

ACCOLIFT® CLH

ELECTRIC CHAIN HOIST

INSTRUCTION MANUAL

for

Installation / Operation / Maintenance / Parts



SERIAL NUMBER

⚠ 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. Acco 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.

ACCOLIFT® GLH

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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.

- ⚠ DANGER** Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.
- ⚠ WARNING** Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.
- ⚠ CAUTION** 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.

⚠ CAUTION

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.

⚠ WARNING

Equipment described herein is not 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 crane designer, crane manufacturer, or user is responsible to furnish these additional items for compliance. Refer to ASME B30.17, Safety Standard for Top-Running Single Girder Cranes; ASME B30.2 Safety Standard for Top-Running Double Girder Cranes; and ASME B30.11 Safety Standard for Underhung Cranes and Monorails. If a below-the-hook lifting device or sling is used with a hoist, refer to ASME B30.9, Safety Standard for Slings, or ASME B30.20, Safety Standard for Below-the-Hook Lifting Device.

Hoists and Cranes, used to handle molten material may require additional equipment or devices. Refer to ANSI Z241.2, Safety Requirements for Melting and Pouring of Metals in the Metalcasting Industry

Electrical equipment described herein is designed and built in compliance with ACCO Material Handling Solutions interpretation of ANSI/NFPA 70, National Electrical Code. 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 ANSI/NFPA 70, and all applicable Federal, State, and Local Codes.

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. Refer to ANSI Z244.1, Personnel Protection - Lockout/Tagout of Energy Sources.

⚠ 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

It is the responsibility of the owner/user to install, inspect, test, maintain, and operate a hoist in accordance with ASME B30.16, Safety Standard for Overhead Hoists, OSHA Regulations, and ANSI/NFPA 70, National Electric Code. If the hoist is installed as part of a total lifting system, such as an overhead crane or monorail, it is also the responsibility of the owner/user to comply with the applicable ASME B30 volume that addresses that type of equipment.

It is the responsibility of the owner/user to have all personnel that will install, inspect, test, maintain, and operate a hoist read the contents of this manual and applicable portions of ASME B30.16, Safety Standard for Overhead Hoists, OSHA Regulations, and ANSI/NFPA 70, National Electrical Code. If the hoist is installed as part of a total lifting system, such as an overhead crane, the applicable ASME B30 volume that addresses that type of equipment must also be read by all personnel.

Any ANSI Standards referenced in this manual may be obtained from the American National Standards Institute, 1430 Broadway, New York, New York 10018.

This manual contains information for safe operation of an overhead hoist. Taking precedence over any 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 Acco Material Handling Solutions York, Pennsylvania or the distributor of the hoist. Do not install, inspect, test, maintain, or operate this hoist unless this information is fully understood.

When contacting Acco Material Handling Solutions or the distributor of the hoist, always make reference to the serial number of the hoist.

A regular schedule of inspection of the hoist in accordance with the requirements of ASME B30.16 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 in accordance with ANSI Z244.1. Follow other maintenance procedures outlined in this manual and applicable ASME B30 volumes.

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 and applicable ASME B30 volumes could result in serious bodily injury or death, and/or property damage.

1. Features

ACCOLIFT® CLH hoists feature lower headroom than conventional hoists. Due to their compact size these hoists fit well into jib crane and light rail applications. These hoists are available for single-phase and three-phase applications. 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 tests and inspections, while our production processes meet stringent quality requirements.

- Brake System ----- cone brake
- Upper Limit Switch ----- prevents over-lifting of chain
- Push Button Pendant Control Switch ----- with emergency stop button

1.1. Mechanism group

ACCOLIFT® CLH 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 <3 phase> : FEM9.511(Hoist = FEM 2m 40% ED)

Hook suspension chain hoist <1 phase> : FEM9.511(Hoist = FEM 2m 30%ED)

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

Mechanism group	1 Bm	1 Am	2 m	3 m	4 m	5 m
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 0.63 k 0.8	0.5	0.5-1	1-2	2-4	4-8	8-16
Very Heavy 0.8 k 1.00	0.25	0.5	0.5-1	1-2	2-4	4-8

NOTICE

ACCOLIFT® CLH electric chain hoists should be operated under the allowance of the above FEM determination. The above mechanism group is valid for the entire period of operation, and for reasons of operational safety, hoists shall not be operated outside these recommendations.

1.2. Working environment data

Ambient temperature: from -4F to 104F

Protection class: IP55

Side pulling angle: max. 3 degrees

Sound level: 80dB (A)

⚠ WARNING

ACCOLIFT® CLH 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 normal 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 (THREE PHASE)

Specifications

Model		VFD Control						Single Speed					
		2230010		2230020		2230040		2230010		2230020		2230040	
		VFD-230	VFD-460	VFD-230	VFD-460	VFD-230	VFD-460						
Capacity(WLL)	ton	1/2t		1t		2t		1/2t		1t		2t	
Standard lift	ft	20											
Pushbutton cord length	ft	18											
Lifting speed	fpm	17/6				9/3		17				9	
Lifting motor	V	208-230	460	208-230	460	208-230	460	208-230	460	208-230	460	208-230	460
	KW(HP)	1.5(2.0)											
Load chain dia(inch)xChainfall Lines		0.280"x1				0.280"x2		0.280"x1				0.280"x2	
Net weight	lbs	146				181		134				168	
Weight for additional 1ft lift		0.67				1.34		0.67				1.34	

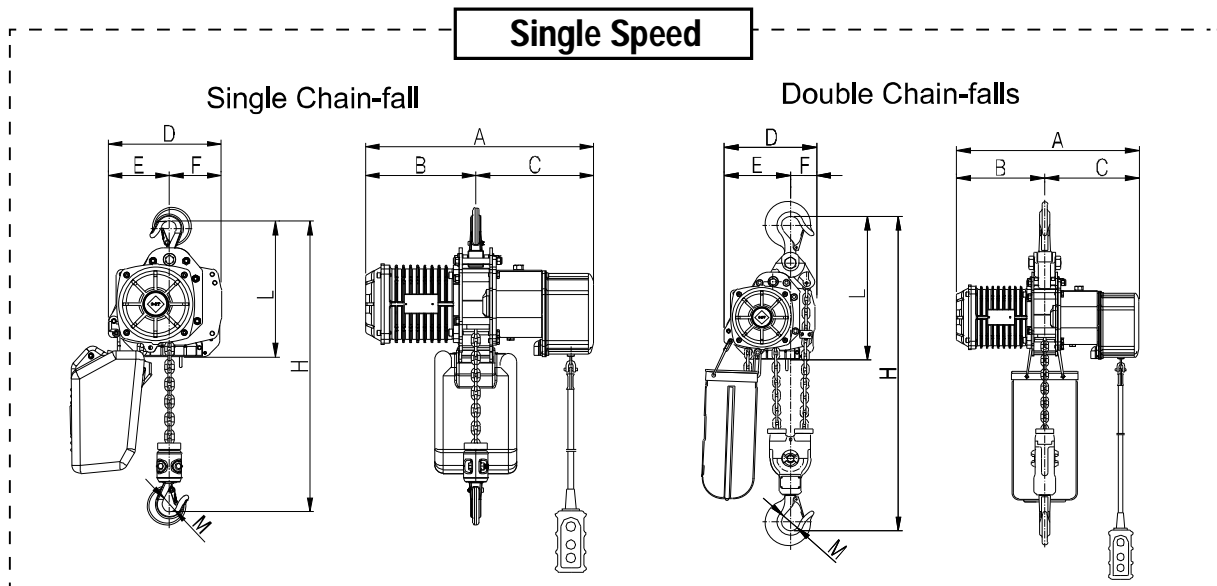
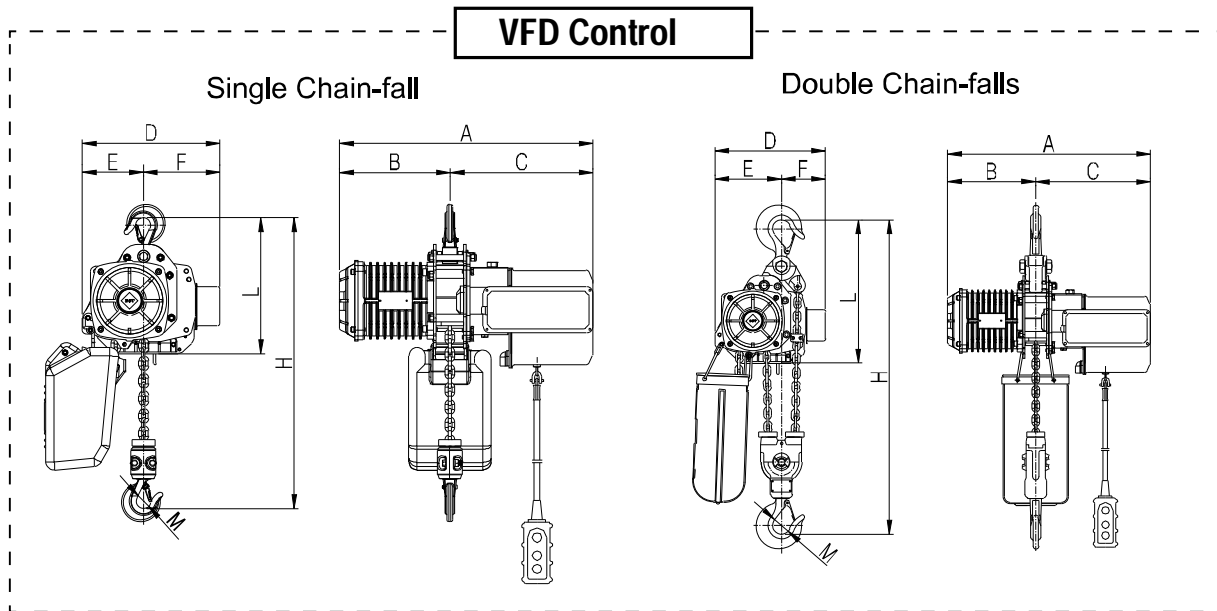
WLL.(working load limit): All units tested at 125% of the rated capacity.

Longer lifts affect the chain container size. Please contact the factory or the authorized distributor.



Dimension (inch)

Model	VFD Control						Single Speed		
	2230010		2230020		2230040		2230010	2230020	2230040
	VFD-230	VFD-460	VFD-230	VFD-460	VFD-230	VFD-460			
A	23.9		23.9		23.9		20.7	20.7	
B	10.4		10.4		10.4		10.4	10.4	
C	13.5		13.5		13.5		10.3	10.3	
D	12.9		12.9		12.9		10.7	10.7	
* H : minimum headroom	E		F		G		5.8	7.8	
* Hook is produced by the hot forging process and has ±2% variation from nominal dimension.	F		G		H		4.9	2.9	
	M		N		O		1.38	2.1	
	H		I		J		15.8	26.8	
	L		K		L		12.7	16.9	



1.3.1 Motor Trolley Mounted Series(Three phase)

Specifications (Three phase)

Model	VFD CONTROL						SINGLE SPEED						
	2230110		2230120		2230140		2230110		2230120		2230140		
	VFD-230	VFD-460	VFD-230	VFD-460	VFD-230	VFD-460	2230110	2230120	2230110	2230120	2230110	2230120	
Capacity(WLL) ton	1/2t		1t		2t		1/2t		1t		2t		
Standard lift ft	20												
Pushbutton cord length ft	18												
Lifting speed fpm	17/6				9/3		17				9		
Traversing speed fpm	40/17						36						
Lifting motor	V	208-230	460	208-230	460	208-230	460	208-230	460	208-230	460	208-230	460
	KW(HP)	1.5(2.0)											
Traversing motor	V	208-230	460	208-230	460	208-230	460	208-230	460	208-230	460	208-230	460
	KW(HP)	0.4(0.54)											
Load chain dia(inch)xChainfall Lines	0.280"x1				0.280"x2		0.280"x1				0.280"x2		
Net weight ibs	137				165		116.8				141.1		
I-beam flange width	3.25-12												
I-beam curve radius	31.5												
Weight for additional 1foot lift ibs	0.67				1.34		0.67				1.34		

W.L.L.(working load limit): All units tested at 125% of the rated capacity.

Longer lifts affect the chain container size, Please contact the factory or the authorized distributor.



Dimension (inch)

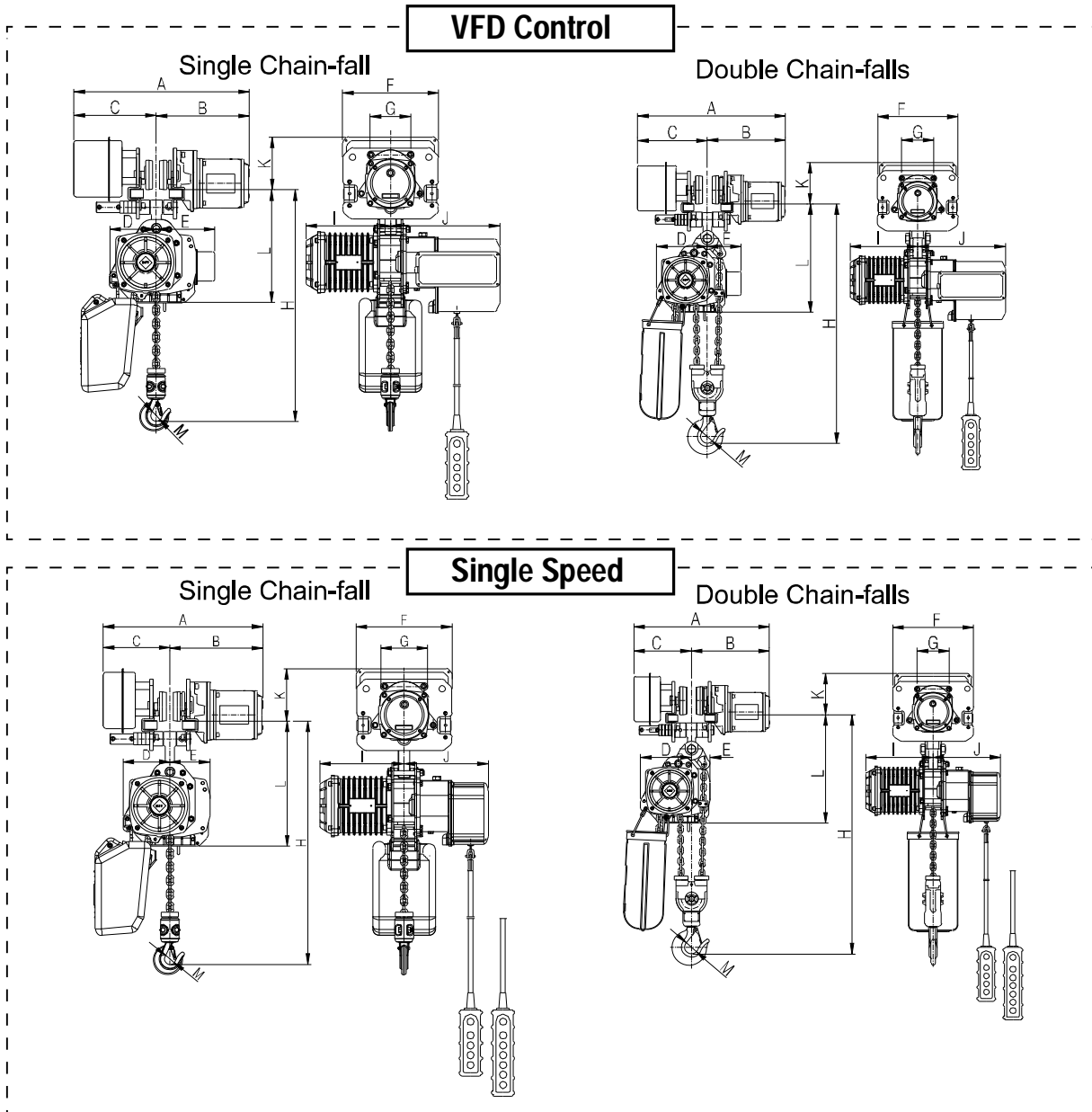
Model	VFD CONTROL						SINGLE SPEED		
	2230110		2230120		2230140		2230110	2230120	2230140
	VFD-230	VFD-460	VFD-230	VFD-460	VFD-230	VFD-460			
A	21.6+2B		22.7+2B		19.6+2B		20.8+2B		
B	11.4+B		12+B		8.2+B		8.8+B		
C	10.2+B		10.7+B		11.4+B		12+B		
D	5.7		7.8		5.7		7.8		
E	7.2		5.1		4.9		2.9		
F	11.8		12.4		11.8		12.4		
G	4.3		4.9		4.3		4.9		
H	17.6		26		17.6		26		
I	10.4		10.4		10.4		10.4		
J	13.5		13.5		10.3		10.3		
K	6.5		6.3		6.5		6.3		
L	15.5		18		14.1		16.7		
M	1.38		2.1		1.38		2.1		

* The figure B* can be calaurated

* = 1/2X(width(mm) of the traversig rail)

* H : minimum headroom

* Hook is produced by the hot forging process and has ±2% variation from nominal dimension.



1.4. Hook Suspension Series (SINGLE PHASE)

Specifications

Model		VFD Control			Single Speed					
		2330010	2330020	2330040	2330010		2330020		2330040	
		VFD-230-1	VFD-230-1	VFD-230-1						
Capacity(WLL)	ton	1/2t	1t	2t	1/2t	1t	2t			
Standard lift	ft	20								
Pushbutton cord length	ft	18								
Lifting speed	fpm	17/6		9/3	14			7		
Lifting motor	V	230	230	230	115	230	115	230	115	230
	KW(HP)	1.5(2.0)			0.8(1.1)					
Load chain dia(inch)xChainfall Lines		0.280"x1		0.280"x2	0.280"x1			0.280"x2		
Net weight	lbs	148		181	139			172		
Weight for additional 1ft lift	lbs	0.67		1.34	0.67			1.34		

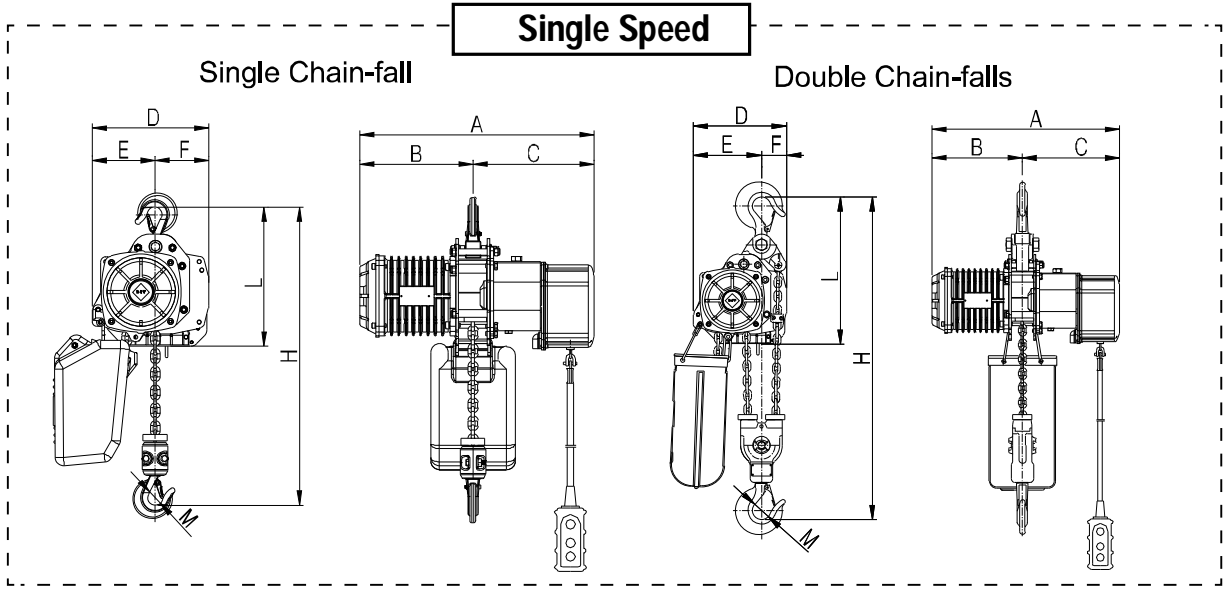
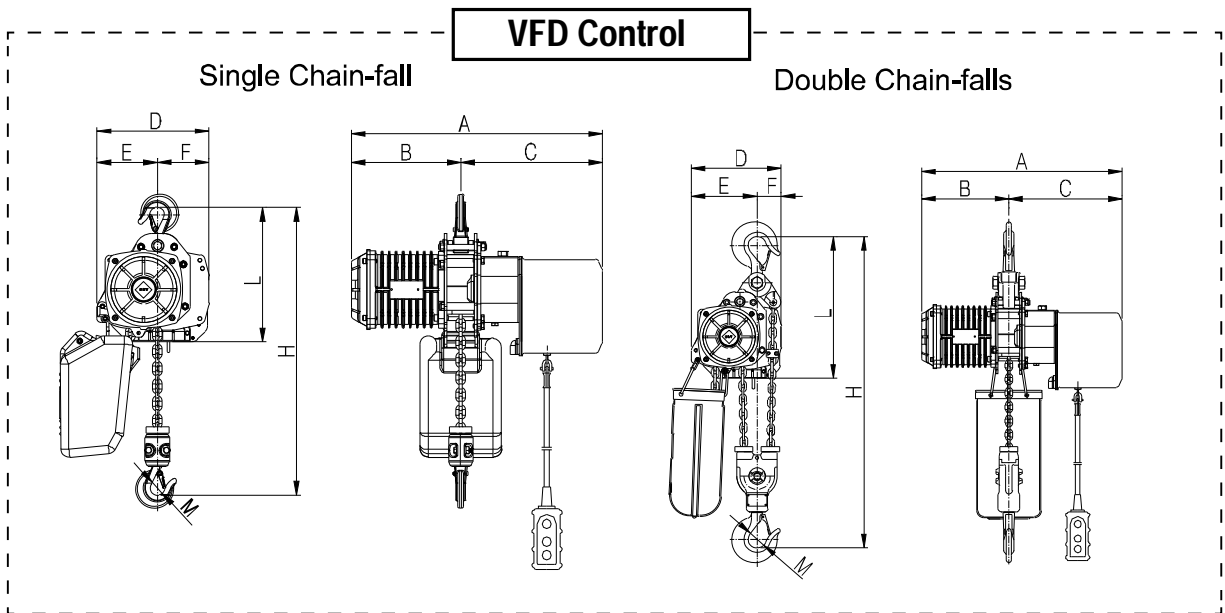
W.L.L.(working load limit): All units tested at 125% of the rated capacity.

Longer lifts affect the chain container size, Please contact the factory or the authorized distributor.



■ Dimension (inch)

Model	VFD Control			Single Speed		
	2330010	2330020	2330040	2330010	2330020	2330040
	VFD-230	VFD-230	VFD-230			
A	23.9		23.9	21.5		21.5
B	10.4		10.4	10.4		10.4
C	13.5		13.5	11.1		11.1
D	10.7		10.7	10.7		10.7
* H : minimum headroom	5.8		7.8	5.8		7.8
* Hook is produced by the hot forging process and has ±2% variation from nominal dimension.	4.9		2.9	4.9		2.9
M	1.38		2.1	1.38		2.1
H	15.8		26.8	15.8		26.8
L	14.9		19	12.7		16.9



1.4.1 Motor Trolley Mounted Series(Single phase)

Specifications (single phase)

Model		VFD CONTROL			SINGLE SPEED						
		2330110	2330120	2330140	2330110		2330120		2330140		
		VFD-230-1	VFD-230-1	VFD-230-1	1/2t		1t		2t		
Capacity(WLL)	ton	1/2t	1t	2t	1/2t		1t		2t		
Standard lift	ft	20									
Pushbutton cord length	ft	18									
Lifting speed	fpm	17/6			9/3			14		7	
Traversing speed	fpm	36			36						
Lifting motor	V	230	230	230	115	230	115	230	115	230	
	KW(HP)	1.5(2.0)			0.8(1.1)						
Traversing motor	V	230	230	230	115	230	115	230	115	230	
	KW(HP)	0.2(0.27)			0.2(0.27)						
Load chain dia(inch)xChainfall Lines		0.280"x1		0.280"x2		0.280"x1			0.280"x2		
Net weight	ibs	227		280		225			273		
I-beam flange width		3.25-12									
I-beam curve radius		31.5									
Weight for additional 1foot lift		0.67		1.34		0.67			1.34		

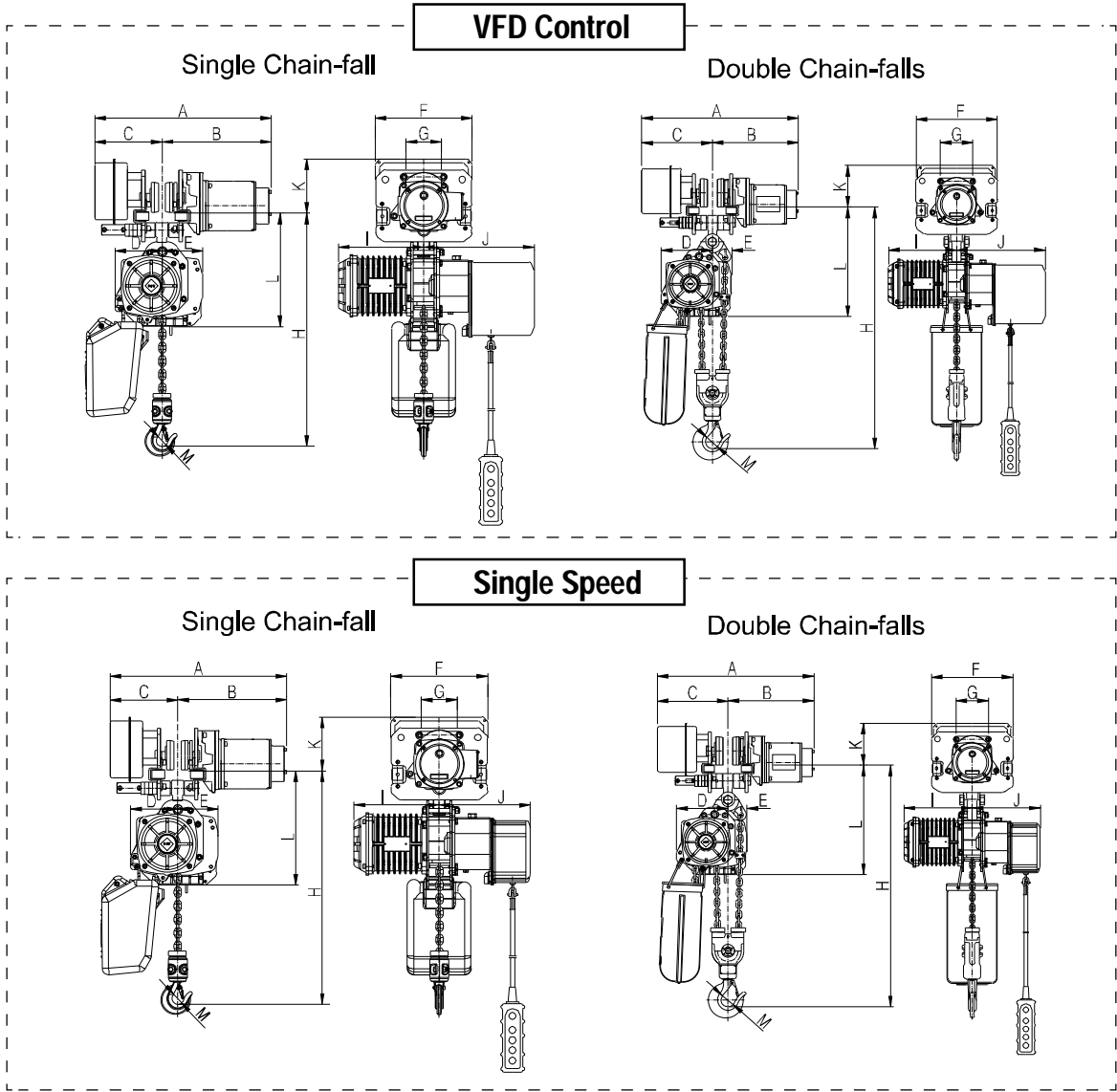


Dimension (inch)

Model	VFD CONTROL			SINGLE SPEED		
	2330110	2330120	2330140	2330110	2330120	2330140
	VFD-230-1	VFD-230-1	VFD-230-1			
A	23.5+2B		24.6+2B	23.5+2B		24.6+2B
B	13.3+B		13.9+B	13.3+B		13.9+B
C	10.2+B		10.7+B	10.2+B		10.7+B
D	5.7		7.8	5.7		7.8
E	4.9		2.9	4.9		2.9
F	11.8		12.4	11.8		12.4
G	4.3		4.9	4.3		4.9
H	17.6		26	17.6		26
I	10.4		10.4	10.4		10.4
J	13.5		13.5	11.1		11.1
K	6.5		6.3	6.5		6.3
L	15.5		18	14.1		16.7
M	1.38		2.1	1.38		2.1

* The figure B* can be calaurated
 * = 1/2X(width(mm) of the
 traversig rail)
 * H : minimum headroom
 * Hook is produced by the
 hot forging process and
 has ±2% variation from
 nominal dimension.

W.L.L.(working load limit): All units tested at 125% of the rated capacity.
 Longer lifts affect the chain container size, Please contact the factory or the authorized distributor.



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

ACCOLIFT® CLH trolleys are designed to form an integral hoist/trolley combination, keeping the load equally distributed for easy traversing and long life.

Hook suspension trolleys are available as push/pull and hand-gear versions. A lug mounted push/pull trolley is also available for easy mounting to the hoist by removing the top hook and bolting in the supplied lug connector.



Plain Trolley

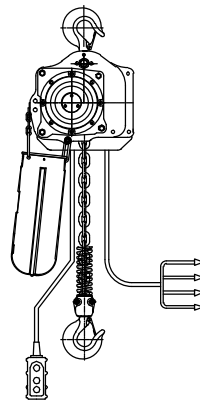


Geared Trolley

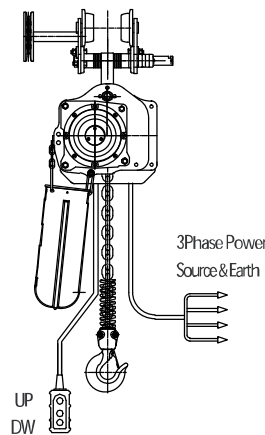


Lug mount plain trolley kit

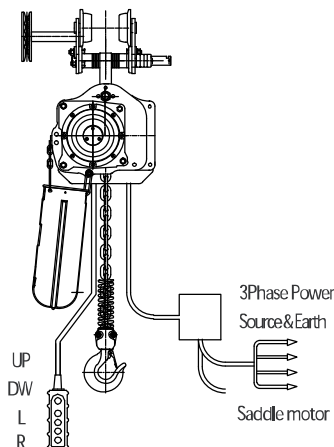
Hook suspension hoist



Plain trolley hoist
Geared trolley hoist



Plain trolley crane-mounted
Geared trolley crane-mounted



3. Safety precautions

3.1. Warning and Caution

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 **SERIOUS BODILY INJURY** or **DEATH** and/or **PROPERTY DAMAGE**.

