



제 2012 - 39812 호

안 전 인 증 서

(사업장명)

극동호이스트(주)

(소 재 지) (425-833) 경기도 안산시 성곡동 630-2 반월공단 B-607-14

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

_____ 품 목 _____

호이스트

_____ 형식, 모델(용량, 등급)/인증번호 _____

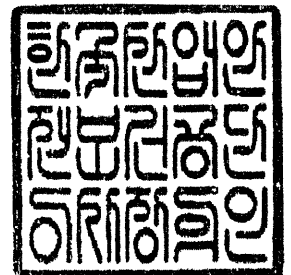
KD10-M (10Ton) / 12-AQ2AC-05015

_____ 인 증 기 준 _____

고용노동부 고시 제2012 - 33호 (위험기계, 기구 의무안전인증 고시)

_____ 인 증 조 건 _____

2012년 12월 07일



한국산업안전보건공단이사장



심사결과 통지서

신청인	사업장명	극동호이스트(주)	사업장관리번호	134-81-013350
	사업자등록번호	134-81-01335	대표자 성명	최성찬
	소재지	(425 - 833) 경기도 안산시 성곡동630-2 반월공단 B-607-14		
안전인증대상 기계·기구명				
호이스트				
형식 (규격)		KD10-M	용량 (등급)	10 Ton

산업안전보건법 제 34조 및 같은 법 시행규칙 제58조의4에 따라 실시한

[] 예비심사

[☒] 서면심사

[] 기술능력 및 생산체계 심사

결과가 [☒] 적 합

[] 개별 제품심사

[] 부적합

합을 통지합니다.

[] 개별 제품심사(제작중)

[] 형식별 제품심사

2012년 12월 06일

인증심사원

김흥태 변명수

강 흥 태
(인명 또는 직인)

한국산업안전보건공단 경기서부지도원장



서 면 심 사 서 류

형식 번호 : KD10-M

극 동 호 이 스트 (주)

工場 : 경기도 안산시 단원구 성곡동 630-2 반월공단607-14

電話 : 031) 491 - 5311

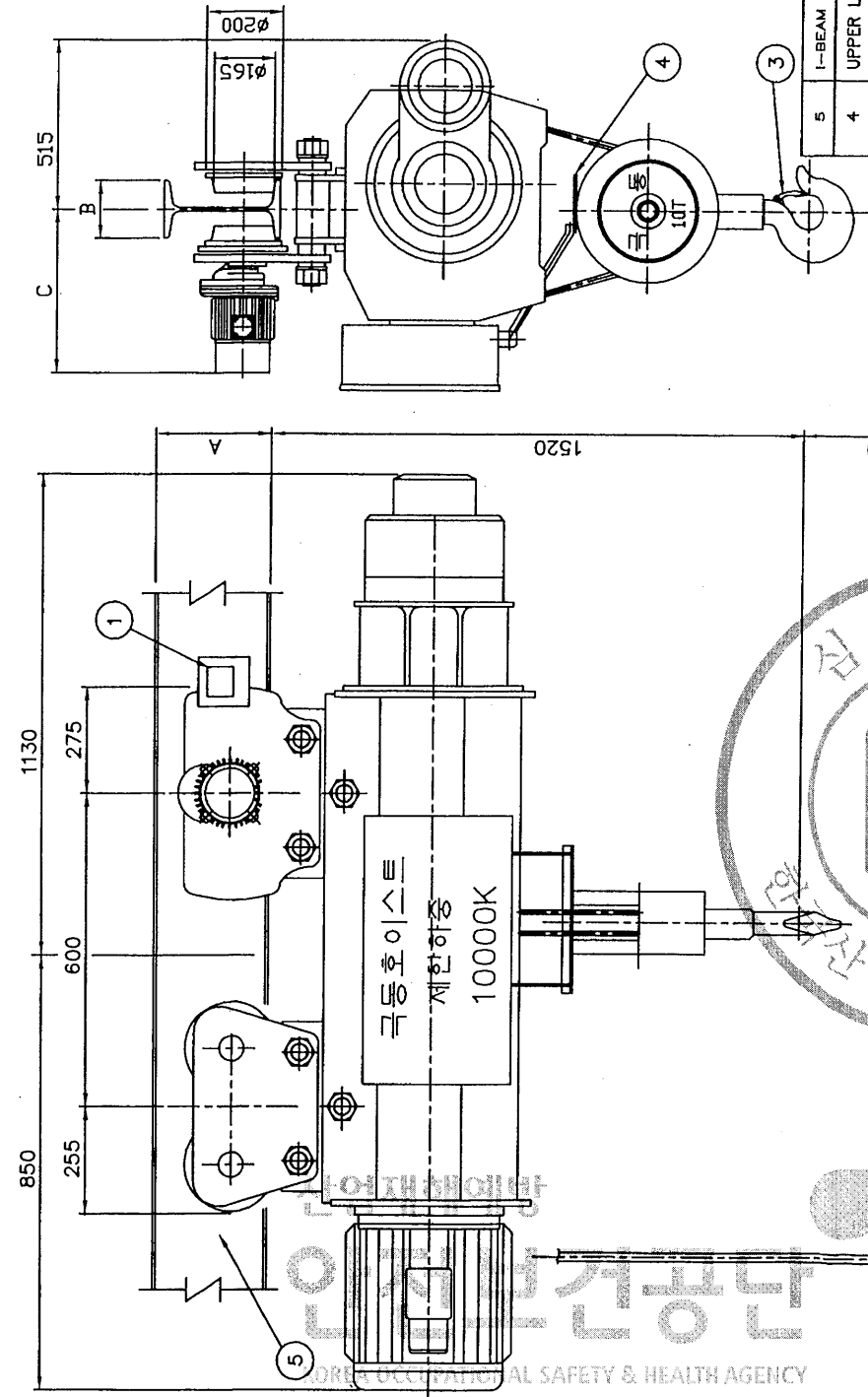
산업재해예방 FAX : 031) 494 - 5315

안전보건공단

KOREA OCCUPATIONAL SAFETY & HEALTH AGENCY

노동에 영향을 미치는 요인

구분		내역		
형식	모델	양정(M)	권상속도(M/MIN)	회행방식
산업재해예방 안전보건공단 KOREA OCCUPATIONAL SAFETY & HEALTH AGENCY KD10-M	KD10-L9-M	9	6.0 4.5 3.0	모터구동식
	KD10-L12-M	12		
	KD10-L18-M	18		
	KD10-L24-M	24		
	KD10-L30-M	30		
	KD10-L9-M-H	9		
	KD10-L12-M-H	12		
	KD10-L18-M-H	18		
	KD10-L24-M-H	24	4.5/0.45	모터구동식
	KD10-L30-M-H	30		
	KDC10-L9-M	9		
	KDC10-L12-M	12		
	KDC10-L18-M	18		
	KDC10-L24-M	24		
	KDC10-L30-M	30		
	KDC10-L9-M-H	9		
	KDC10-L12-M-H	12		
	KDC10-L18-M-H	18		
	KDC10-L24-M-H	24		
	KDC10-L30-M-H	30		



