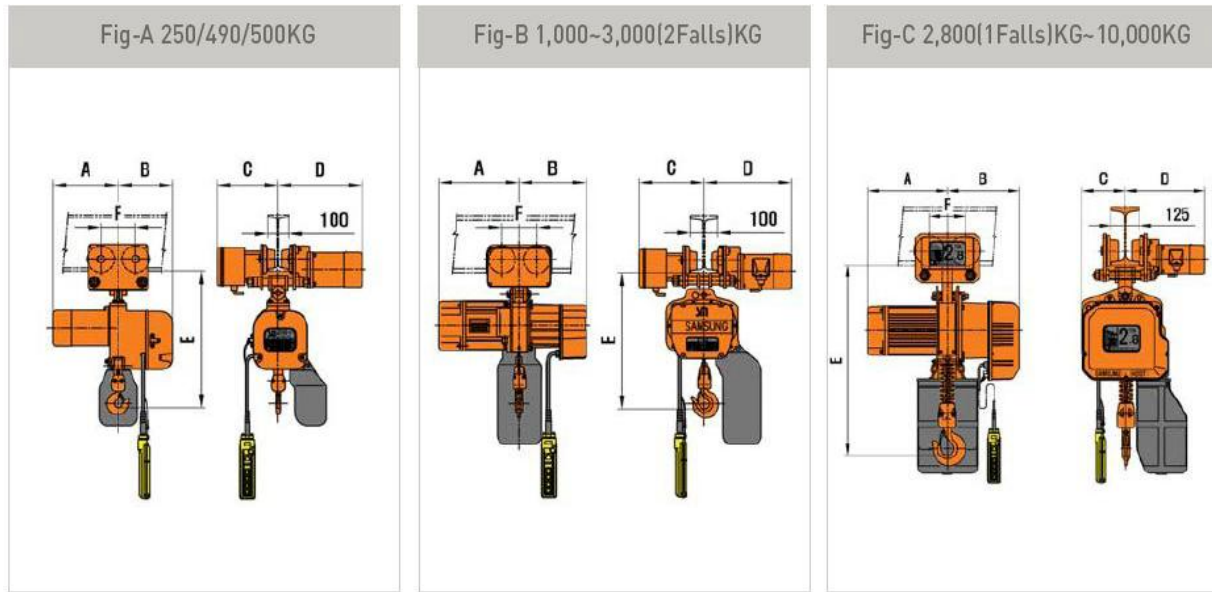
Fig-C 2,800(1Falls)KG~10,000KG



### Specifications

Fig.	Model	Capacity (KG)	Hoisting Motor-Single				Hoisting Motor-Double				Traversing Motor				Load Chain (mm*Falls)	
			Power(kw)		Speed(m/min)		Power(kw)		Speed(m/min)		Power(kw)		Speed(m/min)			
			50Hz	60Hz	50Hz	60Hz	50Hz	60Hz	50Hz	60Hz	50Hz	60Hz	50Hz	60Hz		
A	SCT-S025	250	0.21	0.25	3.5	4.2	-	-	-	-	0.17	0.2	16.7	20	Φ5 x 1	
			0.31	0.4	4.7	5.6	-	-	-	-	-	-	-	-	Φ5 x 1	
			0.42	0.5	7.0	8.4	-	-	-	-	-	-	-	-	Φ5 x 1	
			0.42	0.5	3.5	4.2	-	-	-	-	-	-	-	-	Φ5 x 2	
A	SCT-S049 SCT-S050	490 500	0.92	1.1	7.0	8.4	-	-	-	-	0.17	0.2	16.7	20	Φ5 x 1	
			1.25	1.5	9.0	10.8	1.25/0.63	1.5/0.75	9/4.5	10.8/5.4	-	-	-	-	Φ7.1 x 1	
			0.83	1.0	3.8	4.6	0.83/0.42	1.0/0.5	3.8/1.9	4.6/2.3	-	-	-	-	Φ7.1 x 1	
B	SMT-S(D)1000	1000	1.25	1.5	5.8	7.0	1.25/0.63	1.5/0.75	5.8/2.9	7/3.5	0.33	0.4	16.7	20	Φ7.1 x 1	
			1.25	1.5	6.4	7.7	1.25/0.63	1.5/0.75	6.4/3.2	7.7/3.9	-	-	-	-	Φ7.1 x 1	
			1.08	1.3	3.8	4.6	1.08/0.54	1.3/0.65	3.8/1.9	4.6/2.3	-	-	-	-	Φ7.1 x 1	
	B	SMT-S(D)1250	1250	1.67	2.0	5.8	7.0	1.67/0.83	2.0/1.0	5.8/2.9	7/3.5	0.33	0.4	16.7	20	Φ7.1 x 1
				1.67	2.0	6.4	7.7	1.67/0.83	2.0/1.0	6.4/3.2	7.7/3.9	-	-	-	-	Φ7.1 x 1
				1.33	1.6	4.4	5.3	1.33/0.67	1.6/0.8	4.4/2.2	5.3/2.7	-	-	-	-	Φ8.0 x 1
	B	SMT-S(D)1500	1500	2.08	2.5	6.7	8.0	2.08/1.04	2.5/1.3	6.7/3.3	8/4	0.33	0.4	16.7	19	Φ8.0 x 1
				2.08	2.5	7.3	8.8	2.08/1.04	2.5/1.3	7.3/3.7	8.8/4.4	-	-	-	-	Φ8.0 x 1
				0.83	1.0	1.9	2.3	0.83/0.42	1.0/0.5	1.9/1	2.3/1.2	-	-	-	-	Φ7.1 x 2
	B	SMT-S(D)2000	2000	1.25	1.5	2.9	3.5	1.25/0.63	1.5/0.75	2.9/1.5	3.5/1.8	0.33	0.4	16.7	20	Φ7.1 x 2
				1.25	1.5	3.2	3.8	1.25/0.63	1.5/0.75	3.2/1.6	3.8/1.9	-	-	-	-	Φ7.1 x 2
				1.08	1.3	1.9	2.3	1.08/0.54	1.3/0.65	1.9/1	2.3/1.2	-	-	-	-	Φ7.1 x 2
B	SMT-S(D)2500	2500	1.67	2.0	2.9	3.5	1.67/0.83	2.0/1.0	2.9/1.5	3.5/1.8	0.33	0.4	16.7	20	Φ7.1 x 2	
			1.67	2.0	3.2	3.8	1.67/0.83	2.0/1.0	3.2/1.6	3.8/1.9	-	-	-	-	Φ7.1 x 2	
			1.33	1.6	2.2	2.6	1.33/0.67	1.6/0.8	2.2/1.1	2.6/1.3	-	-	-	-	Φ8.0 x 2	
B	SMT-S(D)2800 SMT-S(D)3000	2800 3000	2.08	2.5	3.3	4.0	2.08/1.04	2.5/1.25	3.3/1.7	4/2	0.33	0.4	16.7	19	Φ8.0 x 2	
			2.08	2.5	3.7	4.4	2.08/1.04	2.5/1.25	3.7/1.8	4.4/2.2	-	-	-	-	Φ8.0 x 2	
C	SMT-S(D)2800 SMT-S(D)3000	2800 3000	2.9	3.5	5.0	6.0	2.9/1.45	3.5/1.75	5/2.5	6/3	0.33	0.4	15.8	19	Φ11.2 x 1	
			2.9	3.5	2.5	3.0	2.9/1.45	3.5/1.75	2.5/1.25	3/1.5	0.33	0.4	13.3	16	Φ11.2 x 2	
	C	SMT-S(D)7500	7500	2.9	3.5	1.7	2.0	2.9/1.45	3.5/1.75	1.7/0.8	2/1	0.83	1.0	8.3	10	Φ11.2 x 3
				2.9	3.5	1.3	1.5	2.9/1.45	3.5/1.75	1.3/0.6	1.5/0.8	1.25	1.5	8.3	10	Φ11.2 x 4