WARNING

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"

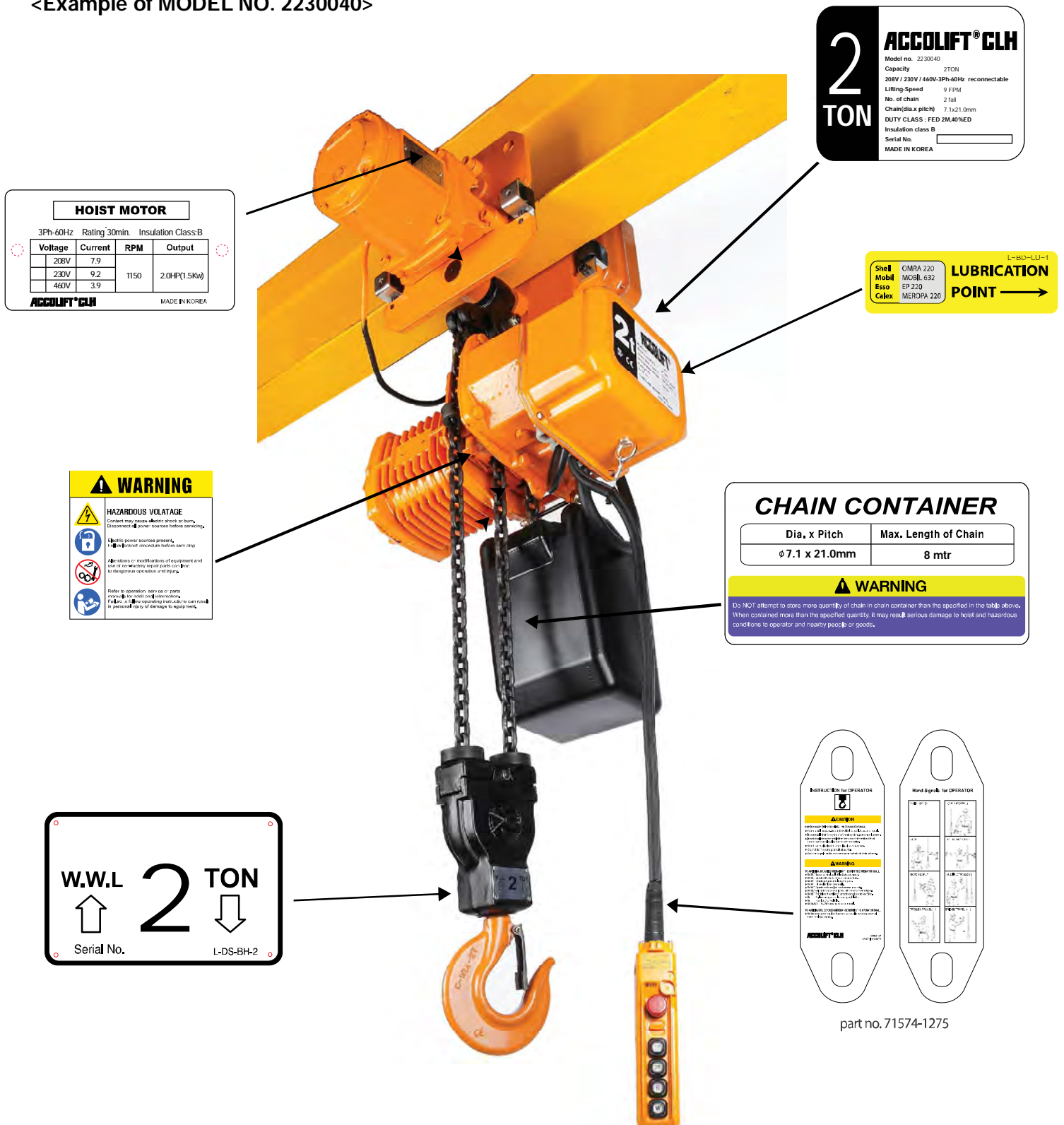
It is the responsibility of the owner / user to

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 originally attached. Do not allow the labels and name plate to become obstructed or defaced.

<Example of MODEL NO. 2230040>



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 (feet or meter)
 - d. Power supply
 - e. Push button pendant assembly (2button, 4button or 6button)
 - 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 is 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 (115V,208V,230V,460V)
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 in accordance with ANSI Z244.1. 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.

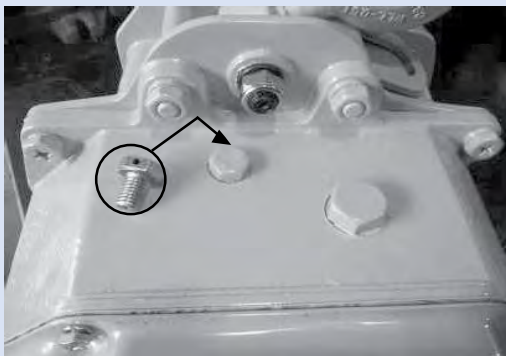
4.2.2. Installation of "BOLT with vent hole" (Vent Bolt)

ACCOLIFT® CLH 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.

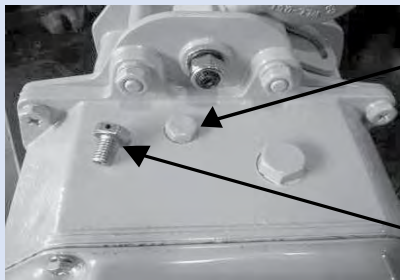
When the temperature of the gear assembly goes up with continued operation, the "BOLT with Vent Hole" (Vent Bolt) relieves the pressure in the gear assembly caused by the increase in temperature.

⚠ 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.



"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.

"AFTER installation"

With Vent Bolt

4.2.3. Installation of Chain Container to hoist body

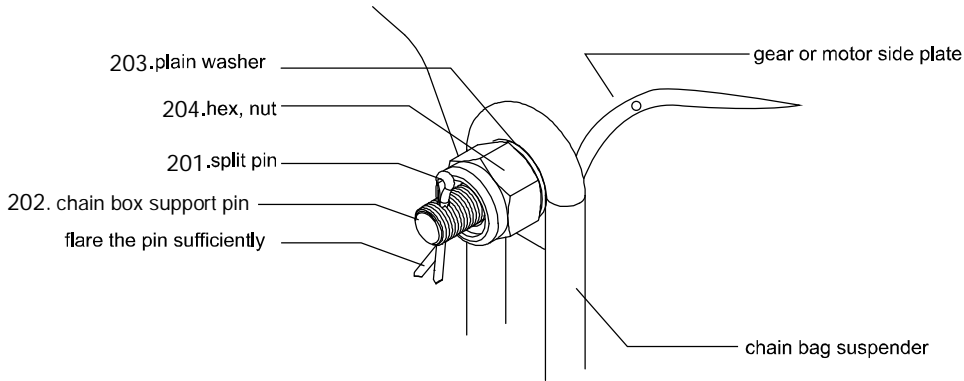
Lifting height below or equal to 26ft(2ton 2chain fall hoist lifting height below 13ft)

- 1) Place chain box hanger spring on staybolt (CH39)
- 2) Use the chain box hanger pin (CH134) to fix the chain box on gear and motor side plate hole.

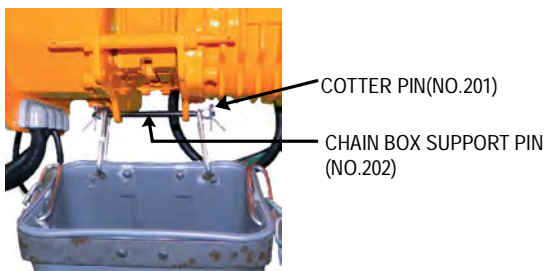


Lifting height over 26ft(2ton 2chain fall hoist lifting height over 13ft)

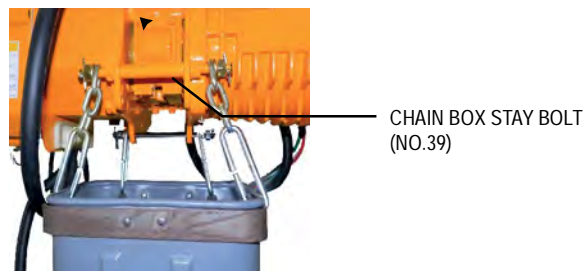
- 1) Insert the load chain into the chain container.
- 2) Place the container support chain on "CH202 Chain box support pin" of Chain Container to secure the container.
- 3) Insert "CH202. chain box support pin" and lock both ends with "CH201. cotter pin"



- 4) Line up chains strait so as not to be twisted.
- 5) Place the remaining container support chain on the CH39 Chain box stay bolt



[2-1]



[2-2]

* **Chain container (chain box)**

⚠ WARNING

Do not attempt to store more quantity of chain in chain container than that specified in the table. When containing more than the maximum specified quantity, it may result in serious damage to hoist and hazardous conditions to the operator and nearby people or goods. For the hoist with double chain-falls, the chain container should be installed with the unloaded load chain projecting by about 20 inch (50cm). When the chain container is pushed to the sides by the loads, the load chain may gush out or may not smoothly go through the chain hoist body, posing a danger.

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.

Maximum Chain-Lift-Length, according to each Chain Container

Longer lifts affect the chain container size. When exceeding the maximum lift specified for a Chain Container, it is strictly prohibited to operate the hoist. For a larger size chain container for longer lifts, please contact the factory or authorized dealer for the Steel Chain Container

Applied Load Chain : (Dia.xPitch)		0.280" x 0.827" (7.1mm x 21.0mm)		REMARK
Capacity (chain-fall reeving)		1ton (1fall)	2ton (2fall)	
Plastic chain container	PCCT	≤26ft lift	13ft lift	
	PCCA	≤52ft lift	≤26ft lift	
	PCCB	≤130ft lift	≤65ft lift	
Steel chain container	SCC	130ft lift <	65ft lift <	Order made

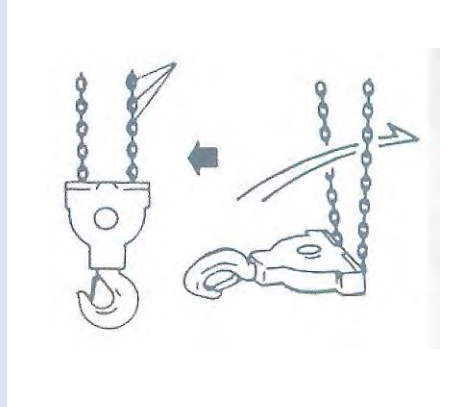
⚠ WARNING

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 people 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.

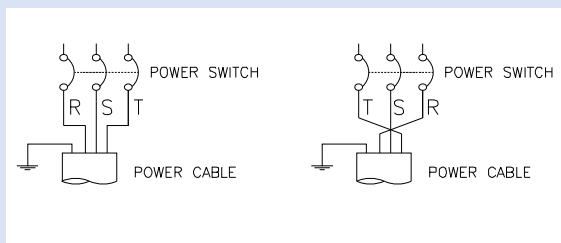
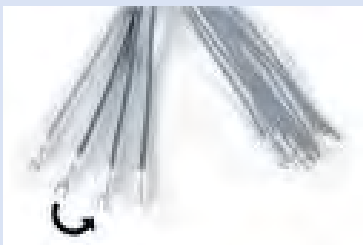


4.2.6. Incorrect Phase Checking (by exchanging One of Three Black lines)

After installation, the operator shall check UP/DOWN motions by pressing the Push Button Pendant Switch. If hoist does not operate in the proper UP/DOWN direction, it indicates incorrect phasing of input power supply lines.

NOTICE

Before operation under load, operator shall check hoist operation with push button control. If the hoist operates in the opposite direction of the push button control, phasing of the input power supply line is incorrect. In this case, reverse TWO of the THREE power supply phase lines as illustrated.

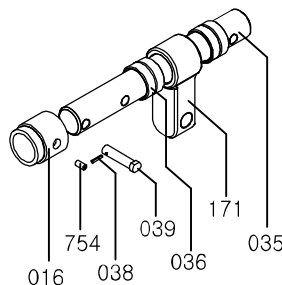


4.3. Installation of the Motorized Trolley Mounted Series

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

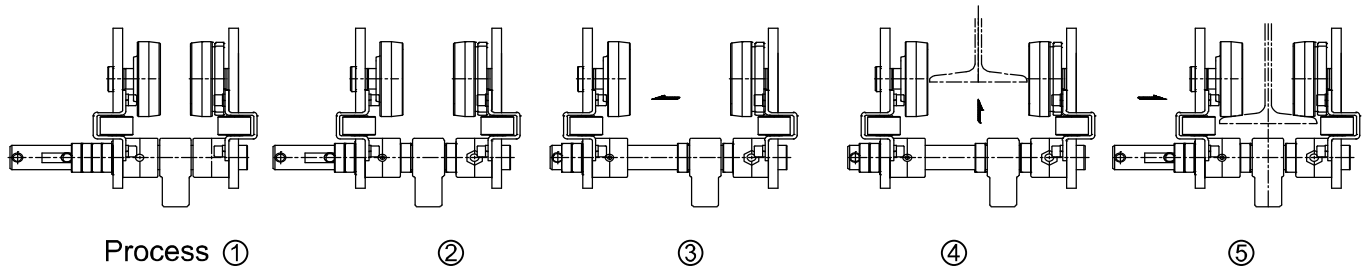
For Trolley, there are THREE types: Motorized trolley, Plain trolley, Geared trolley
 First, check the difference between beam flange width and guide roller spacing.

*** Parts to adjust I-Beam Width**



- MT016. Bracket A
- MT035. Shaft
- MT036A. Adjusting Collar
- MT036B. Adjusting Washer
- MT038. Setting Pin
- MT039. Stopper Pin
- MT171. Connector
- MT754. Setting Screw

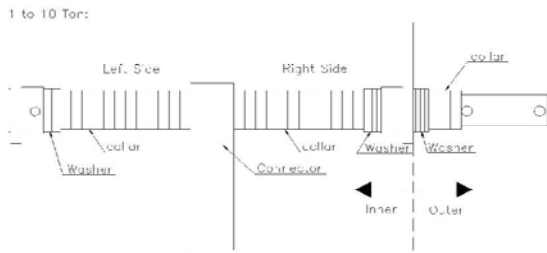
*** How to set up the I-Beam Width of Motorized Trolley**



Motorized trolley can be used on I-beams different in width only by inserting adjusting collars (0 pcs to 6 pcs.)

- ① Pull out both "MT039. Stopper Pin" and "MT036. Adjusting Collar"
- ② Widen TROLLEY up to the maximum width by pulling out "MT035. Shaft"
- ③ In accordance with the following I-Beam width instruction, please Insert the applied number of collars and washers at the right end and push the trolley to the direction of arrow mark.
- ④ Insert TROLLEY on I-Beam.
- ⑤ Locate "MT171. Connector" on the center and line up "MT036. Adjusting Collar" by setting the same number of collars and washers at both ends.

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



Each collar width per pcs: 0.492 inch (12.5mm)
 Each washer width per pcs: 0.118 inch (3mm)

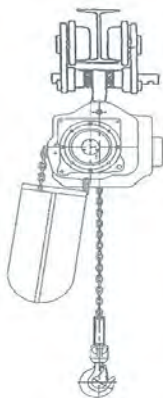
Beam Flange Width		(in)	3 ¹ / ₄	4	5	6	7	8	9	10	11	12
Cap. (Ton)	Spacer Type	(mm)	85	102	127	153	178	203	229	254	279	305
1	Washer	Inner	4	2	2	2	2	2	2	2	2	10
		Outer	6	8	8	8	8	8	8	8	8	8
	collar	Inner	0	2	4	6	8	10	12	14	16	16
		Outer	16	14	12	10	8	6	4	2	0	0
2	Washer	Inner	2	0	0	0	0	0	0	0	0	88
		Outer	6	8	8	8	8	8	8	8	8	8
	collar	Inner	0	2	4	6	8	10	12	14	16	16
		Outer	16	14	12	10	8	6	4	2	0	0
	Washer	Inner	2	0	0	0	0	0	0	0	0	8
		Outer	6	8	8	8	8	8	8	8	8	8

For Beam Flange Widths other than indicated, distribute collars and washers equally on Left Side and Right Side so that total clearance between Beam Flange Width and Trolley Side Guide Rollers is no less than 0.039 inch (1mm) and no more than 0.197 inch (5mm). A difference of one washer between Left Side and Right Side is permissible. No difference in quantity of collars between Left Side and Right Side is permissible.

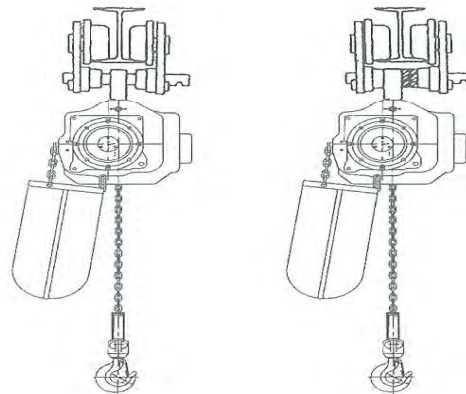
⚠ WARNING

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

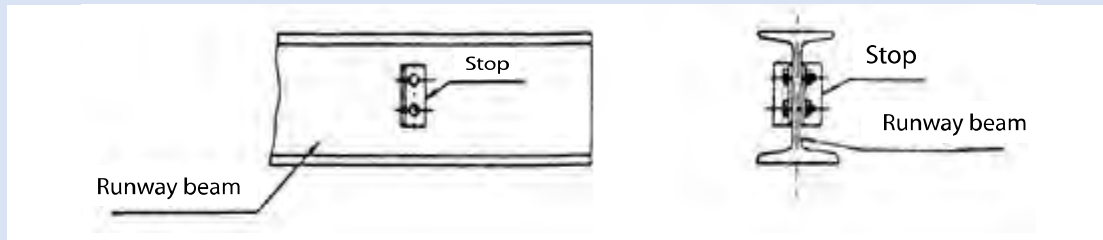


(A) Without collars, the setting of connector become loose and not secure.
 (B) With One-sided setting of collars, it shall result in the un-balanced trolley installation.

⚠ WARNING

(Customer scope for installation)

1. Customer is strongly recommended to install END STOP as this is the customer's responsibility. To prevent possible falling of trolley from the runway beam, the customer shall install END STOP as follows.



2. For trolley limit switches used as a safety device, they shall be installed in parallel with I-beam at both ends to detect the runway limit of the end of trolley travel. Please refer to the figure for proper installation.

4.3.2. How to connect electric power source ("CIS": customer installation scope under customer responsibility)

- ① In parallel with I-beam, install the power cable to optimize the trolley movement.
- ② With each interval of 1.5 meter, the cable wheel shall be installed.
- ③ The minimum allowable curve radius of I-beam differs with each rated load of hoist.

Please refer to the specification of hoist in manual article no. 1.4. Motor Trolley Mounted Series, Single Speed

4.4. Initial start-up

Once these checks have been completed, proceed as follows (be ready to press the emergency stop button at all times)

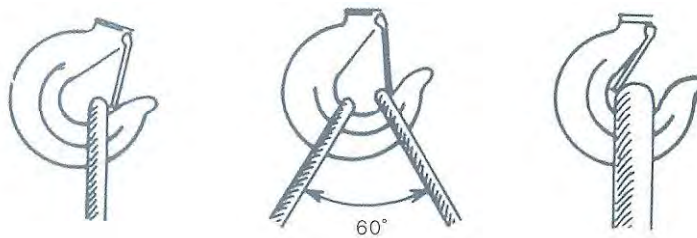
1. Start operating the hoist without a load.
2. Check, when not under load, that the movement of the hook corresponds to the direction of the arrows on the pushbutton station.
3. Check the operation of the hoist limit switch: operate the hoist, without a load, until it reaches the upper and lower hook positions and let the limiter slip briefly.
4. Check the operation of the brake: lift up a nominal load and then lower it.
5. Perform a load test with +10% of the nominal load and static tests with +25% of the nominal load on your installation equipped with our hoist.
6. The hoist which you have just purchased should only be used with a maximum load equal to the hoist's rated load. The length of its useful service life depends on the demands placed upon it, the average operating time, the number of start-stops and proper maintenance.

5. Precautions during operation

⚠ CAUTION

Indicates a potentially hazardous situation, which, if not avoided, MAY result in minor or moderate injury. To avoid such a potentially hazardous situation, THE OPERATOR SHALL

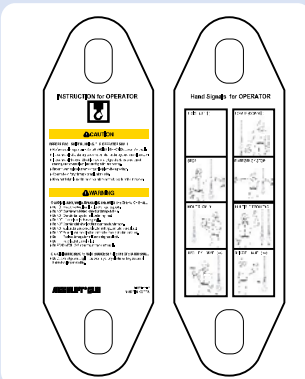
1. Perform a daily inspection according to the instruction manual.
2. Inspect the load chain for any type of deformation or damage and check the load chain lubrication.
3. Visually inspect hooks and hook latches for any type of deformation of throat opening, wear on saddle or load bearing point, and twisting.
4. Report missing or illegible warning labels to the supervisor.
5. Not Operate the hoist if any damage or malfunctions exist.
6. Know hand signals used for hoist operation as per instruction manual.
7. Always notify others when a load transport is about to begin.
8. Always make sure that the supporting structures are strong enough to support the weight of the load and hoist.
9. Maintain firm footing or be otherwise secured when operating the hoist.
10. Check brake function by tensioning the hoist prior to each lift operation.
11. Use hook latches. Latches are to retain slings, chains, etc. under slack conditions only.
12. Place slings balanced on the bottom hook. Avoid "Improper" slinging cases shown below.

"IMPROPER" SLINGING CASES

13. Make sure the hook latches are closed and not supporting any parts of the load.
14. Make sure the load is free to move and will clear all obstructions.
15. Avoid swinging the load or hook.
16. Make sure hook travel is in the same direction as shown on the controls.
17. Inspect the hoist regularly, replace damaged or worn parts, and keep appropriate records of maintenance.
18. Use only manufacturer's recommended parts when repairing the unit.
19. Lubricate load chain per hoist manufacturer's recommendations.
20. NOT use the hoist's overload limiting clutch to measure load.

21. NOT use limit switches as routine operating stops. They are emergency devices only.
22. NOT allow your attention to be diverted from operating the hoist.
23. NOT allow the hoist to be subjected to sharp contact with other hoists, structures, or objects through misuse.
24. NOT adjust or repair the hoist unless qualified to perform such adjustments or repairs.
25. The hoist should be maintained regularly, following the instructions in this manual.
26. Keep the moving components clean and oiled as indicated in this manual.
27. Make sure that the limit switch stops are in place, and that all limit switches are functioning properly...
28. Before operation, check that the load is correctly fastened and installed on the hook.
29. When moving the load, make sure that it is sufficiently raised and distant from the surrounding machines and other objects so as to avoid all obstacles during operation.
30. Make sure that the hoist is vertical to the load before moving it.
31. If manually moving the hoist, push the load.
32. Avoid rocking the load or the hook when using the traveling trolley or crane, by limiting the starting and braking jerks.
33. Use the material under normal working conditions with ambient temperature, atmosphere.
34. Use only for indoor operation of hoist. For outdoor operation, provide adequate protection to ensure a rainproof environment.
35. NOT operate the hoist if any damage or malfunctions exist; and SHALL report any damage or malfunctions to the supervisor.
36. NOT operate the hoist if tagged-out.
37. NOT lift, lower, or transport personnel by means of the hoist, hoist trolley, hoist hook, or load.

NOTICE



Always read and follow the INSTRUCTION for OPERATOR, which contains the main CAUTION and WARNING instructions.

It shall be assembled onto the Push Button Switch Control regardless of working conditions.

For safer hoisting operation, please refer to the Hand Signals for OPERATOR on the backside.

Part number is 71574-1275.

Replace if lost or illegible.

6. Maintenance and servicing

6.1. Electrical connection

⚠ CAUTION

(customer responsible scope for installation)

Before removing the control box cover, check that the hoist power supply is disconnected and locked and tagged.

- * The customer must supply the power supply cable, the fuses and the main disconnect switch (refer to the wiring diagram.)
- * Check that the power supply voltage is correct for the hoist.
- * Check that the voltage does not vary by more than $\pm 10\%$ from the nominal value.
- * Make sure that the main hoist power disconnect switch is de-energized.
- * 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 switches.

NOTICE

(WHEN INSTALLING SINGLE PHASE)

This hoist is wired from the factory for 115-1-60 power supply- See wiring schematic inside enclosure lid for 230-1-60 reconnection instructions.

RECOMMENDED POWER SUPPLY WIRE GAGE (COPPER AWG)

	25FT	50FT	75FT	100FT	150FT	200FT	250FT	300FT
115V	12	10	8	6	6	4	-	-
230V	-	16	14	14	12	10	10	8

6.3. Chain stopper in the chain container.



The chain stopper for slack fall stop is a safety component, not a functional one. Make sure that the stop is correctly fitted. The chain stopper of non-loaded side must be fixed 6inch (15cm) from the load chain end as shown in the left figure.



At the time of product installation, check chain stopper bolts for tightness. Check chain stopper monthly and tighten socket bolts if required.

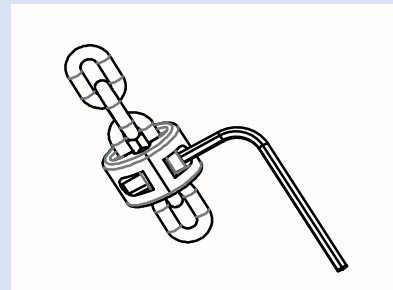
Securely fix using the wrench.

6.4. Chain stopper rubber bumper

⚠ WARNING

Replace and fix the chain stopper and rubber bumper if any of the below problems occur

- Damage of chain stopper on load or non-load side
- Socket bolts are loosened on load or non-load side
- Damage of rubber bumper on load or non-load side



Securely fix using the wrench.

Upper chain stopper is a device which shuts down the hoisting operation when the rubber bumper contact the limit switch in the maximum upper position. Lower chain stopper (non-loaded side of chain) must be fixed approximately 6" (15cm) from the end of the load chain as shown in the photo above. During installation, securely tighten the chain stopper. Check the tightness of the chain stopper bolts monthly and tighten as required.

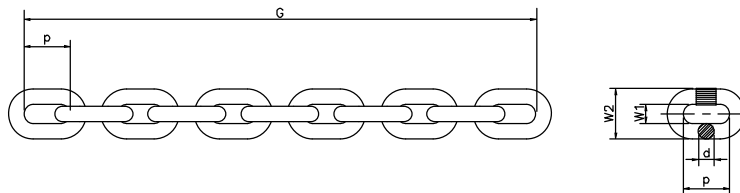
6.5. Load chain

⚠WARNING

Check if the chain is twisted or not.
 Never try to use the hoist when the load chains are entangled.
 Pull the bottom hook to the normal vertical position before use.
 Never use the lifting chain as a sling.
 Never twist the lifting chain.
 Do not bundle the chain into the chain bucket.
 Always keep the chain clean and oiled and check that it is in good condition every day.
 Only a genuine, manufacturer's chain may be used.

*** Specification of Load Chain**

Load chain: diameter x pitch		0.28" x 0.827" (7.1mm x 21.0mm)
Class, Grade		DAT, HE G80 RS
Surface hardness		520-620 HV10(494-589 BHN)
Manuf. test force min.	KN	39.60
Breaking force min.	KN	63.50
Stress at breaking force	N/mm2	800
Breaking elongation min.	%	10
Working load Limit, 1 fall		2204lbs(1000kgs)
Weight per Meter		2.4lbs(1.11kgs)
Dimension (mm)	d	0.280" (7.1mm)
	p	0.827" (21.0mm)
	W1	0.331" (8.4mm)
	W2	0.929" (23.6mm)



6.5.1. Measurement of Wear and Replacement of Load Chain

Dimension of load chain: Dia. x Pitch	0.28" x 0.827" (7.1mm x 21.0mm)
Minimum link diameter allowed (d):	0.267" (6.8mm)
Maximum pitch allowed (p):	0.850" (21.6mm)
Maximum Gage Length allowed (G): (11links pitch measurement)	9.350" (237.5mm)

NOTES: For link diameter, when the wear has increased by more than 5% For pitch, when the wear has increased by more than 3%

Check the load chain for deformation or cracks. In this case, the wear on the chain guide and chain sheave should also be checked and they should be replaced if necessary. If a single link is defective in any way whatsoever, the chain must be replaced. If these limits are exceeded, the chain must be replaced immediately. The gage dimension to be checked shall be measured over 11 links from inside end of link to inside end of link (as shown in figure on previous page).

To remove the chain for 1-fall chain:

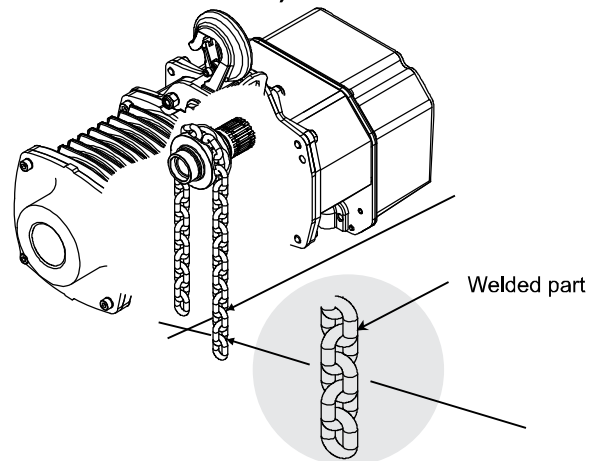
- a. Remove the load from the hook.
- b. Disassemble the hook block.
- c. Lower the chain into the chain container.
- d. Remove the chain container and unscrew and remove the lower chain guide.

To remove the chain for 2-fall chain:

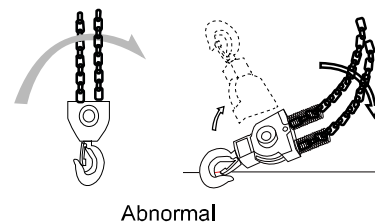
- a. Raise the hook block to about 20 inches (50cm) from the hoist body.
- b. Remove the chain bucket.
- c. Disassemble the fixed point of the chain.
- d. Let the rest of the chain slide through the chain sheave.

6.5.2. Checking chain alignment (the welded part outward from the center)

* Before installation, the welded part position should be checked for safe operation. With the welded part of chain links outward from load sheave or hoist center, the load chain should be aligned before installation. If not aligned correctly outward, it can cause a hazardous condition.

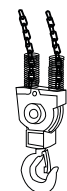


* For the safe operation of load chain, make sure that the bottom hook assembly is not upside down or capsized. In this case, the operator shall restore the chain to normal and make sure the welds on the chain links are in alignment. DO NOT use the hoist with twisted chain. For "Abnormal" case, please turn the bottom hook assembly between the chains to align the load chain.



