



제 CA-2012-0037 호

안 전 인 증 서

(사업장명) (주)KITO

(소재지) 2000, Tsuijiarai, Showa-Cho, Nakakoma-Gun, Yamanashi, Japan

위 사업장에서 제조하는 아래의 품목이 「산업안전보건법」 제34조 및 같은 법 시행규칙 제58조의4제4항에 따른 안전인증 심사결과 안전·보건기준에 적합하므로 안전인증표시의 사용을 인증합니다.

_____	품 명 : 호이스트	_____
_____	형식(용량): KM-ER2-025(2.5 ton)	_____
_____	인증번호 : 12-CA4AC-0037	_____
_____	인증기준 : 위험기계·기구 의무안전인증기준 (고용노동부고시 제2011-39호)	_____
_____	인증조건 : 산업안전보건법 "제34조 준수"	_____

2012년 11월 30일

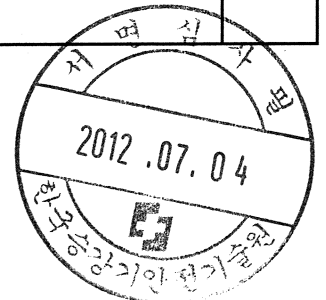
한국승강기안전기술원 이사장



【별지 제4호서식】

동 일 형 식 일 랑 표

사업장명	KITO CORP.		개정일자 및 번호	2012.06.21	인증번호	
형식 및 모델번호		동일형식 항목 및 내역			비고	
형식번호	모델번호	동일형식 항목1	동일형식 항목2	동일형식 항목3		
KM-ER2-025	KITO-ER2-025S	Lift max 30m 권상모타 3.5kW .S : 6.8m/min .IS: 6.6/1.1m/min	횡행모타 없음	Trolley고정형		
	KITO-ER2-025IS			Trolley 있음		
	KITO-ER2SP025S			전기Trolley 결합 type		
	KITO-ER2SP025IS					
	KITO-ER2SG025S					
	KITO-ER2SG025IS					
	KITO-ER2M025S-S		횡행모터 0.4kW .S : 24m/min .L: 12m/min .IS:24/4m/min .IL:12/2m/min			
	KITO-ER2M025S-L					
	KITO-ER2M025S-IS					
	KITO-ER2M025S-IL					
	KITO-ER2M025IS-S					
	KITO-ER2M025IS-L					
	KITO-ER2M025IS-IS					
	KITO-ER2M025IS-IL					
	KITO-C-ER2M025S-S			전기Trolley 결합 Clean type		
	KITO-C-ER2M025S-L					
	KITO-C-ER2M025S-IS					
	KITO-C-ER2M025S-IL					
	KITO-C-ER2M025IS-S					
	KITO-C-ER2M025IS-L					
KITO-C-ER2M025IS-IS						
KITO-C-ER2M025IS-IL						



제 2012-BJ-0009 호



안 전 인 증 서

정호엔지니어링

경기도 광명시 노온사동 440-5

위 사업장에서 제조하는 아래의 품목이 산업안전보건법 제34조 및 같은 법 시행규칙 제58조의4제4항에 따른 안전인증 심사 결과 안전·보건기준에 적합하므로 안전인증표시의 사용을 인증합니다.

품 목

양중기용 과부하방지장치

형식·모델/용량·등급/인증번호

형식·모델
JDL-100

용량·등급
J-2

인증번호
12-AV2BJ-0009

인 증 기 준

방호장치 의무안전인증 고시(고용노동부고시 제2010-36호)

인 증 조 건

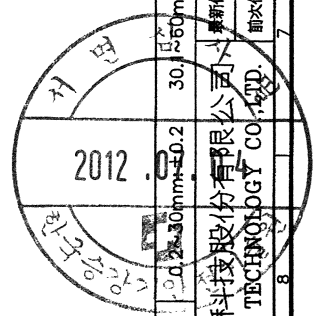
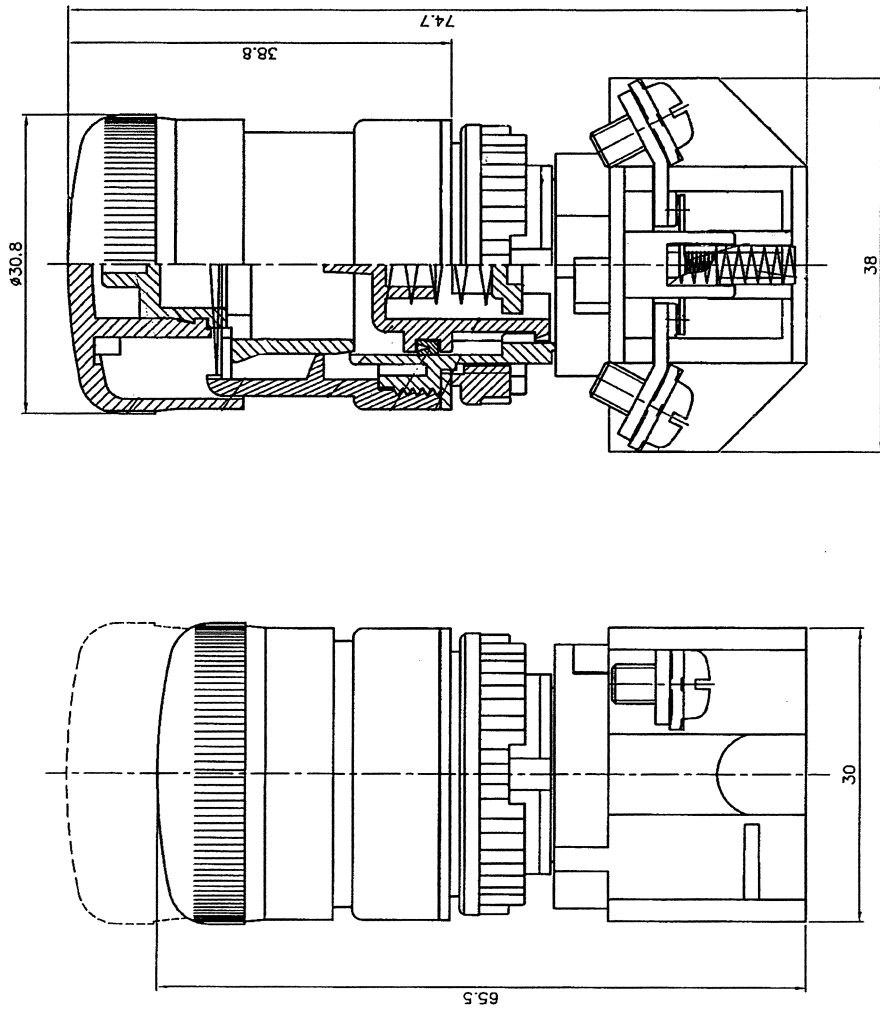
아래 주소에서 생산되는 제품에 한함.

정호엔지니어링, 경기도 광명시 노온사동 440-5

2012년 06월 11일

한국산업안전보건공단 이사장

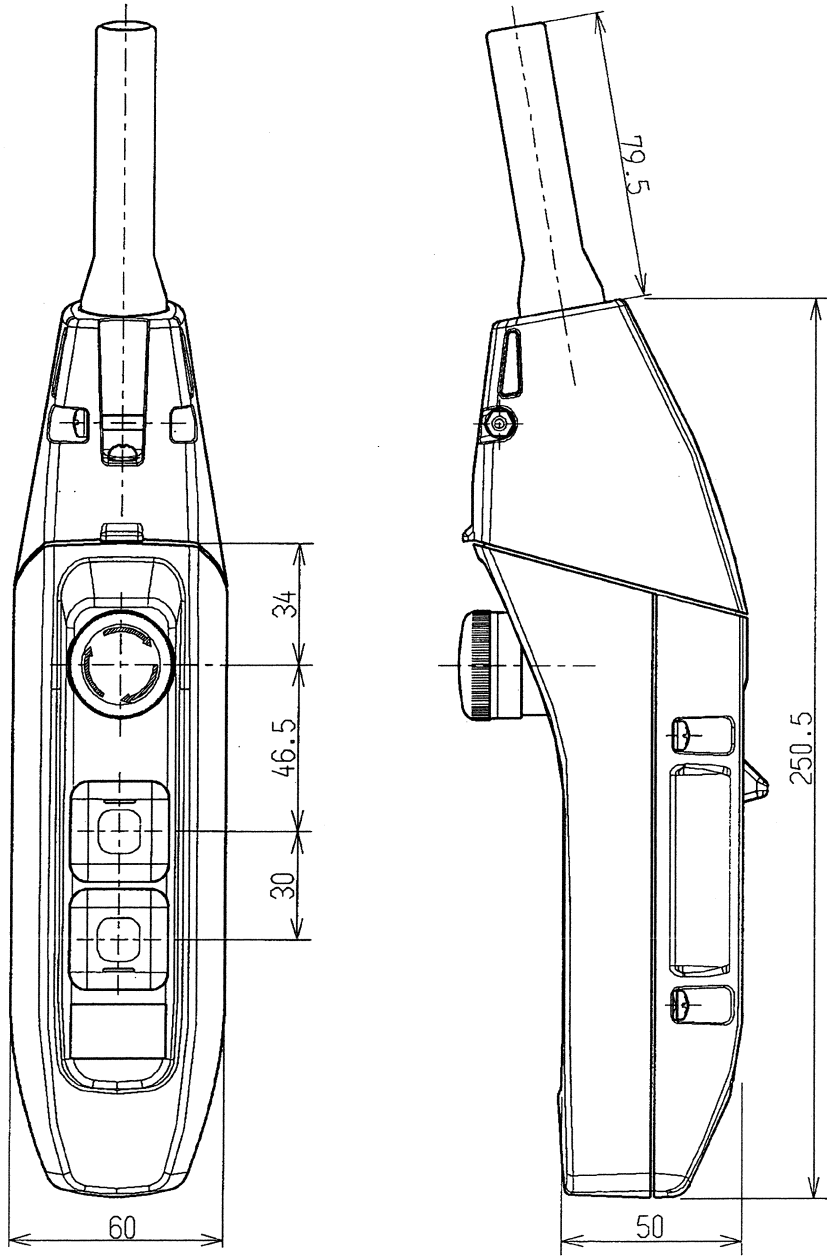




一般公差	0.2~0.3mm:±0.2	30.1~60mm:±0.3	60.1~300mm:±0.5	視具材質	視具處理	視具孔數	設計課 95.05.24 吳宗達	單位	mm	材質	圖號	T2-BKH
天得科技股份有限公司	品保部 95.05.24 林建宏	品保部 95.05.24 林建宏	研發部 95.05.24 周欽祥	核准	核對	繪圖	投標課 95.05.24 吳宗達	比例	2:1	表面處理	品名	T2 BKH 連續開關
TEND TECHNOLOGY CO., LTD.	品保	品保	研發	繪圖	核對	繪圖	投標	投影法	第一角	顏色		