STANDARD



■ Dimension (mm)

Fig.	Model	Capacity (KG)	Dimension					
			Single					Double
			A	B	C	D	E	A
A	SCT-S025	250	245	238	240	320	490	-
	SCT-S049	490	245	238	240	320	550	-
	SCT-S050	500	245	238	240	320	490	-
B	SMT-S(D)1000	1000	295	245	239	299	500	325
	SMT-S(D)1250	1250	295	245	239	299	500	325
	SMT-S(D)1500	1500	315	245	245	305	530	345
	SMT-S(D)2000	2000	295	245	245	326	580	325
	SMT-S(D)2500	2500	295	245	245	326	580	325
	SMT-S(D)2800 SMT-S(D)3000	2800 3000	315	245	245	305	650	345
C	SMT-S(D)2800 SMT-S(D)3000	2800 3000	348	313	190	335	830	380
	SMT-S(D)5000	5000	350	320	200	346	1100	380
	SMT-S(D)7500	7500	350	320	250	460	1400	380
	SMT-S(D)10000	10000	350	320	380	460	1450	380

## 2. General description of manual

The product is supplied together with the manual that is important to keep readily accessible :

- During installation or set-up
- For training operators & the maintenance of the equipment
- For "Safety Precautions" & Operation instructions

### 2.1. Trolley series and Classification of electric wiring

**Samsung** trolleys are designed to form an integral hoist/trolley combination, keeping the load equally distributed for easy traversing and long life, Motor-driven trolleys are ideal for heavier capacities and longer lift applications. Hook suspension trolleys are available in plain and hand-geared versions that enable close control of horizontal movement.



▲ Motor Trolley



▲ Hook Suspension

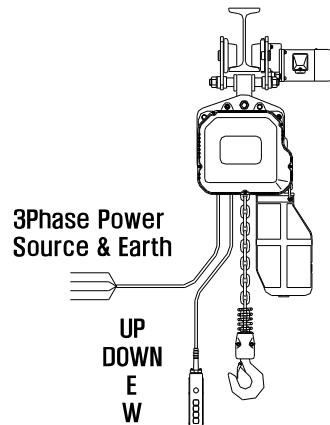


▲ Plain Trolley

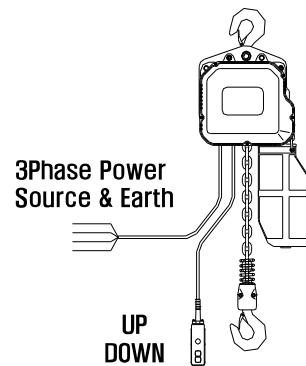


▲ Geared Trolley

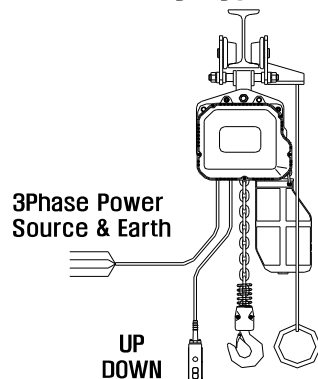
#### Motor Trolley Type



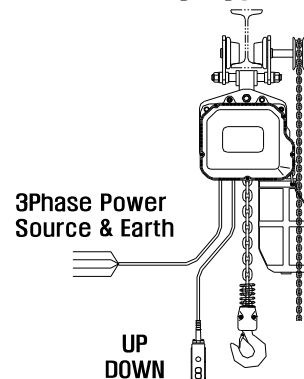
#### Hook Suspension Type



#### Plain Trolley Type



#### Gear Trolley Type



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### 3. Safety precautions

#### 3.1. Warning and Caution

The safety Alert Symbol is used in this manual to indicate hazards and to the reader to information that should be known, understood, and followed in order to avoid SERIOUS BODILY INJURY or DEATH and/or PROPERTY DAMAGE.



WARNING symbol indicates a potentially hazardous situation, which, if not avoided, could result in death or serious injury. To avoid such a potentially hazardous situation, THE OPERATOR SHALL

- ▶ NOT operate a damaged, malfunctioning or unusually performing hoist.
- ▶ NOT operate the hoist until you have thoroughly read and understand the manual.
- ▶ NOT operate a hoist which has been modified without the manufacturer's approval.
- ▶ NOT lift more than rated load for the hoist.
- ▶ NOT use hoist with twisted, kinked, damaged, or worn load chain.
- ▶ NOT use the hoist to lift, support, or transport people, nor lift or transport loads over or near people.
- ▶ NOT operate unless load is centered under hoist.
- ▶ NOT attempt to lengthen the load chain or repair damaged load chain.
- ▶ Protect the hoist's load chain from weld splatter or other damaging contaminants.
- ▶ NOT operate hoist when it is difficult to form a straight line from hook to hook in the direction of loading.
- ▶ NOT use load chain as a sling, or wrap chain around the load.
- ▶ NOT apply the load to the tip of the hook or to the hook latch.
- ▶ NOT apply load unless load chain is properly seated in the chain sheave pockets.
- ▶ NOT apply load if bearing prevents equal loading on all load supporting chains.
- ▶ NOT operate beyond the limits of the load chain travel.
- ▶ NOT leave load supported by the hoist unattended unless specific precautions have been taken.
- ▶ NOT allow the load chain or hook to be used as an electrical or welding ground.
- ▶ NOT allow the load chain or hook to be touched by a live welding electrode.
- ▶ NOT remove or obscure the warnings on the hoist.
- ▶ NOT operate a hoist on which the safety placards or decals are missing or illegible.
- ▶ NOT operate a hoist unless it has been securely attached to a suitable support.
- ▶ NOT operate a hoist unless load slings or other approved single attachments are properly sized and seated in the hook saddle.
- ▶ Take up slack carefully-make sure load is balanced and load holding action is secure before continuing.

- 
- ▶ Shut down a hoist that malfunctions or performs unusually and report such malfunction.
  - ▶ Make sure hoist limit switches function properly.
  - ▶ Warn personnel of an approaching load

**⚠ CAUTION**

Read and understand this manual before using the hoist. Taking precedence over any specific rule, however, is the most important rule of all : "USE COMMON SENSE "