Abnormal

* For the inspection of idler sheave of bottom hook assembly, turn idler sheave by lifting the load chain up and down as per the figure.

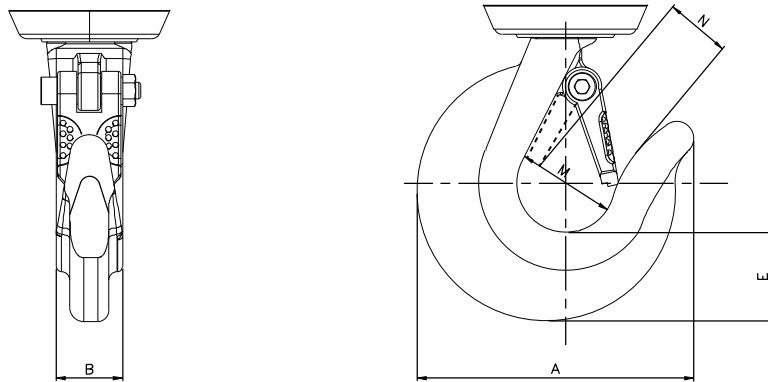


Normal

6.6. Hook

6.6.1. Measurement of wear on the hook (inch)

Capacity	Standard Hook Dimension					For Maintenance (Replacement required)	
	A	B	E	M	N	*Maximum Throat Opening = $N \times 105\%$	Minimum Depth = $E \times 90\%$
1ton(0.5t)	3.780	0.945	1.240	1.378	0.925	0.972	1.116
2ton	5.669	1.181	1.693	2.106	1.535	1.612	1.524



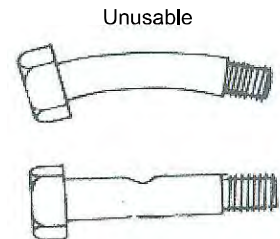
Check hooks for deformation or cracks. Hooks must be replaced if throat opening has increased by more than 5%, or throat opening has any twist from plane of straight hook, or if depth at load bearing point has worn more than 10% of original section dimension(E).

For the wear on the top hook and the load bottom hook, it shall be checked regularly. Measure the throat opening. if the throat opening exceeds the maximum opening allowed, replace the hook. Damaged safety latches shall be replaced immediately. Measure the section dimension E. If this measurement is less than the minimum allowed, replace the hook.

6.6.2. Chain fixing pin on hook

For the double chain-falls, the bottom hook assembly is fastened together with Chain Fixing Pin.

If any deformation is detected, it shall be replaced. Otherwise, the load chain and the hook assembly can fall.



Pin that is bent or pressed is to be replaced.

6.7. Load Sheave and Chain Guide

Load Sheave ensures perfect positioning of the chain with 5 pockets for distribution of the load. Load chain is to be geometrically lined up in accordance with the chain guide and load sheave. Chain guide assures proper engagement of the chain on the load sheave and minimize load chain wear.



6.8. Brake Operation

Please check the slip of chain with load and without load. If there is slip, brake is malfunctioning

⚠ WARNING

Before replacing brake lining, make sure electric power is turned off and load on the hook is removed.

⚠ CAUTION

After replacing the brake lining, operate the hoist in the order of without load, with light load and with rated load to check the brake function.

■ Inspection of brake lining

Immediately replace the brake lining if brake disc is :

- * tainted with oil, grease or other foreign material
- * cracked or damaged
- * worn to the "to be replaced" figures => Hoist brake disc less than .079 inch (2mm).

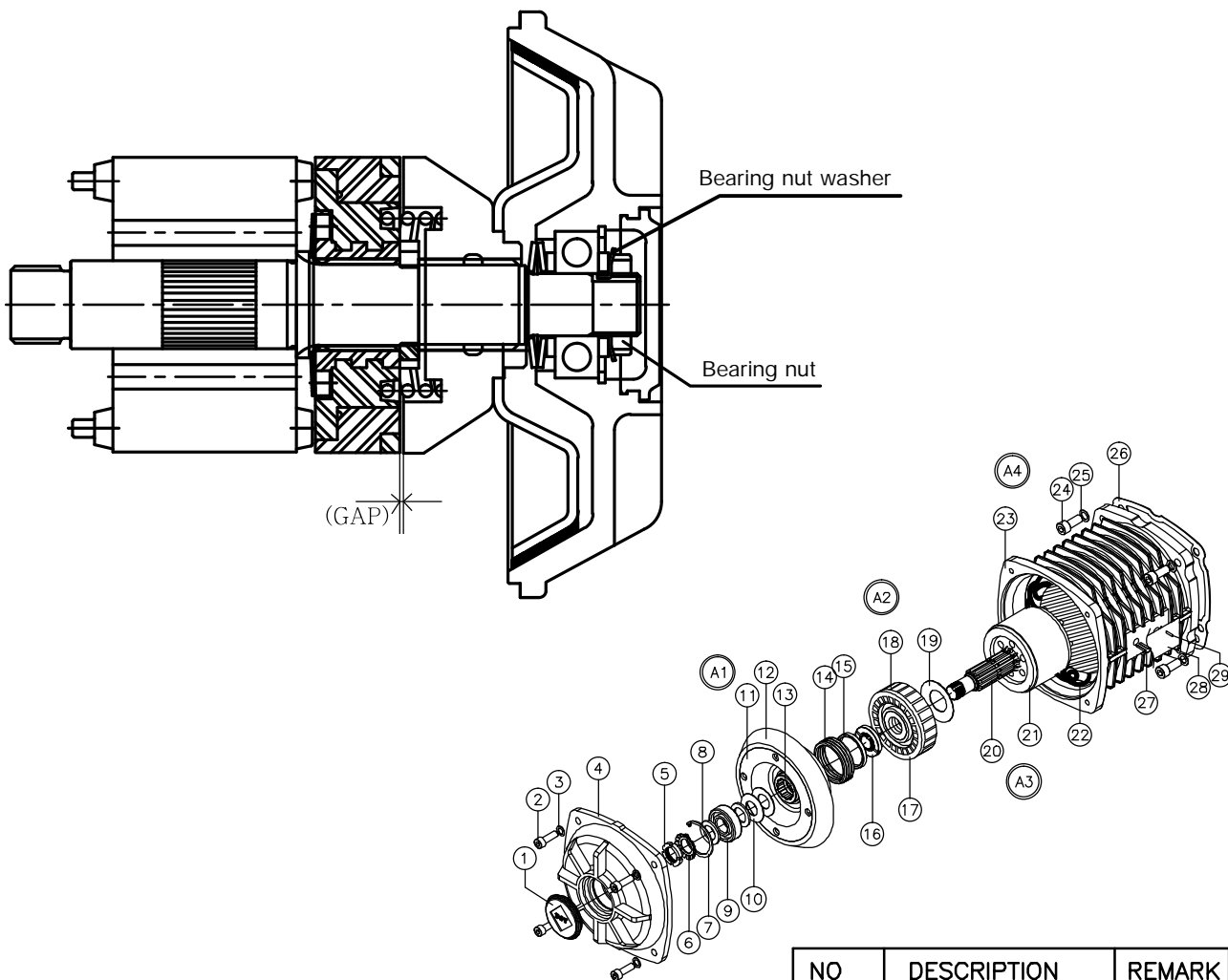
Original dimension of hoist brake disc is .118 inch (3mm).

■ How to adjust brake lining gap

Remove fixed pin from bearing nut washer and rotate the bearing nut to adjust the brake lining gap. Proper gap is .039inch(1mm). Check the reference picture. Rotating the bearing nut clockwise will reduce the gap and will increase the gap when rotated counter clockwise.

■ Procedure of replacing brake lining

Please refer to attached parts spread view. Loosen the wrench bolt (2) and remove the rotor and brake part. Loosen the bearing nut and disassemble A1 brake disc, A2 pull rotor assembly, and A3 rotor assembly. Replace A1 brake disc, assemble with A2 pull rotor assembly and adjust the gap between two parts to .039 inch (1mm). Lubricate the brake disc's inside spline for smooth operation of brake disc. Make sure to check the brake disc operation after replacing.



NO	DESCRIPTION	REMARK
A1	BRAKE DISC ASS'Y	11,12,13
A2	PULL ROTOR ASS'Y	17,18
A3	ROTOR ASS'Y	20,21
A4	MOTOR ASS'Y	22,23

6.9. Motor

Heavy-duty Motor with Overheat Thermal Sensor

High torque and heavy duty hoist motor with insulation class "B". Frequent operation is efficient with 30min. rating (20 min. for single phase motor). With the built-in thermal sensor, it automatically stops the operation to cool down when the motor internal temperature exceeds 120°C.

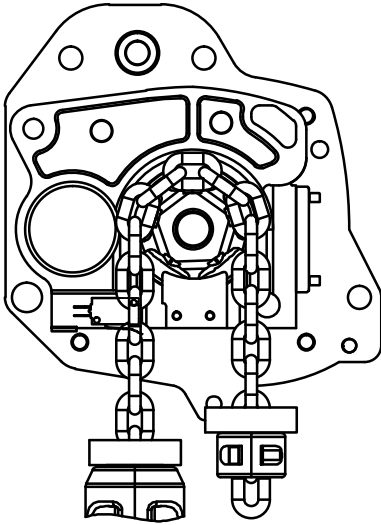


Type of motor enclosure: TENV

6.9.1. Motor rating of Hoist

Phase	ACCO NUMBER	TON	Load Chain Dai (inch)*(Chain Fall)	Lifting Speed (fpm/min)	CONTROL	Output(HP)&Poles	AMP DRAW(V=A)
Three	2230010-VFD-230	1/2T	0.28 X 1	17/6FPM	INVERTER	2.0x6P	208=7.4, 230.=7.7
	2230020-VFD-230	1T	0.28 X 1	17/6FPM		2.0x6P	208=7.4, 230=7.7
	2230040-VFD-230	2T	0.28 X 2	9/3FPM		2.0x6P	208=7.4, 230=7.7
	2230010-VFD-460	1/2T	0.28 X 1	17/6FPM	INVERTER	2.0x6P	460=3.3
	2230020-VFD-460	1T	0.28 X 1	17/6FPM		2.0x6P	460=3.3
	2230040-VFD-460	2T	0.28 X 2	9/3FPM		2.0x6P	460=3.3
	2230010	1/2T	0.28 X 1	17FPM	CONTACTOR	2.0x6P	208=7.9, 230=9.2, 460=3.9
	2230020	1T	0.28 X 1	17FPM		2.0x6P	208=7.9, 230=9.2, 460=3.9
	2230040	2T	0.28 X 2	9FPM		2.0x6P	208=7.9, 230=9.2, 460=3.9
Single	2330010	1/2T	0.28 X 1	14FPM	CONTACTOR	1.1x4P	115=24.0, 230=11.8
	2330020	1T	0.28 X 1	14FPM		1.1x4P	115=24.0, 230=11.8
	2330040	2T	0.28 X 2	7FPM		1.1x4P	115=24.0, 230=11.8
	2330010-VFD-230-1	1/2T	0.28 X 1	17/6FPM	INVERTER	2.0x6P	230=8.0
	2330020-VFD-230-1	1T	0.28 X 1	17/6FPM		2.0x6P	230=8.0
	2330040-VFD-230-1	2T	0.28 X 2	9/3FPM		2.0x6P	230=8.0

6.10. OVERWINDING & OVERLOAD LIMITER



- When the hoist reaches the upper limit position (high hook), the chain stopper will engage the upper limit switch, shutting down the lifting motion. The hoist will still be able to lower once this limit switch is activated.
- Friction Clutch-If abnormal operation or slippage occurs do NOT attempt to disassemble or adjust the Friction Clutch. Replace the worn or malfunctioning Friction Clutch assembly with a new, factory adjusted part.



MODEL NO. 2330010,2330020,2330040



MODEL NO. 2230010,2230020,2230040
2230010VFD,2230020VFD,2230040VFD
2330010VFD,2330020VFD,2330040VFD

6.11. Push Button Pendant Switch

Rain-proof, IP64 protection, with 2,4 or 6 buttons, All models are equipped with Emergency Stop function.

Easy to operate and designed with 110 VAC control voltage. It is compact to enable easy one-handed sure grip control. The push button cable is provided with built-in strain relief to help prevent cable damage.



7. Preventive maintenance

7.1. Recommended Periodic Maintenance and Inspection Table

Check	Interval	Qualification of the customer s personnel
Brake operation	Daily	Operator
Visual inspection of the chain	Daily	Operator
Suspension of the control box by the steel wire	Daily	Operator
Cleanness and lubrication of the chain	Monthly	Operator
Limiter operation	Monthly	Operator
Measuring of the wear on the chain	Every 3 months	Operator
Measuring of the wear on the hooks	Every 3 months	Operator
Tightening of the hook block screws	Every 3 months	Operator
Checking of the locking plate screws	Every 3 months	Operator
Lubrication of the idler sprocket	Annually	Operator
Checking of the screw tightening torques and checking for signs of corrosion	Annually	Qualified mechanic
Adjustment of the limiter and brake	Annually	Qualified mechanic
Lubrication of the gears	Please refer to page 65 of gear oil section	

7.2. Lubrication

Lubrication point	Possible brands	Quantity & Applied model no.	
Chain	Chain lubricating fluid	As required	
Gears	SHELL OMALA 220 MOBIL MOBILGEAR 630 ESSO SPARTAN EP 220 CALTEX MEROPA 220	0.8 liter	0.5ton(chain-fall reeving 1) 1ton (chain-fall reeving 1) 2ton (chain-fall reeving 2)

7.3. Recommended Technical Support for Various Spare Parts

Spare part	To be replaced by	Qualification of the personnel
Upper chain guide	Authorized manufacturer personnel	Qualified mechanic
Output shaft	Authorized manufacturer personnel	Qualified mechanic
Gearing (1st/2nd stage)	Authorized manufacturer personnel	Qualified mechanic
Other sealing and O-rings	Authorized manufacturer personnel	Qualified mechanic
Electric box	Authorized manufacturer personnel	Qualified electrician
PC-board	Authorized manufacturer personnel	Qualified electrician
brake system	Authorized manufacturer personnel	Qualified electrician
Chain	Customer	Qualified mechanic
Chain container (chain bag)	Customer	Qualified mechanic
Chain stopper	Customer	Qualified mechanic
Suspension hook	Customer	Qualified mechanic
Hook assembly	Customer	Qualified mechanic
Fuses	Customer	Qualified electrician

7.4. Troubleshooting

Problem	Cause	Solution
The chain hoist does not work	The emergency stop button is activated	Deactivate it
	Main switch is off	Turn it on
	Poor contactor of push button	Replace push button control
Hoist motor malfunction	Check power cable, terminal and push button switch contact	Repair or replace
	Noise on motor and over current flow	It is overloaded. Operate hoist within rated capacity
	Noise on motor and over heat	Check fuse, voltage, or connection of 3 phase power
The Travel direction does not correspond to that indicated on the push button	The power supply is incorrectly connected	Change two phases of the power supply
Brake Malfunction	Wear on brake lining	Check and replace brake lining
	Slip	Contact qualified technician
Electric Leakage	Electric flow on hoist body and chain	Check connection to an earth ground Check insulation resistance Check moisture on push button and dry
Abnormal noises while the load is being moved	The chain components are not lubricated	Lubricate the chain components
	Chain is worn	Replace it
	Load sheave or chain guide is worn	Replace the sheave or chain guide
	Idler sheave is worn	Replace it
	A supply phase is missing	Check the connection of the phases

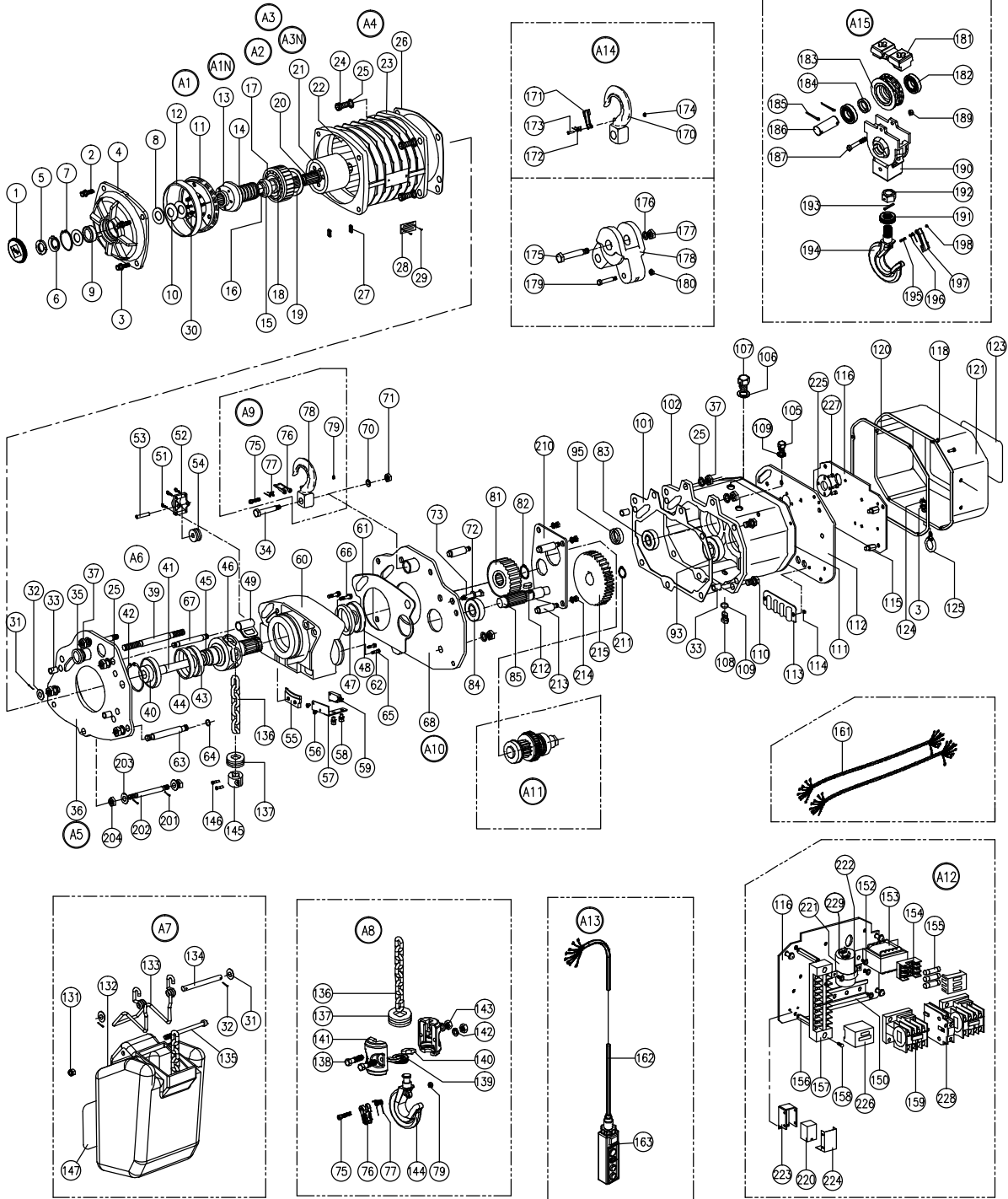
Once the hoist has been used for the FEM class duration, **all** of the components must be checked by an authorized agent or by the manufacturer. The hoist should no longer be used, unless agreement is obtained from the authorized agent or the manufacturer.

For discarding chain hoist, please remove **all** greases and oils from the hoist.

8. Parts illustrations

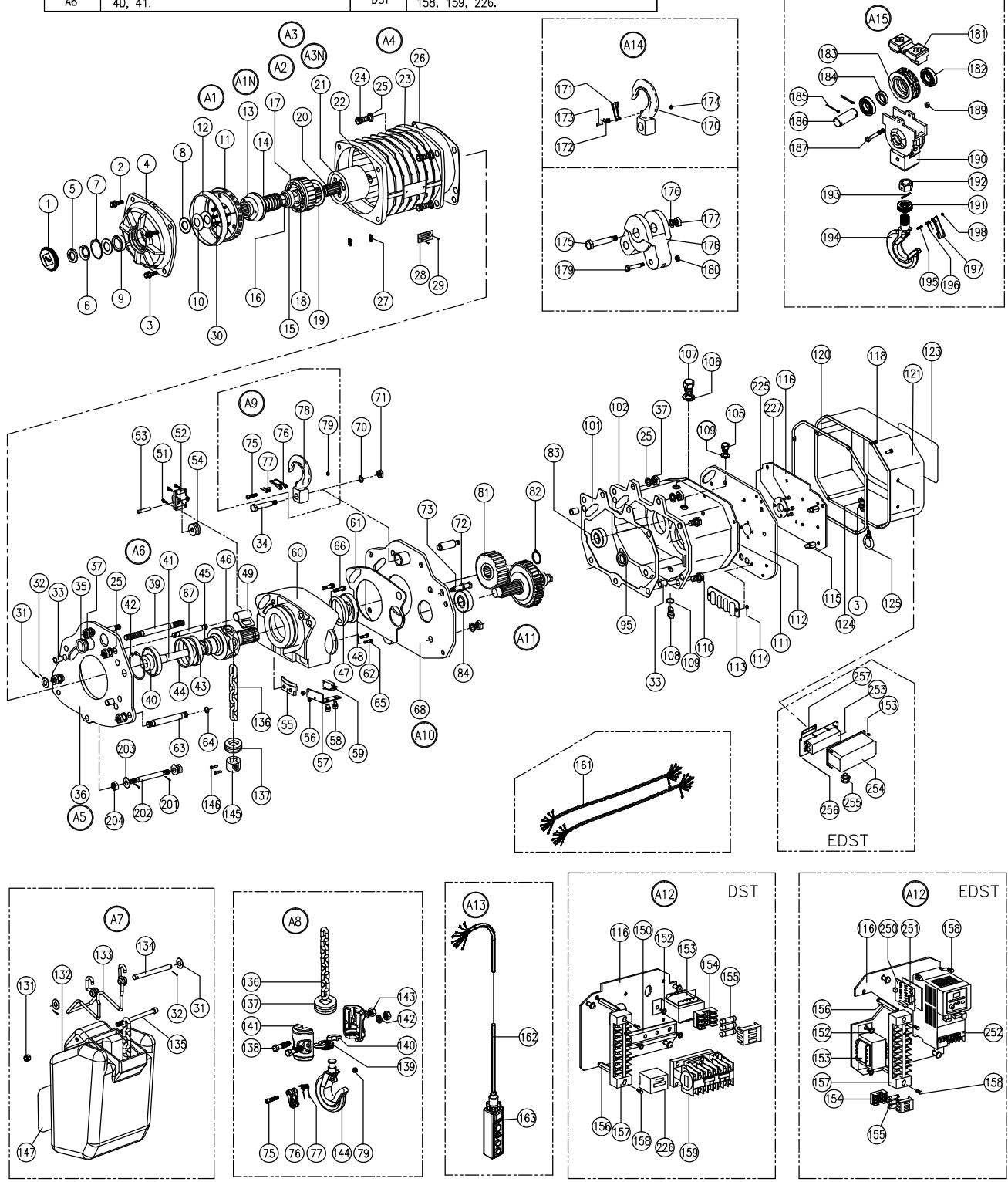
8.1. Exploded View of CH(chain hoist) Parts (2330010,2330020,2330040)

ASS'Y NO	ASSEMBLED PARTS	ASS'Y NO	ASSEMBLED PARTS	ASS'Y NO	ASSEMBLED PARTS
A1	A1N, 13, 30.	A7	31, 32, 131, 132, 133, 134, 135, 147.	A13	162, 163.
A1N	11, 12.	A8	75, 76, 77, 79, 138, 139, 140, 141, 142, 143, 144.	A14	170, 171, 172, 173, 174.
A2	17, 18.	A9	75, 76, 77, 78, 79.	A15	171, 172, 173, 174, 181, 182, 183, 184, 185, 186, 187, 189, 190, 191, 192, 193, 194
A3	A2, 15, 16, 19, A3N	A10	35, 68, 213.		
A3N	20, 21	A11			
A4	22, 23, 27, 28, 29.	A12	116,150,151,153,154,155,156,157,158,159, 220,221,222,223,224,226,228,229.		
A5	35, 36.				
A6	40, 41.				



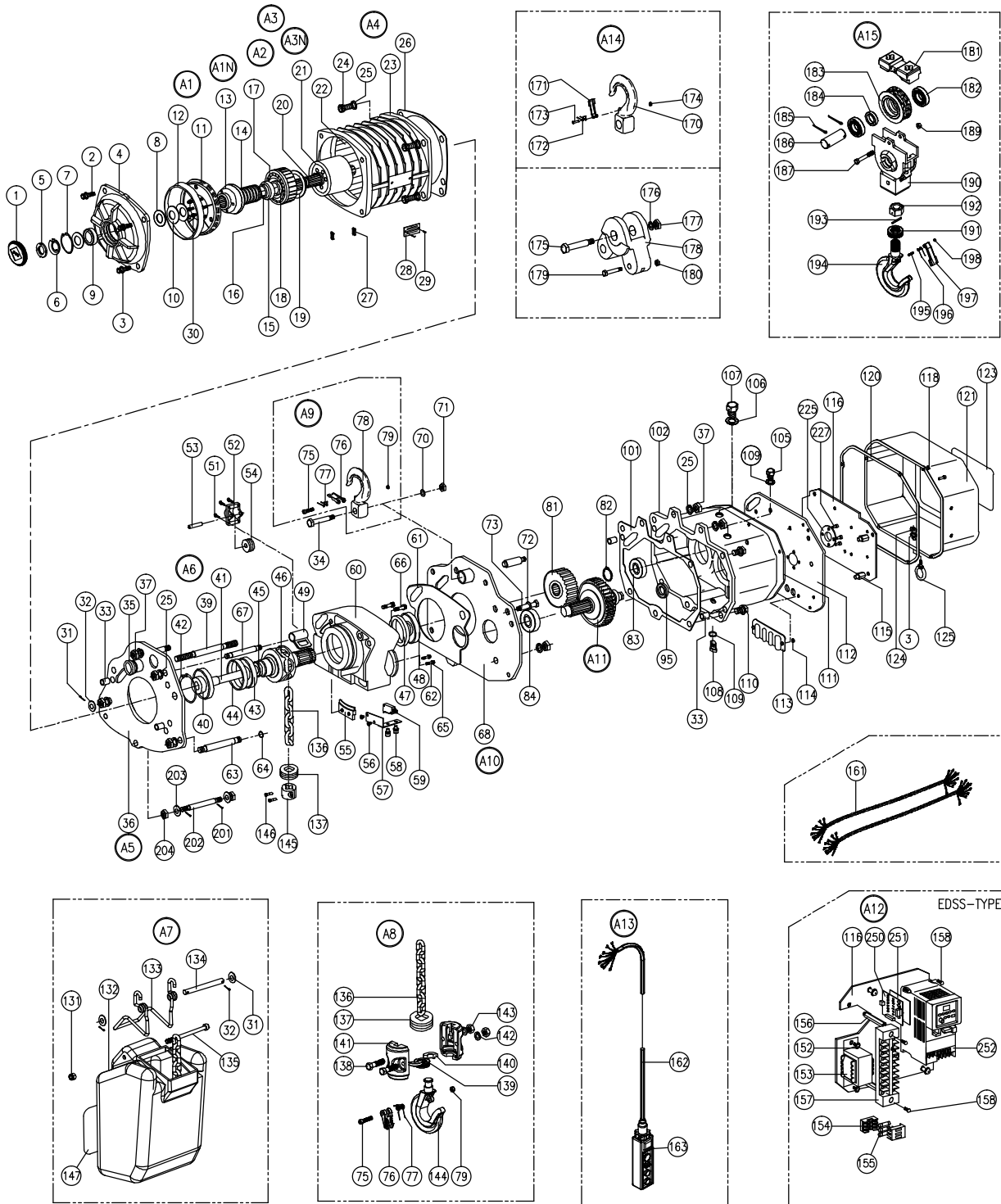
8.2. Exploded View of CH(chain hoist) Parts
 (2230010,2230020,2230040 & 2230010-VFD, 2230020-VFD, 2230040-VFD)

ASS'Y NO	ASSEMBLED PARTS	ASS'Y NO	ASSEMBLED PARTS	ASS'Y NO	ASSEMBLED PARTS
A1	A1N, 13, 30.	A7	31, 32, 131, 132, 133, 134, 135, 147.	A12	116, 152, 153, 154, 155, 156, 157, 158,
A1N	11, 12.	A8	75, 76, 77, 79, 138, 139, 140, 141, 142,	EDST	250, 251, 252.
A2	17, 18.		143, 144.	A13	162, 163.
A3	A2, 15, 16, 19, A3N	A9	75, 76, 77, 78, 79.	A14	170, 171, 172, 173, 174.
A3N	20, 21	A10	35, 68.	A15	171, 172, 173, 174, 181, 182, 183, 184,
A4	22, 23, 27, 28, 29.	A11			185, 186, 187, 189, 190, 191, 192, 193, 194
A5	35, 36.	A12	116, 150, 152, 153, 154, 155, 156, 157,		
A6	40, 41.	DST	158, 159, 226.		