圖序: A

Revision	Incidence	Description	Date	Charge	Approved

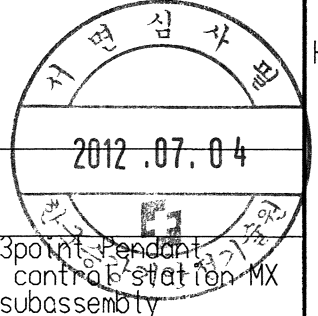


A
B
C
D
E
F
G
H

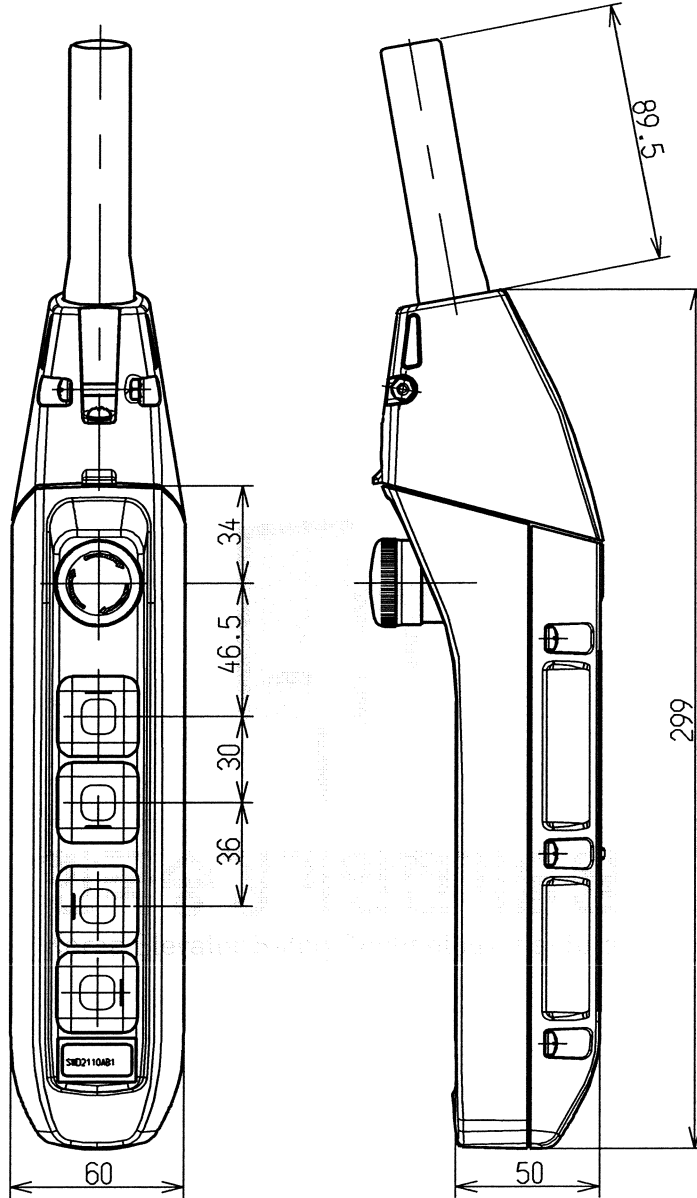
- ⑥
- ⑤
- ④
- ③
- ②
- ①

NOTE

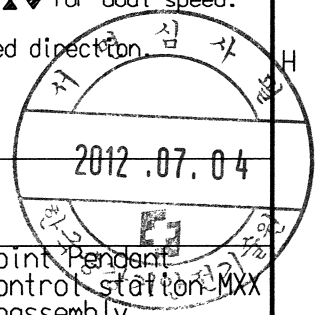
APPROVED	ISHIKAWA	CHECKED	FURIYA	DESIGNED	KOBAYASHI	DRAWN	KOBAYASHI	SCALE	-	DWG. NO.	SWD2X00AA1	NAME CODE	3point Pendant control station MX subassembly
Date issued	08.02.08		08.02.08		08.02.08		08.02.08						



Revision	Incidence	Description	Date	Change	Approved



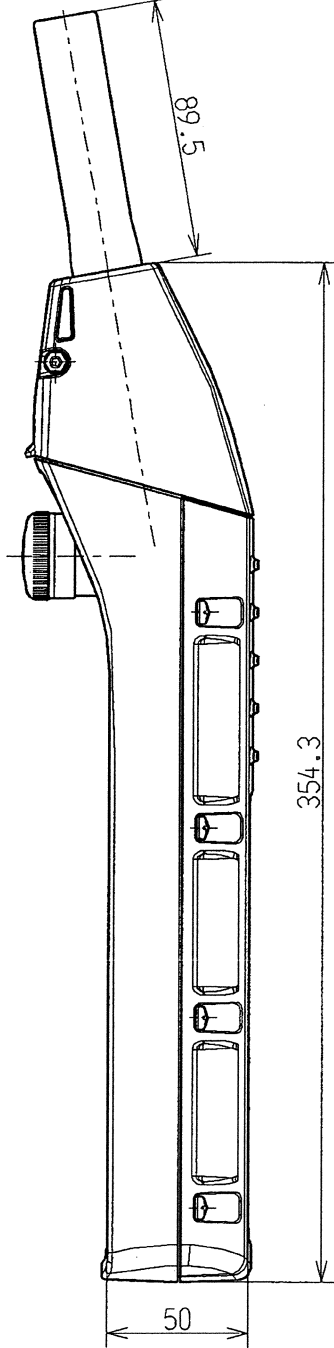
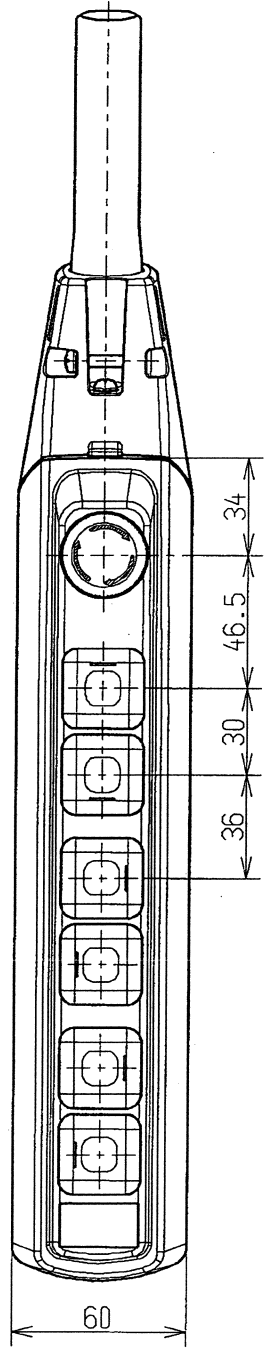
The lifting and lowering push buttons are marked with $\uparrow\downarrow$ for single speed or $\blacktriangle\blacktriangledown$ for dual speed.
 The traveling push buttons are marked with E W or N S depending on the installed direction.



6
5
4
3
2
1

APPROVED	H.FURIYA	CHECKED	T.HATANO	DESIGNED	KOBAYASHI	DRAWN	KOBAYASHI	SCALE	-	DWG. NO.	SWD2XX0AA1	MATERIAL		NAME CODE	5point Pendant control station MXX subassembly
	Date issued		09.04.21		09.04.21		09.04.21		09.04.21						

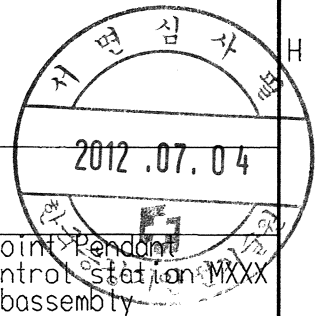
Revision	Incidence	Description	Date	Charge	Approved



(E)
(W)
(S)
(N)

⑥
⑤
④
③
②
①

APPROVED		CHECKED		DESIGNED		DRAWN		SCALE		DWG. NO.	MATERIAL	NAME	CODE
ISHIKAWA		FURIYA		KOBAYASHI		KOBAYASHI		-		SWD2XXXAA1		7point Pendant control station MXXX subassembly	
08.02.08		08.02.08		08.02.08		08.02.08							



1 2 3 4 5 6 7 8 9

형식번호 : KM-ER2-025	基本仕様表 Particulars
Model number. KITO-ER2-025S KITO-ER2-025IS	基本仕様 ER2-F
	定容積 Nominal Capacity 2.5t
	リフト能力 Lift 3m(max 30m)
	チェーンサイズ Chain size φ11.2 x 1
	レール下面よりフックまでの最小距離 : C Min. Headroom 625mm
	相電圧 Phase · Voltage 3φ 220(208)V 60Hz 380, 440V 60Hz

モーター出力・反逆定格・等級 Motor Output Duty Rating Classification	巻上モーター Lifting	IS	3.5kW x 4P
巻上速度 Lifting Speed	2巻巻(2444 巻巻) 1巻巻	IS	6.6~1.1 m/min
オンボタンのコード長さ : L Push Button Cord	1巻巻	S	6.8 m/min
ケーブルヤヤ給電ケーブル長さ Length of Power Supply Cable	ケーブルヤヤ給電	-	2.5 m(max 29.5m)
レール下面よりチェーン・パッケージまでの寸法 Chain Container Distance from Bottom of Beam	チェーン・パッケージ	D	840mm(max 1000)
質量 Mass	質量		約 105 kg
塗装色 Painting Color	塗装色		2カラー 7.5YR7/14 Munsell 7.5YR7/14

형식번호 : KM-ER2-025
*자바라는 옵션 사양임

형식번호 : KM-ER2-025			
Model number. KITO-ER2-025S KITO-ER2-025IS			
寸法 Dimensions	M	N	P
1号	337	399	736
2号	401	800	611

承認 APPROVED	検査 CHECKED	設計 DESIGNED	製図 DRAWN
H. Saito 10, 9, 27	K. Nakamura 10, 9, 27	K. Horieuchi 10, 9, 27	
株式会社 KITO			
KITA CO., LTD.			
1-1-1, Hama-cho, Nishi-ku, Osaka, Japan			
TEL: 06-6642-1111 FAX: 06-6642-1112			
E-MAIL: kito@kita.co.jp			

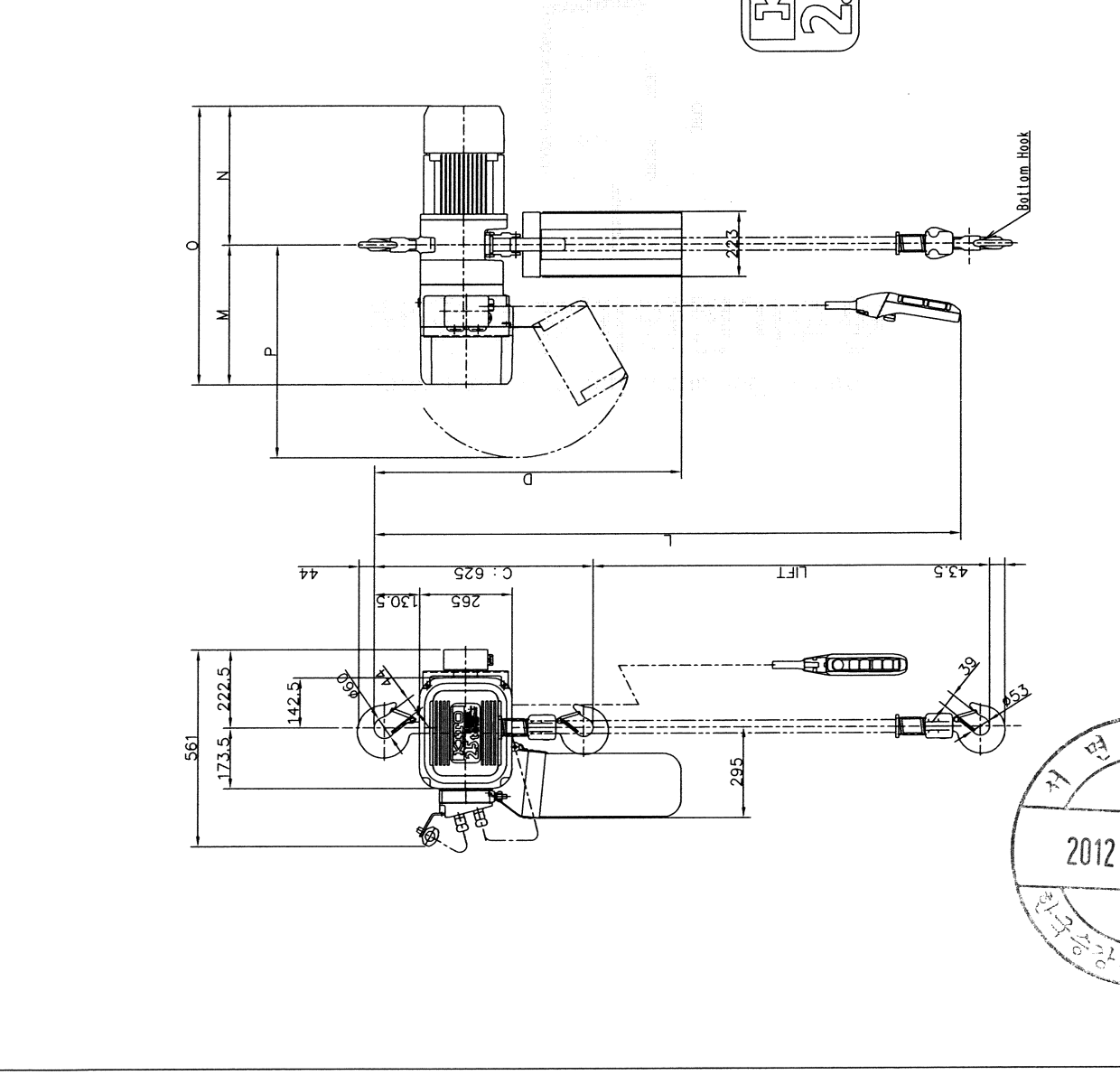
名称
TITLE
2.5t ER2 SERIES ELECTRIC CHAIN HOIST
WITH STANDARD