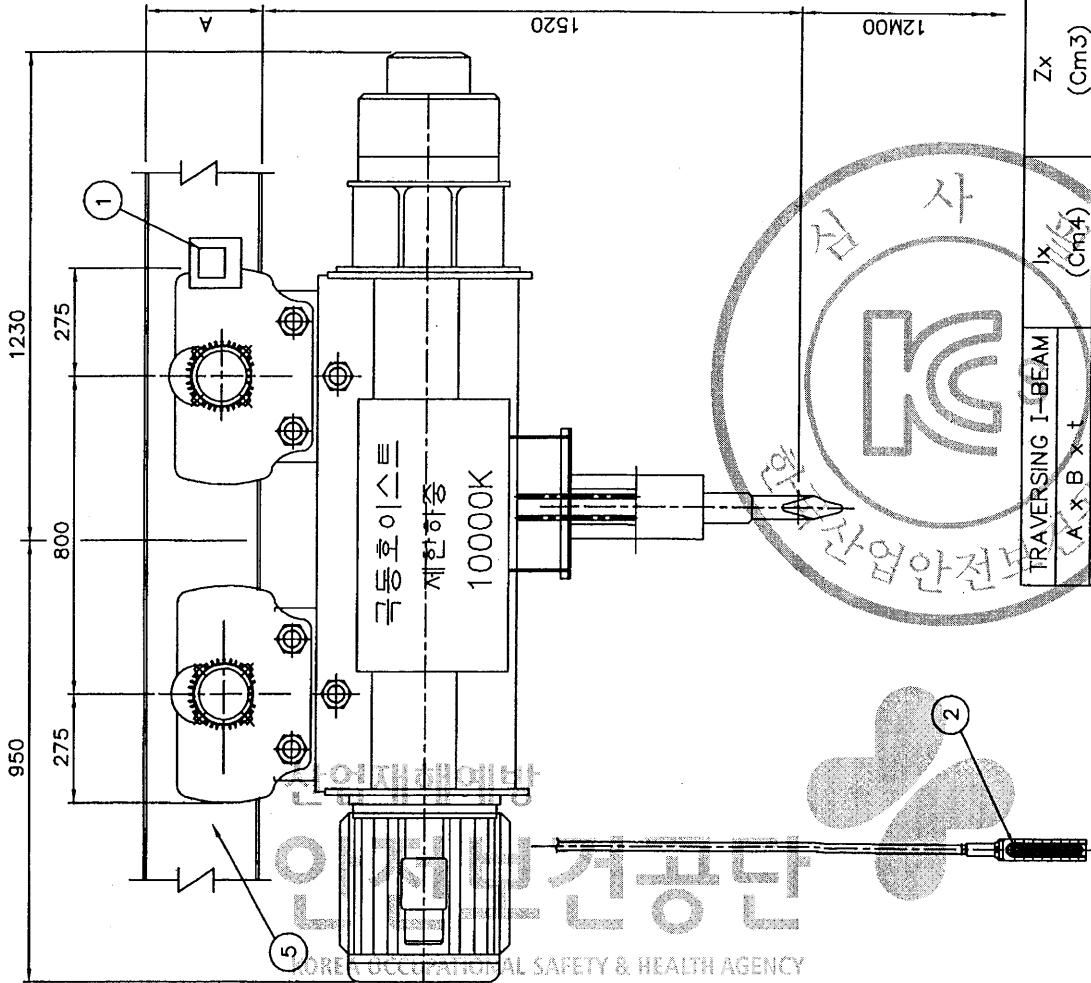
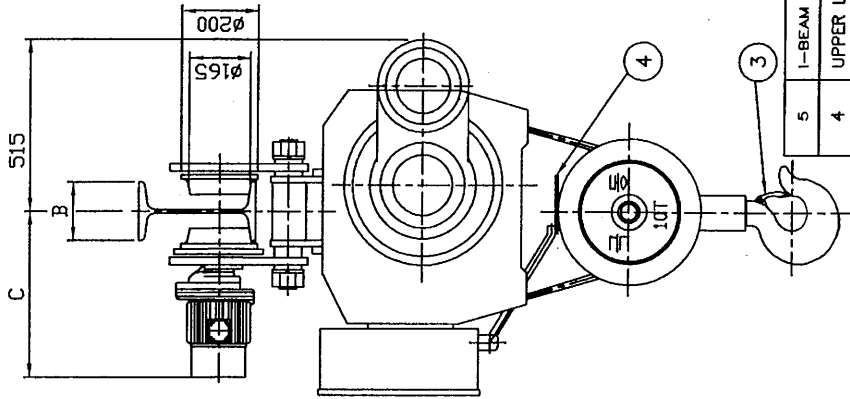
SPECIFICATION			
HOISTING LOAD	10000	KG	
TESTING LOAD	12500	KG	
LIFT	9	M	
RATING	30	MIN	
HOISTING	SPEED	4.5 / 0.45	M/MIN
	MOTOR	9/1.1 KW x 8P	
	SPEED	15	M/MIN
	MOTOR	0.75KW x 4 P	
TRAVER-SING	SPEED	10	M/MIN
	MOTOR	0.5KW x 6 P	
	SPEED	15/7.5	M/MIN
	MOTOR	0.8/0.4KW x 4/8 P	
DUAL	SPEED	10/5	M/MIN
	MOTOR	0.5/0.25KW x 6/12 P	
WIRE ROPE	(6x37) Ø16 x 4FALLS		
POWER SOURCE	AC3Øx220V(380,440,460,480V)x60Hz		
COLOR	10 B 3/5		
WEIGHT	1170	KG	

TABLE 참조			
5	I-BEAM	SS400	-
4	UPPER LIMIT S/W	SS400	1
3	SAFETY LATCH	SS400	1
2	PUSH BUTTON S/W	-	1
1	LOAD LIMITER	-	1
NO.	DESCRIPTIONS	MTL	SET/SET QTY
PROJECT		DATE	
TITLE		SCALE	
DRAWN		DESIGNED	ARRANGEMENT DRAWING FOR HOIST
CHECKED		APPROVED	A3/15 /
SHEET NO.		DRAWING NO.	REF DRAWING
극동호이스트 주식회사			
KUK DONG HOIST CO., LTD.			
KDC10M090			

TRAVERSING I-BEAM	Zx (Cm3)	C
A x B x t		
I 300x150x10t	12700	490
I 350x150x12t	22400	490
I 400x150x10t	24100	490
I 450x175x13t	48800	505
I 600x190x13t	98400	520