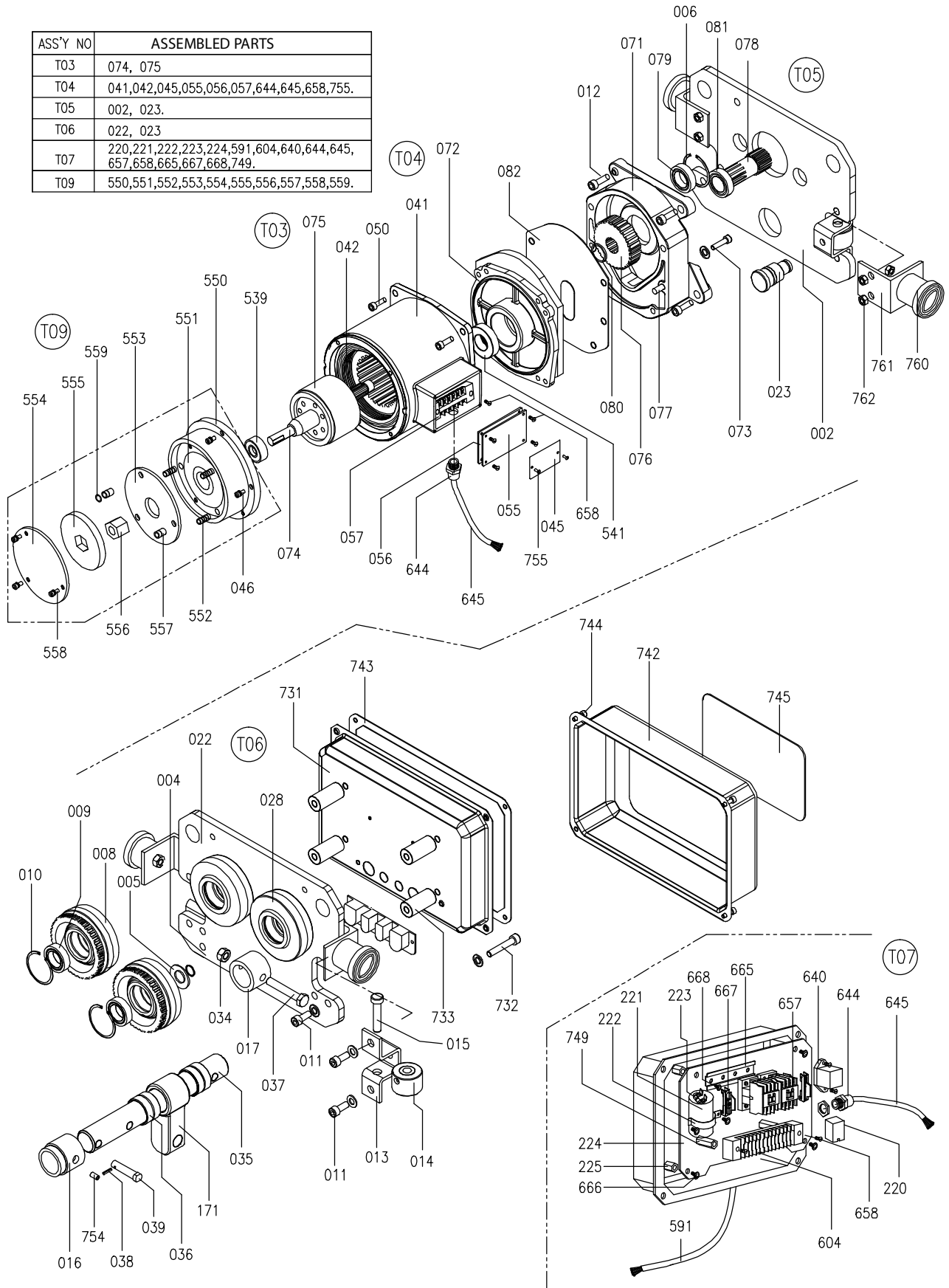
**8.3. Exploded View of CH(chain hoist) Parts
(2330010-VFD, 2330020-VFD, 2330040-VFD)**

ASS'Y NO	ASSEMBLED PARTS	ASS'Y NO	ASSEMBLED PARTS	ASS'Y NO	ASSEMBLED PARTS
A1	A1N, 13, 30.	A7	31, 32, 131, 132, 133, 134, 135, 147.	A13	162, 163.
A1N	11, 12.	A8	75, 76, 77, 79, 138, 139, 140, 141, 142, 143, 144.	A14	170, 171, 172, 173, 174.
A2	17, 18.	A9	75, 76, 77, 78, 79.	A15	171, 172, 173, 174, 181, 182, 183, 184, 185, 186, 187, 189, 190, 191, 192, 193, 194
A3	A2, 15, 16, 19, A3N	A10	35, 68.		
A3N	20, 21	A11			
A4	22, 23, 27, 28, 29.	A12	116, 152, 153, 154, 155, 156, 157, 158, 250, 251, 252.		
A5	35, 36.				
A6	40, 41.				



■ 2330110, 2330120, 2330140 & 2330110-VFD, 2330120-VFD, 2330140-VFD

ASS'Y NO	ASSEMBLED PARTS
T03	074, 075
T04	041,042,045,055,056,057,644,645,658,755.
T05	002, 023.
T06	022, 023
T07	220,221,222,223,224,591,604,640,644,645,657,658,665,667,668,749.
T09	550,551,552,553,554,555,556,557,558,559.



8.5. PART LIST

capacity-chain-falls (how to read out)	0.5Ton	1Ton	2Ton	0.5Ton	1Ton	2Ton	0.5Ton	1Ton	2Ton	0.5Ton	1Ton	2Ton
	1chain-fall	1chain fall	2chain fall	1chain-fall	1chain fall	2chain fall	1chain-fall	1chain fall	2chain fall	1chain-fall	1chain fall	2chain fall
ACCOLIFT MODEL NO (HOOK SUSPENSION)	2230010	2230020	2230040	2230010 VFD	2230020 VFD	2230040 VFD	2330010	2330020	2330040	2330010 VFD	2330020 VFD	2330040 VFD
DESCRIPTION												
CHA1 BRAKE ASS'Y	71964-101											
CHA1N BRAKE DISC ASS'Y	71964-101N											
CHA2 PULL ROTOR ASS'Y	71964-102											
CHA3 FULL ROTOR ASS'Y	71964-103											
CHA3N ROTOR ASS'Y	71964-103N											
CHA4 MOTOR ASS'Y	71964-104			71964-204			71964-304			71964-404		
CHA5 MOTOR SIDE PLATE ASS'Y	71964-105						71964-305			71964-105		
CHA6 1st GEAR ASS'Y	71964-106						71964-306			71964-106		
CHA7 CHAIN BOX ASS'Y	71964-107		71964-207	71964-107		71964-207	71964-107		71964-207	71964-107		71964-207
CHA8 BOTTOM HOOK ASS'Y	71964-108		N/A	71964-108		N/A	71964-108		N/A	71964-108		N/A
CHA9 TOP HOOK ASS'Y	71964-109		N/A	71964-109		N/A	71964-109		N/A	71964-109		N/A
CHA10 GEAR SIDE PLATE ASS'Y	71964-110						71964-310			71964-110		
CHA11 FRICTION CLUTCH	71964-111						71964-311			71964-111		
CHA12 ELECTRIC ASS'Y	71964-112			71964-212			71964-312			71964-412		
CHA13 PUSH BUTTON ASS'Y	71964-113											
CHA14 TOP HOOK ASS'Y-2W	N/A	N/A	71964-214	N/A	N/A	71964-214	N/A	N/A	71964-214	N/A	N/A	71964-214
CHA15 BOTTOM HOOK ASS'Y-(2W)	N/A	N/A	71964-215	N/A	N/A	71964-215	N/A	N/A	71964-215	N/A	N/A	71964-215
CH001 PACKING CAP	71964-1001											
CH002 WRENCH BOLT	71964-1002											
CH003 SPRING WASHER	71964-1003											
CH004 BRAKE COVER	71964-1004											
CH005 LOCK NUT	71964-1005											
CH006 LOCK WASHER	71964-1006											
CH007 SNAP RING	71964-1007											
CH008 PLAIN WASHER	71964-1008											
CH009 BALL BEARING	71964-1009											
CH010 BRAKE SPRING	71964-1010											
CH013 MOVING CORE	71964-1013											
CH014 BRAKE SPRING	71964-1014						71964-3014			71964-1014		
CH015 STOPPER RING	71964-1015											
CH016 SPLIT RING	71964-1016											
CH019 ROTOR SPRING	71964-1019											

capacity-chain-falls (how to read out)	0.5Ton	1Ton	2Ton	0.5Ton	1Ton	2Ton	0.5Ton	1Ton	2Ton	0.5Ton	1Ton	2Ton
	1chain-fall	1chain fall	2chain fall	1chain-fall	1chain fall	2chain fall	1chain-fall	1chain fall	2chain fall	1chain-fall	1chain fall	2chain fall
ACCOLIFT MODEL NO (HOOK SUSPENSION)	2230010	2230020	2230040	2230010 VFD	2230020 VFD	2230040 VFD	2330010	2330020	2330040	2330010 VFD	2330020 VFD	2330040 VFD
DESCRIPTION												
CH022+CH023 STATOR + MOTOR CASE	71964-1022						71964-3022			71964-1022		
CH024 WRENCH BOLT	71964-1024											
CH025 SPRING WASHER	71964-1025											
CH026 PACKING MOTOR CASE	71964-1026											
CH027 SPRING PIN	71964-1027											
CH028 MOTOR NAME PLATE	71964-1028			71964-2028			71964-3028			71964-4028		
CH029 RIVET	71964-1029											
CH030 WRENCH BOLT S/W	71964-1030											
CH031 COTTER PIN	71964-1031											
CH032 PLAIN WASHER	71964-1032											
CH033 SPRING PIN	71964-1033											
CH034 TOP HOOK PIN	71964-1034											
CH035 SUPPORT BOSS	71964-1035											
CH036 MOTOR SIDE PLATE	71964-1036											
CH037 HEX NUT	71964-1037											
CH039 CHAIN BOX STAY BOLT	71964-1039											
CH042 SNAP RING	71964-1042											
CH043 BALL BEARING	71964-1043											
CH044 CHAIN GUIDE COLLAR	71964-1044											
CH045 OIL SEAL	71964-1045											
CH046 LOAD SHEAVE	71964-1046											
CH047 OIL SEAL	71964-1047											
CH048 BALL BEARING	71964-1048											
CH049 HANGER HOLDING METAL	71964-1049											
CH051 HEX WRENCH BOLT	71964-1051											
CH052 ROLLER COVER	71964-1052											
CH053 ROLLER PIN	71964-1053											
CH054 ROLLER	71964-1054											
CH055 STRIPPER	71964-1055											
CH056 TAP SCREW	71964-1056											
CH057 M/S BRACKET	71964-1057											
CH058 MACHINE SCREW S/W	71964-1058											
CH059 LIMIT SWITCH	71964-1059											

capacity-chain-falls (how to read out)		0.5Ton	1Ton	2Ton	0.5Ton	1Ton	2Ton	0.5Ton	1Ton	2Ton	0.5Ton	1Ton	2Ton
		1chain-fall	1chain fall	2chain fall	1chain-fall	1chain fall	2chain fall	1chain-fall	1chain fall	2chain fall	1chain-fall	1chain fall	2chain fall
ACCOLIFT MODEL NO (HOOK SUSPENSION)		2230010	2230020	2230040	2230010 VFD	2230020 VFD	2230040 VFD	2330010	2330020	2330040	2330010 VFD	2330020 VFD	2330040 VFD
DESCRIPTION													
CH060	CHAIN GUIDE	71964-1060											
CH061	PACKING CHAIN GUIDE	71964-1061											
CH062	WRENCH BOLT	71964-1062											
CH063	STAY BOLT A	71964-1063											
CH064	O-RING	71964-1064											
CH065	SPRING WASHER	71964-1065											
CH066	WRENCH BOLT	71964-1066											
CH067	STAY BOLT B	71964-1067											
CH068	GEAR SIDE PLATE	71964-1068					71964-3068			71964-1068			
CH070	SPRING WASHER	71964-1070											
CH071	U-NUT	71964-1071											
CH072	PACKING STOPPER BOLT	71964-1072											
CH073	STOPPER BOLT	71964-1073											
CH075	HEX WRENCH BOLT	71964-1075	N/A	71964-1075	N/A	71964-1075	N/A	71964-1075	N/A	71964-1075	N/A	N/A	N/A
CH076	SAFETY LATCH	71964-1076	N/A	71964-1076	N/A	71964-1076	N/A	71964-1076	N/A	71964-1076	N/A	71964-1076	N/A
CH077	SAFETY LATCH SPRING	71964-1077	N/A	71964-1077	N/A	71964-1077	N/A	71964-1077	N/A	71964-1077	N/A	71964-1077	N/A
CH078	TOP HOOK	71964-1078	N/A	71964-1078	N/A	71964-1078	N/A	71964-1078	N/A	71964-1078	N/A	71964-1078	N/A
CH079	U-NUT	71964-1079	N/A	71964-1079	N/A	71964-1079	N/A	71964-1079	N/A	71964-1079	N/A	71964-1079	N/A
CH081	4th GEAR(6TH)	71964-1081											
CH082	SNAP RING	71964-1082											
CH083	BALL BEARING	71964-1083											
CH084	BALL BEARING	71964-1084											
CH085	3rd GEAR(5TH)	N/A					71964-3085			N/A			
CH093	BALL BEARING	N/A					71964-3093			N/A			
CH095	OIL SEAL	71964-1095					71964-3095			71964-1095			
CH101	PACKING GEAR CASE	71964-1101					71964-3101			71964-1101			
CH102	GEAR CASE	71964-1102					71964-3102			71964-1102			
CH105	AIR HOLE BOLT	71964-1105											
CH106	PACKING AIR BOLT	71964-1106											
CH107	AIR HOLE BOLT	71964-1107											
CH108	HEX BOLT	71964-1108											
CH109	O-RING	71964-1109											

capacity-chain-falls (how to read out)	0.5Ton	1Ton	2Ton	0.5Ton	1Ton	2Ton	0.5Ton	1Ton	2Ton	0.5Ton	1Ton	2Ton
	1chain-fall	1chain fall	2chain fall	1chain-fall	1chain fall	2chain fall	1chain-fall	1chain fall	2chain fall	1chain-fall	1chain fall	2chain fall
ACCOLIFT MODEL NO (HOOK SUSPENSION)	2230010	2230020	2230040	2230010 VFD	2230020 VFD	2230040 VFD	2330010	2330020	2330040	2330010 VFD	2330020 VFD	2330040 VFD
DESCRIPTION												
CH110 HEX BOLT	71964-1110											
CH111 PACKING BOARD	71964-1111						71964-3111			71964-1111		
CH112 COMPONENT BOARD	71964-1112						71964-3112			71964-1112		
CH113 CORD HOLDER ASS'Y	71964-1113											
CH114 HEX NUT	71964-1114											
CH115 HEX STAY PIN	71964-1115											
CH116 ELECTRIC EQUIPMENT BOARD	71964-1116			71964-2116			71964-3116			71964-2116		
CH118 MACHINE SCREW S/W	71964-1118											
CH120 PACKING COMPONENT CASE	71964-1120			71964-2120			71964-1120			71964-2120		
CH121 ELECTRIC COMPONENT CASE	71964-1121			71964-2121			71964-1121			71964-2121		
CH123 NAME PLATE	71964-1123	71964-2123	71964-3123	71964-1123	71964-2123	71964-3123	71964-1123	71964-2123	71964-3123	71964-1123	71964-2123	71964-3123
CH124 NUT	71964-1124											
CH125 EYE BOLT	71964-1125											
CH131 U-NUT	71964-1131											
CH132 CHAIN BOX	71964-1132	71964-2132	71964-1132	71964-2132	71964-1132	71964-2132	71964-1132	71964-2132	71964-1132	71964-2132	71964-1132	71964-2132
CH133 CHAIN BOX HANGER SPRING	71964-1133	N/A	71964-1133	N/A	71964-1133	N/A	71964-1133	N/A	71964-1133	N/A	71964-1133	N/A
CH134 CHAIN BOX HANGER PIN	71964-1134	N/A	71964-1134	N/A	71964-1134	N/A	71964-1134	N/A	71964-1134	N/A	71964-1134	N/A
CH135 CHAIN BOX HANGER BOLT	71964-1135	N/A	71964-1135	N/A	71964-1135	N/A	71964-1135	N/A	71964-1135	N/A	71964-1135	N/A
CH136 LOAD CHAIN	70011-9											
CH137 BUMPER ASS'Y	71964-1137											
CH138 HEX BOLT	71964-1138	N/A	71964-1138	N/A	71964-1138	N/A	71964-1138	N/A	71964-1138	N/A	71964-1138	N/A
CH139 THRUST BEARING	71964-1139	N/A	71964-1139	N/A	71964-1139	N/A	71964-1139	N/A	71964-1139	N/A	71964-1139	N/A
CH140 SPLIT RING	71964-1140	N/A	71964-1140	N/A	71964-1140	N/A	71964-1140	N/A	71964-1140	N/A	71964-1140	N/A
CH141 BOTTOM HOOK COVER	71964-1141	N/A	71964-1141	N/A	71964-1141	N/A	71964-1141	N/A	71964-1141	N/A	71964-1141	N/A
CH142 SPRING WASHER	71964-1142	N/A	71964-1142	N/A	71964-1142	N/A	71964-1142	N/A	71964-1142	N/A	71964-1142	N/A
CH143 HEX NUT	71964-1143	N/A	71964-1143	N/A	71964-1143	N/A	71964-1143	N/A	71964-1143	N/A	71964-1143	N/A
CH144 BOTTOM HOOK	71964-1144	N/A	71964-1144	N/A	71964-1144	N/A	71964-1144	N/A	71964-1144	N/A	71964-1144	N/A
CH145 CHAIN STOPPER	71964-1145											
CH146 WRENCH BOLT	71964-1146											
CH147 CHAIN BOX NAME PLATE	71964-1147	71964-2147	71964-1147	71964-2147	71964-1147	71964-2147	71964-1147	71964-2147	71964-1147	71964-2147	71964-1147	71964-2147
CH150 CHANNEL	71964-1150			N/A			71964-1150			N/A		

capacity-chain-falls (how to read out)		0.5Ton	1Ton	2Ton	0.5Ton	1Ton	2Ton	0.5Ton	1Ton	2Ton	0.5Ton	1Ton	2Ton
		1chain-fall	1chain fall	2chain fall	1chain-fall	1chain fall	2chain fall	1chain-fall	1chain fall	2chain fall	1chain-fall	1chain fall	2chain fall
ACCOLIFT MODEL NO (HOOK SUSPENSION)		2230010	2230020	2230040	2230010 VFD	2230020 VFD	2230040 VFD	2330010	2330020	2330040	2330010 VFD	2330020 VFD	2330040 VFD
DESCRIPTION													
CH152	MACHINE SCREW S/W P/W	71964-1152											
CH153	TRANSFORMER	71964-1153					71964-3153			71964-1153			
CH154	FUSE HOLDER	71964-1154											
CH155	FUSE	71964-1155											
CH156	HEX STAY PIN	71964-1156			71964-2156			71964-1156			71964-2156		
CH157	TERMINAL BLOCK	71964-1157											
CH158	MACHINE SCREW S/W	71964-1158											
CH159	MAGNETIC CONTACTOR	71964-1159			N/A			71964-3159			N/A		
CH161	POWER CABLE ASS'Y	71964-1161											
CH162	PUSH BUTTON CABLE	71964-1162											
CH163	PUSH BUTTON	71964-1163			71964-2163			71964-1163			71964-2163		
CH170	TOP HOOK	N/A	N/A	71964-2170	N/A	N/A	71964-2170	N/A	N/A	71964-2170	N/A	N/A	71964-2170
CH171	SAFETY LATCH	N/A	N/A	71964-2171	N/A	N/A	71964-2171	N/A	N/A	71964-2171	N/A	N/A	71964-2171
CH172	SAFETY LATCH SPRING	N/A	N/A	71964-2172	N/A	N/A	71964-2172	N/A	N/A	71964-2172	N/A	N/A	71964-2172
CH173	HEX WRENCH BOLT	N/A	N/A	71964-2173	N/A	N/A	71964-2173	N/A	N/A	71964-2173	N/A	N/A	71964-2173
CH174	U-NUT	N/A	N/A	71964-2174	N/A	N/A	71964-2174	N/A	N/A	71964-2174	N/A	N/A	71964-2174
CH175	CONNECTING BOLT	N/A	N/A	71964-2175	N/A	N/A	71964-2175	N/A	N/A	71964-2175	N/A	N/A	71964-2175
CH176	PLAIN WASHER	N/A	N/A	71964-2176	N/A	N/A	71964-2176	N/A	N/A	71964-2176	N/A	N/A	71964-2176
CH177	U-NUT	N/A	N/A	71964-2177	N/A	N/A	71964-2177	N/A	N/A	71964-2177	N/A	N/A	71964-2177
CH178	ARM	N/A	N/A	71964-2178	N/A	N/A	71964-2178	N/A	N/A	71964-2178	N/A	N/A	71964-2178
CH179	HEX BOLT	N/A	N/A	71964-2179	N/A	N/A	71964-2179	N/A	N/A	71964-2179	N/A	N/A	71964-2179
CH180	U-NUT	N/A	N/A	71964-2180	N/A	N/A	71964-2180	N/A	N/A	71964-2180	N/A	N/A	71964-2180
CH181	BOTTOM HOOK CHAIN GUIDE	N/A	N/A	71964-2181	N/A	N/A	71964-2181	N/A	N/A	71964-2181	N/A	N/A	71964-2181
CH182	ROLLER BEARING	N/A	N/A	71964-2182	N/A	N/A	71964-2182	N/A	N/A	71964-2182	N/A	N/A	71964-2182
CH183	IDLE SHEAVE	N/A	N/A	71964-2183	N/A	N/A	71964-2183	N/A	N/A	71964-2183	N/A	N/A	71964-2183
CH184	IDLE SHEAVE COLLAR	N/A	N/A	71964-2184	N/A	N/A	71964-2184	N/A	N/A	71964-2184	N/A	N/A	71964-2184
CH185	COTTER PIN	N/A	N/A	71964-2185	N/A	N/A	71964-2185	N/A	N/A	71964-2185	N/A	N/A	71964-2185
CH186	IDLE SHEAVE PIN	N/A	N/A	71964-2186	N/A	N/A	71964-2186	N/A	N/A	71964-2186	N/A	N/A	71964-2186
CH187	HEX BOLT	N/A	N/A	71964-2187	N/A	N/A	71964-2187	N/A	N/A	71964-2187	N/A	N/A	71964-2187
CH189	HEX NUT	N/A	N/A	71964-2189	N/A	N/A	71964-2189	N/A	N/A	71964-2189	N/A	N/A	71964-2189
CH190	BOTTOM HOOK COVER	N/A	N/A	71964-2190	N/A	N/A	71964-2190	N/A	N/A	71964-2190	N/A	N/A	71964-2190
CH191	THRUST BEARING	N/A	N/A	71964-2191	N/A	N/A	71964-2191	N/A	N/A	71964-2191	N/A	N/A	71964-2191

capacity-chain-falls (how to read out)		0.5Ton	1Ton	2Ton	0.5Ton	1Ton	2Ton	0.5Ton	1Ton	2Ton	0.5Ton	1Ton	2Ton
		1chain-fall	1chain fall	2chain fall	1chain-fall	1chain fall	2chain fall	1chain-fall	1chain fall	2chain fall	1chain-fall	1chain fall	2chain fall
ACCOLIFT MODEL NO (HOOK SUSPENSION)		2230010	2230020	2230040	2230010 VFD	2230020 VFD	2230040 VFD	2330010	2330020	2330040	2330010 VFD	2330020 VFD	2330040 VFD
DESCRIPTION													
CH192	BOTTOM HOOK NUT	N/A	N/A	71964-2192	N/A	N/A	71964-2192	N/A	N/A	71964-2192	N/A	N/A	71964-2192
CH193	SPRING PIN	N/A	N/A	71964-2193	N/A	N/A	71964-2193	N/A	N/A	71964-2193	N/A	N/A	71964-2193
CH194	BOTTOM HOOK	N/A	N/A	71964-2194	N/A	N/A	71964-2194	N/A	N/A	71964-2194	N/A	N/A	71964-2194
CH195	HEX WRENCH BOLT	N/A	N/A	71964-2195	N/A	N/A	71964-2195	N/A	N/A	71964-2195	N/A	N/A	71964-2195
CH196	SAFETY LATCH SPRING	N/A	N/A	71964-2196	N/A	N/A	71964-2196	N/A	N/A	71964-2196	N/A	N/A	71964-2196
CH197	SAFETY LATCH	N/A	N/A	71964-2197	N/A	N/A	71964-2197	N/A	N/A	71964-2197	N/A	N/A	71964-2197
CH198	U-NUT	N/A	N/A	71964-2198	N/A	N/A	71964-2198	N/A	N/A	71964-2198	N/A	N/A	71964-2198
CH201	COTTER PIN	N/A	N/A	71964-2201	N/A	N/A	71964-2201	N/A	N/A	71964-2201	N/A	N/A	71964-2201
CH202	CHAIN BOX SUPPORT PIN	N/A	N/A	71964-2202	N/A	N/A	71964-2202	N/A	N/A	71964-2202	N/A	N/A	71964-2202
CH203	PLAIN WASHER	N/A	N/A	71964-2203	N/A	N/A	71964-2203	N/A	N/A	71964-2203	N/A	N/A	71964-2203
CH204	HEX NUT	N/A	N/A	71964-2204	N/A	N/A	71964-2204	N/A	N/A	71964-2204	N/A	N/A	71964-2204
CH210	CENTER PLATE	NA			71964-3210			NA					
CH211	SNAP RING	NA			71964-3211			NA					
CH212	KEY	NA			71964-3212			NA					
CH213	STAY BOLT	NA			71964-3213			NA					
CH214	U NUT	NA			71964-3214			NA					
CH215	4TH GEAR	NA			71964-3215			NA					
CH220	START SWITCH	NA			71964-3220			NA					
CH221	CAPACITOR	NA			71964-3221			NA					
CH222	SADDLE	NA			71964-3222			NA					
CH223	START SWITCH HOUSING	NA			71964-3223			NA					
CH224	START SWITCH COVER	NA			71964-3224			NA					
CH225	BEARING COVER	71964-1225											
CH226	HOUR/COUNT METER	71964-1226		NA			71964-1226		NA				
CH227	MACHINE SCREW S/W	71964-1227											
CH228	INTERLOCK UNIT	NA		NA			71964-3228		NA				
CH229	RECHARGE RESISTOR	NA		NA			71964-3229		NA				
CH250	INTERFACE	NA		71964-2250			NA		71964-2250				
CH251	INTERFACE BOARD	NA		71964-2251			NA		71964-2251				
CH252	INVERTER	NA		71964-2252(230V) 71964-3252(460V)			NA		71964-4252				
CH253	BRAKING RESISTOR	NA		71964-2253			NA		NA				
CH254	COVER	NA		71964-2254			NA		NA				
CH255	CABLE LOCKER	NA		71964-2255			NA		NA				
CH256	BASE PLATE	NA		71964-2256			NA		NA				
CH257	BRACKET	NA		71964-2257			NA		NA				

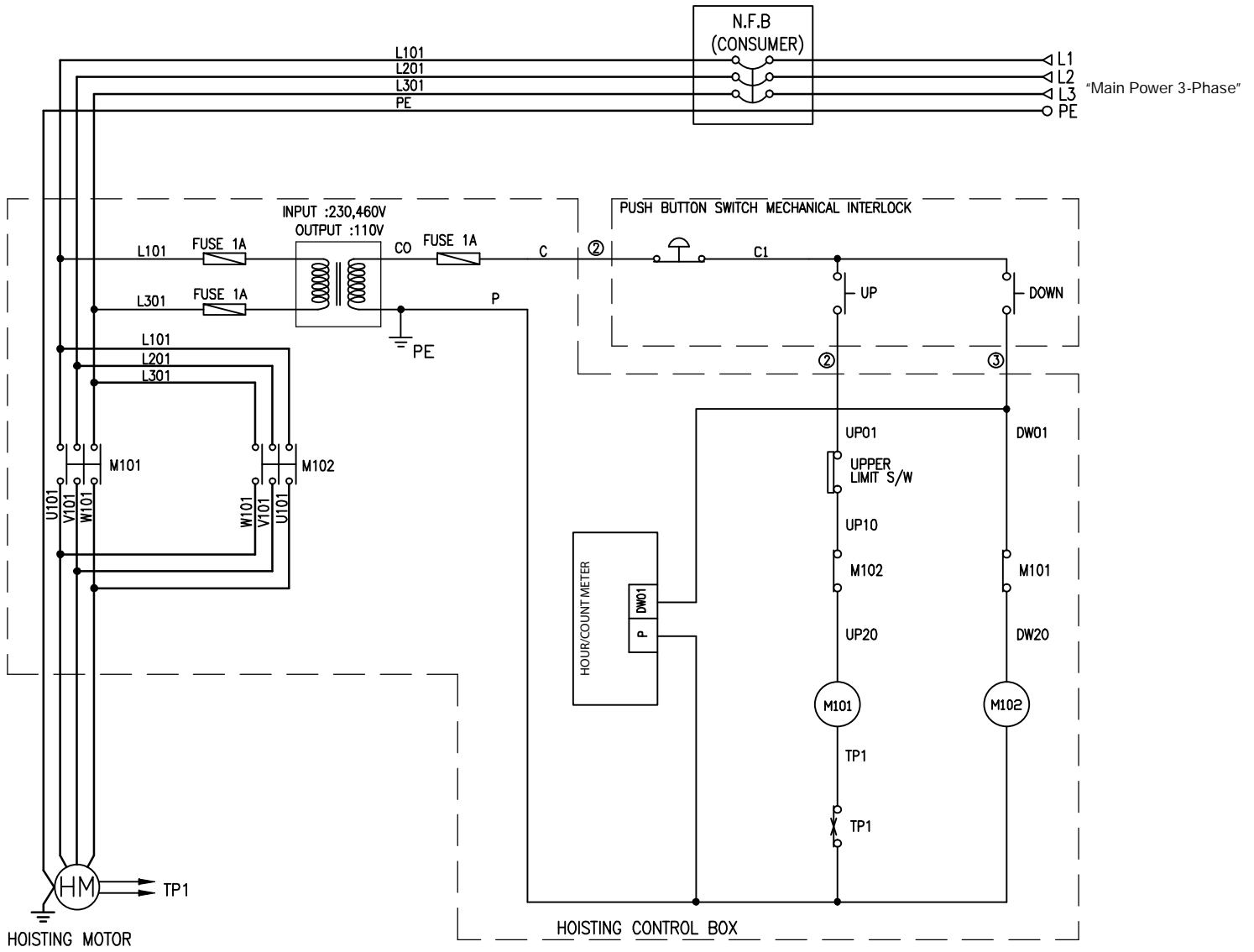
ACCOLIFT MODEL NO (MOTOR TROLLEY MOUNTED)		0.5Ton	1Ton	2Ton	0.5Ton	1Ton	2Ton	0.5Ton	1Ton	2Ton	0.5Ton	1Ton	2Ton
		2230110	2230120	2230140	2230110	2230120	2230140	2230110	2330120	2330140	2330110	2330120	2330140
DESCRIPTION					VFD	VFD	VFD				VFD	VFD	VFD
MTT01	BRAKE DISC ASS'Y	71574-1177						NA					
MTT03	ROTOR ASS'Y	71574-1166						71574-4166					
MTT04	MOTOR ASS'Y	71574-1156						71574-4156					
MTT05	GEAR SIDE PLATE ASS'Y	71574-1133	-2133	71574-1133	-2133	71574-1133	-2133	71574-1133	-2133	71574-1133	-2133	71574-1133	-2133
MTT06	PLAIN SIDE PLATE ASS'Y	71574-1148	-2148	71574-1148	-2148	71574-1148	-2148	71574-1148	-2148	71574-1148	-2148	71574-1148	-2148
MTT07	ELECTRIC EQUIPMENT ASS'Y	71574-1191			NA			71574-4191					
MTT08	ELECTRIC EQUIPMENT ASS'Y	NA			71574-2191			NA			NA		
MTT09	BRAKE ASS'Y	NA			NA			71574-4319					
MT002	GEAR SIDE PLATE	71574-1133	-2133	71574-1133	-2133	71574-1133	-2133	71574-1133	-2133	71574-1133	-2133	71574-1133	-2133
MT004	SNAP RING	71574-1134	-2134	71574-1134	-2134	71574-1134	-2134	71574-1134	-2134	71574-1134	-2134	71574-1134	-2134
MT005	PLAIN WASHER	71574-1135	-2135	71574-1135	-2135	71574-1135	-2135	71574-1135	-2135	71574-1135	-2135	71574-1135	-2135
MT006	SNAP RING	71574-1136											
MT008	GEAR ROLLER	71574-1137	-2137	71574-1137	-2137	71574-1137	-2137	71574-1137	-2137	71574-1137	-2137	71574-1137	-2137
MT009	BALL BEARING	71574-1138	-2138	71574-1138	-2138	71574-1138	-2138	71574-1138	-2138	71574-1138	-2138	71574-1138	-2138
MT010	SNAP RING	71574-1139	-2139	71574-1139	-2139	71574-1139	-2139	71574-1139	-2139	71574-1139	-2139	71574-1139	-2139
MT011	BOLT W/HEX, HOLE	71574-1140											
MT012	HEX NUT	71574-1141											
MT013	GUIDE ROLLER BODY	71574-1142											
MT014	GUIDE ROLLER	71574-1143											
MT015	GUIDE ROLLER PIN	71574-1144											
MT016	BRACKET A"	71574-1145	-2145	71574-1145	-2145	71574-1145	-2145	71574-1145	-2145	71574-1145	-2145	71574-1145	-2145
MT017	BRACKET B"	71574-1146	-2146	71574-1146	-2146	71574-1146	-2146	71574-1146	-2146	71574-1146	-2146	71574-1146	-2146
MT018	CORD HOLDER ASS'Y	71574-1147											
MT022	PLAIN SIDE PLATE	71574-1148	-2148	71574-1148	-2148	71574-1148	-2148	71574-1148	-2148	71574-1148	-2148	71574-1148	-2148
MT023	ROLLER PIN	71574-1149	-2149	71574-1149	-2149	71574-1149	-2149	71574-1149	-2149	71574-1149	-2149	71574-1149	-2149
MT028	PLAIN ROLLER	71574-1150	-2150	71574-1150	-2150	71574-1150	-2150	71574-1150	-2150	71574-1150	-2150	71574-1150	-2150
MT034	U NUT	71574-1151	-2151	71574-1151	-2151	71574-1151	-2151	71574-1151	-2151	71574-1151	-2151	71574-1151	-2151
MT035	SHAFT	71574-1152	-2152	71574-1152	-2152	71574-1152	-2152	71574-1152	-2152	71574-1152	-2152	71574-1152	-2152
MT036A	ADJUSTING COLLAR	71574-1153	-2153	71574-1153	-2153	71574-1153	-2153	71574-1153	-2153	71574-1153	-2153	71574-1153	-2153
MT036A	ADJUSTING WASHER	71574-1227	-2227	71574-1227	-2227	71574-1227	-2227	71574-1227	-2227	71574-1227	-2227	71574-1227	-2227
MT037	STOPPER BOLT(WRENCH BOLT)	71574-1154	-2154	71574-1154	-2154	71574-1154	-2154	71574-1154	-2154	71574-1154	-2154	71574-1154	-2154
MT038	COTTER PIN	71574-1155											
MT039	STOPPER PIN	71574-1296	-2296	71574-1296	-2296	71574-1296	-2296	71574-1296	-2296	71574-1296	-2296	71574-1296	-2296
MT041 + MT042	MOTOR CASE + STATOR ASS'Y	71574-1156						71574-4156					
MT043	BRAKE COVER	71574-1157						NA					
MT044	BRAKE SPRING	71574-1158						NA					
MT045	NAME PLATE	71574-1159			71574-2159			71574-4159					
MT046	BOLT W/HEX, HOLE	71574-1160											
MT050	BOLT W/HEX, HOLE	71574-1162											
MT054	COVER PLUG	71574-1163						NA					
MT071	GEAR CASE	71574-1164											
MT071	FLANGE	71574-1165											
MT073	BOLT W/HEX, HOLE	71574-1320											