図番
Dwg. No.
KM-ER2-025-001

尺度
SCALE
NOT

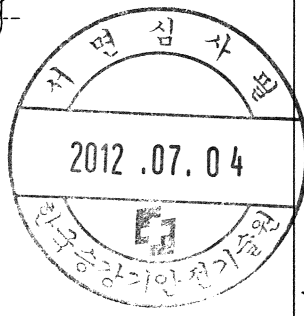
変更回数
REV.
1

角法
Unit
mm



承認 APPROVED	検査 CHECKED	設計 DESIGNED	製図 DRAWN
H. Saito 10, 9, 27	K. Nakamura 10, 9, 27	K. Horieuchi 10, 9, 27	
株式会社 KITO			
KITA CO., LTD.			
1-1-1, Hama-cho, Nishi-ku, Osaka, Japan			
TEL: 06-6642-1111 FAX: 06-6642-1112			
E-MAIL: kito@kita.co.jp			

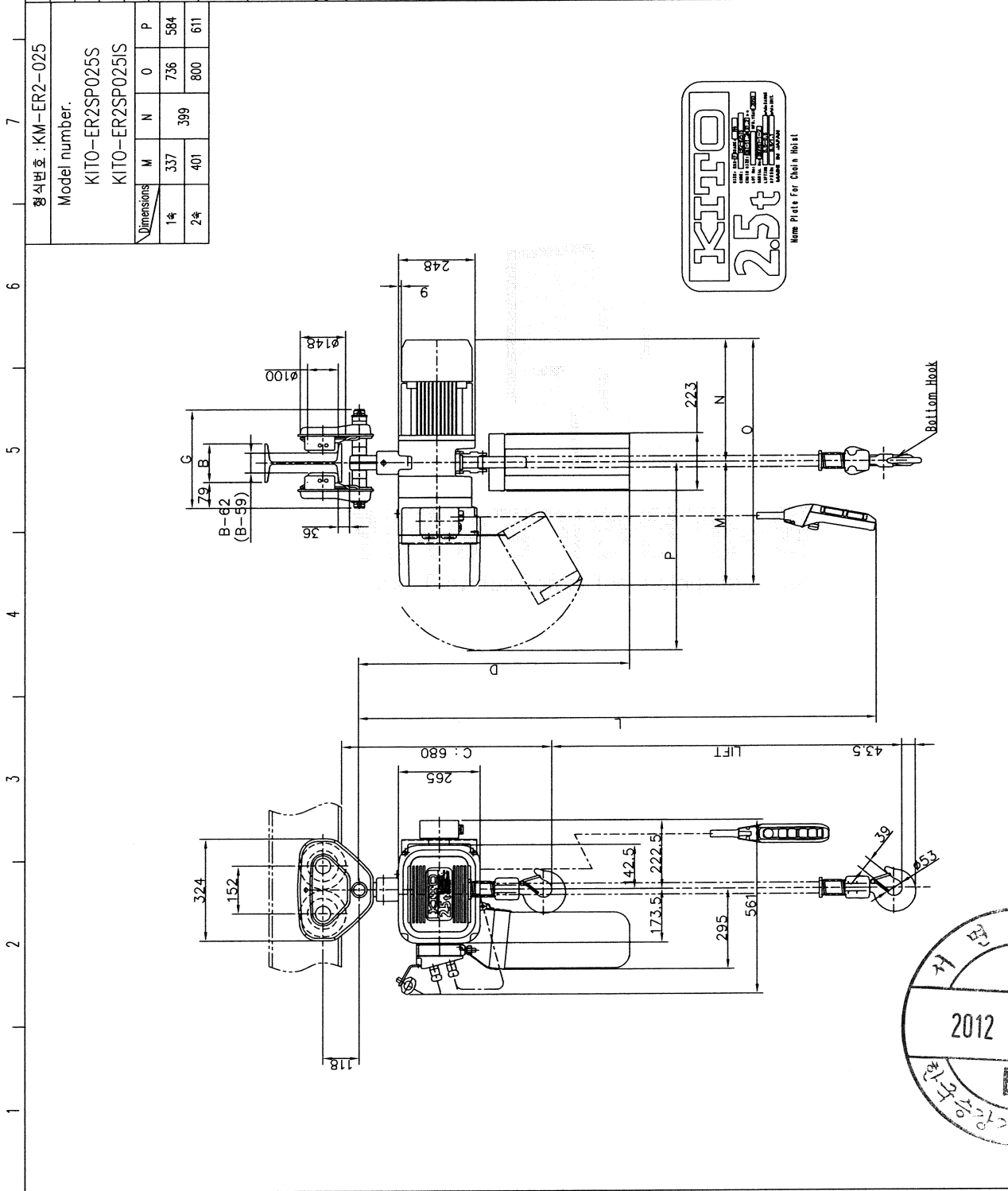
承認 APPROVED	検査 CHECKED	設計 DESIGNED	製図 DRAWN
H. Saito 10, 9, 27	K. Nakamura 10, 9, 27	K. Horieuchi 10, 9, 27	
株式会社 KITO			
KITA CO., LTD.			
1-1-1, Hama-cho, Nishi-ku, Osaka, Japan			
TEL: 06-6642-1111 FAX: 06-6642-1112			
E-MAIL: kito@kita.co.jp			



형식번호 : KM-ER2-025		請 五 表	
Model number.		Particulars	
KITO-ER2SP025S		基本仕様	
KITO-ER2SP025IS		定 額	
Nominal Capacity		2.5t	
Lift		3m(max.30m)	
Chain size		φ11.2 x 1	
Min. headroom		680mm	
Phase · Voltage		3φ 220(208)V 60Hz 380,440V 60Hz	
Motor Output Duty Rating Classification		IS,S 3.5kW x 4P	
Lifting Speed		IS 6.6~1.1 m/min	
Push Button Code		S 2.5 m(max.29.5m)	
Length of Power Supply Cable		- m	
Chain Container Distance from Bottom of Beam		890mm(max.1000)	
Min. Radius for Curve		1700mm	
Flange Width		82~153mm	
Max. Dimension of Trolley Width		320mm	
Weight		約 125 kg	
Painting Color		マニール 7.5YR7/14 Munsell 7.5YR7/14	

名称 TITLE	2.5t ER2 SERIES ELECTRIC CHAIN HOIST WITH PLAIN TROLLEY		
製造番号 CODE	ER2-SP	尺 度 SCALE	NOT
図番 Dwg. No.	KM-ER2-025-002	改訂回数 REV.	1

寸法単位 : mm
様式 : 025P-19



承認 APPROVED	検 査 CHECKED	設 計 DESIGNED	製 図 DRAWN
H. Saito 10, 9, 27	K. Nakamura 10, 9, 27	K. Horiuchi 10, 9, 27	

年 月 日 DATE	担 当 DRAWN	承認 APPROVED

改訂 REV.	数 QTY	内 容 CONTENTS	



1 2 3 4 5 6 7 8 9

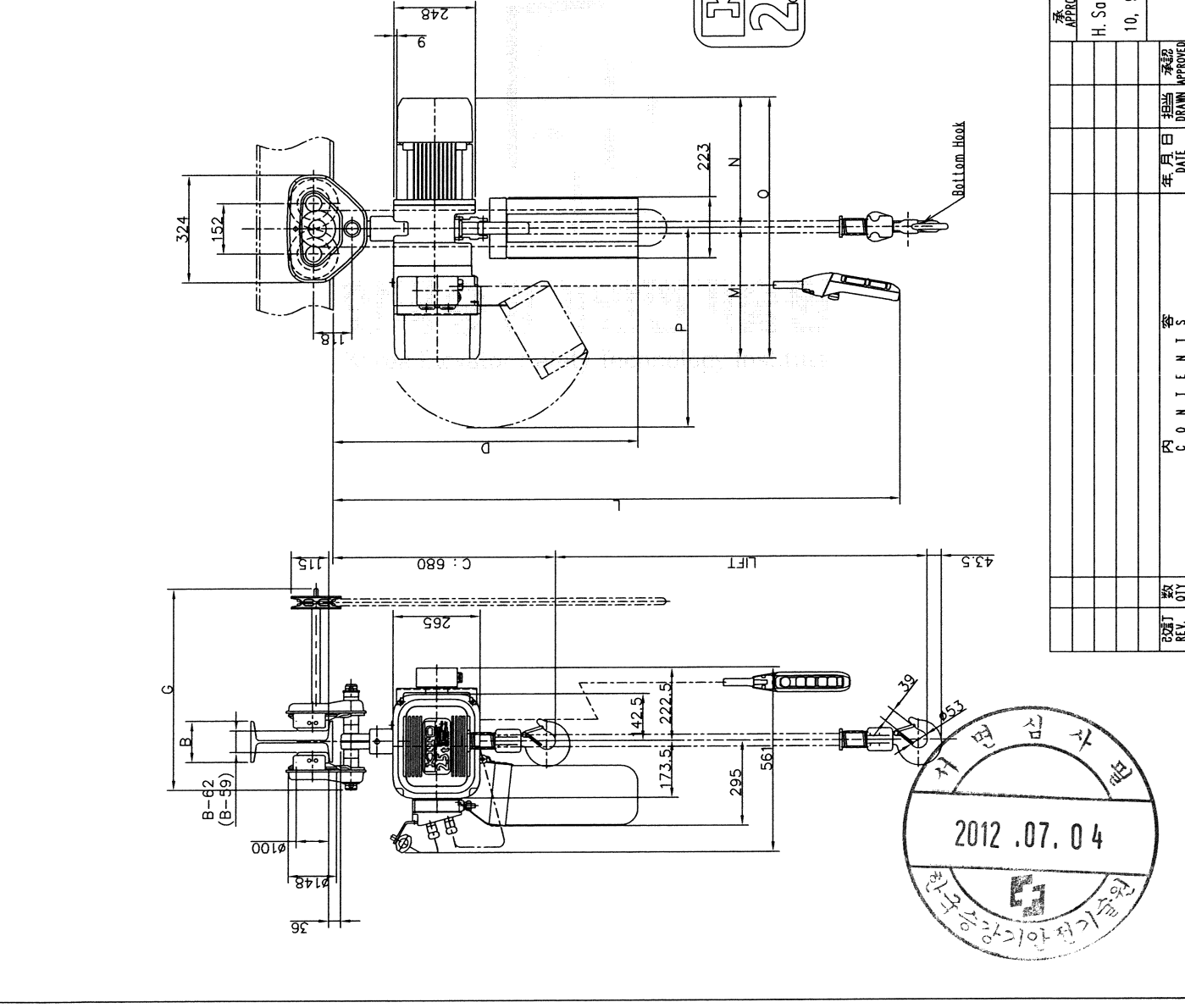
형식번호 : KM-ER2-025	基本仕様 Particulars
Model number.	基本仕様 Particulars
KITO-ER2SG025S	定 額 重 量 Nominal Capacity
KITO-ER2SG025IS	3m(max. 30m)
	チェーンサイズ Chain size
	φ11.2 x 1
	レール下面より フックまでの最小距離 : C
	680mm
	相 数 ・ 電 圧 Phase · Voltage
	3φ 220(208)V 60Hz 380, 440V 60Hz

モーター出力 ・ 反復定格 ・ 等級 Motor Output Duty Rating Classification	巻上モーター for Lifting	IS,S	3.5kW x 4P
巻上速度 Lifting Speed	24巻(24M4 巻巻)	IS	6.6~1.1 m/min
オンボルトコード長さ : L Push Button Cord ケーブル長さ Length of Power Supply Cable	1巻巻	S	6.8 m/min
レール下面よりチェーン パッケージまでの寸法 Chain Container Distance from Bottom of Beam			2.5 m(max. 29.5m)
最小回転半径 Min. Radius for Curve			- m
適用レール巾 : B Flange Width			890mm(max. 1000)
トロリ架大巾 : G Min. Dimension of Trolley Width			1700mm
質量 Mass			82~153mm
塗装色 Painting Color			644mm
			約 133 kg
			マニール 7.5VR7/14 Munsell 7.5R7/14

형식번호 : KM-ER2-025
*자바라는 옵션 사양임

형식번호 : KM-ER2-025	Model number.			
KITO-ER2SG025S	KITO-ER2SG025S			
KITO-ER2SG025IS	KITO-ER2SG025IS			
1차	337	399	736	584
2차	401	800	611	

承認 APPROVED	検 査 CHECKED	設 計 DESIGNED	製 図 DRAWN
H. Saito	K. Nakamura	K. Horiuchi	
10, 9, 27	10, 9, 27	10, 9, 27	
株式会社 KITO			
KITO CO., LTD.			
1-1-1, Hongo-cho, Nakamura-ku, Osaka-shi, Japan			
Name Plate for Chain Hoist			
2.5t			



承認 APPROVED	検 査 CHECKED	設 計 DESIGNED	製 図 DRAWN
H. Saito	K. Nakamura	K. Horiuchi	
10, 9, 27	10, 9, 27	10, 9, 27	
株式会社 KITO			
KITO CO., LTD.			
1-1-1, Hongo-cho, Nakamura-ku, Osaka-shi, Japan			
Name Plate for Chain Hoist			
2.5t			

年 月 日 DATE	相 当 DRAWN	承認 APPROVED
内 容 CONTENTS		
改訂 REV.	数 QTY	

図番
DIM. NO. KM-ER2-025-003

尺 度
SCALE N0T

変更回数
REV. 1

接式 025P-19

三角法 単位 : mm

LOAD SUMMARY 1 – INVERTER사양(2속)

*POWER SOURCE : AC 3Φ 220(208)V

OBJECT	HOISTING	TRAVERSING	CONTROL CIRCUIT
MOTOR OUTPUT	3.5KW x 4P	0.4KW x 4P	
FULL LOAD CURRENT	18.7 (A)	3 (A)	0.5 (A)

*크레인 하중상태를 HOIST의 정격 LOAD의 100(%)를 사용했을때를 기준으로 작성하였음.