It is responsibility of the owner / user to

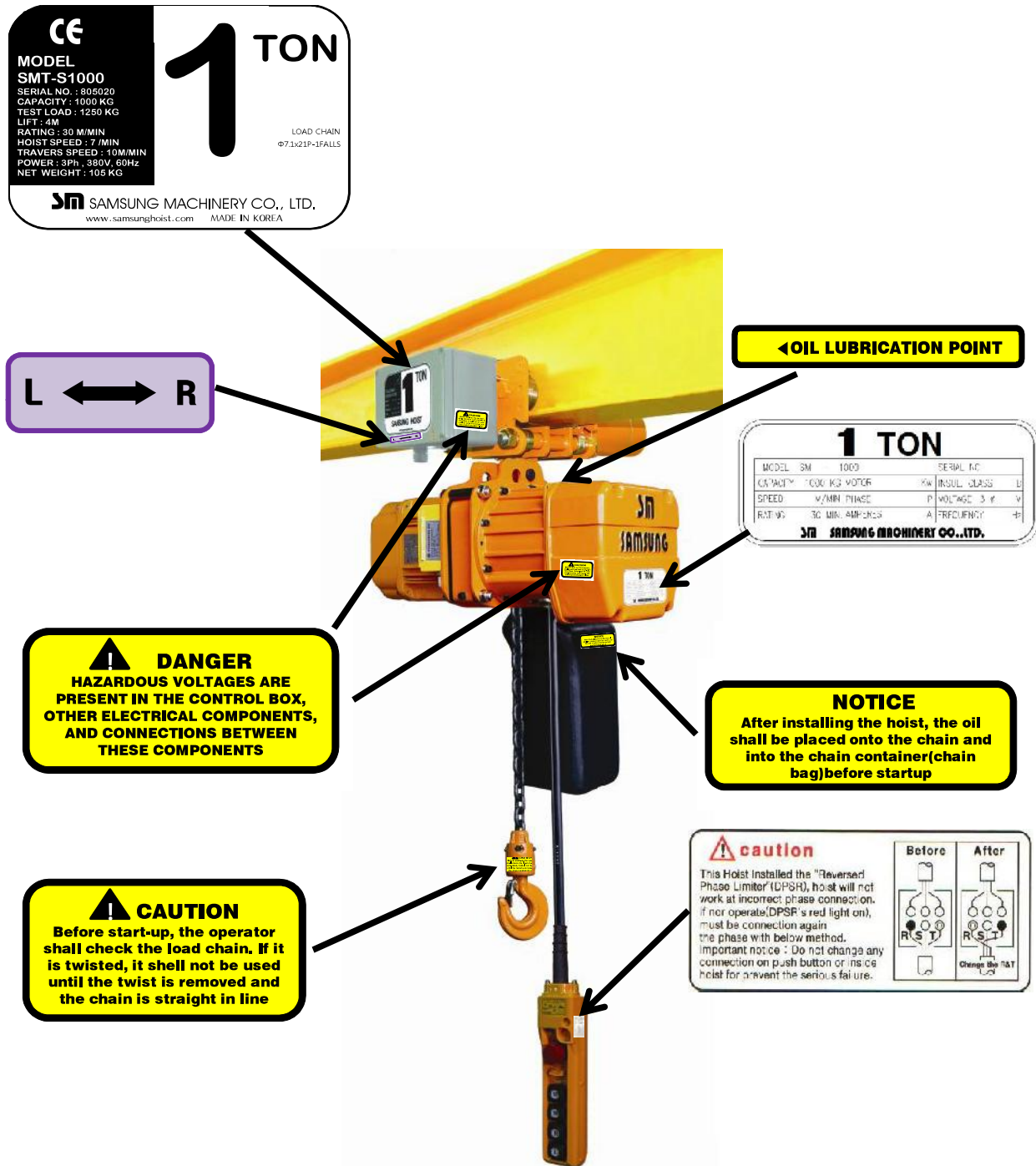
1. Install, inspect, test, maintain, and operate the hoist in accordance with the instruction manual furnished by the manufacturer of the hoist...
2. Train and designate hoist operators, and
3. Train and designate hoist inspectors / maintenance personnel



### 3.2. Name plate and labels on products.

All labels and name plate shall be attached on the products at the same position where they were or originally attached. Do not allow the labels and name plate to become obstructed or defaced.

<Example of MODEL NO. SMT-S1000>





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## 4. Installation

Each complete electric chain hoist is load tested at the factory at 125% of the nameplate-rated capacity. The service life of the hoist depends on the way it is installed.

Always keep this manual near the hoist, available to the operator and the person in charge of maintenance. Make sure that all safety rules are followed.

### 4.1. Checking of product

1. Check the product if there is any damage or deformation during the transportation.
2. Check the specification of the hoist you purchase as listed below.
  - a. Model no.
  - b. Rated capacity (ton)
  - c. Lifting length of load chain (meter)
  - d. Power supply
  - e. Push button pendant assembly (2button, 4button or 6 button)
  - f. Specially ordered optional items
  - g. Beam width for trolley installation

Store the hoist in its normal operating position without load, away from aggressive atmospheres such as dust or humidity. Make sure that the hoist always clean and protected from corrosion and is lubricated.

### 4.2. Installation process

Follow other maintenance procedures outlined in this manual.

1. Handle the hoist by its structure, or by the devices provided for this purpose, or in its original packing.
2. Review the nameplate and warning tags attached to the unit before the installation is started.
3. The hoist should be installed by the technician with the necessary competence.
4. Check that the voltage is in accordance with both the hoist and the voltage at the jobsite (220V, 380V, 440V, 480V, 575V).
5. Make sure that the hoist attaching structure is rigid.
6. Make sure that the safety rules are followed for harness, clearance of work areas, posting of instructions to be followed in the area.

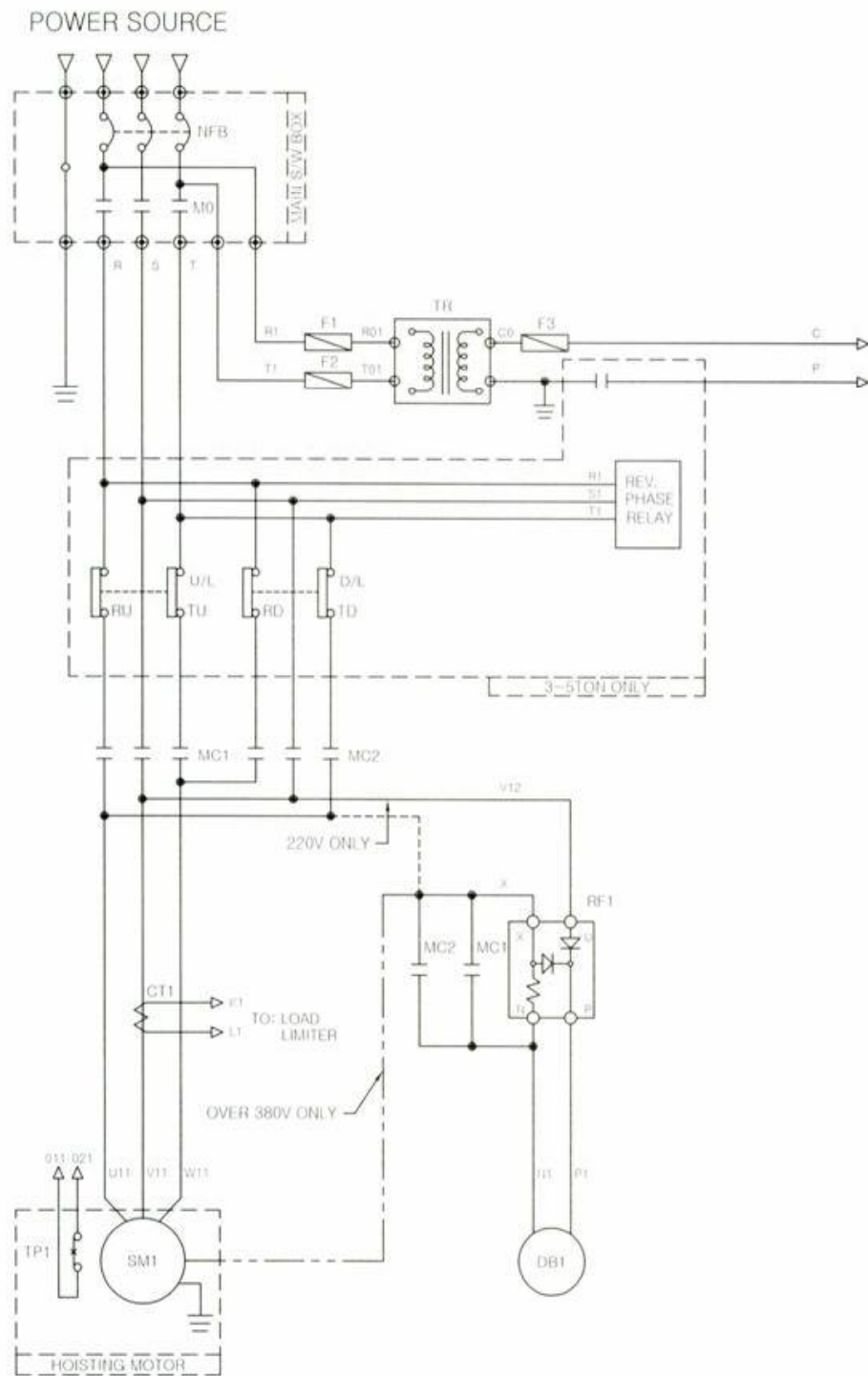
#### 4.2.1. Checking of electricity

### **WARNING**

Before installing, removing, inspection, or performing any maintenance on the hoist, the main switch shall be de-energized and locked out and tagged out. Do not use this equipment in hazardous locations.