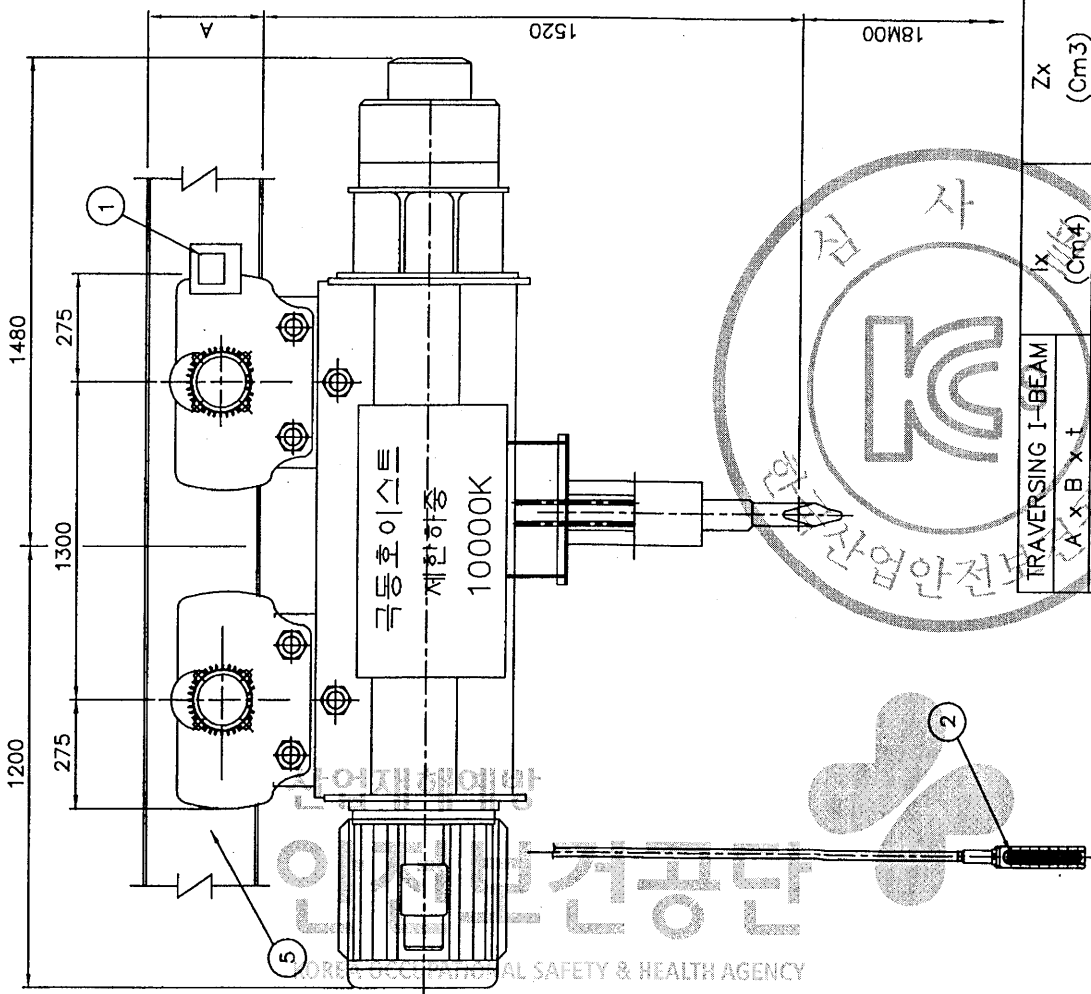
SPECIFICATION	
HOISTING LOAD	10000 KG
TESTING LOAD	12500 KG
LIFT	12 M
RATING	30 MIN
HOISTING	SPEED 4.5 / 0.45 M/MIN
	MOTOR 9/1.1 KW x 8P
	SPEED 15 M/MIN
	MOTOR 0.75KW x 4 P (2UNIT)
	SPEED 10 M/MIN
	MOTOR 0.5KW x 6 P (2UNIT)
	SPEED 15/7.5 M/MIN
	MOTOR 0.8/0.4KW x 4/8P (2UNIT)
	SPEED 10/5 M/MIN
	MOTOR 0.5/0.25KWx6/12P (2UNIT)
WIRE ROPE	(6x37) Ø16 x 4FALLS
POWER SOURCE	AC3Øx220V(380,440,460,480V)x60Hz
COLOR	10 B 3/5
WEIGHT	1280 KG



5	I-BEAM	SS400	-			TABLE 참조
4	UPPER LIMIT S/W	SS400	1			
3	SAFETY LATCH	SS400	1			
2	PUSH BUTTON S/W	-	1			
1	LOAD LIMITER	-	1			
NO.	DESCRIPTIONS	M'TL	SET QTY	UNIT	TOTAL WEIGHT KG.	
PROJECT		DATE				
TITLE		KDC10-L12-M				SCALE
DRAWN		ARRANGEMENT DRAWING FOR HOIST				A3 / 15 /
		DESIGNED	CHECKED	APPROVED	REF DRAWING	
 극동호이스트 주식회사 KUK DONG HOIST CO., LTD.		SHEET NO.				DRAWING NO.
						KDC10M1200

TRAVERSING I-BEAM A x B x t	Zx (Cm3)	C
I 300x150x10t	12700	490
I 350x150x12t	22400	490
I 400x150x10t	24100	490
I 450x175x13t	48800	505
I 600x190x13t	98400	520