*** NOMAL 전류값 ***

권상과 횡행시 : HOISTING + TRAVERSING + CONTROL CIRCUIT = 22.2 A

*** PEAK 전류값 ***

K= NOMAL 전류치가 50A미만일때 1.25, 50A이상일때 1.1적용

NOMAL 전류값 * K = 22.2 * 1.25 = 27.7 A

*POWER SOURCE : AC 3Φ 380(440)V

OBJECT	HOISTING	TRAVERSING	CONTROL CIRCUIT
MOTOR OUTPUT	3.5KW x 4P	0.4KW x 4P	
FULL LOAD CURRENT	9.2 (A)	2.5 (A)	0.5 (A)

*크레인 하중상태를 HOIST의 정격 LOAD의 100(%)를 사용했을때를 기준으로 작성하였음.

*** NOMAL 전류값 ***

권상과 횡행시 : HOISTING + TRAVERSING + CONTROL CIRCUIT = 12.2 A

*** PEAK 전류값 ***

K= NOMAL 전류치가 50A미만일때 1.25, 50A이상일때 1.1적용

NOMAL 전류값 * K = 12.2 * 1.25 = 15.2 A



LOAD SUMMARY 2 – INVERTER사양

*POWER SOURCE : AC 3Φ 220(208)V

OBJECT	HOISTING	TRAVERSING	CONTROL CIRCUIT
MOTOR OUTPUT	3.5KW x 4P	-	
FULL LOAD CURRENT	18.7 (A)	0 (A)	0.5 (A)

*크레인 하중상태를 HOIST의 정격 LOAD의 100(%)를 사용했을때를 기준으로 작성하였음.

*** NOMAL 전류값 ***

권상시 : HOISTING + CONTROL CIRCUIT = 19.2 A

*** PEAK 전류값 ***

K= NOMAL 전류치가 50A미만일때 1.25, 50A이상일때 1.1적용

NOMAL 전류값 * K = 19.2 * 1.25 = 24 A

*POWER SOURCE : AC 3Φ 380(440)V

OBJECT	HOISTING	TRAVERSING	CONTROL CIRCUIT
MOTOR OUTPUT	3.5KW x 4P	-	
FULL LOAD CURRENT	9.2 (A)	0 (A)	0.5 (A)

*크레인 하중상태를 HOIST의 정격 LOAD의 100(%)를 사용했을때를 기준으로 작성하

0

*** NOMAL 전류값 ***

권상시 : HOISTING + CONTROL CIRCUIT = 9.7 A

*** PEAK 전류값 ***

K= NOMAL 전류치가 50A미만일때 1.25, 50A이상일때 1.1적용

NOMAL 전류값 * K = 9.7 * 1.25 = 12.1 A



LOAD SUMMARY 3 – 1속형사양

*POWER SOURCE : AC 3Φ 220(208)V

OBJECT	HOISTING	TRAVERSING	CONTROL CIRCUIT
MOTOR OUTPUT	3.5KW x 4P	0.4KW x 4P	
FULL LOAD CURRENT	16.9 (A)	3 (A)	0.5 (A)

*크레인 하중상태를 HOIST의 정격 LOAD의 100(%)를 사용했을때를 기준으로 작성하였음.

*** NOMAL 전류값 ***

권상과 횡행시 : HOISTING + TRAVERSING + CONTROL CIRCUIT = 20.4 A

*** PEAK 전류값 ***

K= NAMAL 전류치가 50A미만일때 1.25, 50A이상일때 1.1적용

NOMAL 전류값 * K = 20.4 * 1.25 = 25.5 A

*POWER SOURCE : AC 3Φ 380(440)V

OBJECT	HOISTING	TRAVERSING	CONTROL CIRCUIT
MOTOR OUTPUT	3.5KW x 4P	0.4KW x 4P	
FULL LOAD CURRENT	8.7 (A)	2.2 (A)	0.5 (A)

*크레인 하중상태를 HOIST의 정격 LOAD의 100(%)를 사용했을때를 기준으로 작성하였음.

*** NOMAL 전류값 ***

권상과 횡행시 : HOISTING + TRAVERSING + CONTROL CIRCUIT = 11.4 A

*** PEAK 전류값 ***

K= NAMAL 전류치가 50A미만일때 1.25, 50A이상일때 1.1적용

NOMAL 전류값 * K = 11.4 * 1.25 = 14.2 A



LOAD SUMMARY 4 - 1속형사양

*POWER SOURCE : AC 3Φ 220(208)V

OBJECT	HOISTING	TRAVERSING	CONTROL CIRCUIT
MOTOR OUTPUT	3.5KW x 4P	-	
FULL LOAD CURRENT	16.9 (A)	0 (A)	0.5 (A)

*크레인 하중상태를 HOIST의 정격 LOAD의 100(%)를 사용했을때를 기준으로 작성하였음.

*** NOMAL 전류값 ***

권상시 : HOISTING + CONTROL CIRCUIT = 17.4 A

*** PEAK 전류값 ***

K= NOMAL 전류치가 50A미만일때 1.25, 50A이상일때 1.1적용

NOMAL 전류값 * K = 17.4 * 1.25 = 21.7 A

*POWER SOURCE : AC 3Φ 380(440)V

OBJECT	HOISTING	TRAVERSING	CONTROL CIRCUIT
MOTOR OUTPUT	3.5KW x 4P	-	
FULL LOAD CURRENT	8.7 (A)	0 (A)	0.5 (A)

*크레인 하중상태를 HOIST의 정격 LOAD의 100(%)를 사용했을때를 기준으로 작성하였음.

*** NOMAL 전류값 ***

권상시 : HOISTING + CONTROL CIRCUIT = 9.2 A




*** PEAK 전류값 ***

K= NOMAL 전류치가 50A미만일때 1.25, 50A이상일때 1.1적용



NOMAL 전류값 * K = 9.2 * 1.25 = 11.5 A






ROTATING MACHINE

-  SYNCHRONOUS GENERATOR, 3-PHASE
-  AC INDUCTION MOTOR, 3-PHASE
- * N : NORMAL DUTY
- S : STAND-BY
-  DC MOTOR



LIGHTNING ARRESTERS

-  LA : LIGHTNING ARRESTER
- SA : SURGE ARRESTER
- SS : SURGE SUPPRESSOR
-  DISCHARGE COUNTER






















INSTRUMENT TRANSFORMERS

-  CURRENT TRANSFORMER
-  ZERO PHASE CURRENT TRANSFORMER
-  POTENTIAL TRANSFORMER




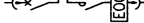

CIRCUIT BREAKERS

-  POWER CIRCUIT BREAKER, FIXED TYPE
- OCB : SF6 GAS CIRCUIT BREAKER
- VCB : VACUUM CIRCUIT BREAKER
- ACB : AIR CIRCUIT BREAKER
-  POWER CIRCUIT BREAKER, DRAWOUT TYPE










SWITCHES


-  CIRCUIT BREAKER, FIXED TYPE
- MCCB : MOULDED CASE CIRCUIT BREAKER
- MCB : MINIATURE CIRCUIT BREAKER
-  CIRCUIT BREAKER, DRAWOUT TYPE
-  WITHDRAWABLE INTERCONNECTOR
-  CIRCUIT BREAKER, MANUALLY OPERATED FIXED TYPE WITH THERMAL & MAGNETIC TRIP
-  CIRCUIT BREAKER, MANUALLY OPERATED FIXED TYPE WITH MAGNETIC TRIP ONLY
-  CIRCUIT BREAKER, MANUALLY OPERATED DRAWOUT TYPE WITH THERMAL & MAGNETIC TRIP
-  CIRCUIT BREAKER, MANUALLY OPERATED FIXED TYPE WITH THERMAL & MAGNETIC TRIP AND RESIDUAL CURRENT RELEASE
-  DISCONNECTOR SWITCH, SINGLE THROW MANUALLY OPERATED
-  LOAD BREAK SWITCH, SINGLE THROW MANUALLY OPERATED
-  EARTHING SWITCH, SINGLE THROW MANUALLY OPERATED
-  DISCONNECTOR SWITCH, SINGLE THROW MOTOR OPERATED
-  EARTHING SWITCH, SINGLE THROW MOTOR OPERATED
-  VACUUM CIRCUIT SWITCH
-  FUSED DISCONNECTOR SWITCH
-  FUSE-SWITCH
-  LIMIT SWITCH (MAKE CONTACT)
-  LIMIT SWITCH (BREAK CONTACT)
-  PUSH BUTTON, NORMALLY OPEN MOMENTARY CONTACT
-  PUSH BUTTON, NORMALLY CLOSED MOMENTARY CONTACT
-  PUSH BUTTON, NORMALLY OPEN PUSH TO LOCK, RELEASED BY KEY
-  MANUAL SELECTOR SWITCH (LOCKED)

CONTACTORS AND STARTERS

-  AUX. CONTACT, NORMALLY OPEN WHEN MAIN SWITCHING DEVICE IS DE-ENERGIZED
-  AUX. CONTACT, NORMALLY CLOSED WHEN MAIN SWITCHING DEVICE IS DE-ENERGIZED
-  MAGNETIC CONTACTOR, ELECTRICALLY OPERATED
-  COMBINATION STARTER, FULL VOLTAGE, NON-REVERSING, DRAWOUT TYPE, WITH ELECTRICALLY OPERATED CONTACTORS, WITH MAGNETIC MOTOR CIRCUIT BREAKER, BUILT IN ELECTRONIC OVER-CURRENT RELAY WITH ADJUSTABLE TRIP RATING
-  COMBINATION STARTER, FULL VOLTAGE, NON-REVERSING, FIXED TYPE, WITH ELECTRICALLY OPERATED CONTACTORS, WITH MAGNETIC MOTOR CIRCUIT BREAKER, BUILT IN THERMAL OVER-CURRENT RELAY WITH ADJUSTABLE TRIP RATING