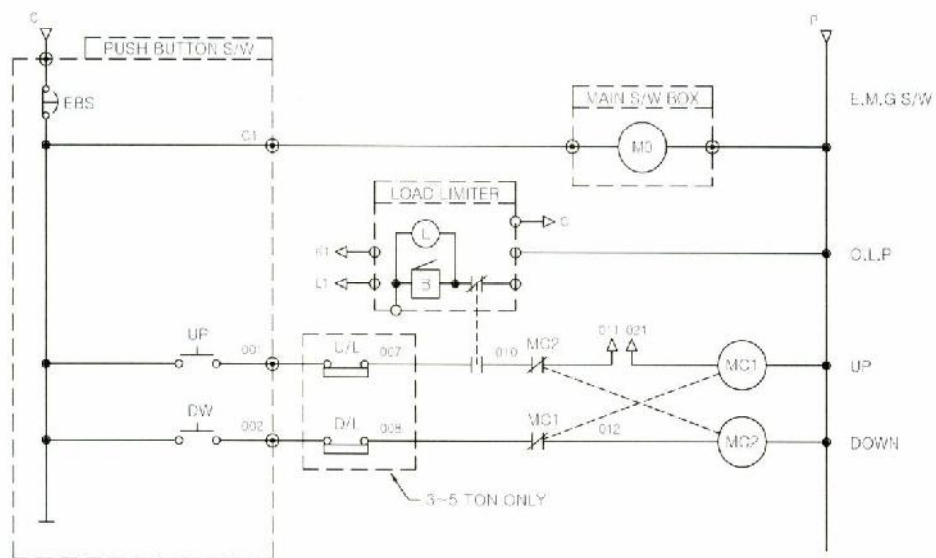
- ▶ the electric chain hoists shall be connected to an earth ground.
- ▶ Lock-out and tag-out the main disconnect switch, in the de-energized position, before performing any service on the hoist.
- ▶ The customer must supply the power supply cable, the fuses and the main disconnect switch.
- ▶ Check that the supply voltage is the same as the nameplate voltage on the hoist.
- ▶ Check that the voltage does not vary by more than  $\pm 10\%$  from the nominal value.
- ▶ Do not use conductors smaller than those listed in the manual, to supply power to the hoist.
- ▶ Never bypass limit switches, remove limit switch stops, or otherwise defeat limit switch devices.

■ Electric Wiring Diagram of Hook Suspension Series(Single Speed)



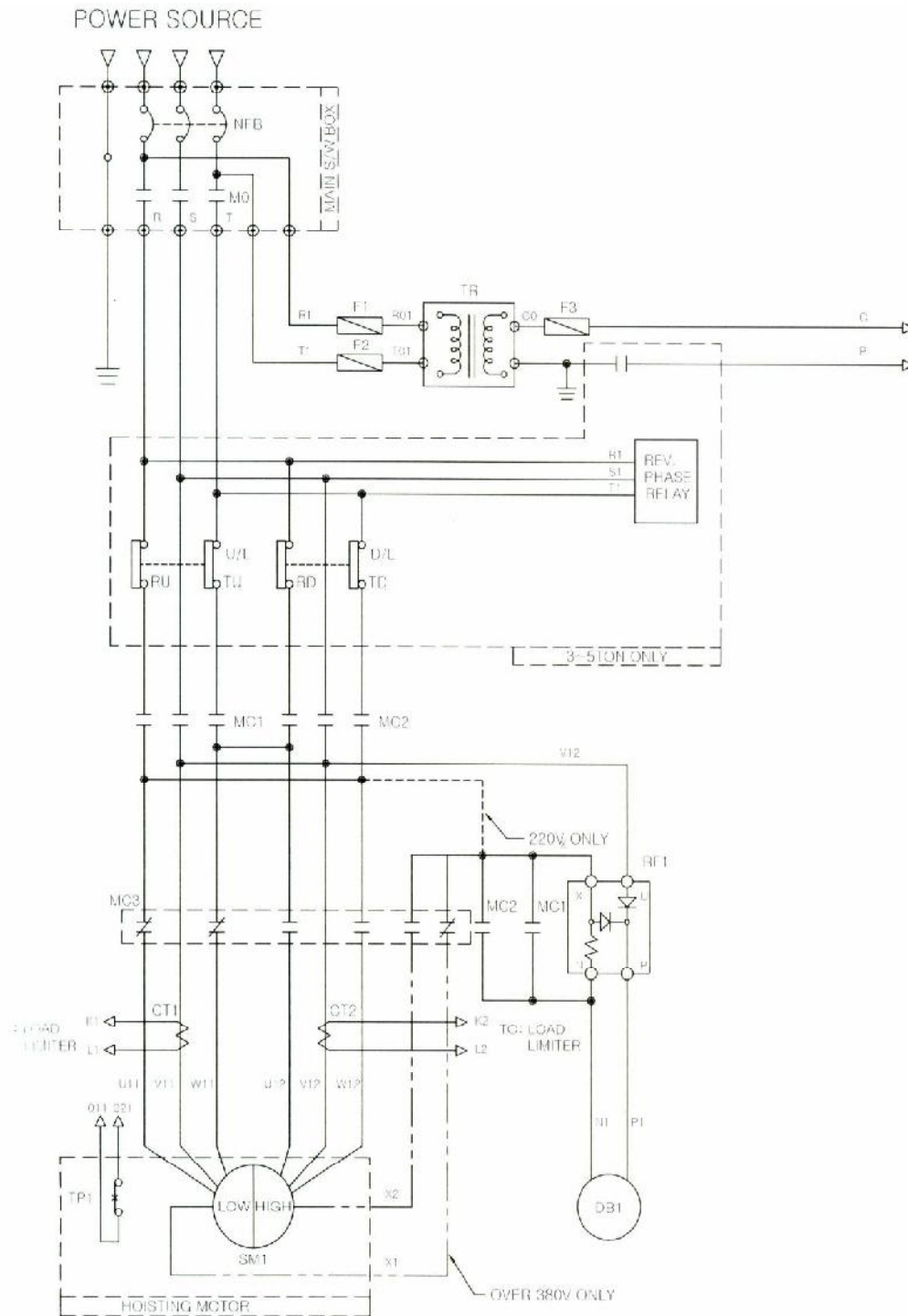
## ■ Electric Wiring Diagram of Hook Suspension Series(Single Speed)

POWER SOURCE : AC 3P-H-220V	CONTROL POWER : AC 1PH-110V-60Hz/50Hz
POWER SOURCE : AC 3P-H-380V	CONTROL POWER : AC 1PH-48V-60Hz/50Hz
AC 3P-H-440V	
AC 3P-H-460V	
AC 3P-H-480V	