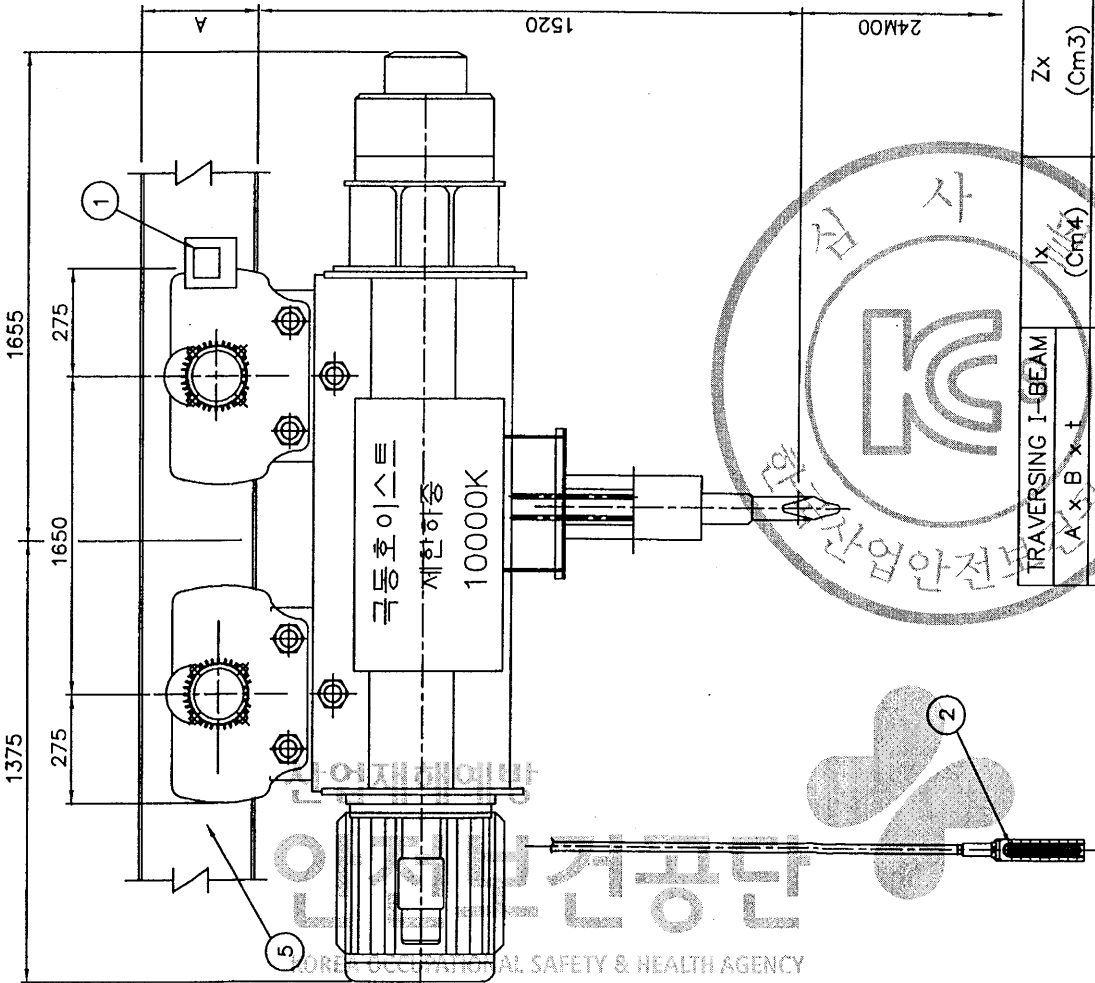
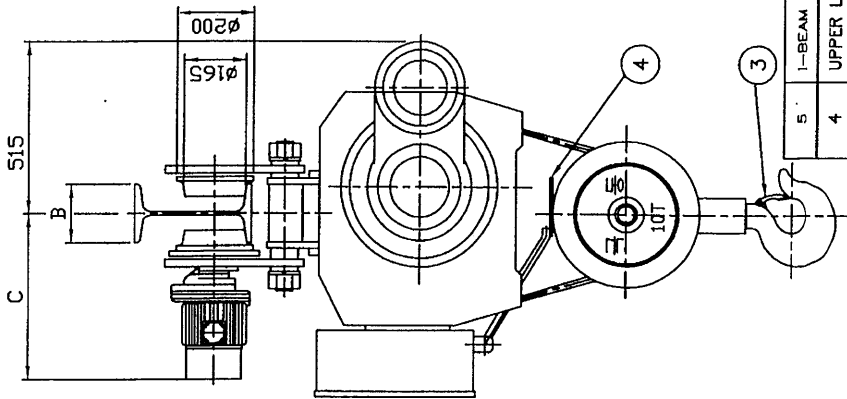




5	I-BEAM	SS400	-				TABLE 참조
4	UPPER LIMIT S/W	SS400	1				
3	SAFETY LATCH	SS400	1				
2	PUSH BUTTON S/W	-	1				
1	LOAD LIMITER	-	1				
NO.	DESCRIPTIONS	MTL	SET QTY	SET UNIT	TOTAL WEIGHT KG.		REMARKS
PROJECT		DATE					
TITLE		KDC10-L18-M					SCALE
		ARRANGEMENT DRAWING FOR HOIST					A3 / 15 /
DRAWN	DESIGNED	CHECKED	APPROVED				REF DRAWING
 곡동호이스트 주식회사 KUK DONG HOIST CO., LTD.		SHEET NO.		DRAWING NO.			
							KDC10M1800

TRAVERSING I-BEAM	A x B x t			I _x (Cm ⁴)	Z _x (Cm ³)	C
	A	B	t			
I 300x150x10t				12700	849	490
I 350x150x12t				22400	1280	490
I 400x150x10t				24100	1200	490
I 450x175x13t				48800	2170	505
I 600x190x13t				98400	3280	520

SPECIFICATION		
HOISTING LOAD	10000	KG
TESTING LOAD	12500	KG
LIFT	24	M
RATING	30	MIN
HOISTING	SPEED	4.5 / 0.45 M/MIN
	MOTOR	9/1.1 KW x 8P
HIGH	SPEED	15 M/MIN
	MOTOR	0.75KW x 4 P (2UNIT)
LOW	SPEED	10 M/MIN
	MOTOR	0.5KW x 6 P (2UNIT)
DUAL HIGH	SPEED	15/7.5 M/MIN
	MOTOR	0.8/0.4KW x 4/8P (2UNIT)
DUAL LOW	SPEED	10/5 M/MIN
	MOTOR	0.5/0.25KWx6/12P (2UNIT)
WIRE ROPE (6x37) Ø16 x 4FALLS		
POWER SOURCE AC3Øx220V(380,440,460,480V)×60Hz		
COLOR	10 B 3/5	
WEIGHT	1570 KG	