MT076	2ND GEAR	71574-1167							
MT077	SPRING PIN	71574-1168							
MT078	3RD GEAR	71574-1169							
MT079	BALL BEARING	71574-1170							
MT080	SNAP RING	71574-1171							
MT081	COLLAR FOR 3RD GEAR	71574-1172							
MT082	PACKING FLANGE	71574-1173							
MT171	CONNECTOR-PARALLEL	71574-1174	-2174	71574-1174	-2174	71574-1174	-2174	71574-1174	-2174
MT171	CONNECTOR-CROSS	71574-1265	-2265	71574-1265	-2265	71574-1265	-2265	71574-1265	-2265
MT221	CONDENSER	NA				71574-4323			
MT222	SADDLE	NA				71574-4324			
MT223	RECHARGE RESISTOR	NA				71574-4325			
MT224	ELECTRIC EQUIPMENT BOARD	NA				71574-4326			
MT225	HEX STAY BOLT	NA				71574-4327			
MT523	BUMPER RUBBER	71574-1175							
MT539	BALL BEARING	71574-1178							
MT541	BALL BEARING	71574-1179							
MT550	BRAKE STATOR	NA				71574-4331			
MT551	BRAKE COIL	NA				71574-4332			
MT552	BRAKE SPRING	NA				71574-4333			
MT553	MOVING PLATE	NA				71574-4334			
MT554	BRAKE COVER	NA				71574-4335			
MT555	BRAKE LINING	NA				71574-4336			
MT556	HEX HUB	NA				71574-4337			
MT557	STAY PIPE	NA				71574-4338			
MT558	HEX WRENCH BOLT S/W	NA				71574-4339			
MT559	O RING	NA				71574-4340			
MT591	POWER CORD	71574-1341							
MT600	INVERER	NA	71574-2342			NA	NA		
MT604	TERMINAL BLOCK	71574-1343							
MT620	INTERFACE	NA	71574-2344			NA	NA		
MT621	INTERFACE BOARD	NA	71574-2345			NA	NA		
MT640	TECTIFIER	NA	NA			71574-4346			
MT644	CABLE HOLDER	71574-1347							
MT645	MOTOR CABLE	71574-1181							
MT657	MAGNETIC SWITCH	71574-1180	NA			71574-4180			
MT658	MACHINE SCREW S/W	71574-1348							
MT663	FUSE	NA	71574-2349			NA	NA		
MT664	FUSE HOLDER	NA	71574-2350			NA	NA		
MT665	CHANNEL	71574-1351							
MT666	FUSE HOLDER COVER	NA	71574-2352			NA	NA		
MT667	CHANNEL STOPPER	71574-1353							
MT668	MACHINE SCREW S/W, P/W	71574-1354							

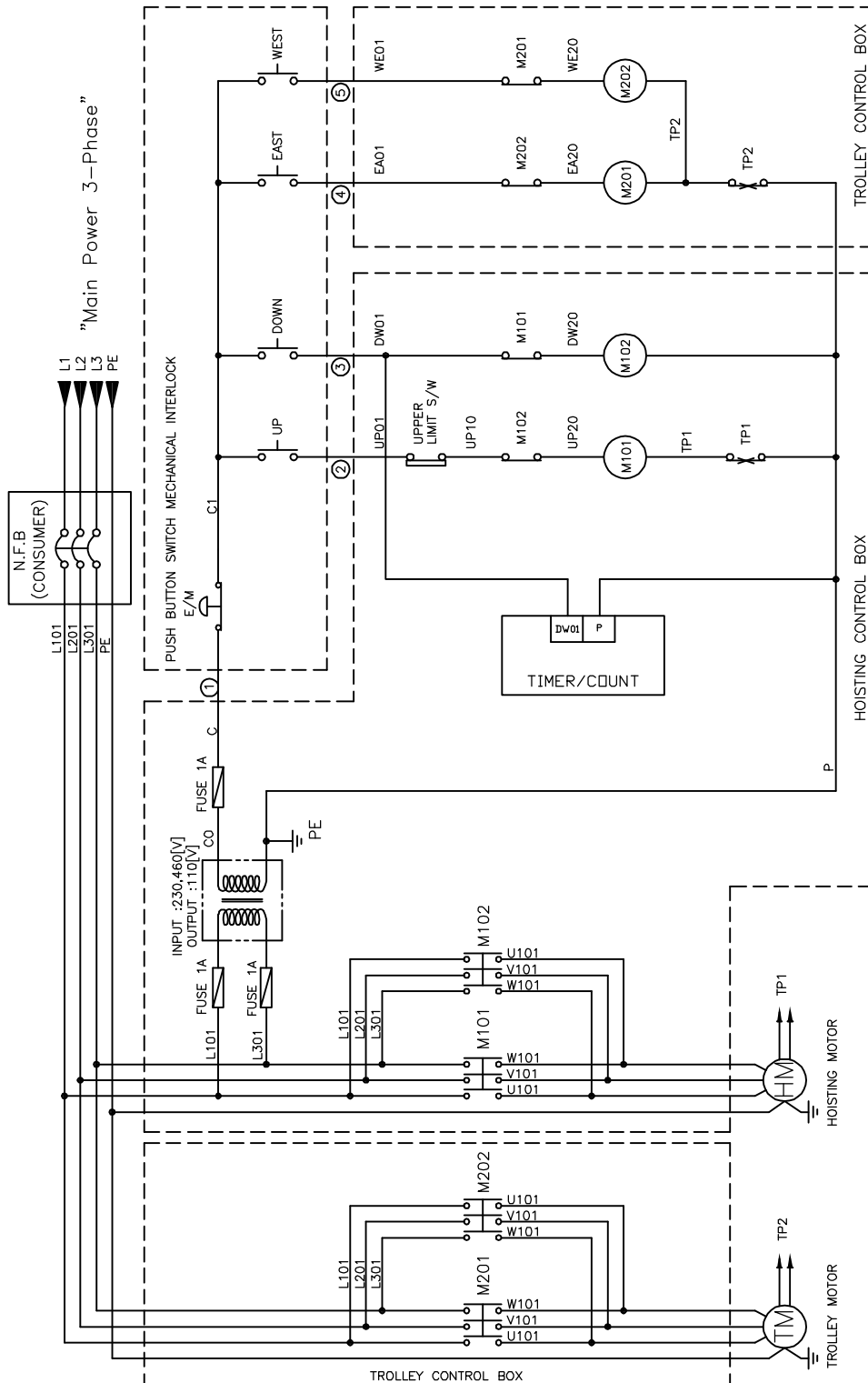
MT731	CONTROL BOX	71574-1182	71574-2182		71574-1182				
MT732	BOLT W/HEX, HOLE	71574-1183							
MT733	SUPPORT BAR	71574-1184							
MT742	CONTROL BOX COVER	71574-1185	71574-2185		71574-1185				
MT743	CONTROL BOX COVER PACKING	71574-1186							
MT744	MACHINE SCREW	71574-1355							
MT745	NAME PLATE	71574-1187	-2187	71574-1187	-2187	71574-1187	-2187	71574-1187	-2187
MT749	HEX STAY PIN	71574-1356							
MT754	SET SCREW	71574-1188							
MT755	RIVET	71574-1189							
MT756	LEAD PACKING	71574-1190			NA		NA		
MT760	BUMPER STOPPER	71574-1313							
MT761	BUMPER BRACKET	71574-1314							
MT762	HEX NUT	71574-1357							

● **Electric Connection Drawing**

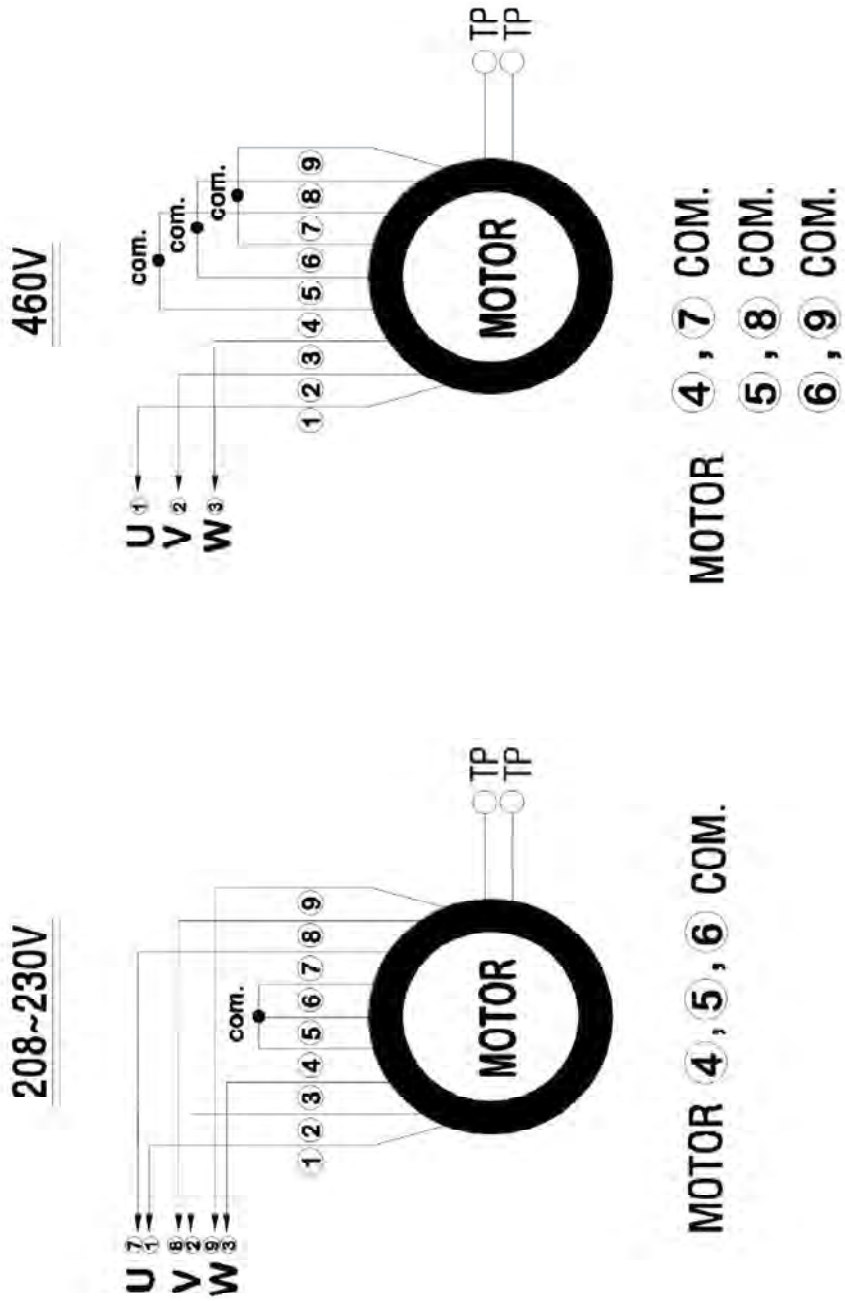
■ 2230010,2230020,2230040



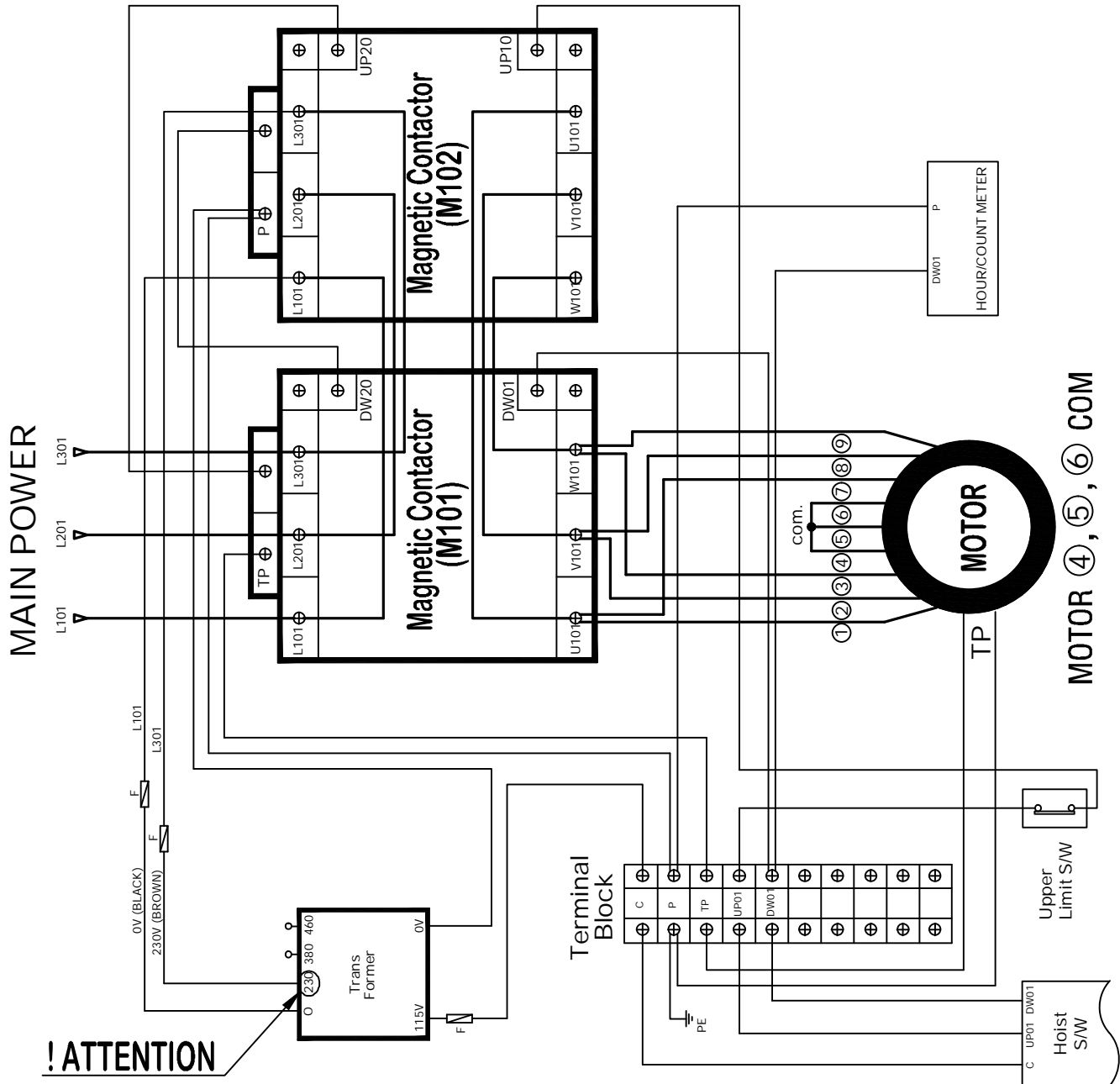
■ 2230110,2230120,2230140



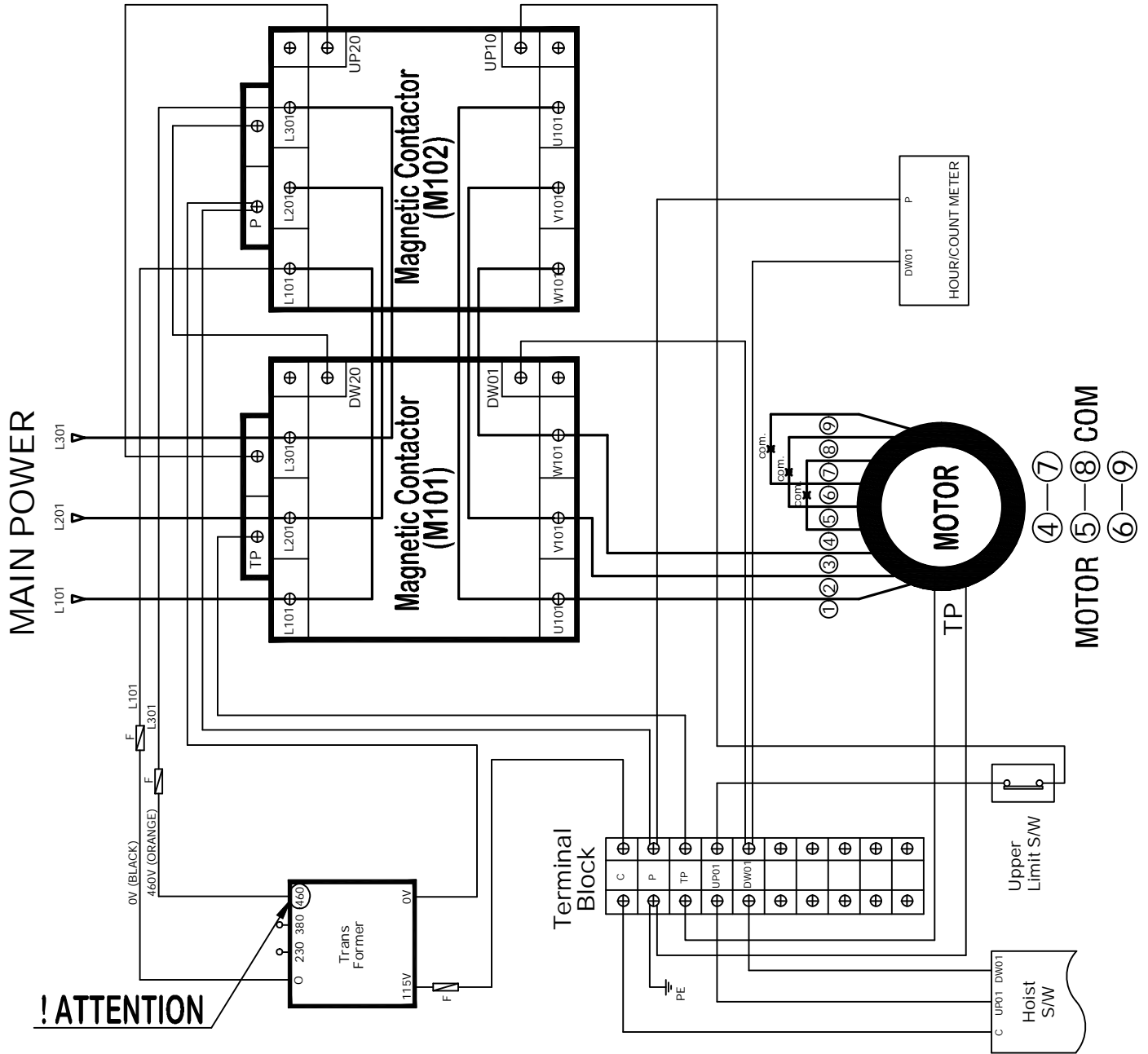
Motor Diagram 208~230V/460V Combined



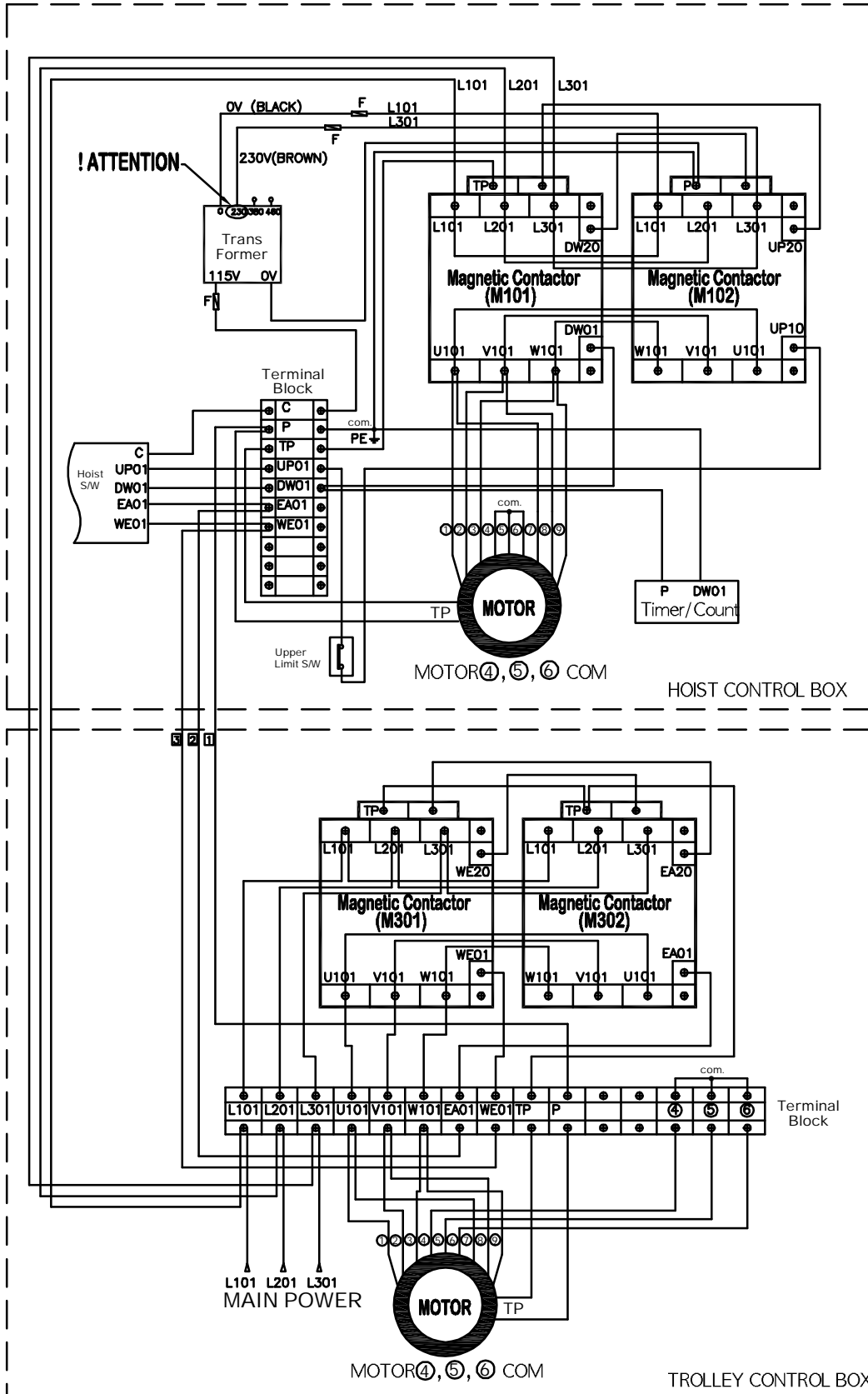
■ 2230010, 223020, 223040(208V~230V 60Hz)



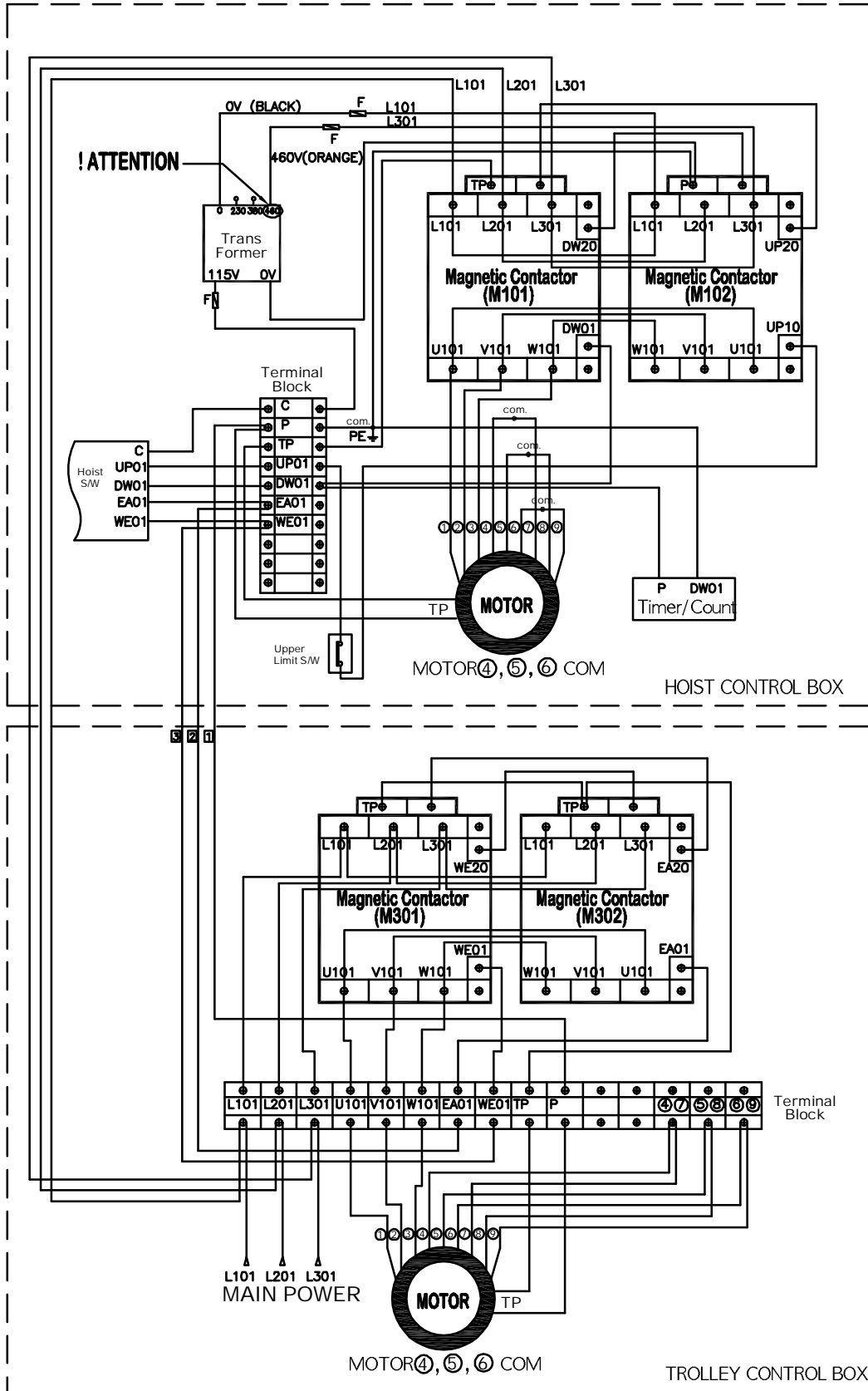
■ 2230010, 223020, 223040(460V 60Hz)