GRAPHIC SYMBOLS

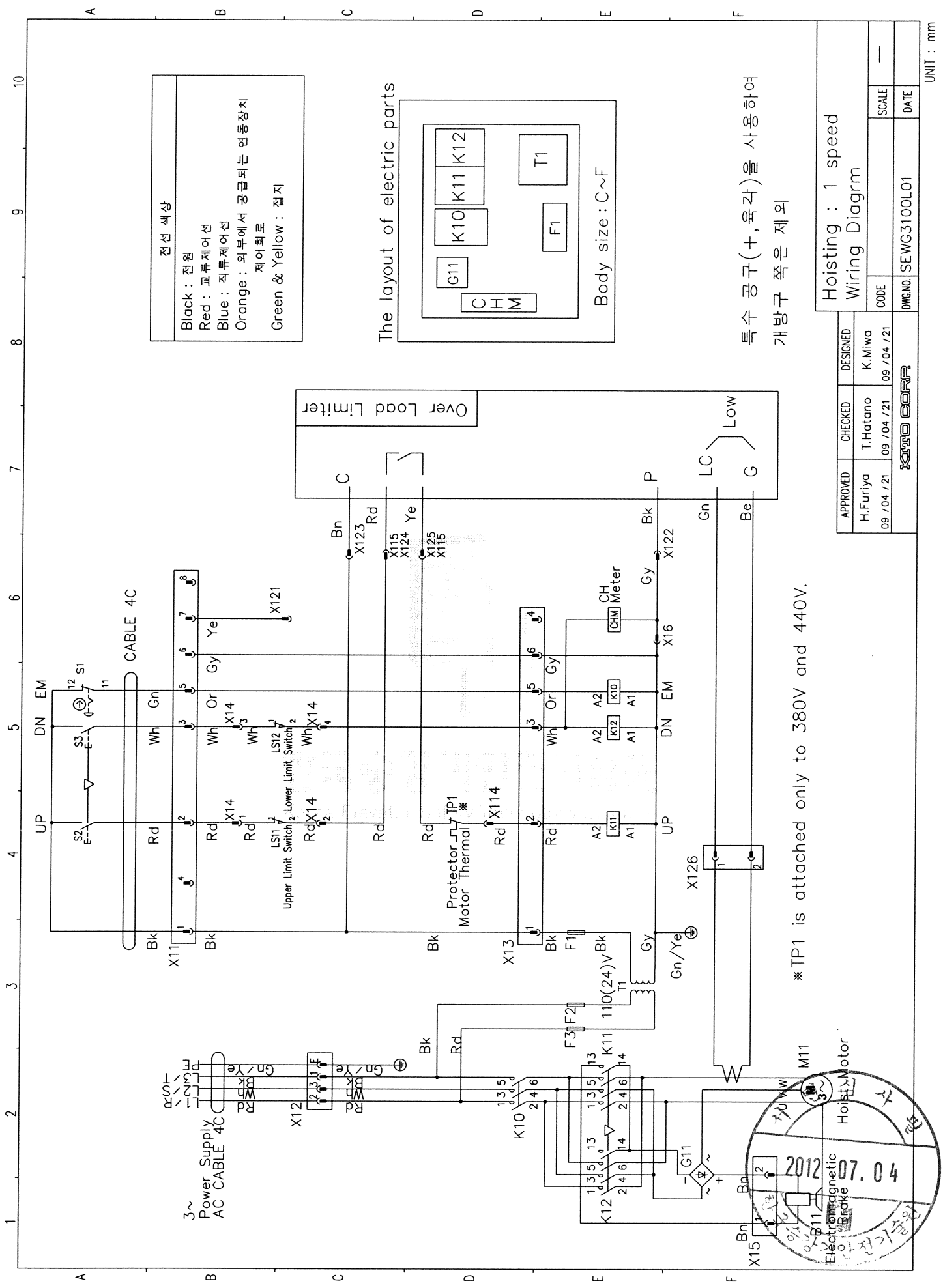
-  GENERAL OPERATING COIL
-  CAPACITOR
-  CAPACITOR VOLTAGE TRANSFORMER(CVT)
-  RESISTOR
-  DIODE
-  BUS DUCT
- SPB : SEGREGATED PHASE BUS DUCT
- IPB : ISOLATED PHASE BUS DUCT
-  CABLE HEAD AND CABLE CONNECTION
-  AMMETER SWITCH
-  VOLTMETER SWITCH

-  SIGNAL LAMP
- * R = RED
- G = GREEN
- W = WHITE
- C = CYAN
- Y = YELLOW
- B = BLUE
- A = AMBER

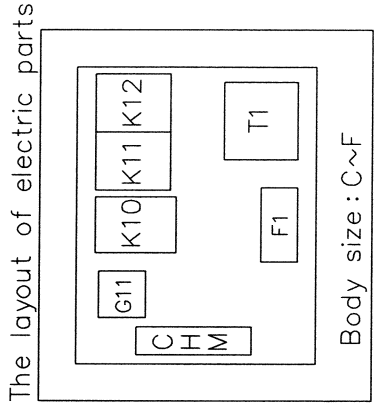
SYMBOL LIST

APPROVED	CHECKED	DESIGNED	SCALE	DATE
KOTO CORP				
			SYMBOL LIST	





전선 색상
 Black : 전원
 Red : 교류제어선
 Blue : 직류제어선
 Orange : 외부에서 공급되는 연동장치 제어회로
 Green & Yellow : 접지

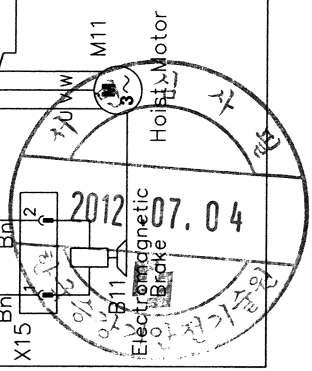


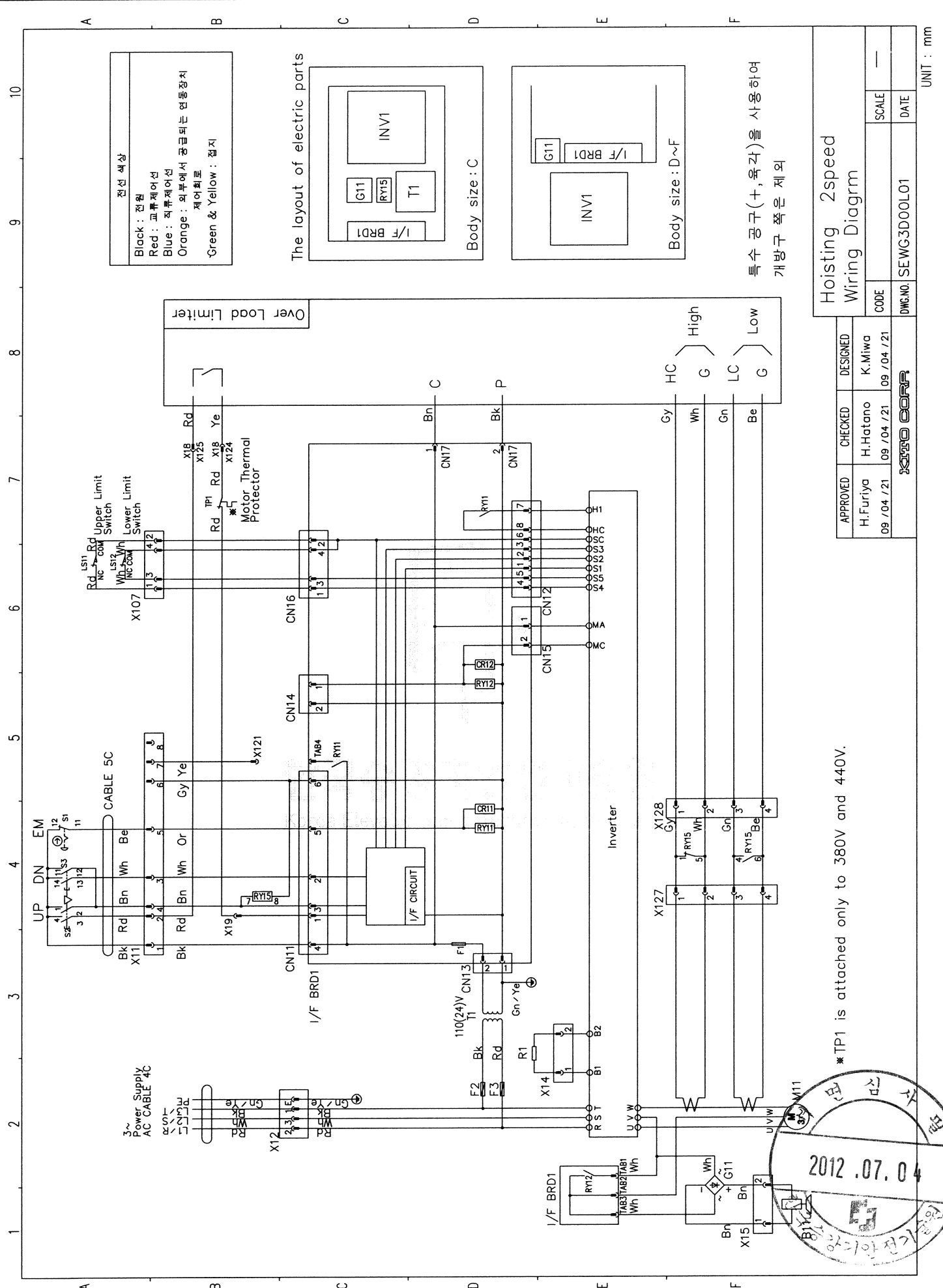
특수 공구(+, 육각)을 사용하여
 개방구 쪽은 제외

*TP1 is attached only to 380V and 440V.

APPROVED	CHECKED	DESIGNED	Hoisting : 1 speed Wiring Diagram	
H.Furiya	T.Hatano	K.Miwa	CODE	SCALE
09 /04 /21	09 /04 /21	09 /04 /21	—	—
KOTO CORP			DWG.NO	DATE
			SEWC3100L01	

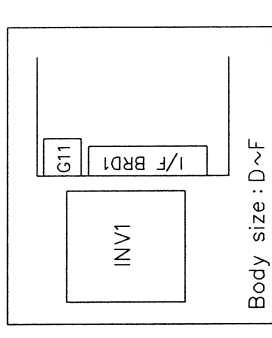
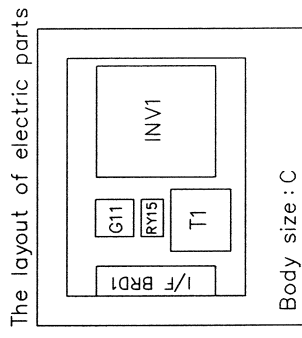
UNIT : mm





전선 색상

Black : 전원
Red : 과부재어선
Blue : 외부제어선
Orange : 외부에서 공급되는 연동장치 제어회로
Green & Yellow : 접지



특수 공구(+, 육각)을 사용하여
개방구 쪽은 제외

Hoisting 2speed Wiring Diagram

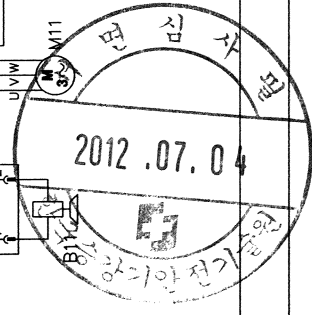
APPROVED	CHECKED	DESIGNED
H.Furiya	H.Hatano	K.Miwa
09 / 04 / 21	09 / 04 / 21	09 / 04 / 21