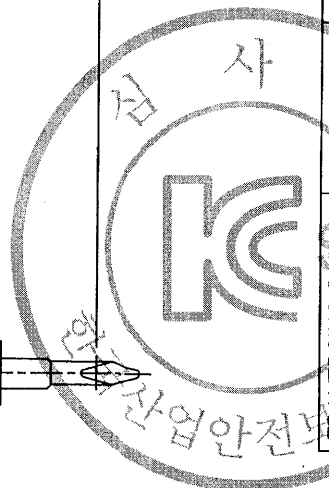
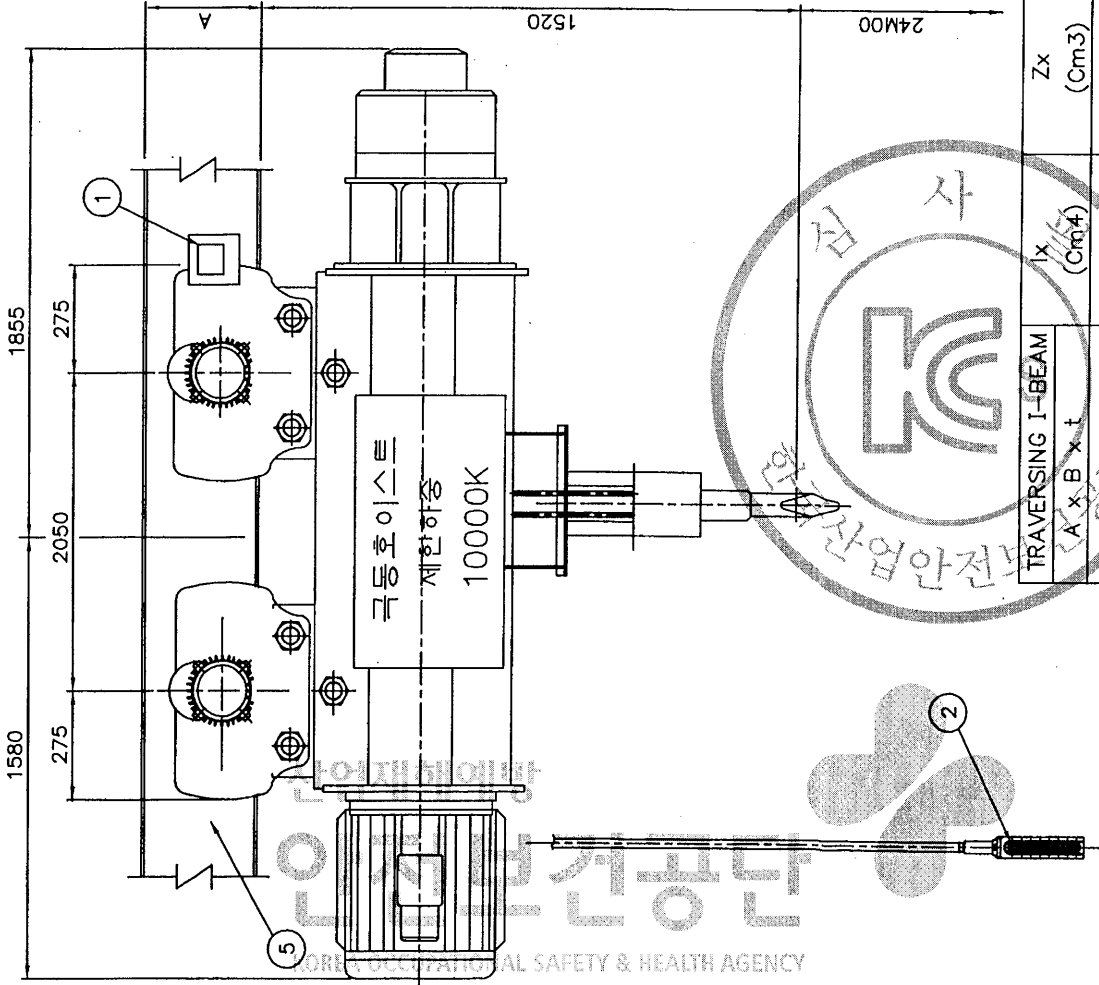
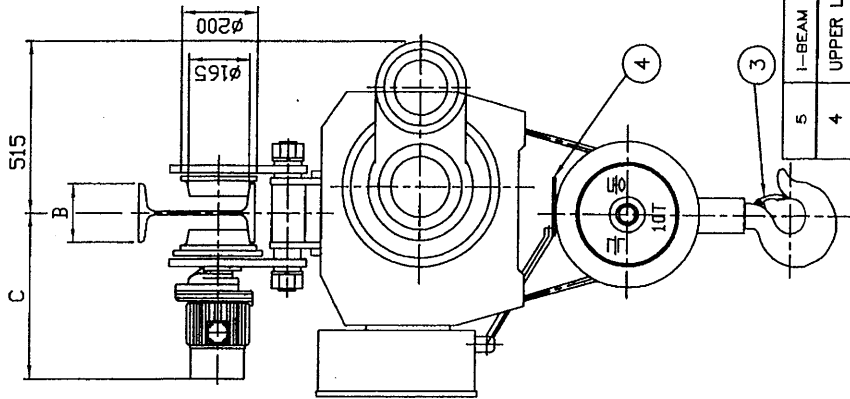
TRAVERING I-BEAM (A x B x t)	X (Cm4)	Zx (Cm3)	C
I 300x150x10t	12700	849	490
I 350x150x12t	22400	1280	490
I 400x150x10t	24100	1200	490
I 450x175x13t	48800	2170	505
I 600x190x13t	98400	3280	520

5	I-BEAM	SS400	-			TABLE 참조
4	UPPER LIMIT S/W	SS400	1			
3	SAFETY LATCH	SS400	1			
2	PUSH BUTTON S/W	-	1			
1	LOAD LIMITER	-	1			
NO.	DESCRIPTIONS	MTL	SET QTY	UNIT	TOTAL WEIGHT KG.	REMARKS
PROJECT		DATE				
TITLE		KDC10-L24-M				
		ARRANGEMENT DRAWING FOR HOIST				
		SCALE				
		A3 / 15 /				
DRAWN	DESIGNED	CHECKED	APPROVED		REF. DRAWING	

극동호이스트 주식회사
KUK DONG HOIST CO., LTD.



SPECIFICATION			
HOISTING LOAD	10000	KG	
TESTING LOAD	12500	KG	
LIFT	30	M	
RATING	30	MIN	
HOISTING	SPEED	4.5 / 0.45	M/MIN
	MOTOR	9/1.1 KW x 8P	
HIGH	SPEED	15	M/MIN
	MOTOR	0.75KW x 4 P (2UNIT)	
LOW	SPEED	10	M/MIN
	MOTOR	0.5KW x 6 P (2UNIT)	
DUAL HIGH	SPEED	15/7.5	M/MIN
	MOTOR	0.8/0.4KW x 4/8P (2UNIT)	
DUAL LOW	SPEED	10/5	M/MIN
	MOTOR	0.5/0.25KWx6/12P (2UNIT)	
WIRE ROPE	(6x37) -ø16 x 4FALLS		
POWER SOURCE	AC3øx220V(380,440,460,480V)x60Hz		
COLOR	10 B 3/5		
WEIGHT	1660	KG	



TRAVERSING I-BEAM	A x B x t	X (Cm4)	Zx (Cm3)	C
I 300x150x10t		12700	849	490
I 350x150x12t		22400	1280	490
I 400x150x10t		24100	1200	490
I 450x175x13t		48800	2170	505
I 600x190x13t		98400	3280	520

NO.	DESCRIPTIONS	MTL	SET QTY	UNIT	TOTAL WEIGHT KG.	REMARKS
5	I-BEAM	SS400	-			TABLE 참조
4	UPPER LIMIT S/W	SS400	1			
3	SAFETY LATCH	SS400	1			
2	PUSH BUTTON S/W	-	1			
1	LOAD LIMITER	-	1			

PROJECT	DATE	
TITLE	KDC10-L30-M	
DRAWN	DESIGNED	CHECKED
ARRANGEMENT DRAWING FOR HOIST		
APPROVED		
REF. DRAWING		
A3/15		
SCALE		