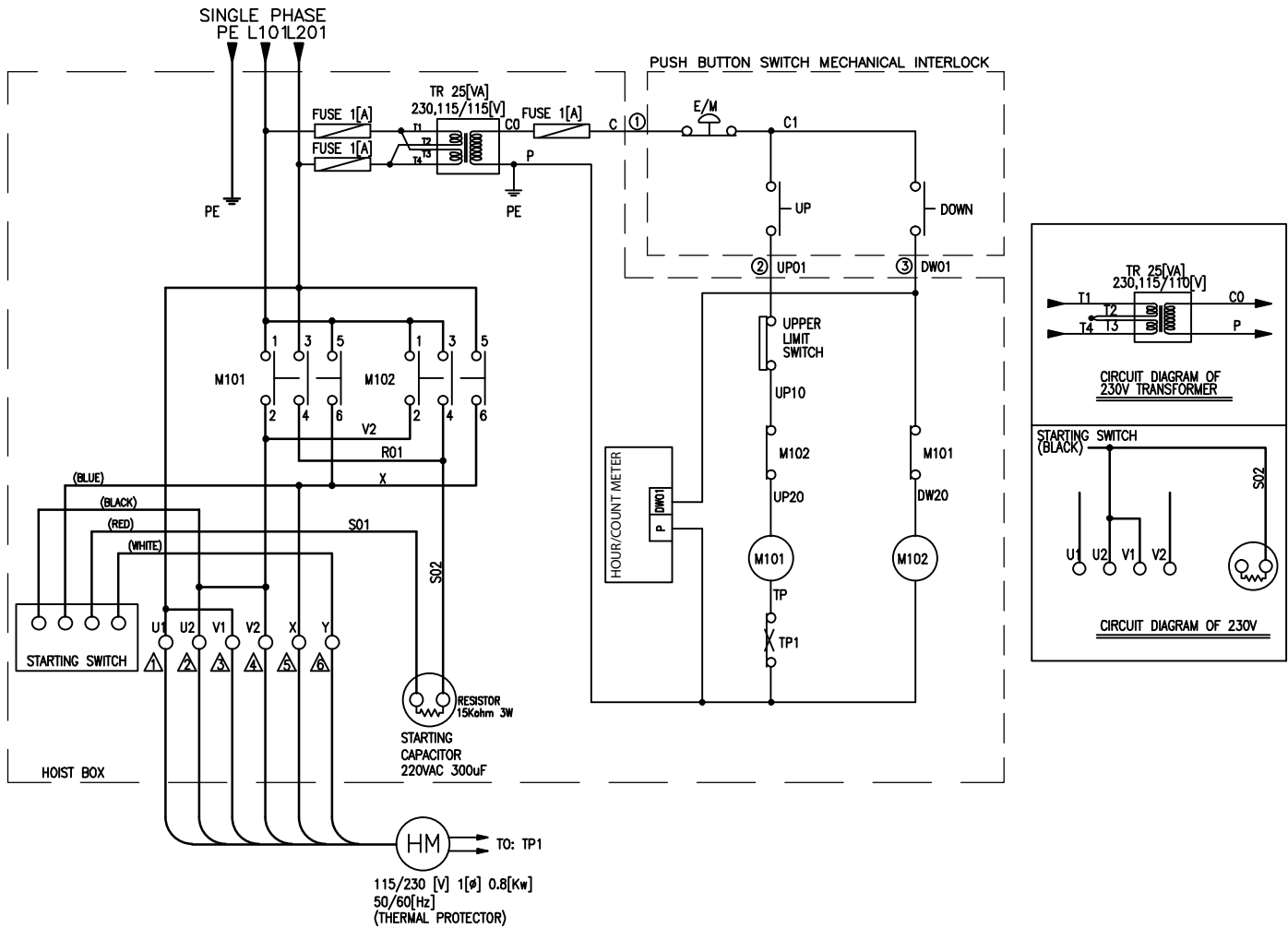
■ 2230110, 2230120, 2230140(208V-230V 60Hz)



■ 2230110, 2230120, 2230140(460V 60Hz)



■ 2330010, 2330020, 2330040(115V / 230V 60Hz)

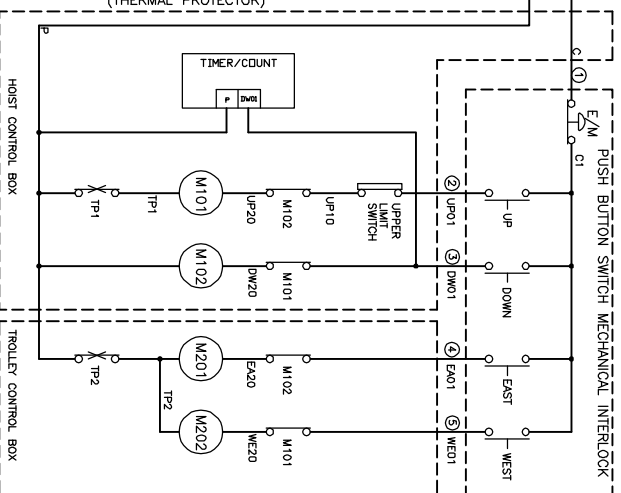
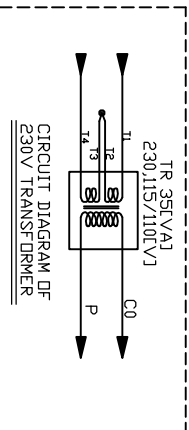
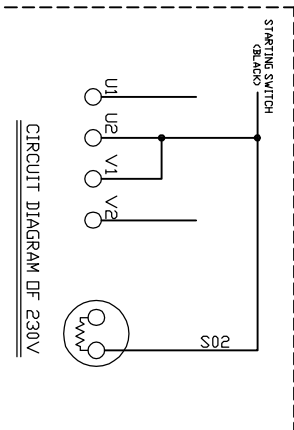
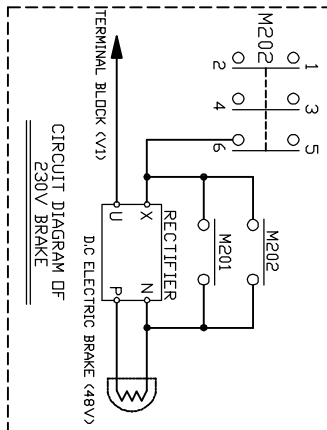
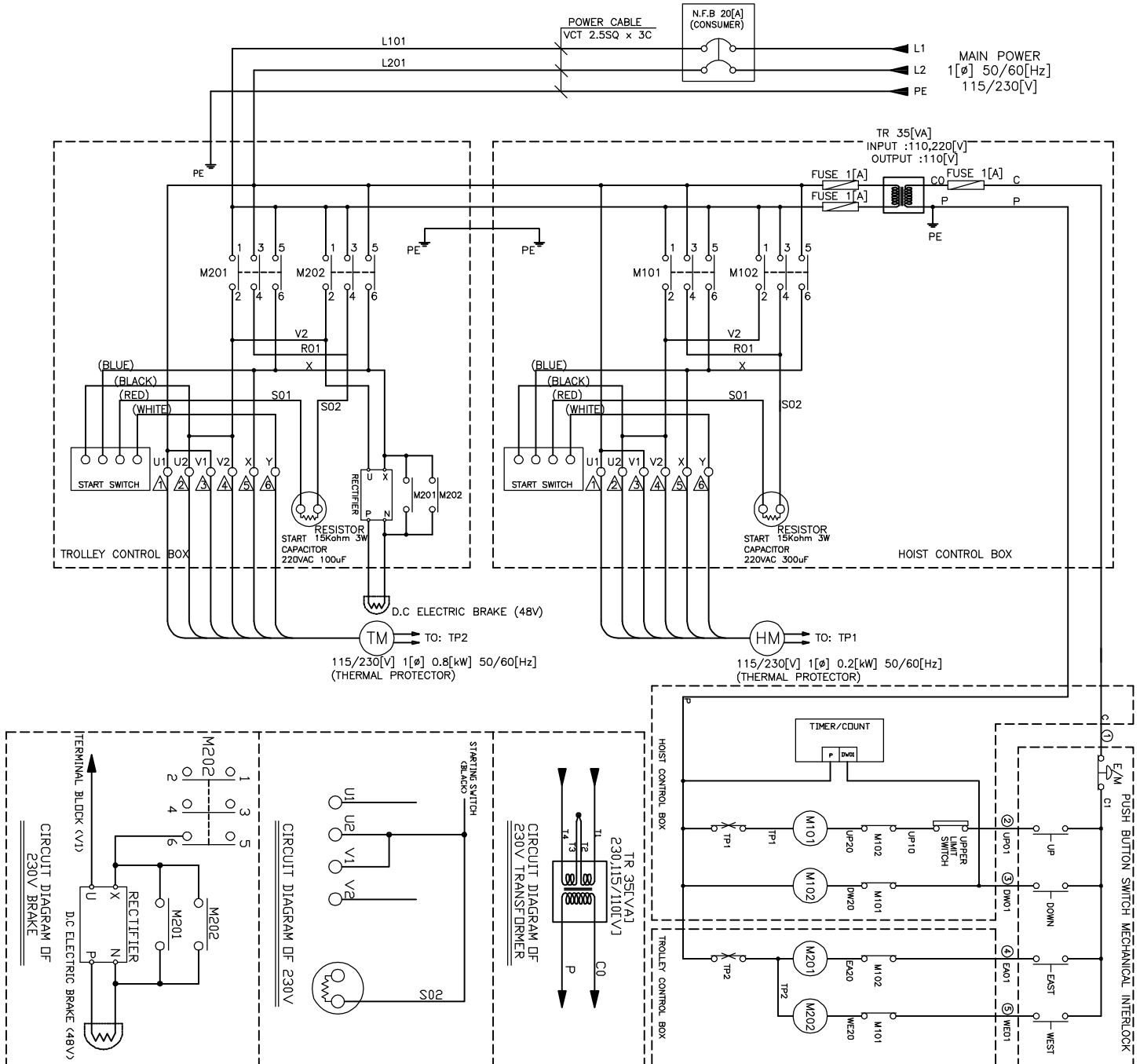


This hoist is wired from the factory for 115-1-60 power supply- See wiring schematic inside enclosure lid for 230-1-60 reconnection instructions.

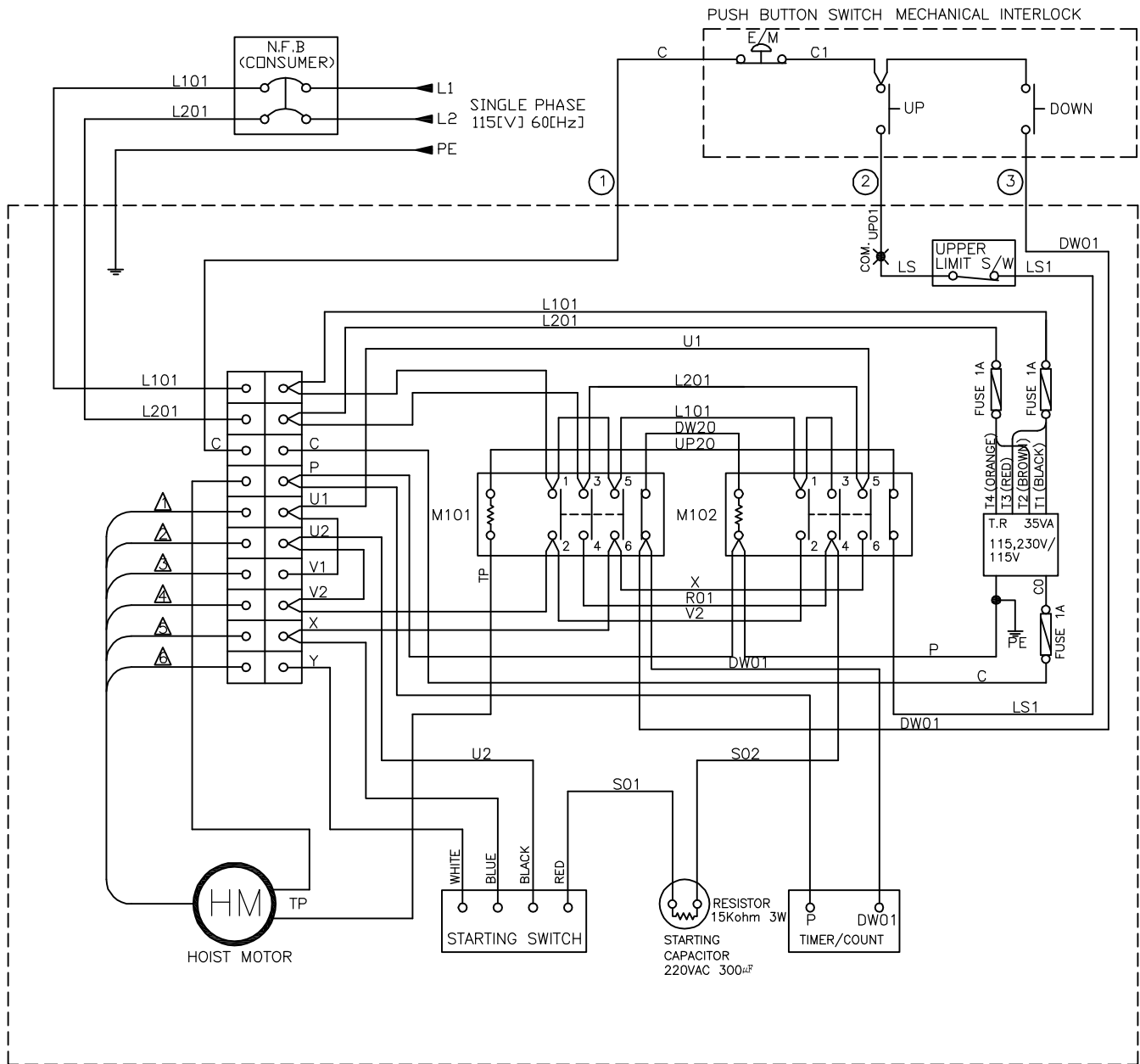
RECOMMENDED POWER SUPPLY WIRE GAGE (COPPER AWG)

	25FT	50FT	75FT	100FT	150FT	200FT	250FT	300FT
115V	12	10	8	6	6	4	-	-
230V	-	16	14	14	12	10	10	8

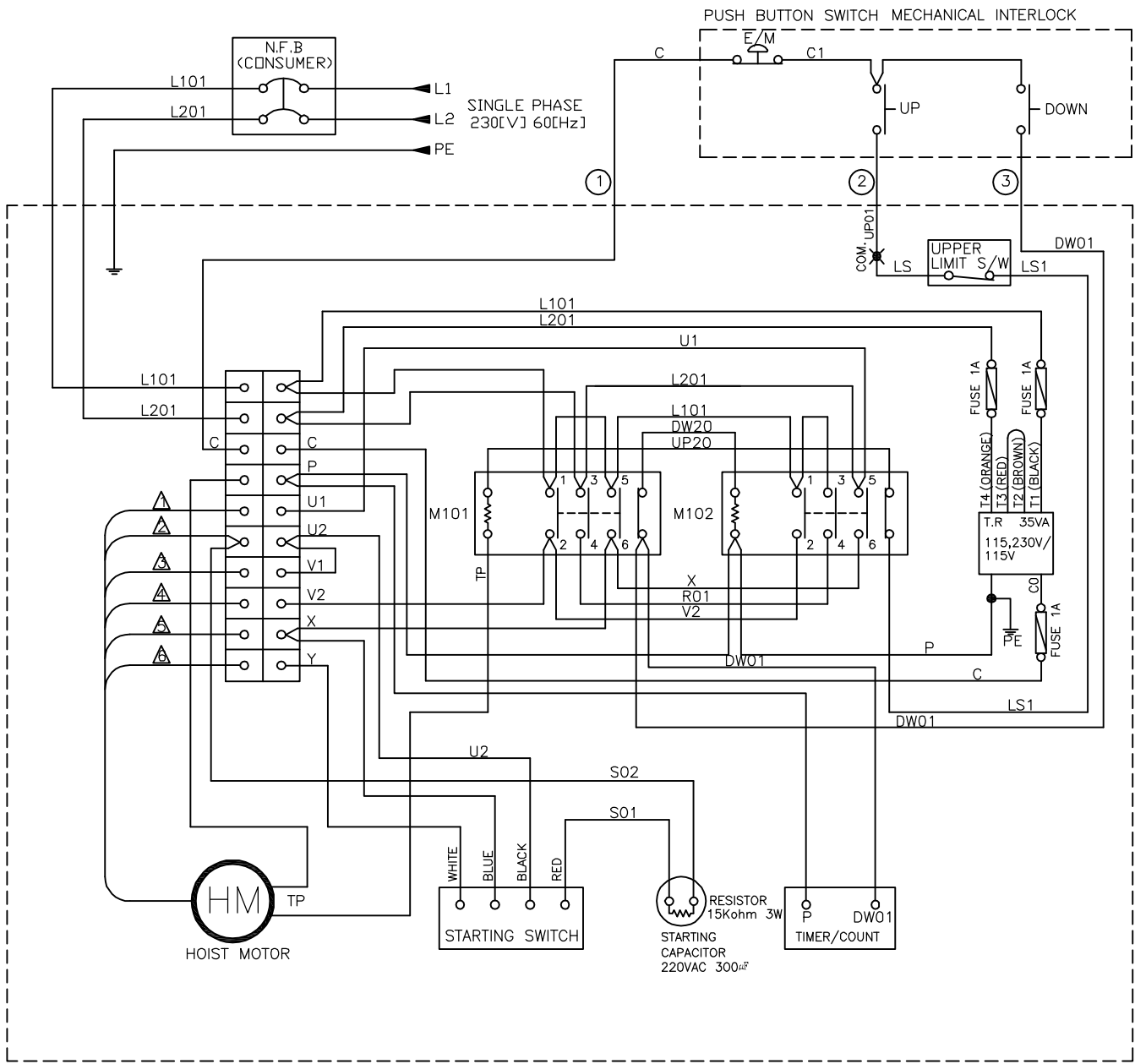
2330110, 2330120, 2330140(115V / 230V 60Hz)



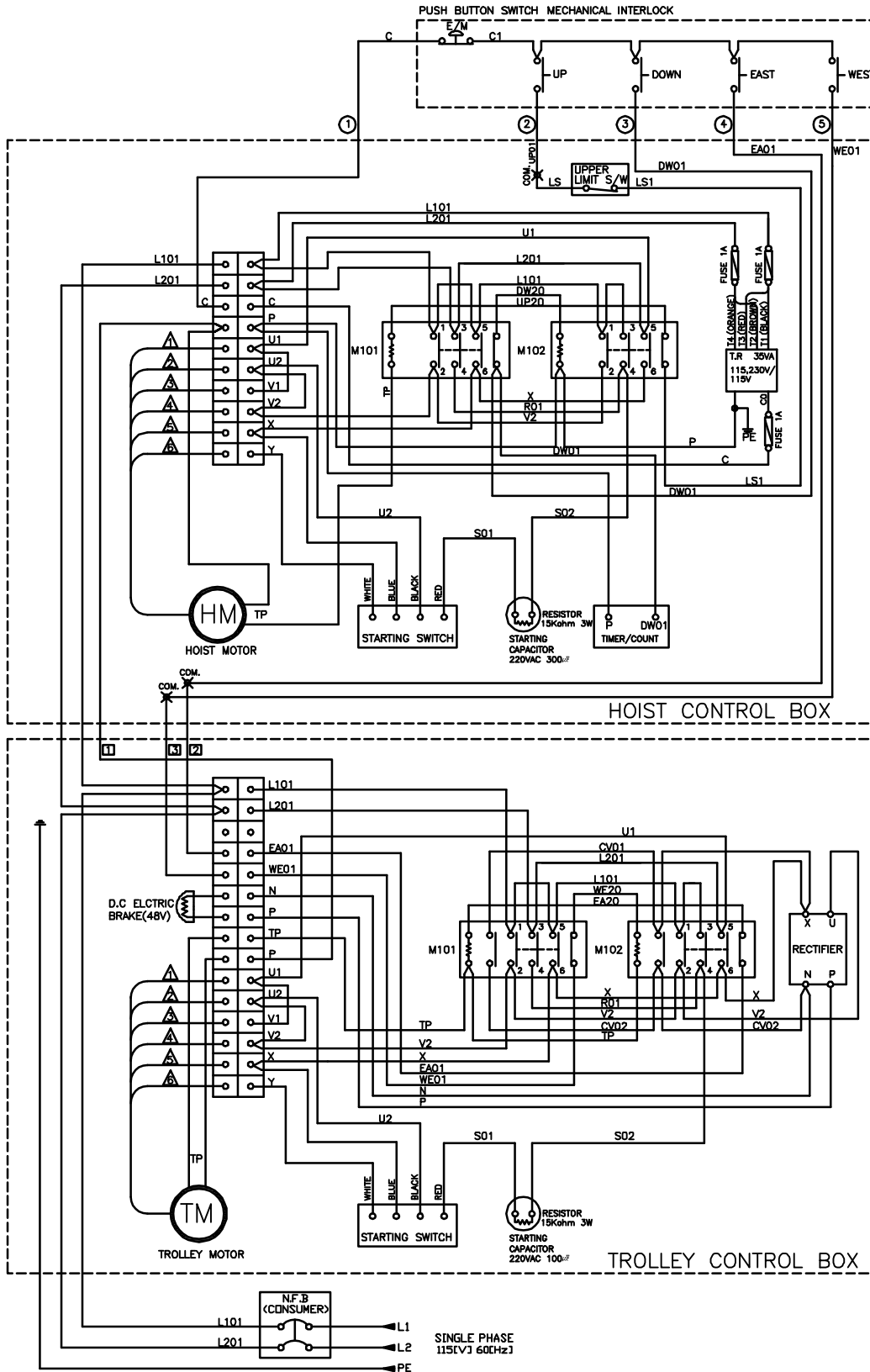
■ 2330010, 2330020, 2330040(115V 60Hz)



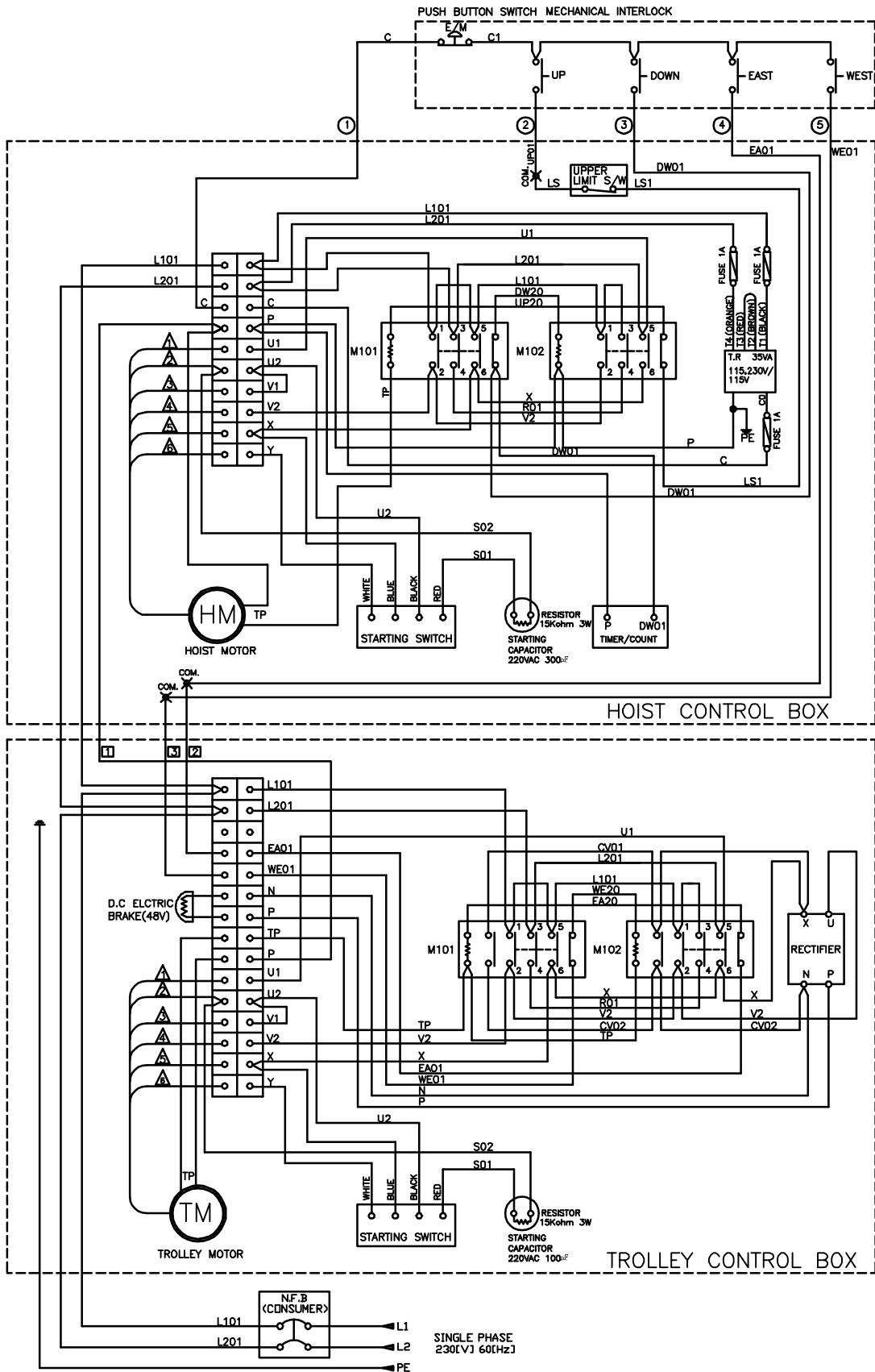
■ 2330010, 2330020, 2330040(230V 60Hz)



■ 2330110, 2330120, 2330140(115V 60Hz)



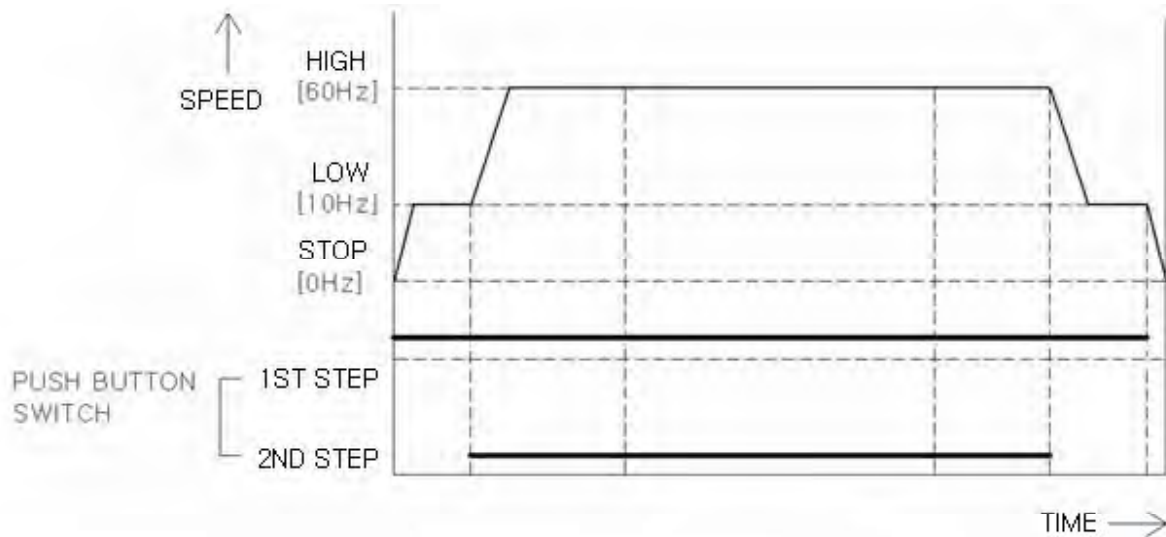
2330110, 2330120, 2330140(230V 60Hz)



9. INVERTER(PowerFlex 523 Adjustable Frequency AC Drive)

9.1.Operating Hoist (Dual Speed)

- Low speed at the first step, high speed at the second step.
- Acceleration time of 5.0 seconds.



9.2.Push Button Control for Inverter Hoist



<ul style="list-style-type: none"> ■ Reset Button (Emergency Stop Button) ■ To restore the tripped inverter, press this button
<ul style="list-style-type: none"> ■ Hoist Up <ul style="list-style-type: none"> - First Step : Slow Speed - Second Step : Fast Speed
<ul style="list-style-type: none"> ■ Hoist Down <ul style="list-style-type: none"> - First Step : Slow Speed - Second Step : Fast Speed

9.3. TRIAL OPERATION

⚠ DANGER

DISCONNECT POWER AND LOCKOUT DISCONNECTING MEANS BEFORE PERFORMING SERVICE TO ELECTRICAL PARTS OF THIS EQUIPMENT.

The inverter drive contains high voltage capacitors that take time to discharge after removal of power supply. Wait for 3 minutes for capacitors to discharge to safe voltage levels before proceeding with any check ups of electrical parts of this equipment after shutting down the power.

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

⚠ WARNING

- Check that all wiring has been completed before performing trial operation.
- Don't change wiring of push button switch.
- To change the acceleration or deceleration time, refer to inverter manual.
- Failure to comply with any of the limitations noted herein can result in serious bodily injury or death and/or property damage.

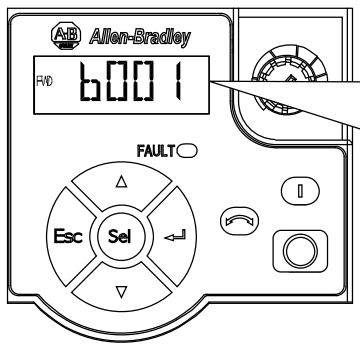
9.4. INVERTER PARAMETER SETTINGS

ACCOLIFT 2-STEP SPEED INVERTER SETTINGS

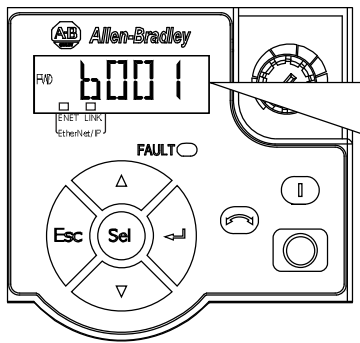
CAPACITY	HOIST HZ SETTING	HOIST ACCEL SETTING	HOIST DECEL SETTING
	SETP43 / P44 - LIFTING(up/down)	SET P041	SET P042
1TON(0.5T)	12 Hz (FPM 6) - 60 Hz (FPM 17)	5.0 SEC	0.2 SEC
2TON	12 Hz (FPM 3) - 60 Hz (FPM 9)	5.0 SEC	0.2 SEC

9.5. DISPLAY AND CONTROL KEYS

PowerFlex 523



PowerFlex 525








Menu	Parameter Group and Description
b	Basic Display Commonly viewed drive operating conditions.
p	Basic Program Commonly used programmable functions.
t	Terminal Blocks Programmable terminal functions.
C	Communications Programmable communication functions.
L	Logic (PowerFlex 525 only) Programmable logic functions.
d	Advanced Display Advanced drive operating conditions.
R	Advanced Program Remaining programmable functions.
N	Network Network functions that are shown only when a comm card is used.
M	Modified Functions from the other groups with values changed from default.
f	Fault and Diagnostic Consists of list of codes for specific fault conditions.
G	AppView and CustomView Functions from the other groups organized for specific applications.





Control and Navigation Keys

Display	Display State	Description
ENET (PowerFlex 525 only)	Off	Adapter is not connected to the network.
	Steady	Adapter is connected to the network and drive is controlled through Ethernet.
	Flashing	Adapter is connected to the network but drive is not controlled through Ethernet.
LINK (PowerFlex 525 only)	Off	Adapter is not connected to the network.
	Steady	Adapter is connected to the network but not transmitting data.
	Flashing	Adapter is connected to the network and transmitting data.





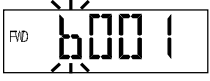


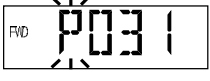
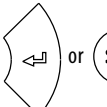




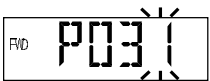
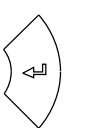
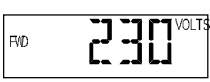
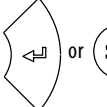

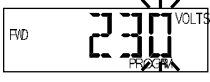


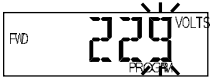
LED	LED State	Description
FAULT	Flashing Red	Indicates drive is faulted.