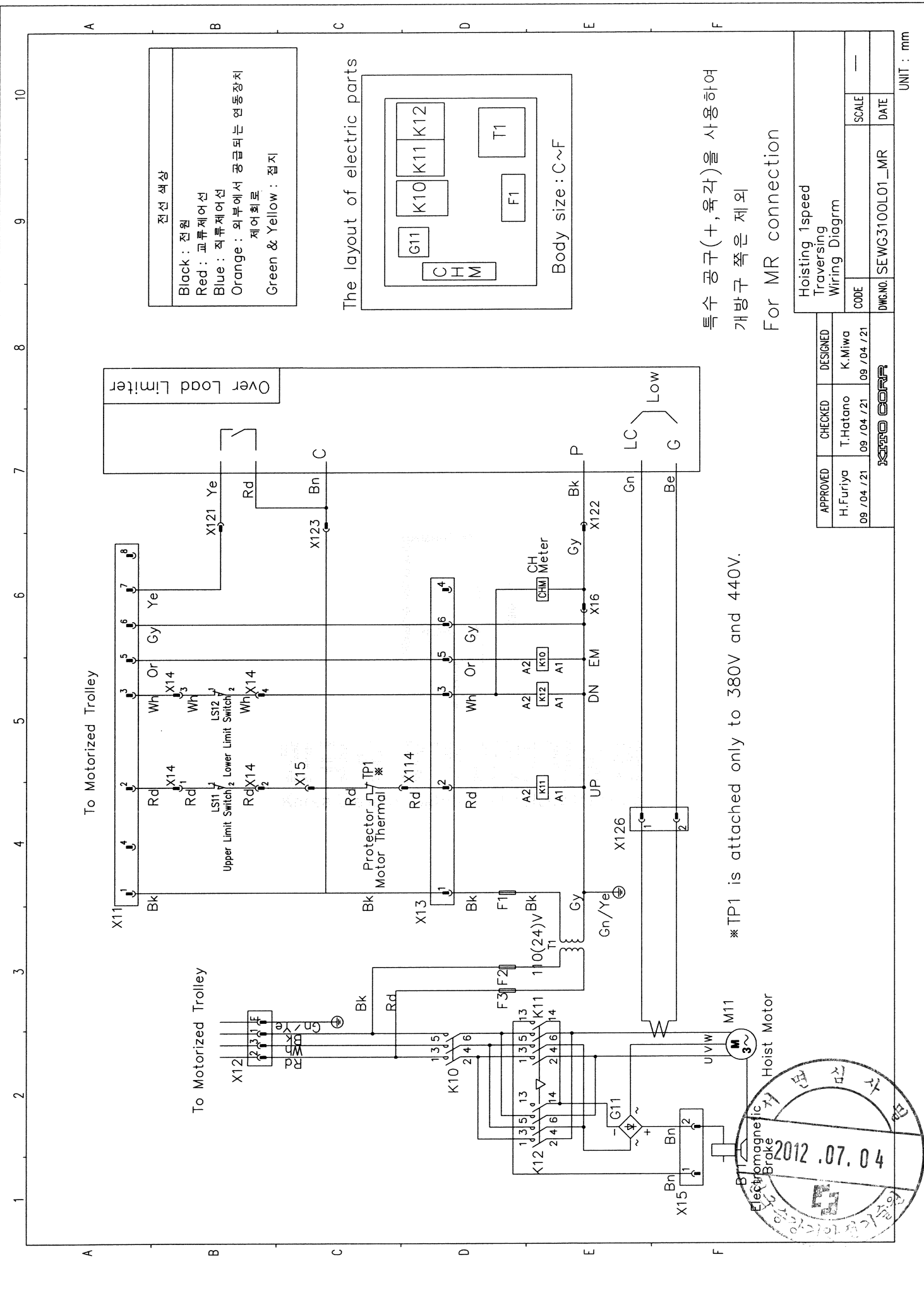
CODE	SCALE	DATE
—	—	—

KOTO CORP
DWG.NO. SEWG3D00L01

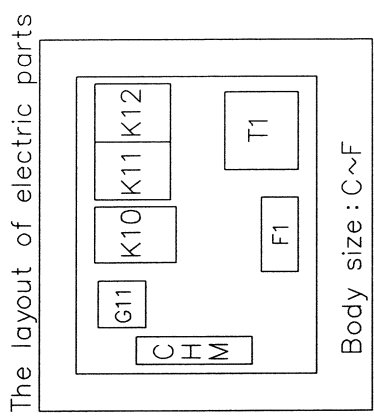
UNIT : mm

*TP1 is attached only to 380V and 440V.





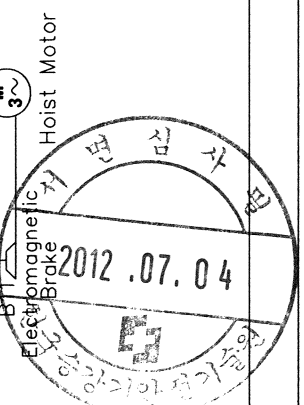
전선 색상
 Black : 전원
 Red : 교류제어선
 Blue : 직류제어선
 Orange : 외부에서 공급되는 연동장치 제어회로
 Green & Yellow : 접지



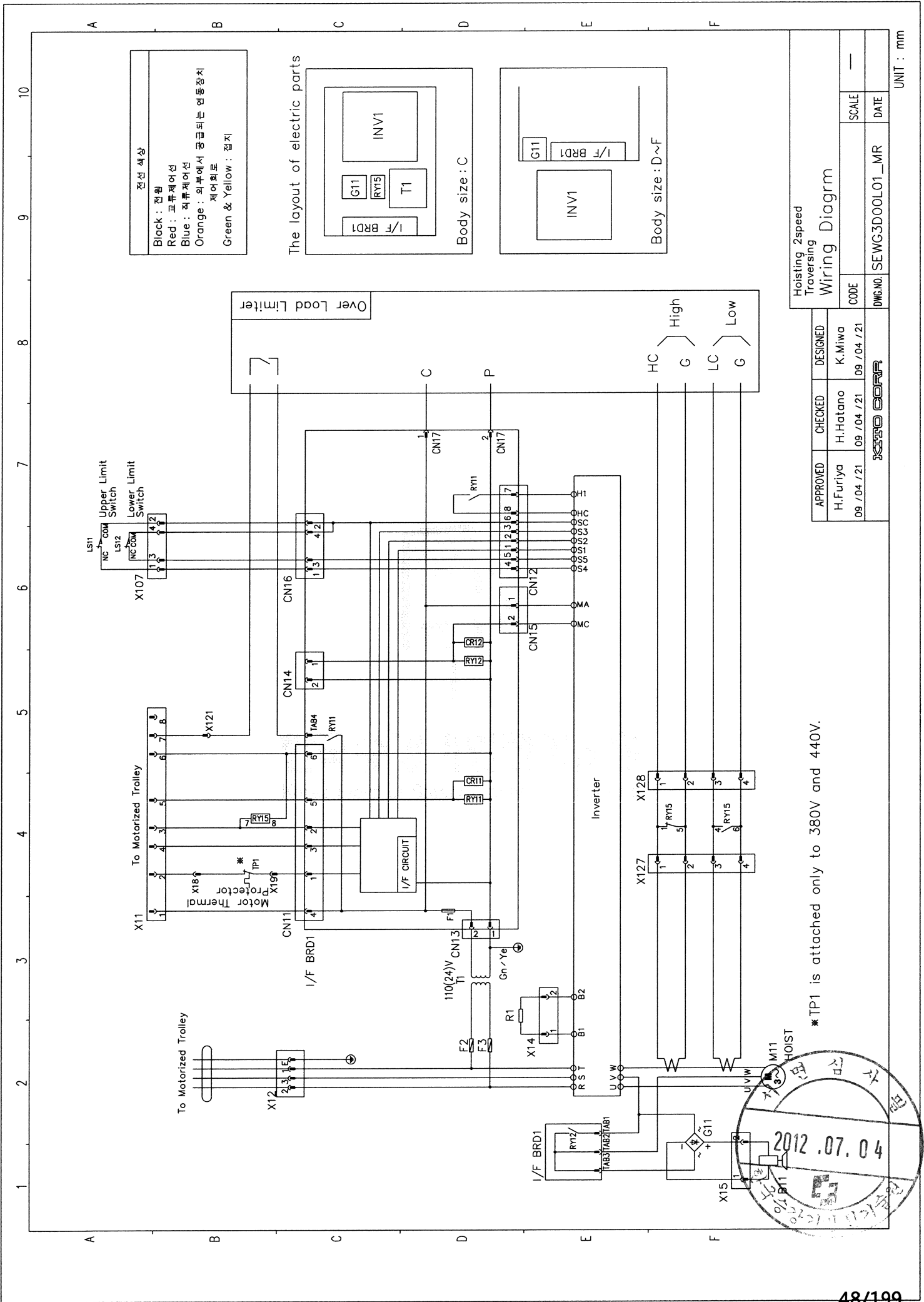
특수 공구(+, 육각)를 사용하여
 개방구 쪽은 제외
 For MR connection

APPROVED		CHECKED	DESIGNED
H.Furuya		T.Hatano	K.Miwa
09 / 04 / 21		09 / 04 / 21	09 / 04 / 21
KATO CORP.			
CODE	SCALE	DATE	
DMG.NO. SEWG3100L01_MR	—		

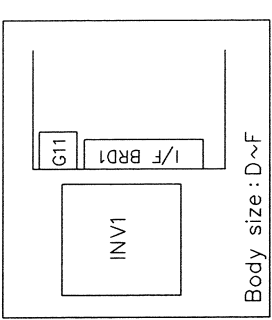
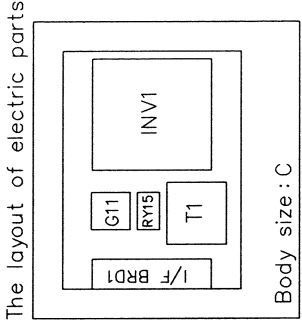
※ TP1 is attached only to 380V and 440V.



UNIT : mm



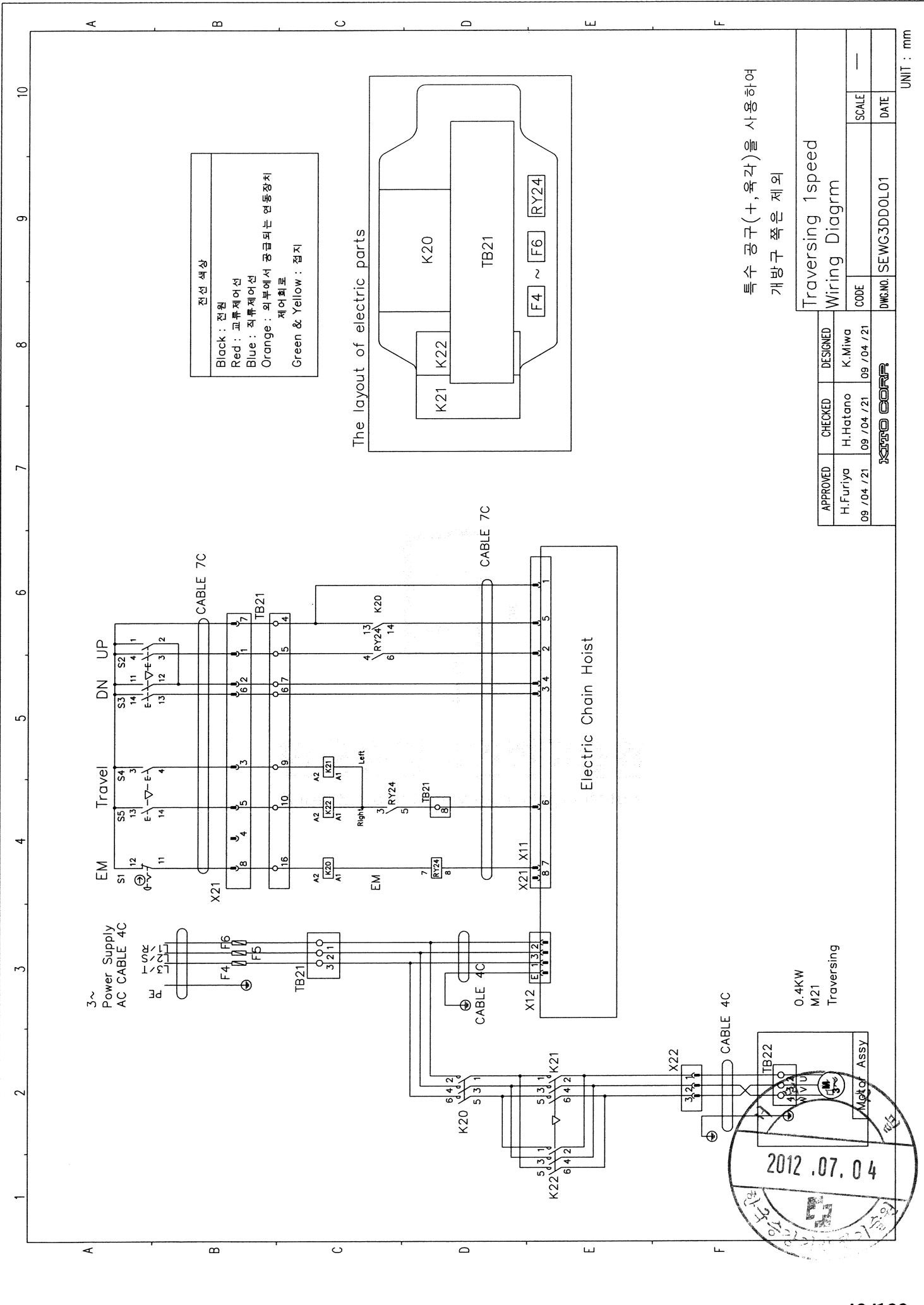
전선 색상
 Black : 전철
 Red : 교류제어선
 Blue : 직류제어선
 Orange : 외부에서 공급되는 연동장치 제어회로
 Green & Yellow : 접지



Hoisting 2speed Traversing Wiring Diagram	
APPROVED	CHECKED
H.Furiya	H.Hatano
09 / 04 / 21	09 / 04 / 21
YATRO CORP	
DESIGNED	DATE
K.Miwa	09 / 04 / 21
CODE	SCALE
DWG.NO. SEWG3D00L01_MR	—

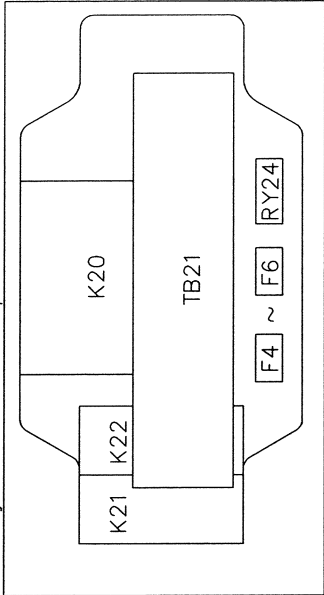
* TP1 is attached only to 380V and 440V.