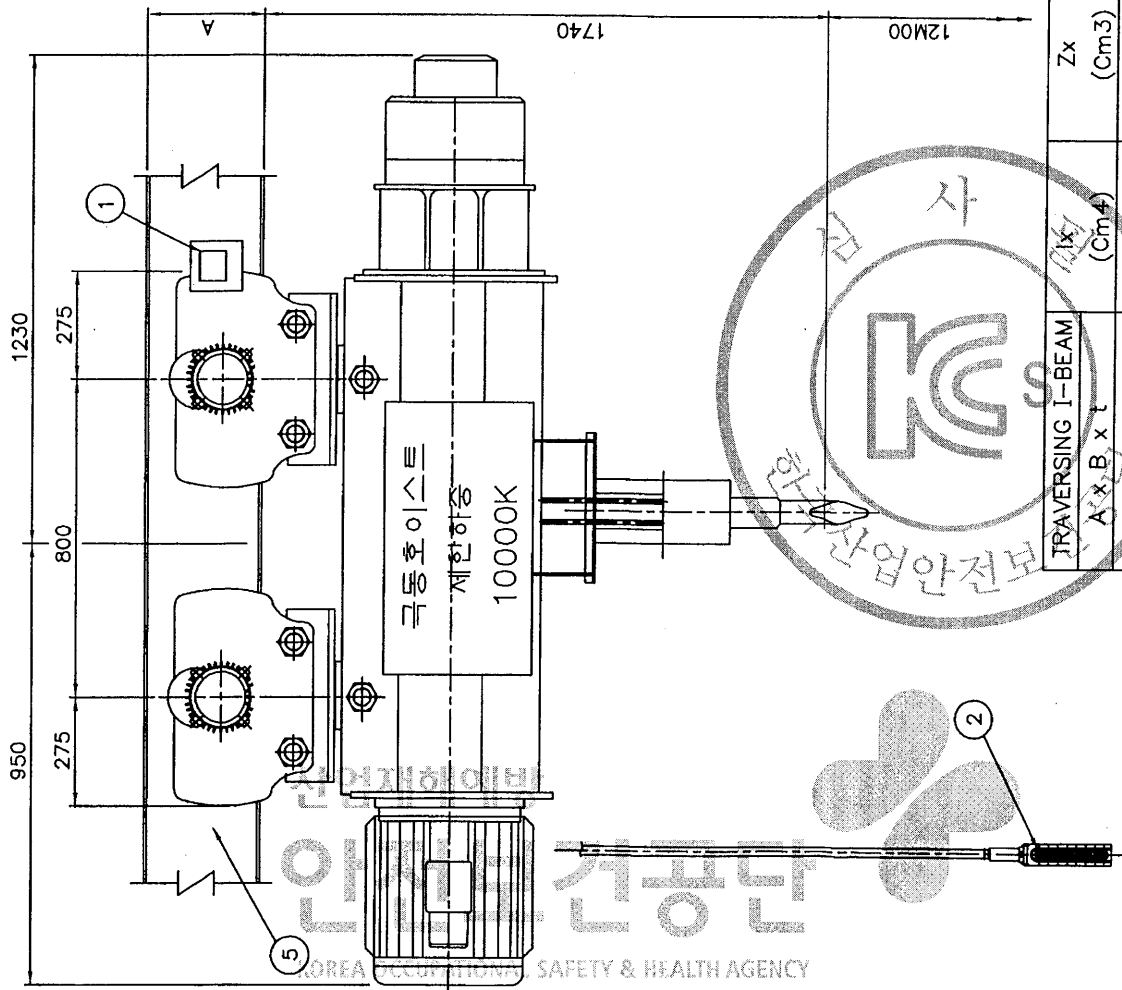
	극동호이스트 주식회사	SHEET NO.	DRAWING NO.
	KUK DONG HOIST CO., LTD.		KDC10M3000





5	I-BEAM	SS400	-		TABLE 참조	
4	UPPER LIMIT S/W	SS400	1			
3	SAFETY LATCH	SS400	1			
2	PUSH BUTTON S/W	-	1			
1	LOAD LIMITER	-	1			
NO.	DESCRIPTIONS	MT'L	SET QTY	UNIT	TOTAL WEIGHT KG.	REMARKS
PROJECT						DATE
TITLE	KDC10-L9-M-H				SCALE	
	ARRANGEMENT DRAWING FOR HOIST				A3/15	/
DRAWN	DESIGNED	CHECKED	APPROVED	REF DRAWING		
 KDK KUK DONG HOIST CO., LTD.		KUK DONG HOIST 주식회사 KUK DONG HOIST CO., LTD.		SHEET NO.	DRAWING NO.	
					KDC10M0900H	

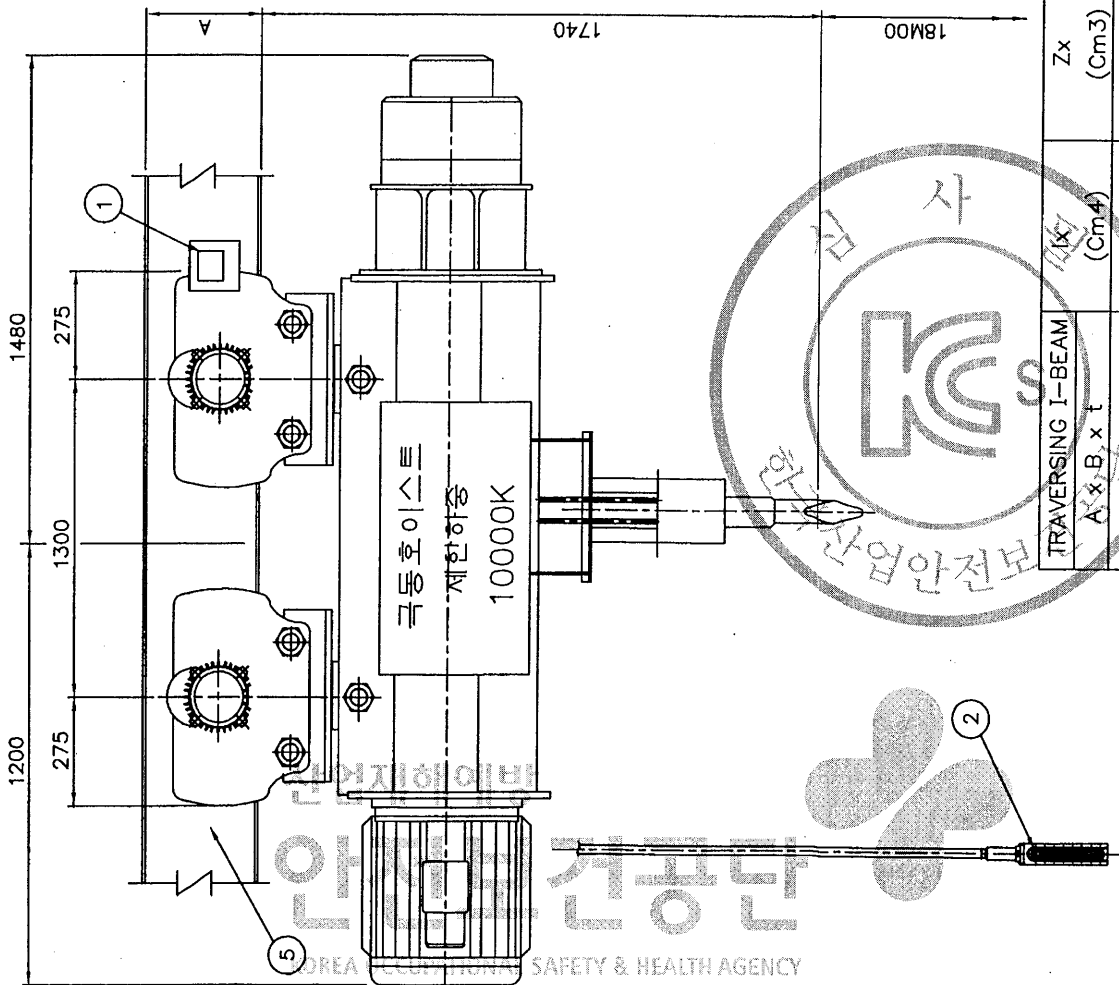
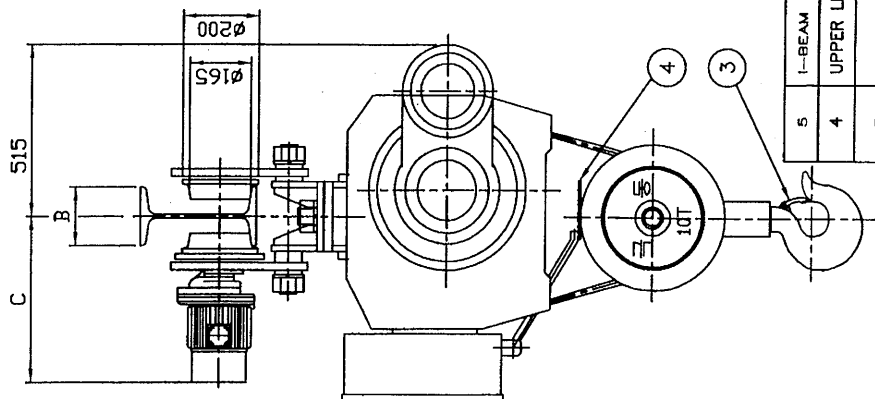
TRAVERSING I-BEAM	A x B x t	N (Cm ⁴)	Zx (Cm ³)	C
I 300x150x10t		12700	849	490
I 350x150x12t		22400	1280	490
I 400x150x10t		24100	1200	490
I 450x175x13t		48800	2170	505
I 600x190x13t		98400	3280	520