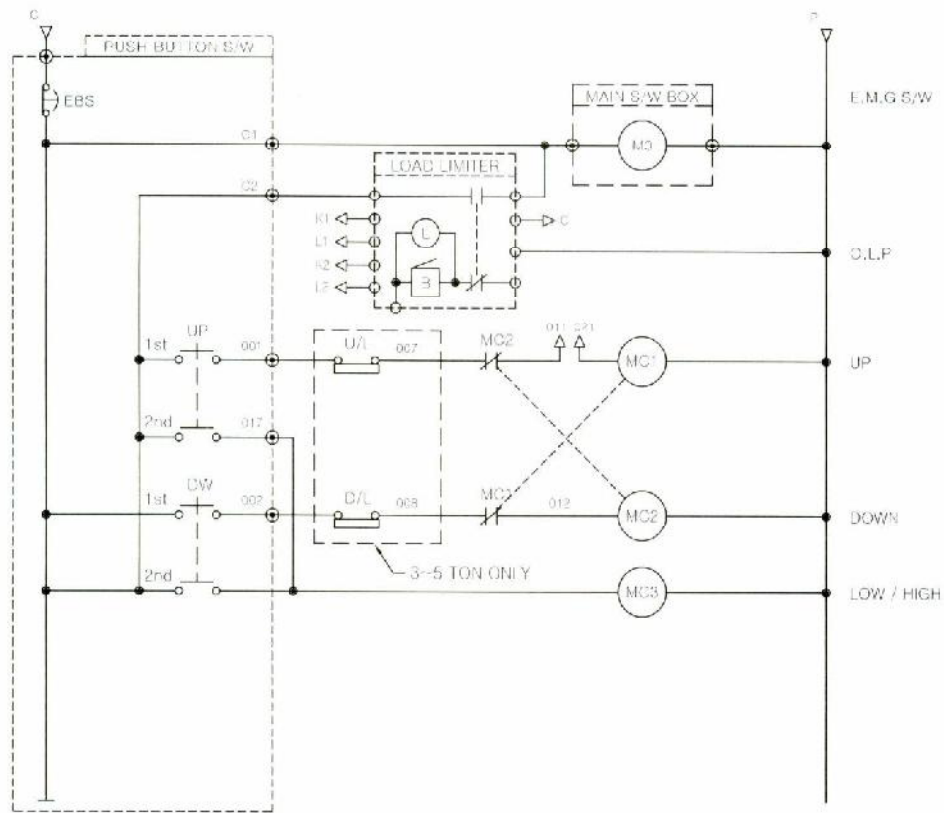
- ▶ Option
- Over Load Alert Limiter Option
- Traversing Limiter.
- Digital Phase Sequence Relay.

■ Electric Wiring Diagram of Hook Suspension Series(Double Speed)



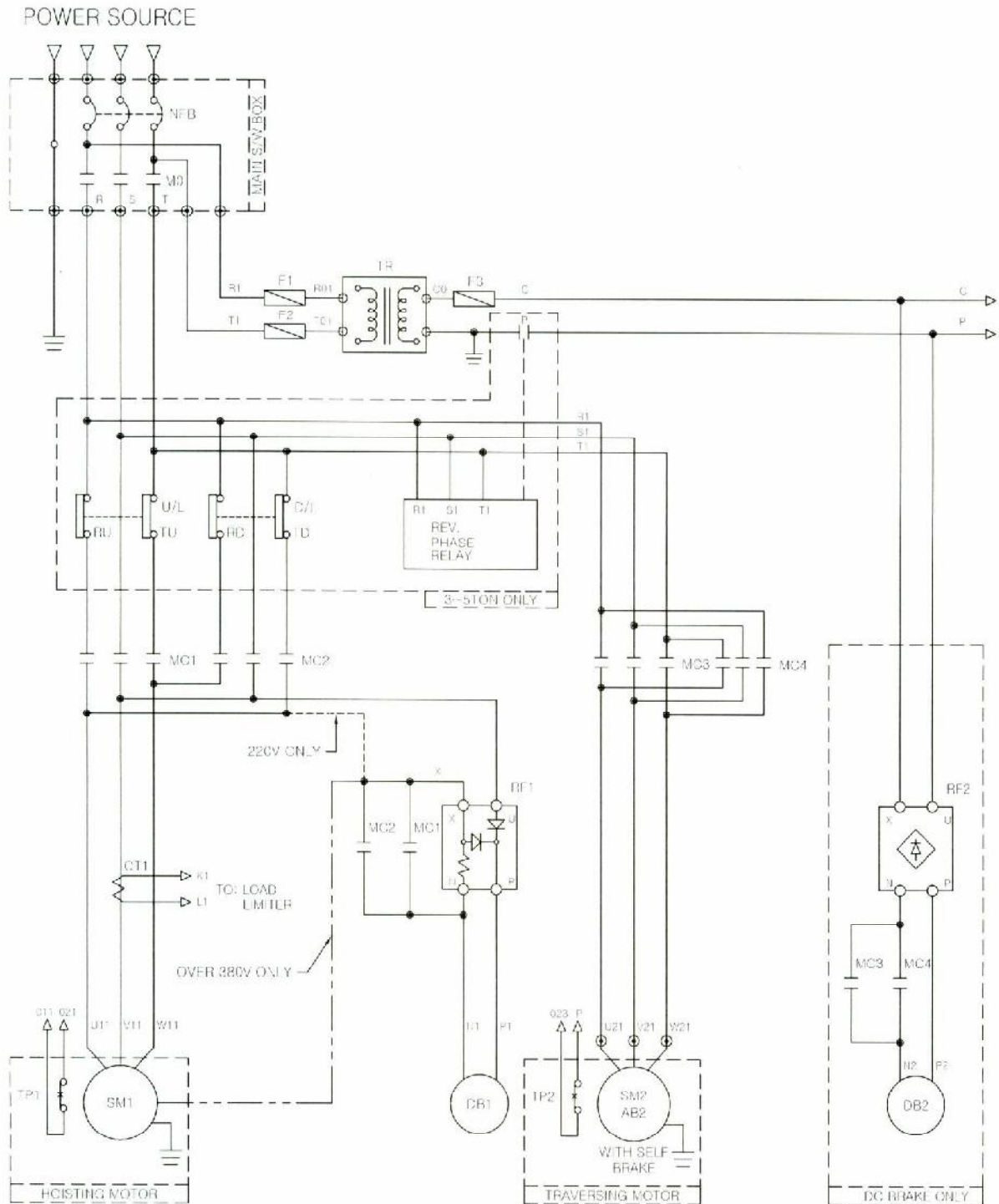
## ■ Electric Wiring Diagram of Hook Suspension Series(Double Speed)

POWER SOURCE : AC 3PH-220V	CONTROL POWER : AC 1PH-110V-60Hz/50Hz
POWER SOURCE : AC 3PH-380V	CONTROL POWER : AC 1PH-48V-60Hz/50Hz
AC 3PH-440V	
AC 3PH-460V	
AC 3PH-480V	