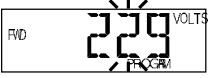


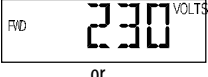
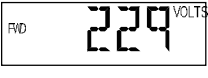

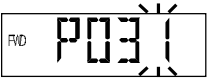
Key	Name	Description
 	Up Arrow Down Arrow	Scroll through user-selectable display parameters or groups. Increment values.
	Escape	Back one step in programming menu. Cancel a change to a parameter value and exit Program Mode.
	Select	Advance one step in programming menu. Select a digit when viewing parameter value.
	Enter	Advance one step in programming menu. Save a change to a parameter value.

9.6. VIEWING AND EDITING PARAMETERS

Key	Name	Description
	Reverse	Used to reverse direction of the drive. Default is active. Controlled by parameters P046, P048 and P050 [Start Source x] and A544 [Reverse Disable].
	Start	Used to start the drive. Default is active. Controlled by parameters P046, P048 and P050 [Start Source x].
	Stop	Used to stop the drive or clear a fault. This key is always active. Controlled by parameter P045 [Stop Mode].
	Potentiometer	Used to control speed of drive. Default is active. Controlled by parameters P047, P049 and P051 [Speed Reference x].

The following is an example of basic integral keypad and display functions. This example provides basic navigation instructions and illustrates how to program a parameter.

Step	Key(s)	Example Display
1. When power is applied, the last user-selected Basic Display Group parameter number is briefly displayed with flashing characters. The display then defaults to that parameter's current value. (Example shows the value of b001 [Output Freq] with the drive stopped.)		
2. Press Esc to display the Basic Display Group parameter number shown on power-up. The parameter number will flash.		
3. Press Esc to enter the parameter group list. The parameter group letter will flash.		
4. Press the Up Arrow or Down Arrow to scroll through the group list (b, P, t, C, L, d, A, f and Gx).	 or 	
5. Press Enter or Sel to enter a group. The right digit of the last viewed parameter in that group will flash.	 or 	
6. Press the Up Arrow or Down Arrow to scroll through the parameter list.	 or 	
7. Press Enter to view the value of the parameter. Or Press Esc to return to the parameter list.		
8. Press Enter or Sel to enter Program Mode and edit the value. The right digit will flash and the word Program on the LCD display will light up.	 or 	
9. Press the Up Arrow or Down Arrow to change the parameter value.	 or 	

Step	Key(s)	Example Display
10. If desired, press Sel to move from digit to digit or bit to bit. The digit or bit that you can change will flash.		
11. Press Esc to cancel a change and exit Program Mode. Or Press Enter to save a change and exit Program Mode. The digit will stop flashing and the word Program on the LCD display will turn off.	 or 	 or 
12. Press Esc to return to the parameter list. Continue to press Esc to back out of the programming menu. If pressing Esc does not change the display, then b001 [Output Freq] is displayed. Press Enter or Sel to enter the group list again.		

⚠ WARNING

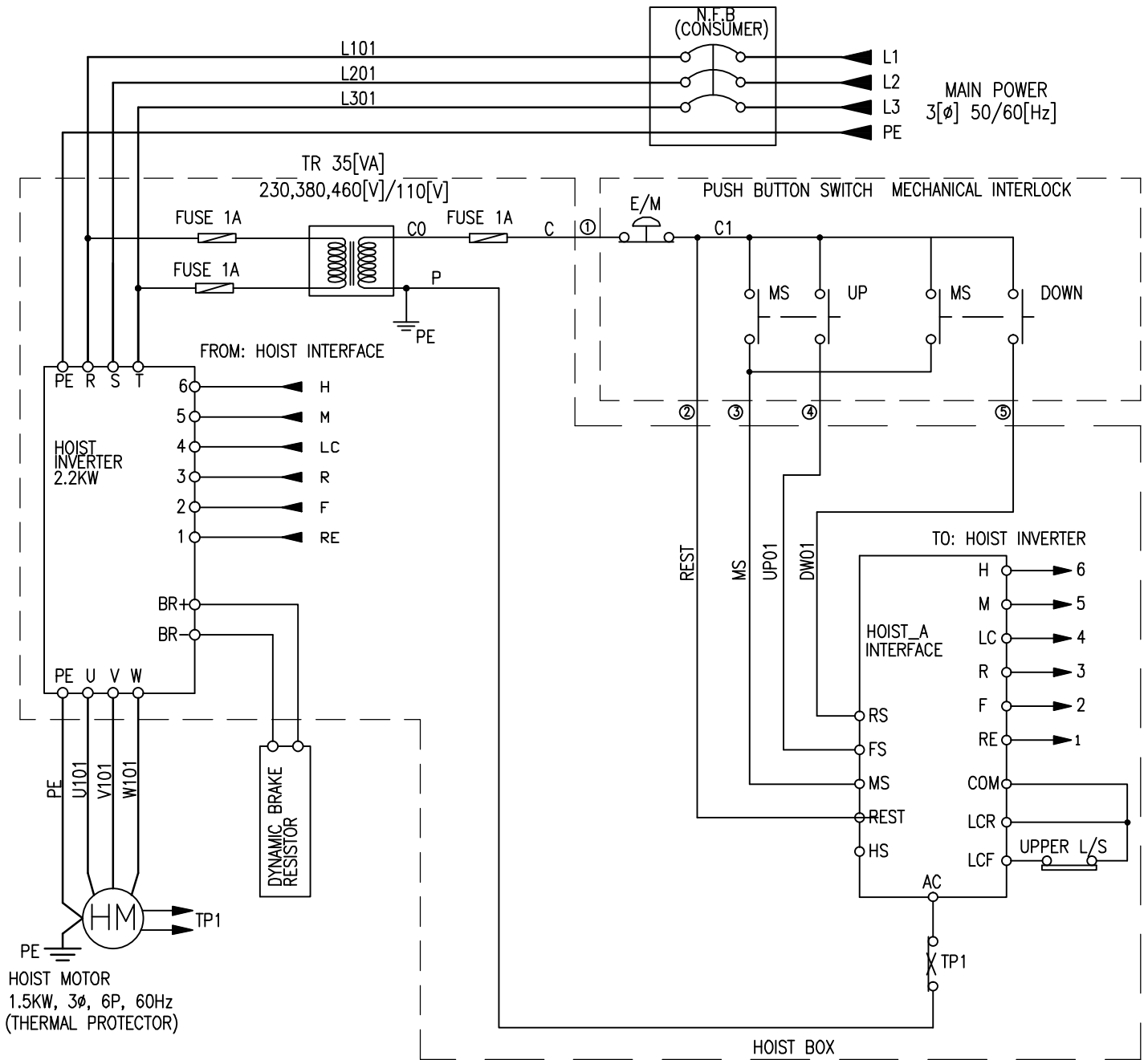
- Do not change any parameter value not indicated in this manual
- Do not set a value that exceeds a parameter range given in inverter manual
- Make sure to perform trial operation after changing a parameter value. If there is anything wrong, stop the operation immediately and check the values and correct them.

NOTICE

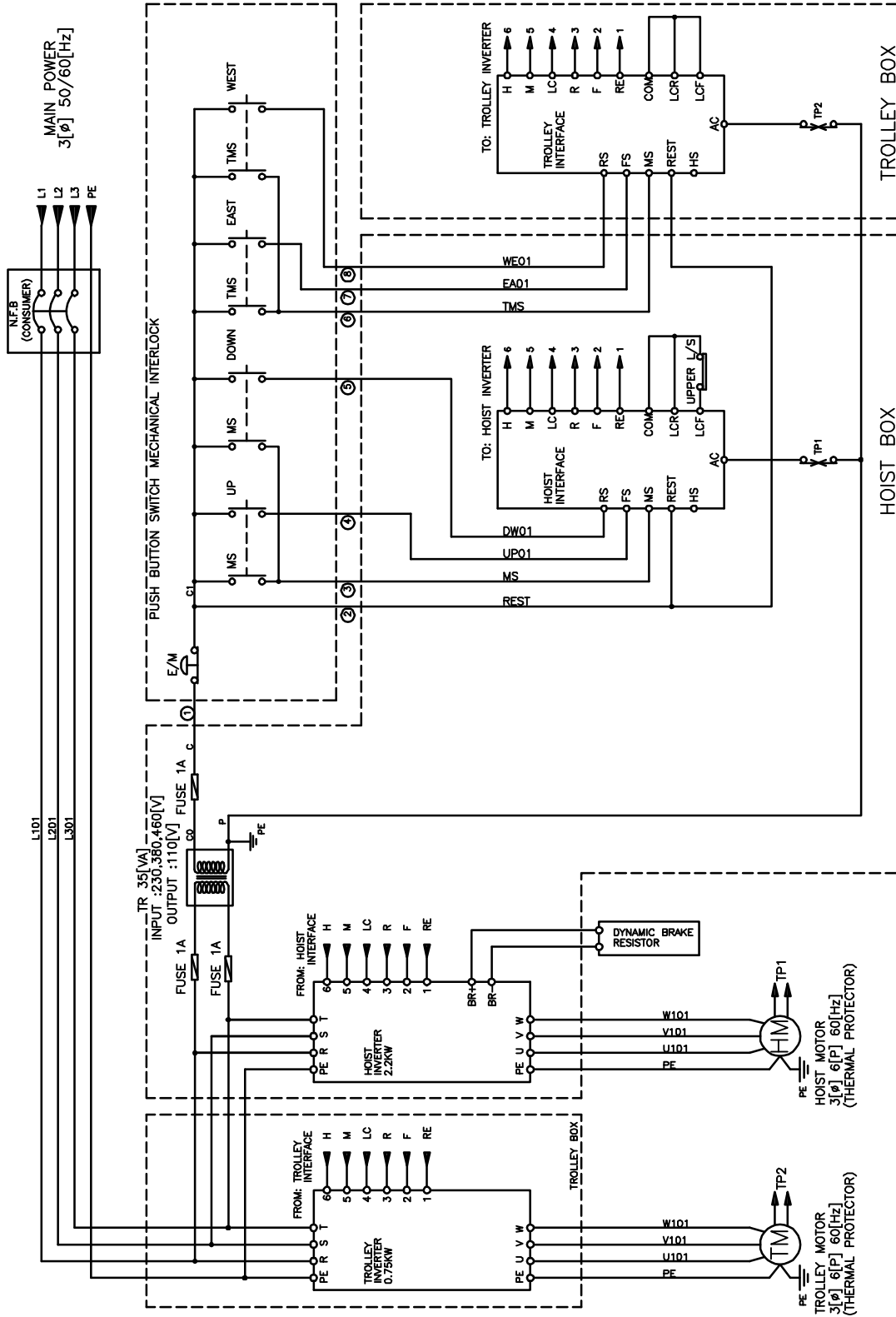
- To change the parameter value, refer to the inverter manual
Before making any changes in the inverter, clear understanding of the inverter manual is required.

● **Electric Connection Drawing**

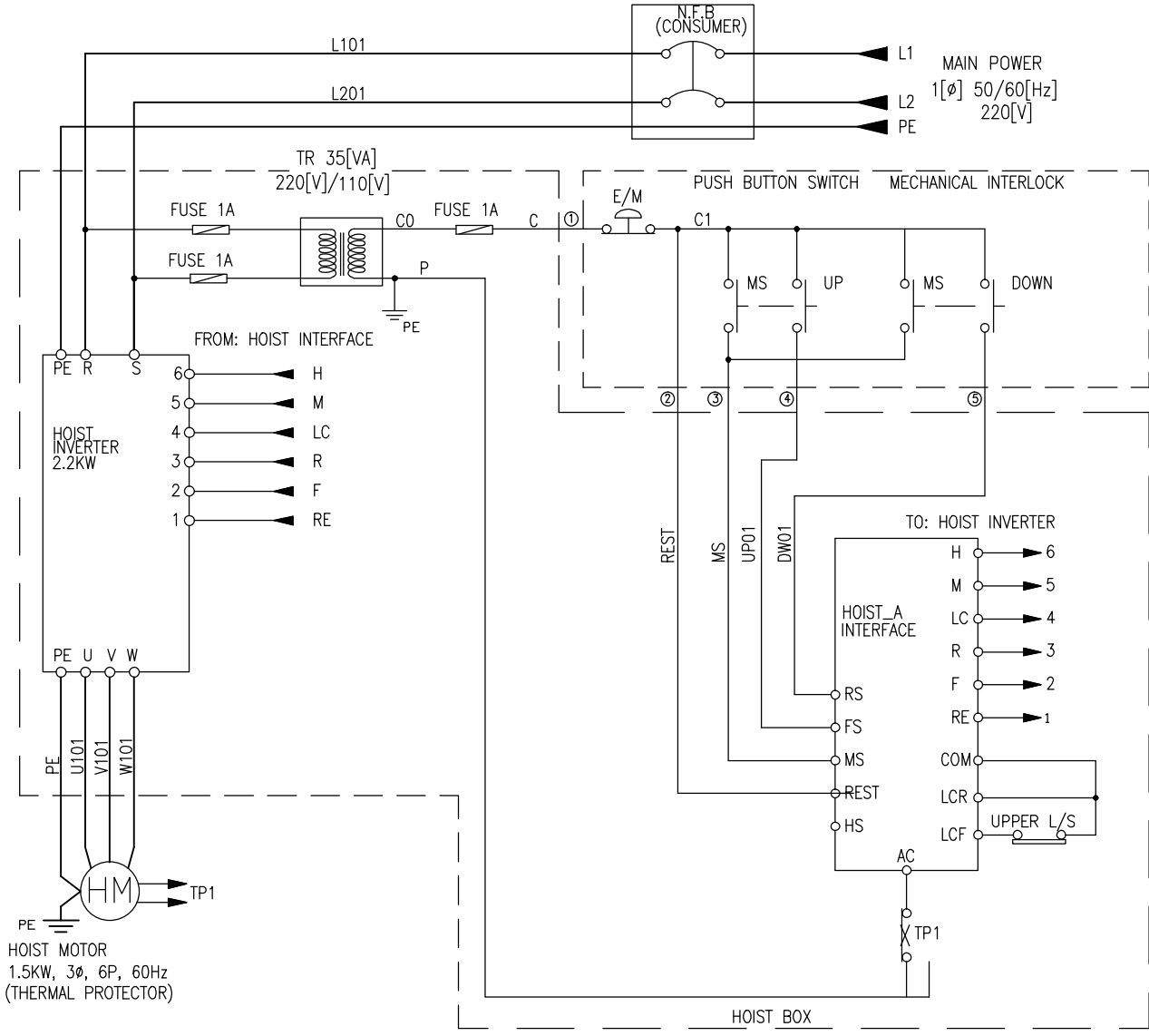
■ 2230010-VFD, 2230020-VFD-, 2230040-VFD



■ 2230110-VFD , 2230120-VFD , 2230140-VFD



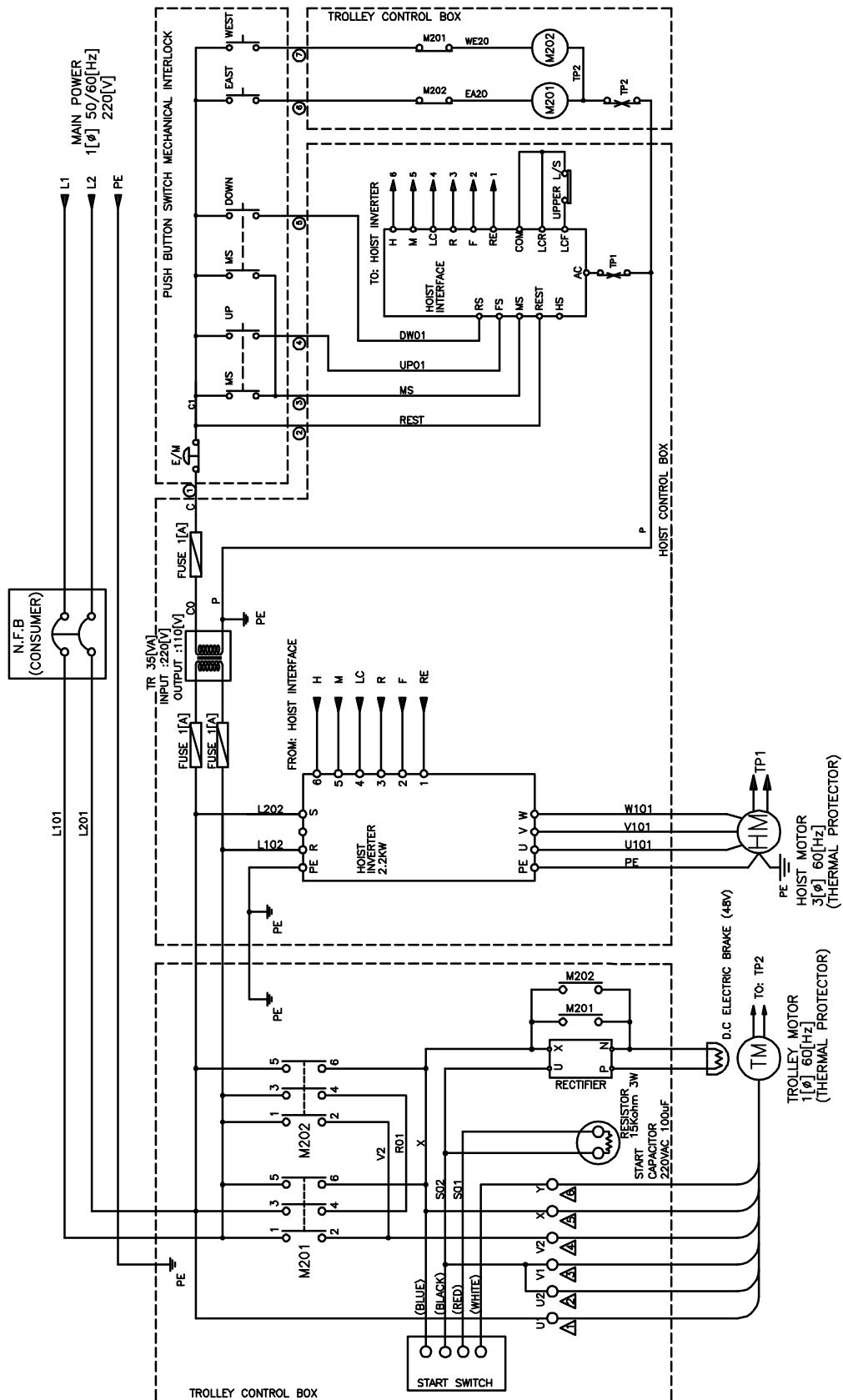
■ 2330010-VFD-230-1, 2330020-VFD-230-1, 2330040-VFD-230-1



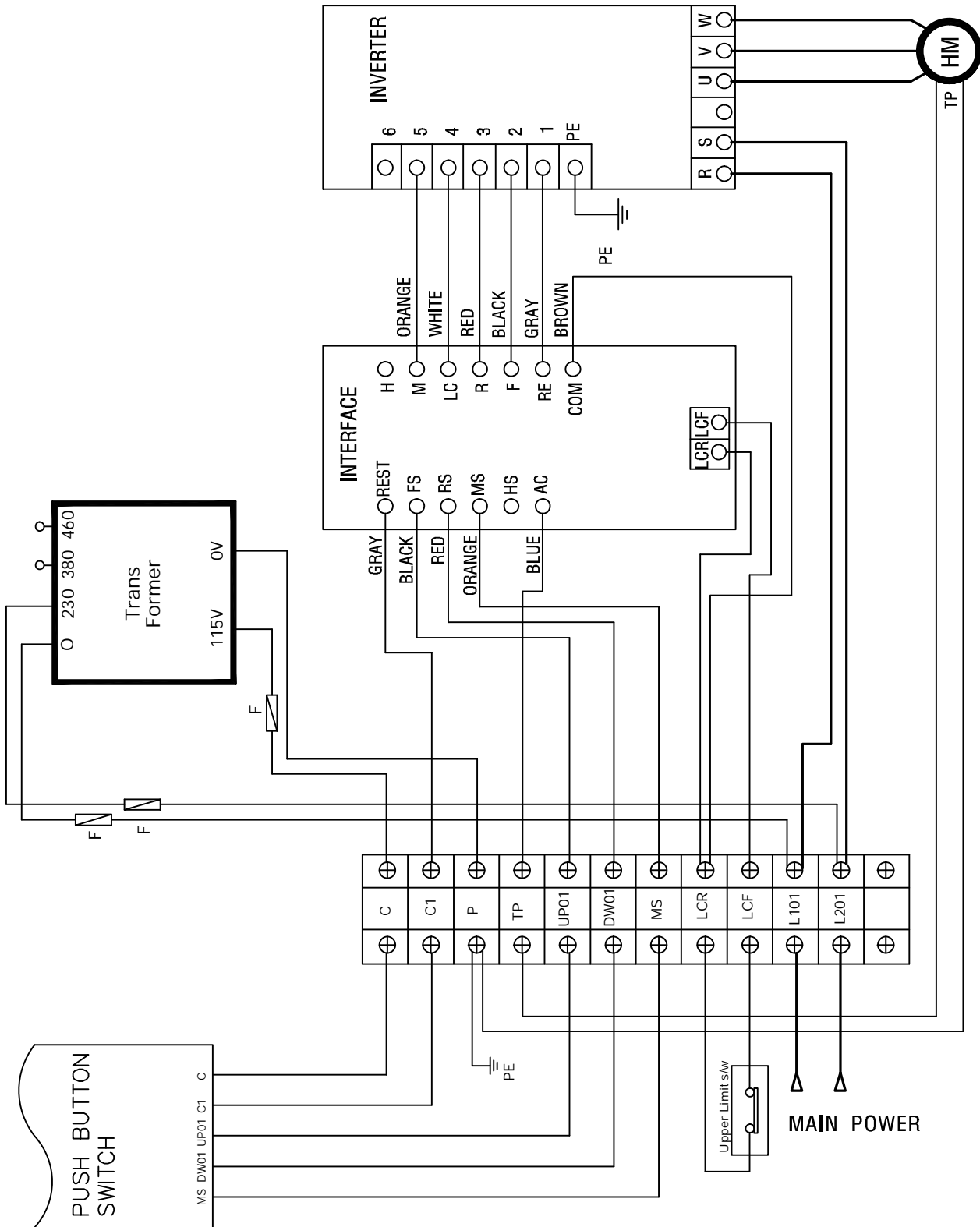
RECOMMENDED POWER SUPPLY WIRE GAGE (COPPER AWG)

	25FT	50FT	75FT	100FT	150FT	200FT	250FT	300FT
230V	-	16	14	14	12	10	10	8

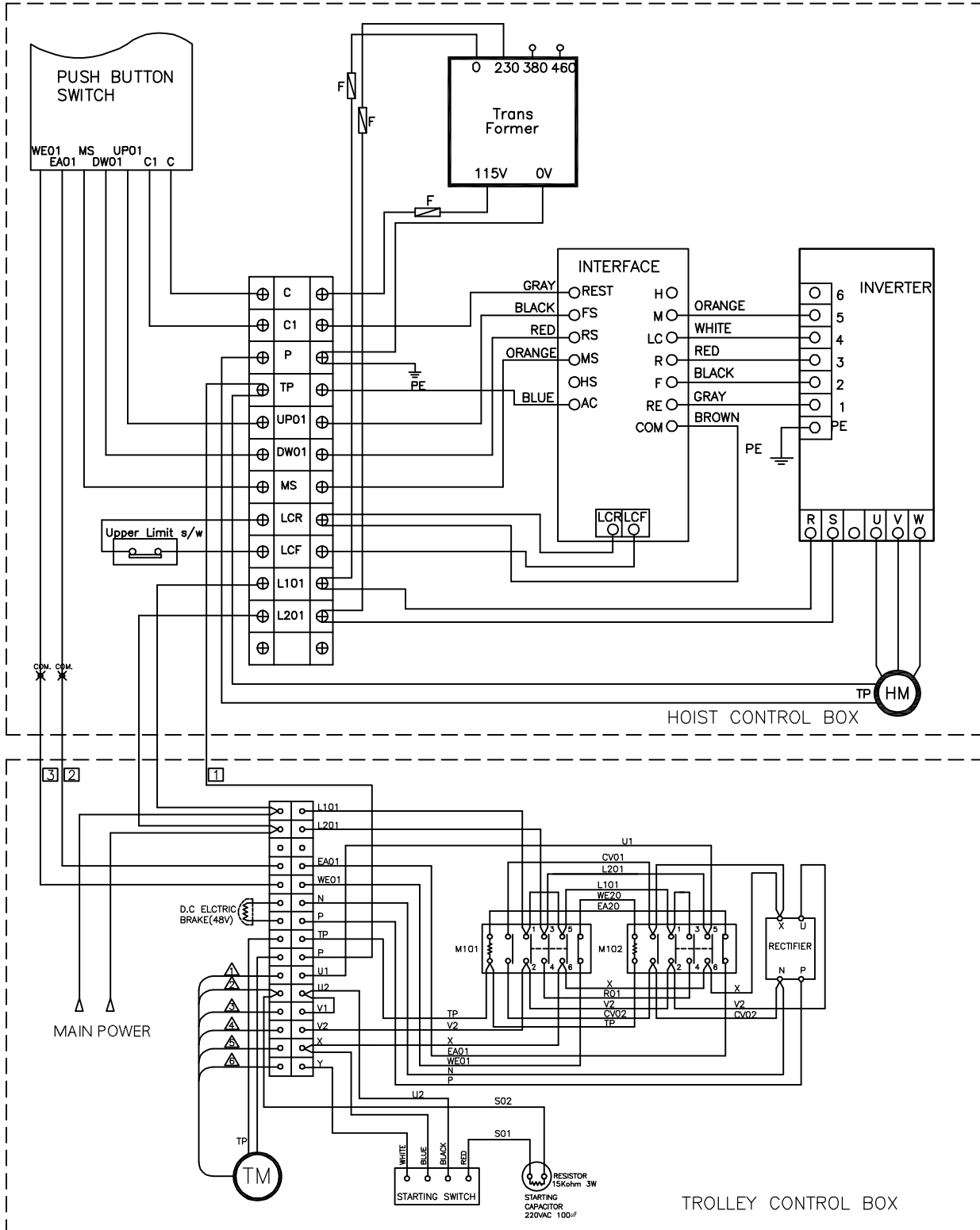
■ 2330110-VFD-230-1 , 2330120-VFD-230-1 , 2330140-VFD-230-1



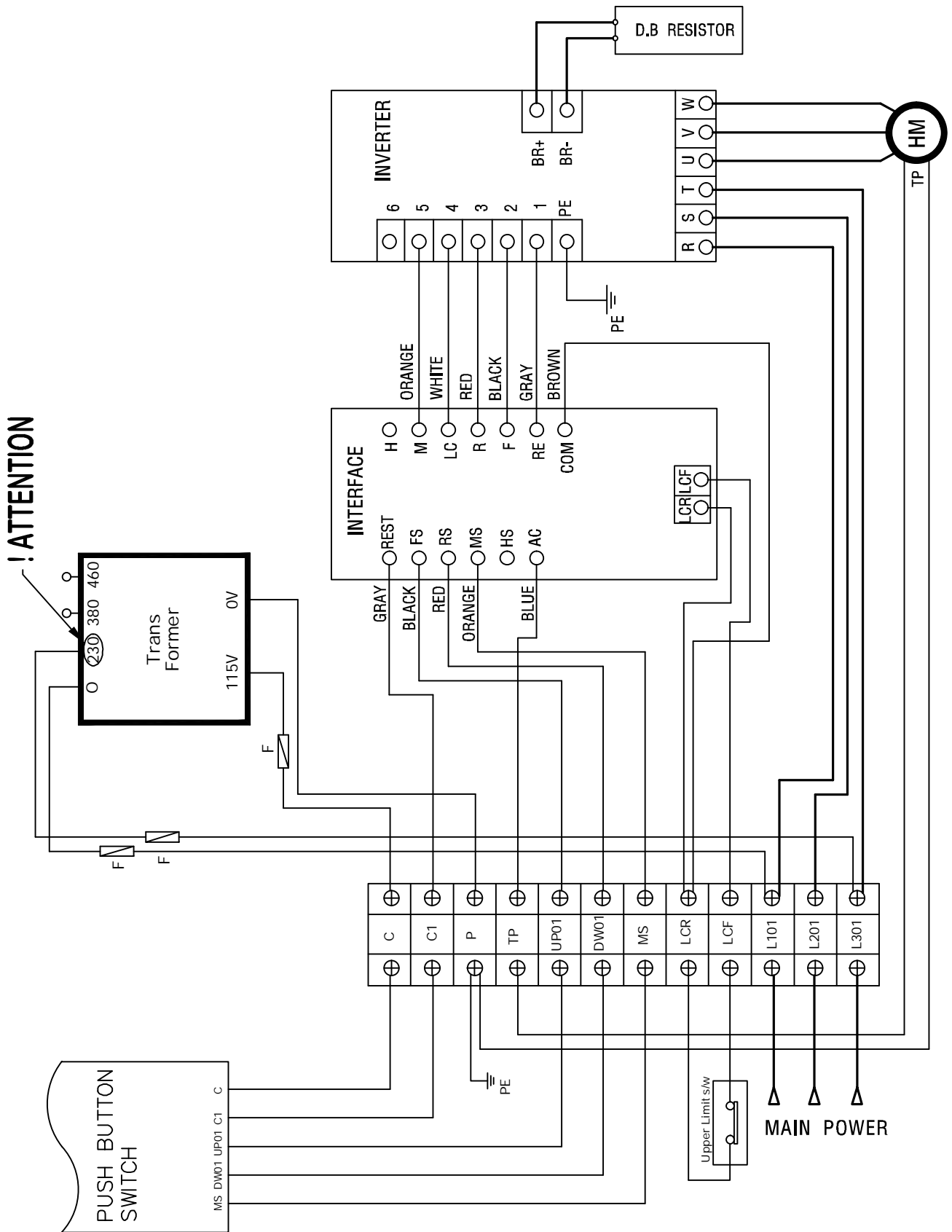
■ 2330010-VFD-230-1, 2330020-VFD-230-1, 2330040-VFD-230-1