No.	DESCRIPTIONS	MTL	SET QTY	SERIAL NO.	TOTAL WEIGHT KG.	REMARKS
5	I-BEAM	SS400	-			
4	UPPER LIMIT S/W	SS400	1			
3	SAFETY LATCH	SS400	1			
2	PUSH BUTTON S/W	-	1			
1	LOAD LIMITER	-	1			
DATE _____						
PROJECT _____						
TITLE KDC10-L12-M-H ARRANGEMENT DRAWING FOR HOIST		SCALE A3 / 15 /				
DRAWN	DESIGNED	CHECKED	APPROVED	REF. DRAWING		
				DRAWING NO. KDC10M1200H		
극동호이스트 주식회사 KUK DONG HOIST CO., LTD.				SHEET NO. _____		

TRAVERSING I-BEAM	$A \times B \times t$	V_x (Cm ⁴)	Z_x (Cm ³)	C
I 300x150x10t		12700	849	490
I 350x150x12t		22400	1280	490
I 400x150x10t		24100	1200	490
I 450x175x13t		48800	2170	505
I 600x190x13t		98400	3280	520

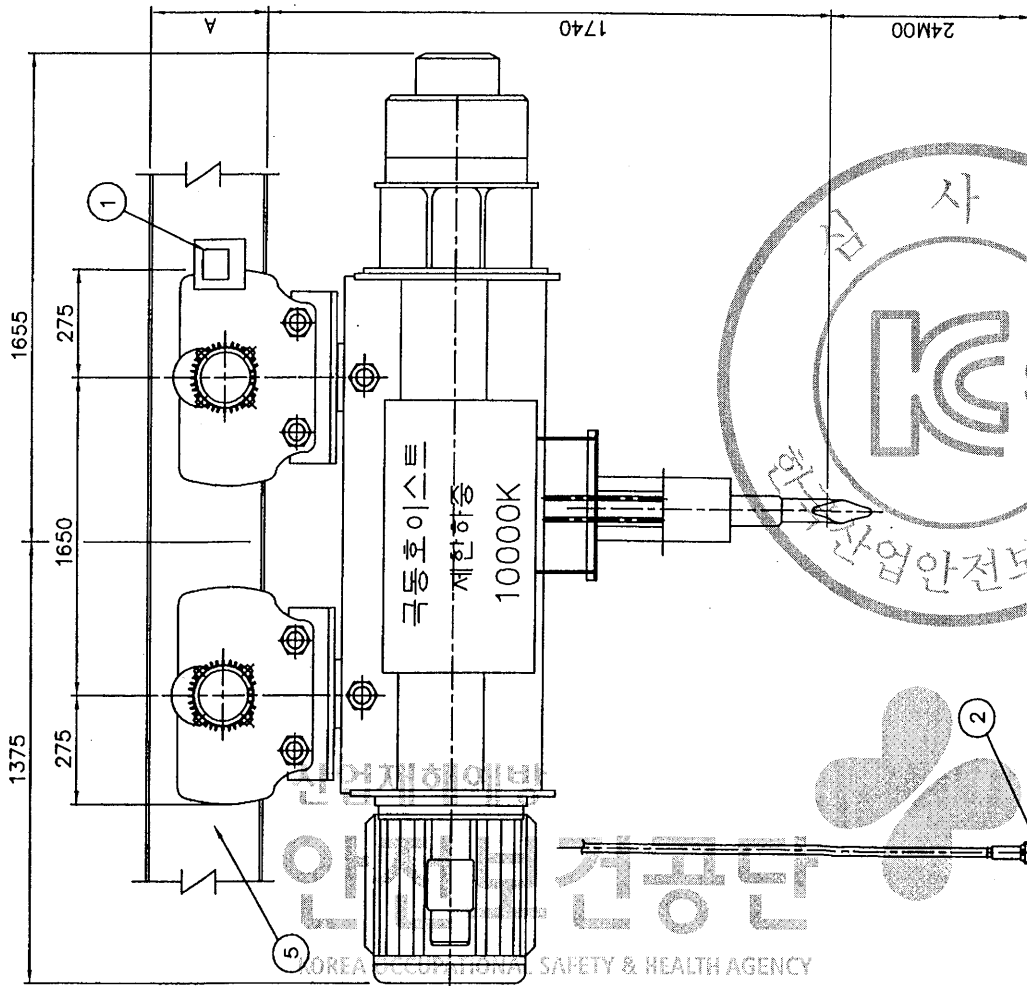
SPECIFICATION	
HOISTING LOAD	10000 KG
TESTING LOAD	12500 KG
LIFT	18 M
RATING	30 MIN
HOISTING	SPEED 4.5 / 0.45 M/MIN
	MOTOR 9/1.1 KW x 8P
HIGH	SPEED 15 M/MIN
	MOTOR 0.75KW x 4 P (2UNIT)
LOW	SPEED 10 M/MIN
	MOTOR 0.5KW x 6 P (2UNIT)
DUAL HIGH	SPEED 15/7.5 M/MIN
	MOTOR 0.8/0.4KW x 4/8P (2UNIT)
DUAL LOW	SPEED 10/5 M/MIN
	MOTOR 0.5/0.25KWx6/12P (2UNIT)
WIRE ROPE (6x37) Ø16 x 4FALLS	
POWER SOURCE AC3Øx220V(380,440,460,480V)x60Hz	
COLOR	10 B 3/5
WEIGHT	1420 KG



NO.	DESCRIPTIONS	MTL	SET QTY	UNIT	TOTAL WEIGHT KG.	REMARKS
5	I-BEAM	SS400	-			TABLE 참조
4	UPPER LIMIT S/W	SS400	1			
3	SAFETY LATCH	SS400	1			
2	PUSH BUTTON S/W	-	1			
1	LOAD LIMITER	-	1			
PROJECT						
TITLE						
DRAWN						
DESIGNED						
CHECKED						
APPROVED						
REF. DRAWING						
SHEET NO.						
DRAWING NO.						
KDC10M1800H						