UNIT : mm



전선 색상
 Black : 전원
 Red : 교류제어선
 Blue : 직류제어선
 Orange : 외부에서 공급되는 연동장치 제어회로
 Green & Yellow : 접지

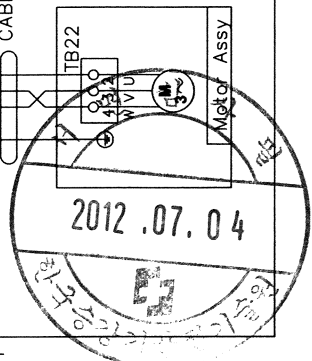
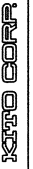
The layout of electric parts



특수 공구(+, 육각)을 사용하여
 개방구 쪽은 제외

Traversing 1speed
 Wiring Diagram

APPROVED	CHECKED	DESIGNED
H.Furiya 09 / 04 / 21	Hi.Hatano 09 / 04 / 21	K.Miwa 09 / 04 / 21
DWG.NO. SEWG3DD0L01		SCALE —
		DATE —



UNIT : mm

CABLE 구성도 및 사양 - 권상 용량 3.5kw

CABLE SPECIFICATION FOR ER2M

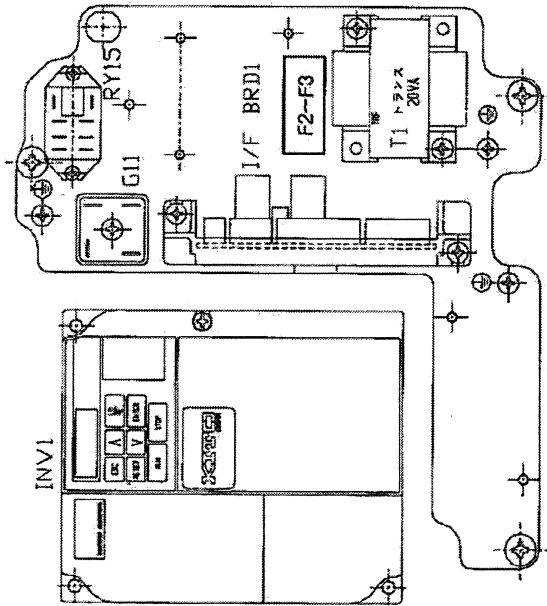
NO	ITEM	TYPE	ER2M30	
			SIZE	
①	Power Line	VCT	4sq x 4C	
②	Push Button Switch	VCT	1.25sq x 8C	
③	Loas Limit	VCT	0.75sq x 8C	
④	Power Line for ER	VCT	2sq x 4C	
⑤	Control Line for ER	VCT	1.25sq x 6C	
⑥	Traversing Motor With Earth	VCT	1.25sq x 4C	

(3Φ 220(208)V / 380V / 440V 60Hz)

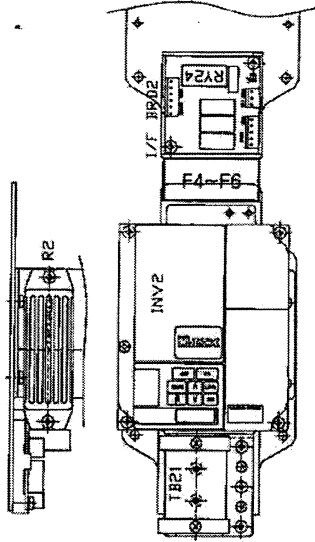


. 호이스트 CONTROL BOX 배치도

HOISTING CONTROL BOX

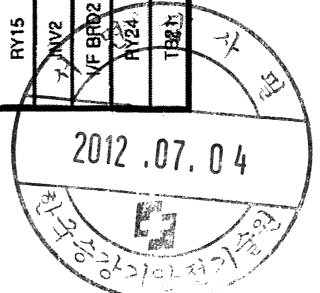


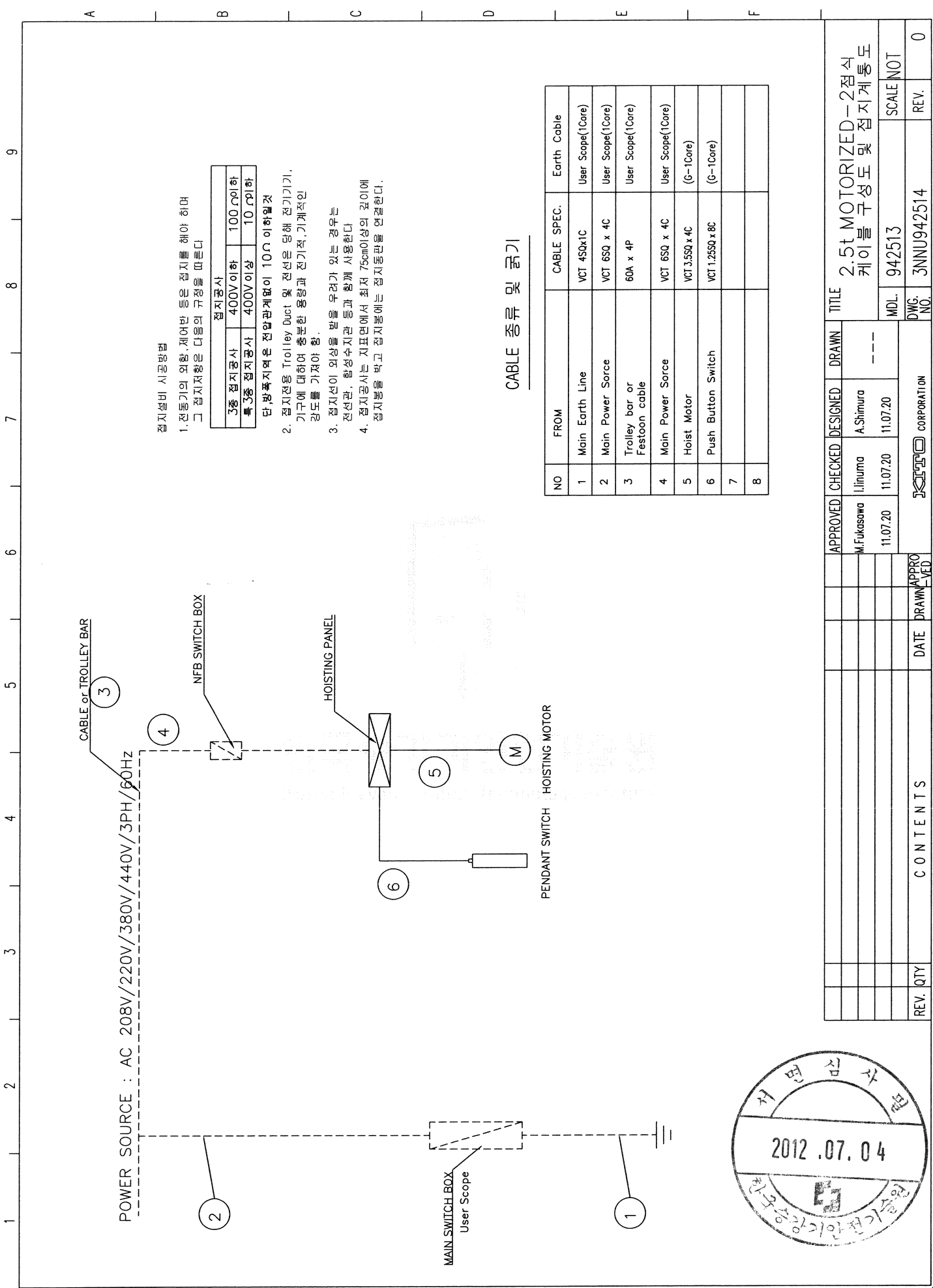
TRaversing CONTROL BOX



ENCLOSURE : HOIST BODY - IP55
PUSH BUTTON - IP65

MARK	DESCRIPTION	TYPE OF MODEL			Q'TY	MAKER	REMARKS
		220V	380V	440V			
INV1	INVERTER	V1000	V1000	V1000	1	YASKAWA	UP/DOWN
T1	TRANSFORMER	220V/24V(110V) 20VA	380V/24V(110V) 20VA	440V/24V(110V) 20VA	1	KITO	CONTROL CIRCUIT
G11	BRIDGE DIODE	S15VB60	S15VB60	S15VB60	1	SHINDENGEN	
1/F BRD1	INTERFACE BOARD	10~15A	10~15A	10~15A	1	KITO	
F2-F3	GLASS FUSE	10A	10A	10A	2	FUJI	
F4-F6	GLASS FUSE	30A	30A	30A	3	FUJI	
RY15	RELAY	110V	110V	110V	1	OMRON	HIGH/LOW
INV2	INVERTER	V1000	V1000	V1000	1	YASKAWA	RIGHT/LEFT
1/F BRD2	INTERFACE BOARD	10~15A	10~15A	10~15A	1	KITO	
RY24	RELAY	110V	110V	110V	1	OMRON	EMERGENCY STOP
TR21	TERMINAL BOARD 21	10~15A	10~15A	10~15A	1	KITO	





접지설비 시공방법

- 전동기의 외함, 제어반 등은 접지를 해야 하며 그 접지 저항은 다음의 규정을 따른다.

접지공사	
3중 접지공사	400V이하 100Ω이하
특3중 접지공사	400V이상 10Ω이하

단, 방폭지역은 전압관계없이 10Ω 이하일 것

- 접지선용 Trolley Duct 및 전선은 당해 전기기기, 기구에 대하여 충분한 용량과 전기적, 기계적인 강도를 가져야 함.
- 접지선이 외상을 받을 우려가 있는 경우는 전선관, 합성수지관 등과 함께 사용한다
- 접지공사는 지표면에서 최저 75cm이상의 깊이에 접지봉을 박고 접지봉에는 접지용관을 연결한다.

CABLE 종류 및 굵기

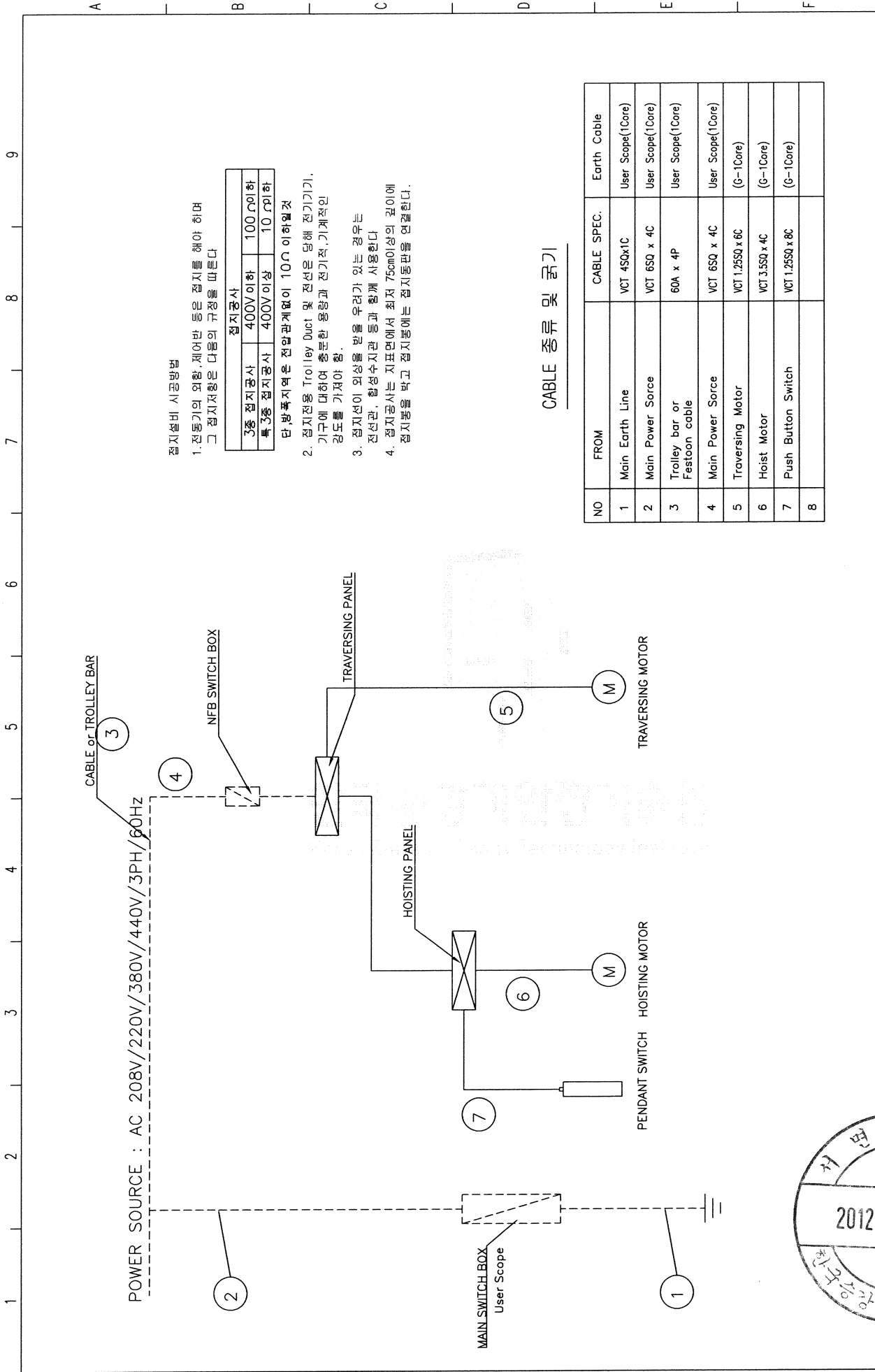
NO	FROM	CABLE SPEC.	Earth Cable
1	Main Earth Line	VCT 450x1C	User Scope(1Core)
2	Main Power Sorce	VCT 650 x 4C	User Scope(1Core)
3	Trolley bar or Festoon cable	60A x 4P	User Scope(1Core)
4	Main Power Sorce	VCT 650 x 4C	User Scope(1Core)
5	Hoist Motor	VCT 3.550 x 4C	(G-1Core)
6	Push Button Switch	VCT 1.2550 x 8C	(G-1Core)
7			
8			