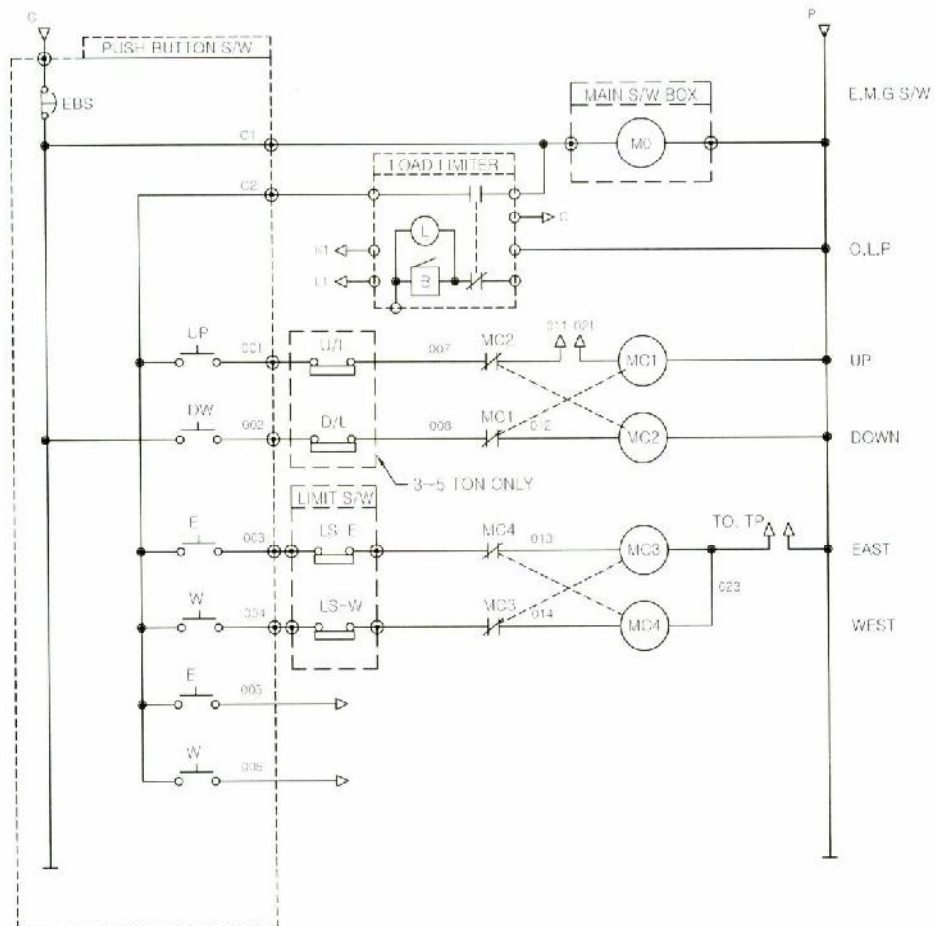
- ▶ Option
- Over Load Alert Limiter Option
- Traversing Limiter.
- Digital Phase Sequence Relay.

■ Electric Wiring Diagram of Motor Trolley Mounted Series(Single Speed)



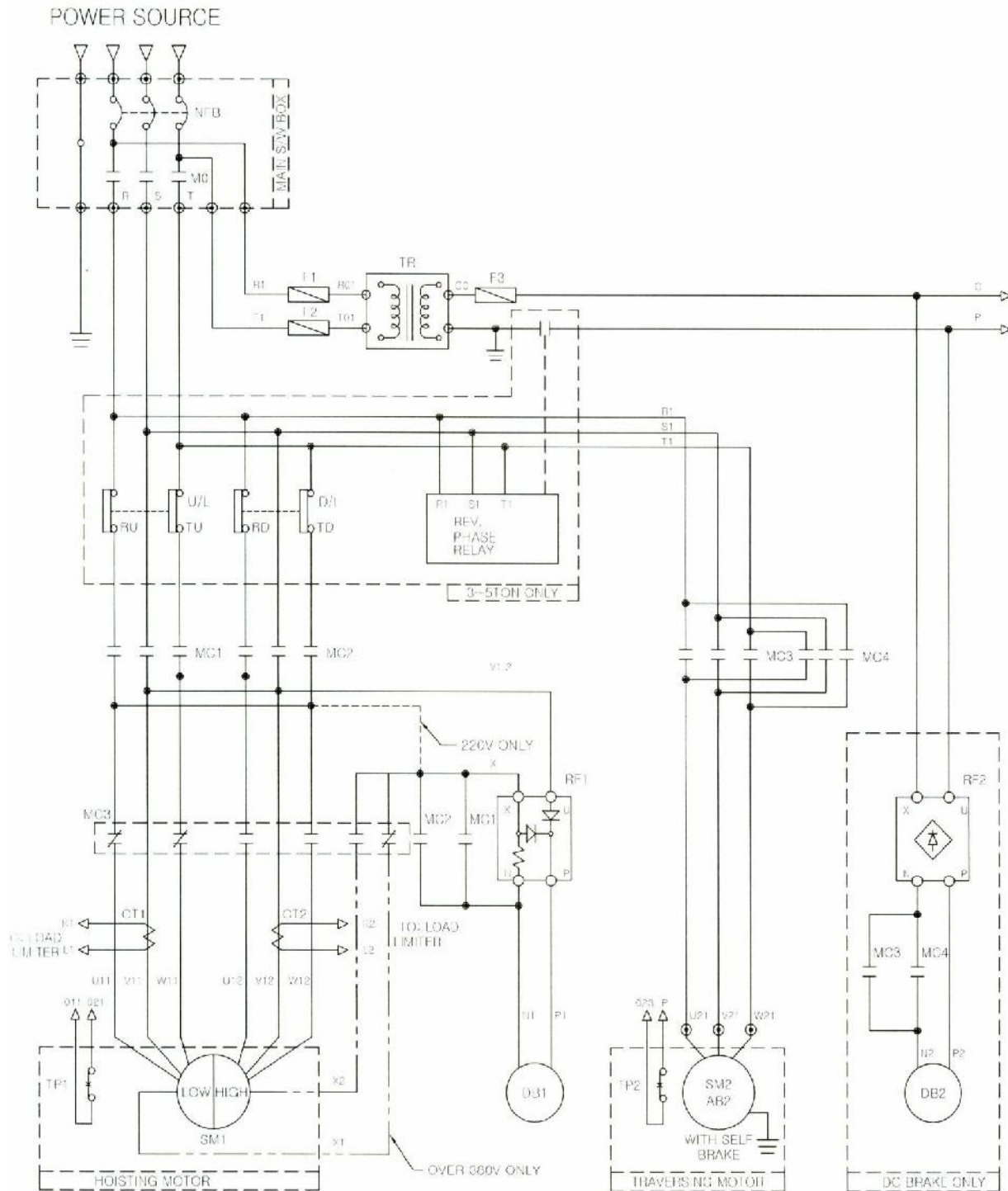
## ■ Electric Wiring Diagram of Motor Trolley Mounted Series(Single Speed)

POWER SOURCE : AC 3PH-220V	CONTROL POWER : AC 1PH-110V-60Hz/50Hz
POWER SOURCE : AC 3PH-380V	CONTROL POWER : AC 1PH-48V-60Hz/50Hz
AC 3PH-440V	
AC 3PH-460V	
AC 3PH-480V	



- ▶ Option
- Over Load Alert Limiter Option
- Traversing Limiter.
- Digital Phase Sequence Relay.