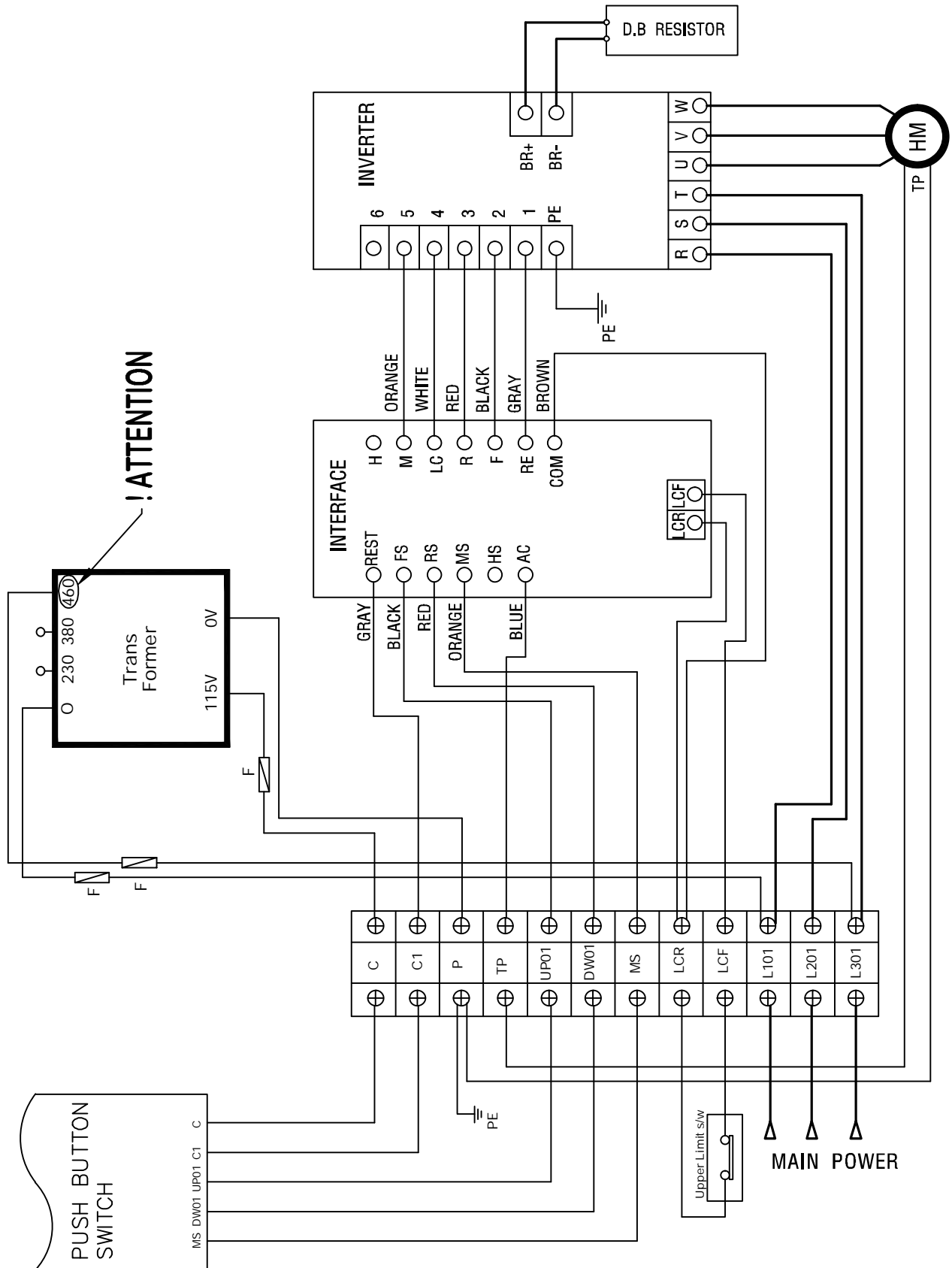
■ 2330110-VFD-230-1 , 2330120-VFD-230-1 , 2330140-VFD-230-1



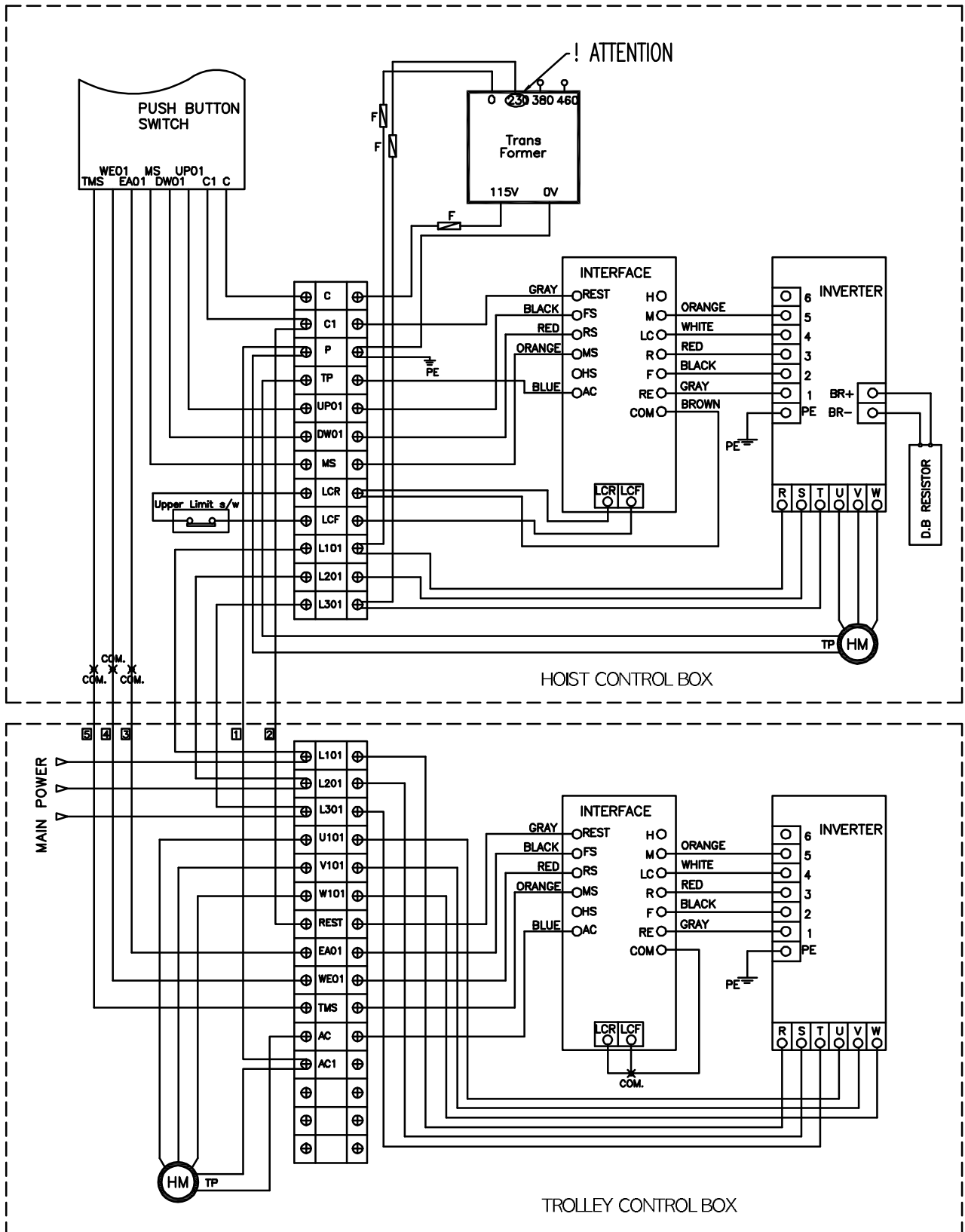
■ 2230010-VFD, 2230020-VFD, 2230040-VFD(230V 60Hz)



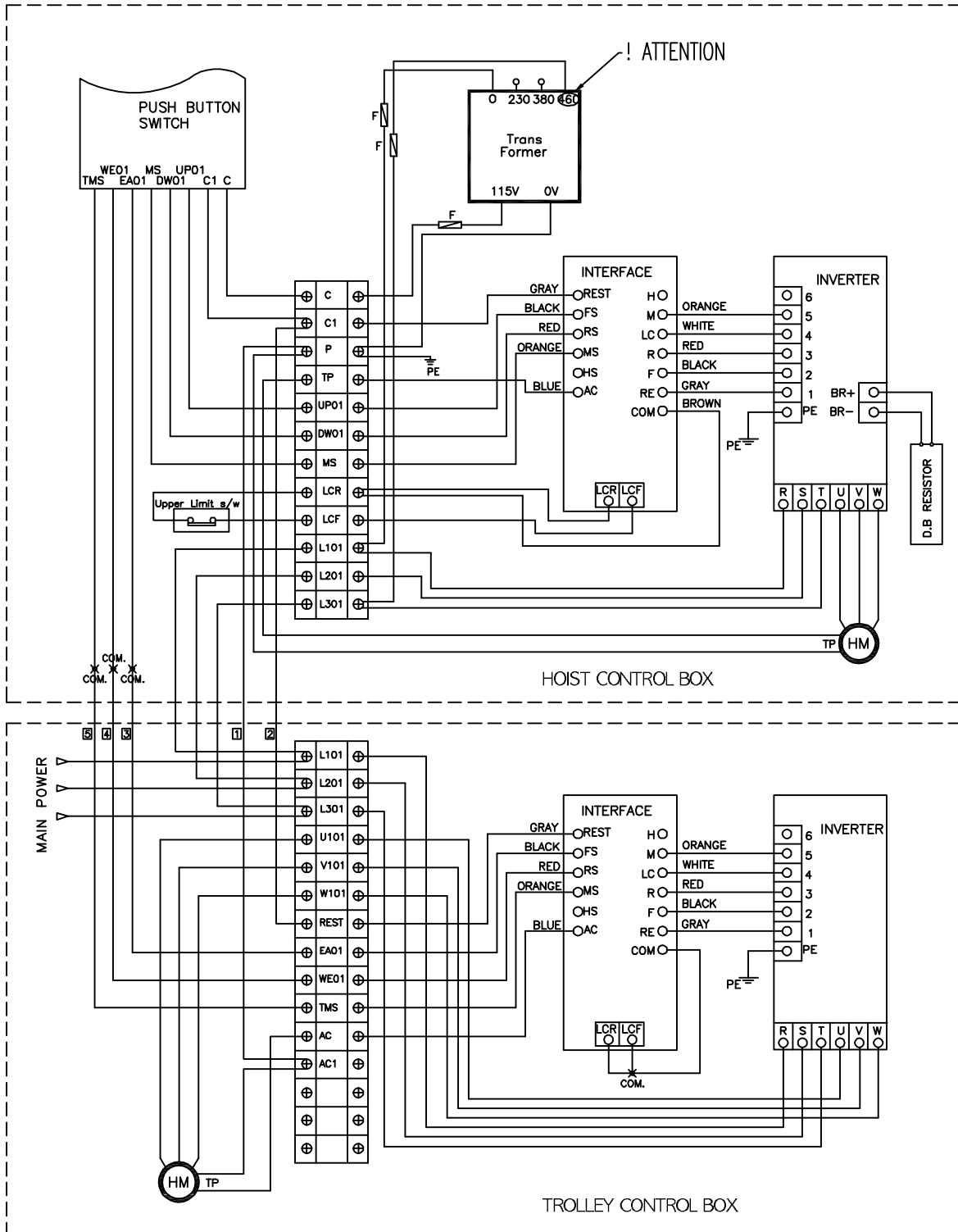
■ 2230010-VFD, 2230020-VFD, 2230040-VFD(460V 60Hz)



■ 2230110-VFD, 2230120-VFD, 2230140-VFD(230V 60Hz)



■ 2230110-VFD, 2230120-VFD, 2230140-VFD(460V 60Hz)



10. Motor Voltage change(Important)

⚠ WARNING

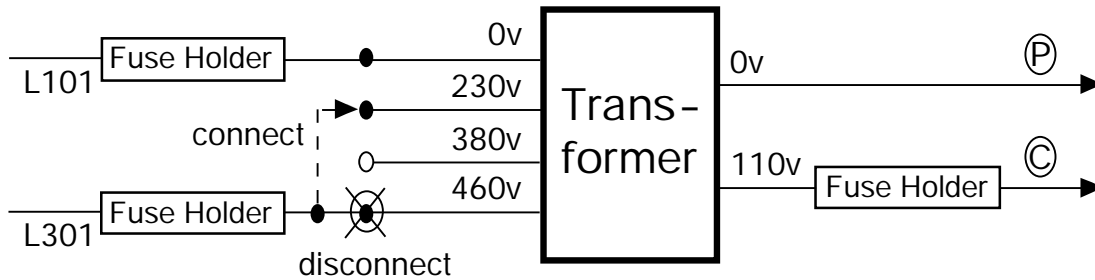
1. Please connect the wire according to the motor wiring drawing

- check the drawing from page 62 ~ 66 for the reference.

2. Transformer Voltage Change

Example: Demonstrated below is changing a transformer that is wired for a 460V application to a 230V application. As shown below, disconnect the fuse holder wire, which is connected to 460V terminal of the transformer, and reconnect the fuse holder wire to 230V terminal of the transformer.

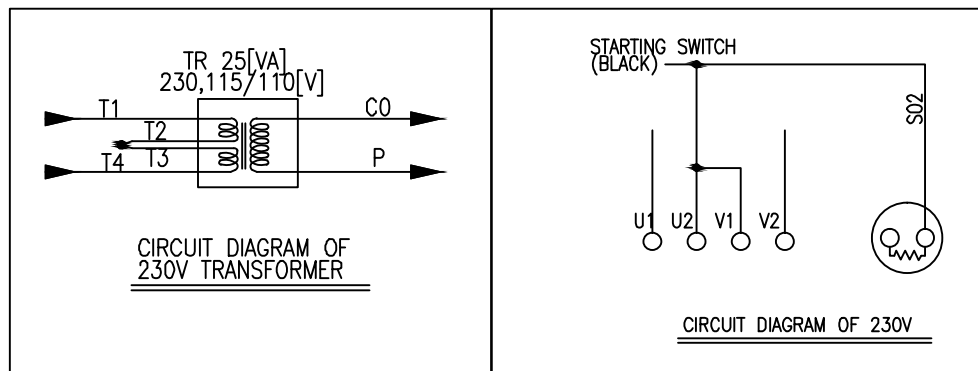
* Three Phase



NOTE

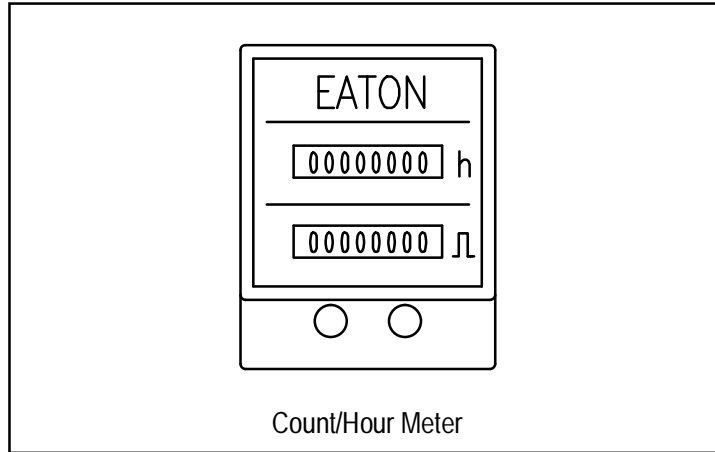
Fuse : 250v 1A

* Single Phase



11. Hour/Count Meter (2230010,2230020,2230040,2330010,2330020,2330040)

The count/ Hour (C/H) Meter located in on the electrical control panel records the hoists on time and number of starts.



Contactor-The C/H Meter can be used in conjunction with the amount of jogging to estimate when the contactor(s) should be replaced. Jogging is when the pendant control buttons are pressed quickly and repetitively to move the hook in small increments. Refer to Table 1-1.

Table 1-1 Criteria for Recommended Contactor Replacement		
Jogging During Normal Operation		Change Contactor After (П) (starts)
Rating	Approximate Jogging Frequency	
Low	Jogging is rare.	950,000
Medium	During 25% of operations/ lifts.	500,000
High	During 50% or more of operations/ lifts.	200,000

Gear Oil - The H/C meter can be used in conjunction with the average load lifted by the hoist to estimate when the gear oil should be changed. Refer to Table 1-2.

Table 1-2 Criteria for Recommended Gear Oil Replacement		
Loading During Normal Operation		Change Gear Oil After (h) (hours)
Rating	Average % of Rated Capacity	
Light	0 to 33%	360
Medium	33 to 67%	240
Heavy	67 to 100 %	120

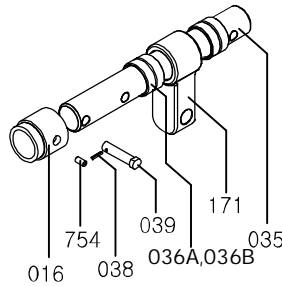
- To change gear oil of VFD hoist, check elapsed run time of the inverter which indicates hoist operation hour. Please refer to inverter manual(PF523) of ENGLISH SECTION.(b019-Elapsed Run Time) Refer to table 1-2 as well.

12. Lug Mount Plain Trolley kit

12.1. How to install Lug Mount Plain Trolley on the runway I-Beam

First, check the difference between beam flange width and guide roller spacing.

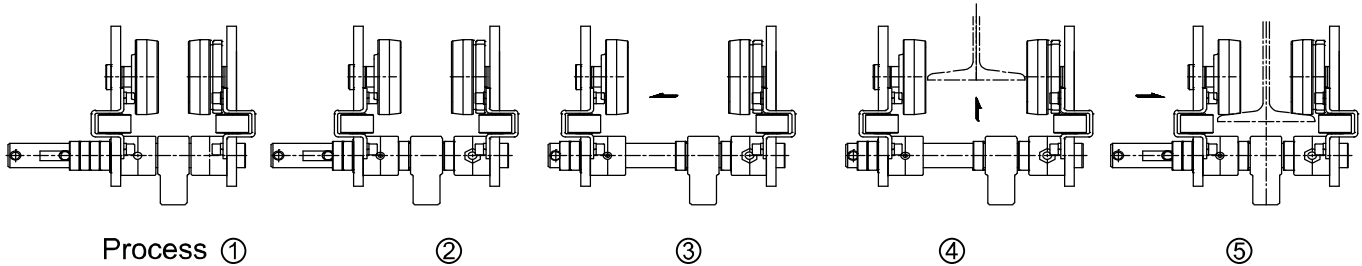
* Parts to adjust I-Beam Width



- PT016. Bracket A
- PT035. Shaft
- PT036A. Adjusting Collar
- PT036B. Adjusting Washer
- PT038. Setting Pin
- PT039. Stopper Pin
- PT171. Connector (Orange color connector is for Accolift CLH hoist)
- PT754. Setting Screw

(* MT171-Connector, Black Color is for Accolift)

* How to set up the I-Beam Width of Lug Mount Plain Trolley

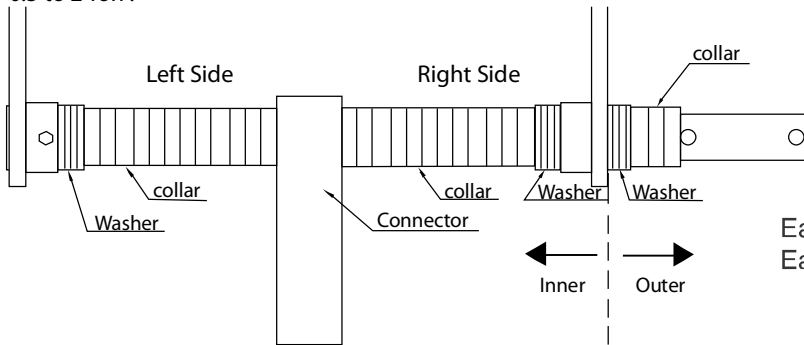


Lug Mount Plain trolley can be used on I-beams different in width only by inserting adjusting collars (0 pcs to 6 pcs.)

- ① Pull out both "PT039. Stopper Pin" and "PT036. Adjusting Collar"
- ② Widen TROLLEY up to the maximum width by pulling out "PT035. Shaft"
- ③ In accordance with the following I-Beam width instruction, please Insert the applied number of collars and washers at the right end and push the trolley to the direction of arrow mark.
- ④ Insert TROLLEY on I-Beam.
- ⑤ Locate "PT171. Connector" on the center and line up "PT036. Adjusting Collar" by setting the same number of collars and washers at both ends. The orange connector is used for the Accolift CLH hoist and the black connector is used for the Accolift hoist.

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

0.5 to 2 Ton :



Each collar width per pcs: 0.492 inch (12.5mm)
 Each washer width per pcs: 0.118 inch (3mm)

Beam Flange Width (in)				Adjusting Collar 0.492inch								Adjusting Washer 0.118inch	
				3 ¹ / ₄	4	5	6	7	8	9	10	11	12
Cap. (Ton)	Spacer Type	(mm)		85	102	127	153	178	203	229	254	279	305
0.5	Washer	Inner	4	2	2	2	2	2	2	2	2	2	10
		Outer	6	8	8	8	8	8	8	8	8	8	8
1	collar	Inner	0	2	4	6	8	10	12	14	16	16	16
		Outer	16	14	12	10	8	6	4	2	0	0	0
2	Washer	Inner	2	0	0	0	0	0	0	0	0	0	88
		Outer	6	8	8	8	8	8	8	8	8	8	0
	collar	Inner	0	2	4	6	8	10	12	14	16	16	16
		Outer	16	14	12	10	8	6	4	2	0	0	0

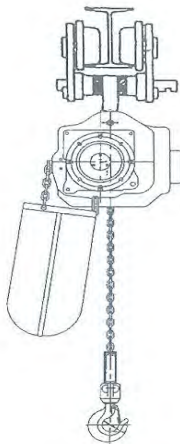
For Beam Flange Widths other than indicated, distribute collars and washers equally on Left Side and Right Side so that total clearance between Beam Flange Width and Trolley Side Guide Rollers is no less than 0.039 inch (1mm) and no more than 0.197 inch (5mm). A difference of one washer between Left Side and Right Side is permissible. No difference in quantity of collars between Left Side and Right Side is permissible.

⚠ WARNING

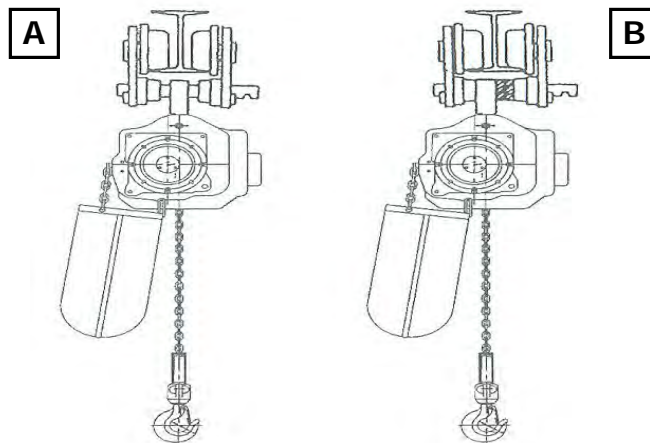
RIGHT installation: Fit both sides of the connector with the same number of adjusting collars.

WRONG installation: It can result in serious accidents.

RIGHT Installation

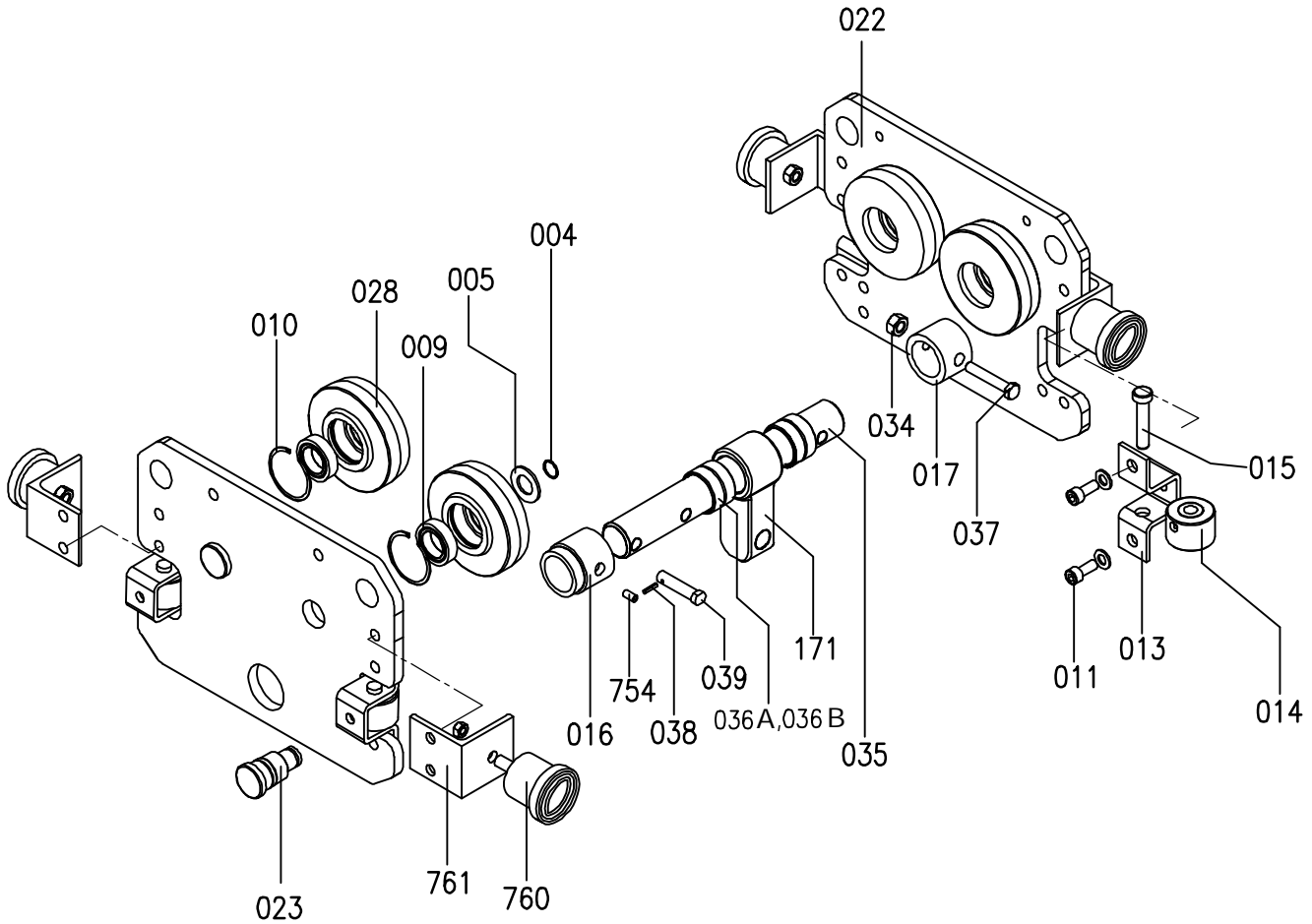


WRONG Installation



(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.

12.3. Exploded View of Lug Mount Trolley kit



12.4. Part list

LUG MOUNT TROLLEY KIT		0.5T	1T	2T	LUG MOUNT TROLLEY KIT		0.5T	1T	2T
PT004	SNAP RING	71574-1134	71574-1134	71574-2134	PT028	PLAIN ROLLER	71574-1150	71574-1150	71574-2150
PT005	PLAIN WASHER	71574-1135	71574-1135	71574-2135	PT034	HEX NUT	71574-1151	71574-1151	71574-2151
PT009	BALL BEARING	71574-1138	71574-1138	71574-2138	PT035	SHAFT	71574-1152	71574-1152	71574-2152
PT010	SNAP RING	71574-1139	71574-1139	71574-2139	PT036A	ADJUSTING COLLAR(0.492inch)	71574-1153	71574-1153	71574-2153
PT011	BOLT W/HEX HOLE	71574-1140	71574-1140	71574-1140	PT036B	ADJUSTING WASHER(0.118inch)	71574-1227	71574-1227	71574-2227
PT013	GUIDE ROLLER BODY	71574-1142	71574-1142	71574-1142	PT037	STOPPER BOLT	71574-1154	71574-1154	71574-2154
PT014	GUIDE ROLLER	71574-1143	71574-1143	71574-1143	PT038	SETTING PIN	71574-1155	71574-1155	71574-2155
PT015	GUIDE ROLLER PIN	71574-1144	71574-1144	71574-1144	PT039	STOPPER PIN	71574-1311	71574-1311	71574-2311
PT016	BRACKET A	71574-1145	71574-1145	71574-2145	PT171	CONNECTOR(Orange Color)	71574-1312	71574-1312	71574-2265
PT017	BRACKET B	71574-1146	71574-1146	71574-2146	PT754	SET SCREW	71574-1188	71574-1188	71574-2188
PT022	PLAIN SIDE PLATE	71574-1148	71574-1148	71574-2148	PT760	BUMPER STOPPER	71574-1313	71574-1313	71574-1313
PT023	ROLLER PIN	71574-1149	71574-1149	71574-2149	PT761	BUMPER BRACKET	71574-1314	71574-1314	71574-1314

ACCOLIFT® GLH

GENERAL CONDITIONS OF WARRANTY

WARRANTIES: The seller warrants to the original using Buyer thereof that the goods sold under this Agreement are free from defects in workmanship and materials for a period of one year from the date of shipment to the original using Buyer. No other express warranties are given and no affirmation of Seller or Seller's agents, by word or action, shall constitute a warranty. No warranty is made for components and accessories made by others when such items are warranted by their respective manufacturers.

Installation or operation of the equipment in any manner other than as recommended by Seller, shall void the warranty.

Any variations in details between the goods furnished herein and those covered in Buyer's specifications are due to standards of manufacture not to be construed as exceptions to the specifications.

DISCLAIMER OF IMPLIED WARRANTIES:

- (a) SELLER MAKES NO WARRANTY OF MERCHANTABILITY IN RESPECT TO THE GOODS SOLD UNDER THIS AGREEMENT.
- (b) This sale is made WITHOUT ANY WARRANTY BY SELLER THAT THE GOODS ARE SUITABLE FOR ANY PARTICULAR PURPOSE.
- (c) Buyer hereby waives all other warranties, guarantees, obligations, liabilities, rights, and remedies arising by law or otherwise including any obligation or liability of the Seller arising from tort, and Buyer shall indemnify Seller from any liability, loss, damage, or claim arising from Buyer's tortious use of the goods sold hereby.

REMEDIES:

- (a) Under no conditions shall any goods be returned to Seller without its prior written consent.
- (b) The Buyer's sole and exclusive remedy for breach of any warranty is limited to Seller furnishing, at its expense, duplicate or repaired parts F.O.B. Seller's plant with installation at Buyer's expense if discovery of a claimed defect occurs during the allowable warranty period, and if Seller's inspection determines a defect exists.
- (c) The quantity of material shown by invoice shall in all cases govern settlement for shortages, unless notice of shortage, appropriately documented, is given to the carrier and the Seller upon delivery by the Carrier.
- (d) Claims for errors, deficiencies or imperfections shall be deemed waived by the Buyer unless Seller is notified in writing of the basis of such claims within 10 days after discovery of claimed defect and such discovery occurs within the warranted period.
- (e) Neither Buyer nor User shall be entitled under this Agreement to recover from Seller any incidental or consequential damages of any nature including but not limited to the cost of any labor expended by others in connection with the goods sold hereby by reason of any alleged nonconformity or breach of warranty on the part of the Seller, nor costs of material or account thereof, nor any lost profits whether determinable or speculative.



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