REV.	QTY	CONTENTS	DATE	DRAWN	APPROVED	CHECKED	DESIGNED	DRAWN	TITLE
									2.5t MOTORIZED-2점식 케이블 구성도 및 접지계통도
					M. Fukasawa	Ilinuma	A. Shimura	---	
					11.07.20	11.07.20	11.07.20		MDL. 942513
									DWG. NO. 3NNU942514
									SCALE NOT
									REV. 0

UNIT : mm

様式 025G-05



접지설비 시공방법

1. 전동기의 외향, 제어반 등은 접지를 해야 하며 그 접지저항은 다음의 규정을 따른다

접지공사		
3층 접지공사	400V이하	100Ω이하
특 3층 접지공사	400V이상	10Ω이하

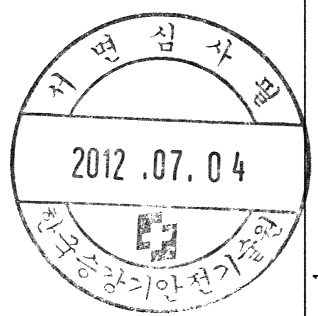
단, 방폭지역은 전압관계없이 10Ω 이하일것

2. 접지전용 Trolley Duct 및 전선은 당해 전기기기, 기구에 대하여 충분한 용량과 전기적, 기계적인 강도를 가져야 함.
3. 접지선이 외상을 받을 우려가 있는 경우는 전선관, 합성수지관 등과 함께 사용한다
4. 접지공사는 지표면에서 최저 75cm이상의 깊이에 접지봉을 박고 접지봉에는 접지동판을 연결한다.

CABLE 종류 및 굵기

NO	FROM	CABLE SPEC.	Earth Cable
1	Main Earth Line	VCT 4SQx1C	User Scope(1Core)
2	Main Power Source	VCT 6SQ x 4C	User Scope(1Core)
3	Trolley bar or Festoon cable	60A x 4P	User Scope(1Core)
4	Main Power Source	VCT 6SQ x 4C	User Scope(1Core)
5	Traversing Motor	VCT 1.25SQ x 6C	(G-1Core)
6	Hoist Motor	VCT 3.5SQ x 4C	(G-1Core)
7	Push Button Switch	VCT 1.25SQ x 8C	(G-1Core)
8			

REV.	QTY	CONTENTS	DATE	DRAWN	APPROVED	CHECKED	DESIGNED	DRAWN	TITLE
									2.5t MOTORIZED-4점식
									케이블 구성도 및 접지계통도
									MDL. 942513
									DWG. NO. 3NNU942513
									SCALE NOT
									REV. 0



UNIT : mm

樣式 025G-05

Date: 2009/04/14

Certificate of Compliance

We certify that the ER2 protection degrees conform to the IP rating as follows:

Hoist body - IP55 based on JIS C 4034-5, "Rotating electrical machines – Part5: Classification of degrees of protection provided by enclosures of rotating electrical machines (IP code)".

Push button - IP65 based on JIS C 0920, "Tests to prove protection against ingress of water and degrees of protection against ingress of solid objects for electrical equipment".

Technical Control Group

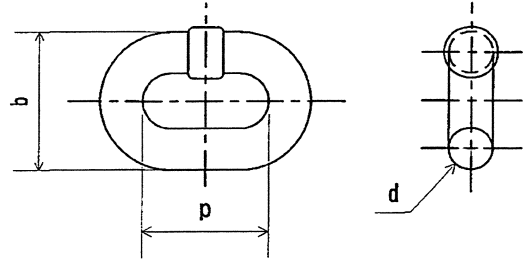
Certificate No. : FK100110

Date Issued : 2010/6/3

INSPECTION CERTIFICATE

Messrs. SAMSUNG HEAVY INDUSTRIES CO., LTD.

Commodity : NC Load Chain
 Code : KER2-112
 Lot No. : 2358
 Quantity : 1 line(s)
 Reference No. : U3-U63-00563
 Order No. : KJ-10-076B
 Production No. : 303035



1. Material : Manganese Alloy Steel

2. Dimensions (mm)

	d	p	b
Specified	11.2 ±0.4	31.2 +0.61 0	Max. 39.0
Result	Good	Good	Good

3. Breaking test

	Breaking load (kN)	Total ultimate elongation (%)
Specified	Min. 160	Min. 10
Result	Good	Good

4. Manufacturing Proof force test (Test load : 100 kN)

	Permanent elongation (%)
Specified	Max. 0.25
Result	Good

General judgment : Satisfactory



2000 Tsukijjarai, Showa-cho,
 Nakakoma-gun, Yamanashi, JAPAN

Quality Assurance Group
 Quality Assurance Department

M. Ogihara

(Manager)

Messrs. _____

Motor Test Report for Electric Chain Hoist

Motor type : Three phase squirrel cage type induction motor.

Manufacturer : Yasukawa Electric Mfg. Co.

Production No. : -

Rating

Model	Output	Pole	Intermittent Rating	Voltage	Frequency
IBQ	3.5kW	4P	60%ED	220V	60Hz

Full load characteristics

Voltage	Frequency	220V 60Hz
Load	%	100
Current	A	16.9
Speed	rpm	1670

Insulation class E

The above characteristics are obtained from calculation where the motor is assembled with an electric chain hoist and the hoist is subjected to full load



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Nakakoma-gun, Yamanashi, JAPAN

Quality Assurance Group
Quality Assurance Department
Development & Technology Division

M. Ogihara (Manager)

Messrs. _____

Motor Test Report for Electric Chain Hoist

Motor type : Three phase squirrel cage type induction motor.

Manufacturer : Yasukawa Electric Mfg. Co.

Production No. : -

Rating

Model	Output	Pole	Intermittent Rating	Voltage	Frequency
IBQ	3.5kW	4P	40/20%ED	220V	Speed Control by Inverter

Full load characteristics

Voltage	Frequency	220V	Speed Control by Inverter
Load	%	100	
Current	A	18.7	
Speed	rpm	~	

Insulation class E

The above characteristics are obtained from calculation where the motor is assembled with an electric chain hoist and the hoist is subjected to full load



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Quality Assurance Group
Quality Assurance Department
Development & Technology Division

M. Ogihara

(Manager)

Messrs. _____

Motor Test Report for Electric Chain Hoist

Motor type : Three phase squirrel cage type induction motor.

Manufacturer : Yasukawa Electric Mfg. Co.

Production No. :

Rating

Model	Output	Pole	Intermittent Rating	Voltage	Frequency
IBQ	3.5kW	4P	60%ED	380 - 440V	60Hz

Full load characteristics

Voltage	Frequency	380 - 440V 60Hz
Load	%	100
Current	A	8.7
Speed	rpm	1650

Insulation class B

The above characteristics are obtained from calculation where the motor is assembled with an electric chain hoist and the hoist is subjected to full load



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Quality Assurance Group
Quality Assurance Department
Development & Technology Division

(Manager)

K. Kishimoto

Messrs. _____

Motor Test Report for Electric Chain Hoist

Motor type : Three phase squirrel cage type induction motor.

Manufacturer : Yasukawa Electric Mfg. Co.

Production No. :

Rating

Model	Output	Pole	Intermittent Rating	Voltage	Frequency
IBQ	3.5kW	4P	60%ED	380 - 440V	Speed Control by Inverter

Full load characteristics

Voltage	Frequency	380 - 440V	Speed Control by Inverter
Load	%	100	
Current	A	9.2	
Speed	rpm	~	

Insulation class B

The above characteristics are obtained from calculation where the motor is assembled with an electric chain hoist and the hoist is subjected to full load



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Quality Assurance Group
Quality Assurance Department
Development & Technology Division

(Manager)

K. Kishimoto

Messrs. _____

Motor Test Report for Electric Trolley

Motor type : Three phase squirrel cage type induction motor.

Manufacturer : Yasukawa Electric Mfg. Co.

Production No. : -

Rating

Model	Output	Pole	Intermittent Rating	Voltage	Frequency
IBQ-T	0.4kW	4P	40%ED	220V	60Hz

Full load characteristics

Voltage	Frequency	220V	60Hz
Load	%	100	
Current	A	3.0	
Speed	rpm	1685	

Insulation class E

The above characteristics are obtained from calculation where the motor is assembled with an electric trolley and the trolley is subjected to full load



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Quality Assurance Department
Development & Technology Division

M. Ogihara (Manager)

Messrs. _____

Motor Test Report for Electric Trolley

Motor type : Three phase squirrel cage type induction motor.

Manufacturer : Yasukawa Electric Mfg. Co.

Production No. : -

Rating

Model	Output	Pole	Intermittent Rating	Voltage	Frequency
IBQ-T	0.4kW	4P	27/13%ED	220V	Speed Control by Inverter

Full load characteristics

Voltage	Frequency	220V	Speed Control by Inverter
Load	%	100	
Current	A	3.0	
Speed	rpm	~	

Insulation class E

The above characteristics are obtained from calculation where the motor is assembled with an electric trolley and the trolley is subjected to full load



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Quality Assurance Group
Quality Assurance Department
Development & Technology Division

M. Ogihara (Manager)

Messrs. _____

Motor Test Report for End Carriage

Motor type : Three phase squirrel cage type induction motor.

Manufacturer : Yasukawa Electric Mfg. Co.

Production No. :

Rating

Model	Output	Pole	Intermittent Rating	Voltage	Frequency
IBQ-T	0.4kW	4P	40%ED	380 - 440V	60Hz

Full load characteristics

Voltage	Frequency	380 - 440V 60Hz
Load	%	100
Current	A	2.2
Speed	rpm	1670

Insulation class B

The above characteristics are obtained from calculation where the motor is assembled with an electric chain hoist and the hoist is subjected to full load



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Quality Assurance Group
Quality Assurance Department
Development & Technology Division

(Manager)

K. Kishimoto

Messrs. _____

Motor Test Report for End Carriage

Motor type : Three phase squirrel cage type induction motor.

Manufacturer : Yasukawa Electric Mfg. Co.

Production No. :

Rating

Model	Output	Pole	Intermittent Rating	Voltage	Frequency
IBQ-T	0.4kW	4P	40%ED	380 - 440V	Speed Control by Inverter

Full load characteristics

Voltage	Frequency	220 – 230V	Speed Control by Inverter
Load	%	100	
Current	A	2.5	
Speed	rpm	~	

Insulation class B

The above characteristics are obtained from calculation where the motor is assembled with an electric chain hoist and the hoist is subjected to full load



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Quality Assurance Group
Quality Assurance Department
Development & Technology Division

(Manager)

K. Kishimoto