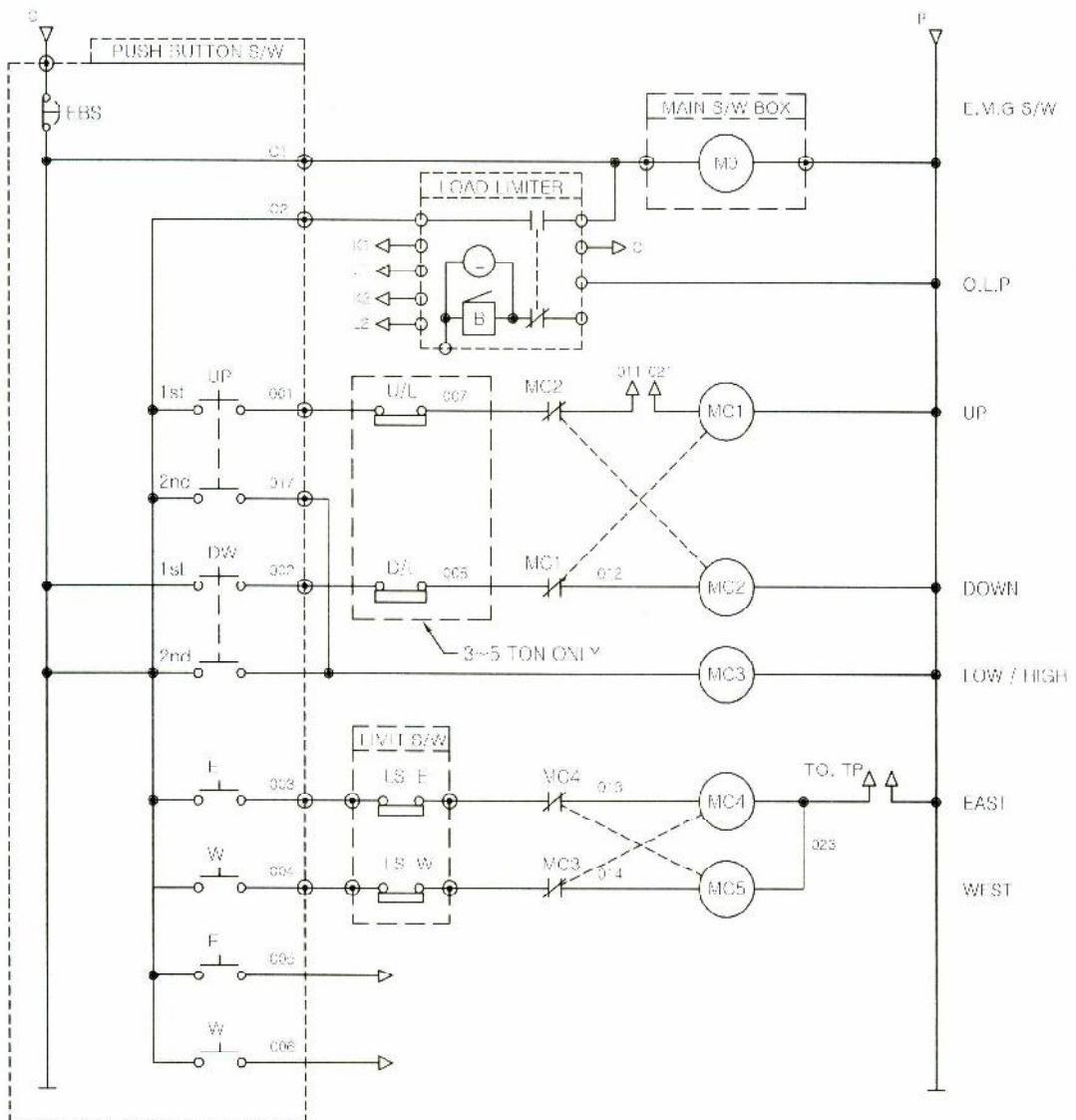
## ■ Electric Wiring Diagram of Motor Trolley Mounted Series(Double Speed)





## ■ Electric Wiring Diagram of Motor Trolley Mounted Series(Double Speed)

POWER SOURCE : AC 3PH-220V	CONTROL POWER : AC 1PH-110V-50Hz/50Hz
POWER SOURCE : AC 3PH-380V	CONTROL POWER : AC 1PH-48V-60Hz/50Hz
AC 3PH-440V	
AC 3PH-460V	
AC 3PH-480V	



- ▶ Option
- Over Load Alert Limiter Option
- Traversing Limiter.
- Digital Phase Sequence Relay.

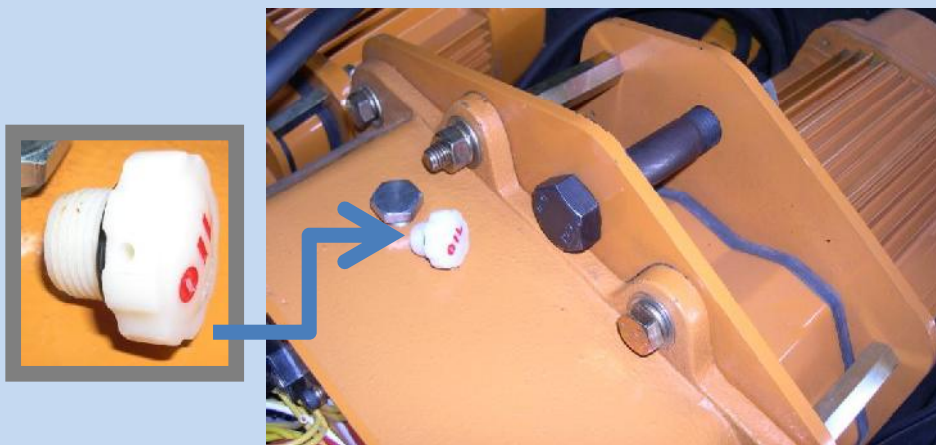
#### 4.2.2. Installation of "BOLT with vent hole"(Vent Bolt)

Electric Chain Hoists are shipped with a "Bolt without Hole" (Solid Bolt) to prevent the possibility of oil leaking during the transportation of the product.

When the temperature of the gear assembly goes up with continued operation, the "BOLT with Vent Hole" (Vent Bolt) relieves the pressure in the gear assembly caused by the increase in temperature.

### ⚠ WARNING

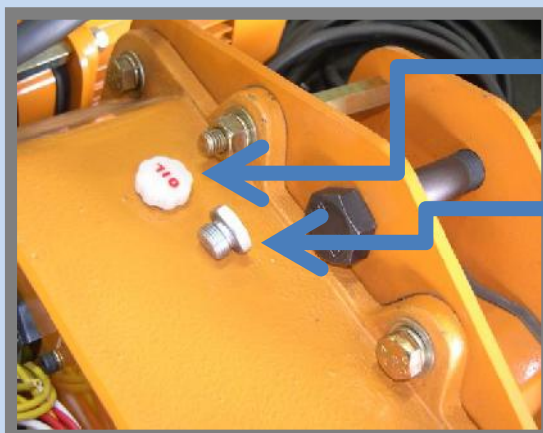
#### Replacement of Solid Bolt with Vent Bolt



On the hoist, the Solid Bolt is located at the lubrication point. Before the installation of the hoist, the customer shall change the bolt from "BEFORE installation" to "AFTER installation" as shown below.

The Vent Bolt functions as the air ventilation device to relieve pressure created by the increase in temperature from operation of the gearing. It helps prevent damage to the seal packing from high pressure.

If NOT changed to "Vent Bolt", a possible hazardous condition can result due to the high pressure in the gear assembly.

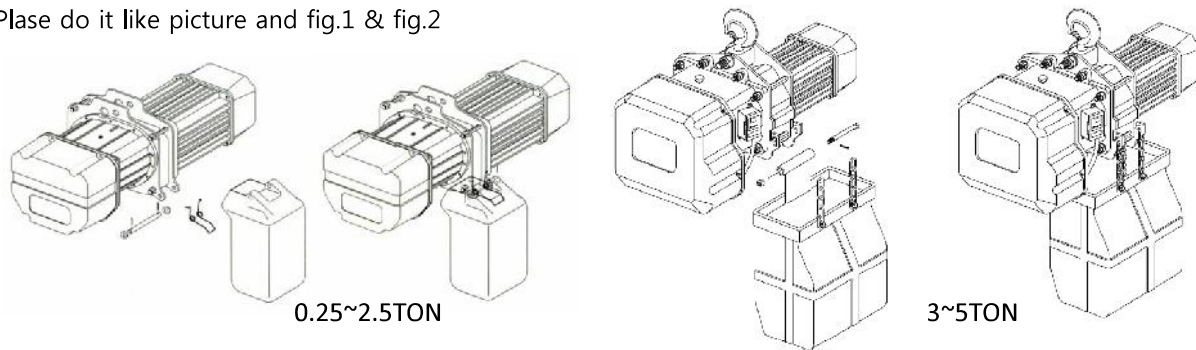


"AFTER installation"  
With Vent Bolt

"BEFORE installation"  
As shipped, the hoist has a Solid Bolt at the lubrication point to prevent the possibility of oil leaking due to movement in transportation.

### 4.2.3. Installation of Chain Container to hoist body

\*Please do it like picture and fig.1 & fig.2



\*When you put the chain into chain bucket, Please put first End-Stopper into chain bucket for preventing chain twist.

### 4.2.4. Oil Lubrication on load chain and into chain container

Please lubricate the load chain, using the plastic oil bottle which is included with the hoist.

## NOTICE

#### Oil Lubrication into Chain Container



After installing the hoist, the oil shall be placed onto the chain and into the chain container (chain bag) before startup.

- ▶ If the load chain is used when it's dry, abrasion and noise will result.
- ▶ Depending on the oil lubrication, the life of the load chain can vary up to 10 times compared to non-oiled load chain.
- ▶ If the load chain is used without oil lubrication before startup, the manufacturer Will not be held responsible for possible damage to the load chain.



## ⚠ WARNING

DO NOT attempt to store a greater quantity of chain in the chain container than is specified in the table above. When containing more than the specified quantity, it may result in serious damage to the hoist and a hazard to the operator and nearby or goods.

#### 4.2.5. Checking Load Chain after installation

### ⚠ CAUTION

- ▶ Before start-up, the operator shall check the load chain. If it is twisted, it shall not be used until the twist is removed and the chain is straight in line.
- ▶ For double chain-falls, a capsized load chain shall not be used. When capsized, the operator shall turn over the bottom hook assembly as shown in the figure. If not, it will cause serious damage to the product.
- ▶ On load chain, oil lubrication shall be made with the oil bottle which is included with the hoist. When dry chain with no lubrication is used, it will cause shortened life of the load chain and a possible breakage of the load chain during operation, resulting in damage to the product and / or a hazardous condition to the operator and nearby people or goods.



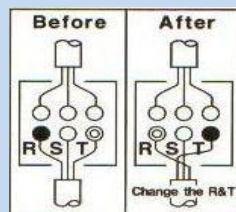
#### 4.2.6. Automatic Incorrect Phase Checking (by exchanging One of Three Black lines)

After installation, the operator shall check UP/DOWN motions by pressing the Push Button Pendant Switch. If it does not operate in the UP/DOWN direction, it may indicate the automatic P.I.P.L (Preventive Incorrect Phase Limiter) built inside the hoist body, is activated due to incorrect phasing of the input power supply lines.

### NOTICE

If it does not operate with the Push button control, it indicates that the electric incorrect phase limiter (protector) is operating.

*In this case, reverse TWO of the THREE power supply phase lines as illustrated.*

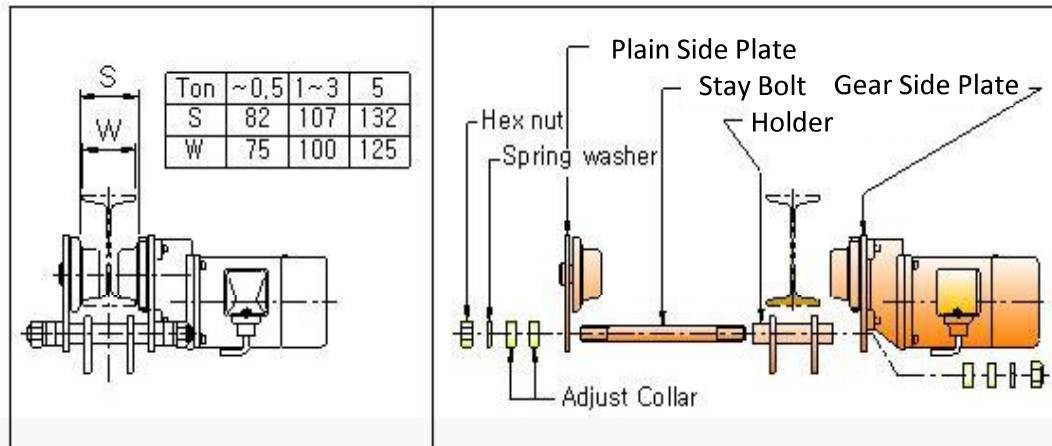


### 4.3. Installation of the Motor Trolley Mounted Series

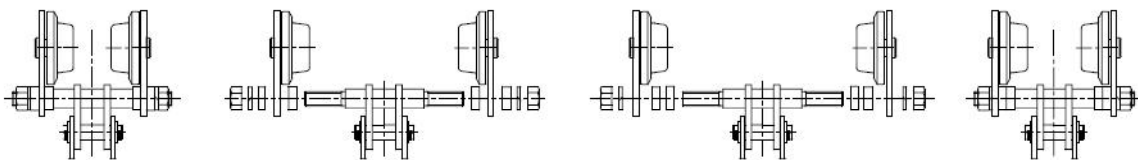
#### 4.3.1. How to install Trolley on the runway I-beam

For Trolley, there are THREE types : Motor trolley, Plain trolley, Geared trolley  
 First, check the difference between beam flange width and guide roller spacing.

#### ■ Parts to adjust I-Beam Width



#### ■ How to set up the I-Beam Width of Motor Trolley



Process ①

②

③

④

Motor trolley can be used on I-beams different in width only by inserting adjusting collars  
 (0 pcs to 2 pcs)

- ① Pull out both "TUS013.Hex Nut" and "TUS015.Adj. Collar"
- ② Widen TROLLEY up to the maximum width by pulling out "TUS012.Stay Bolt"
- ③ In accordance with the following I-Beam width instruction, please insert the applied number of collars at the right end and push the trolley to the direction.
- ④ Instet TROLLEY on I-Beam.
- ⑤ Locate "TUS016 Holder" on the center and line up "TUS015.Adj. Collar" by setting the same number of collars at both ends.

■ Applied Collar Numbers for Each Trolley Capacity on I-Beam.

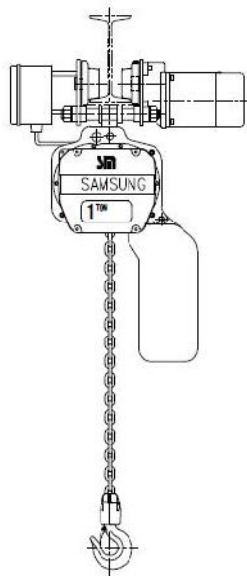
Each collar width per pcs : 12.5mm

I-Beam width(mm)	Adjusting Collar Numbers for Each Trolley Capacity (total no. =1/2right + 1/2left)			
	0.25~0.5ton	1ton	2~3ton	5ton
each collar width x total numbers	4pcs	4pcs	4pcs	4pcs
	75mm	0pcs	0pcs	0pcs
	100mm	1pcs	1pcs	1pcs
	125mm	2pcs	2pcs	2pcs
	150mm	3pcs	3pcs	3pcs

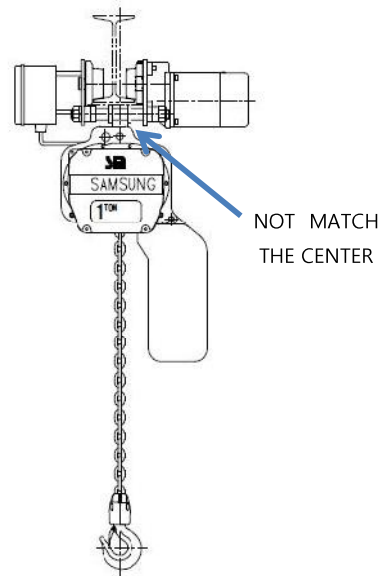
**⚠ WARNING**

RIGHT installation : Fit both sides of the connector with the same number of adjusting collars.  
 WRONG installation : It can result in serious accidents.

**RIGHT Installation**



**WRONG Installation**



- (A) Without collars, the setting of connector become loose and not secure
- (B) With One-sided setting of collars, it shall result in the un-balanced trolley installation.