TRAVERSING I-BEAM	Zx (Cm3)	C
A x B x t		
I 300x150x10t	849	490
I 350x150x12t	1280	490
I 400x150x10t	1200	490
I 450x175x13t	2170	505
I 600x190x13t	3280	520





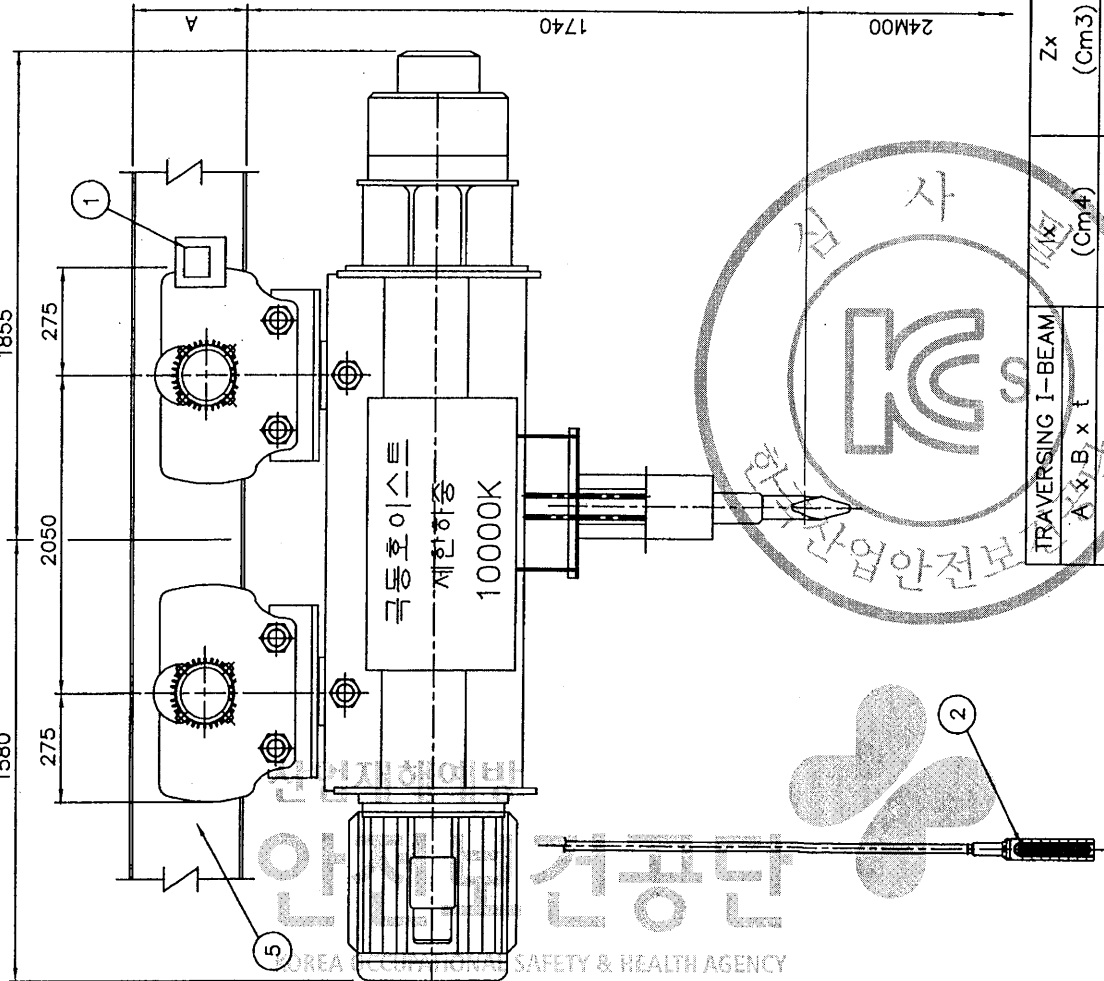
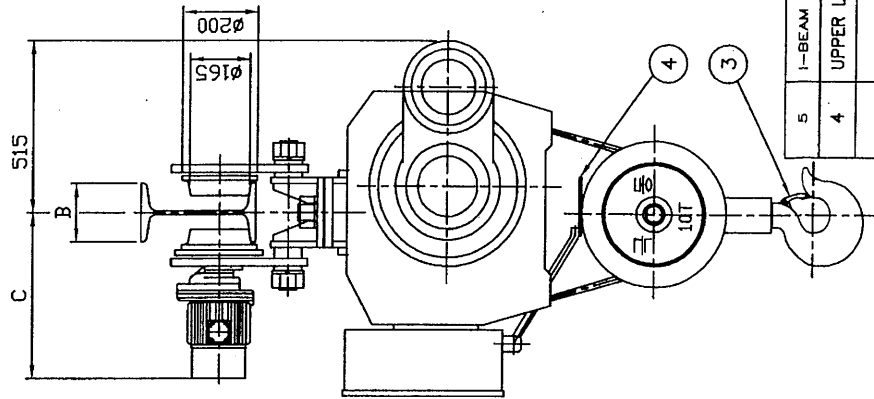
5	I-BEAM	SS400	-			TABLE 참조	
4	UPPER LIMIT S/W	SS400	1				
3	SAFETY LATCH	SS400	1				
2	PUSH BUTTON S/W	-	1				
1	LOAD LIMITER	-	1				
NO.	DESCRIPTIONS	M'TL	SET/SET QTY	UNIT	TOTAL WEIGHT KG.	REMARKS	
PROJECT		DATE					
TITLE		KDC10-L24-M-H			SCALE		
		ARRANGEMENT DRAWING FOR HOIST			A3/15 /		
DRAWN	DESIGNED	CHECKED	APPROVED	REF. DRAWING			
						DRAWING NO.	
				SHEET NO.		KDC10M2400H	



극동호이스트 주식회사
KUK DONG HOIST CO., LTD.

TRAVERSING I-BEAM	$A \times B \times t$	Z_x (Cm ⁴)	C
I 300x150x10t	12700	849	490
I 350x150x12t	22400	1280	490
I 400x150x10t	24100	1200	490
I 450x175x13t	48800	2170	505
I 600x190x13t	98400	3280	520

SPECIFICATION			
HOISTING LOAD	10000	KG	
TESTING LOAD	12500	KG	
LIFT	30	M	
RATING	30	MIN	
HOISTING	SPEED	4.5 / 0.45	M/MIN
	MOTOR	9/1.1 KW x 8P	
HIGH	SPEED	15	M/MIN
	MOTOR	0.75KW x 4 P (2UNIT)	
LOW	SPEED	10	M/MIN
	MOTOR	0.5KW x 6 P (2UNIT)	
DUAL HIGH	SPEED	15/7.5	M/MIN
	MOTOR	0.8/0.4KW x 4/8P (2UNIT)	
DUAL LOW	SPEED	10/5	M/MIN
	MOTOR	0.5/0.25KWx6/12P (2UNIT)	
WIRE ROPE (6x37) Ø16 x 4FALLS			
POWER SOURCE AC3Øx220V(380,440,460,480V)x60Hz			
COLOR 10 B 3/5			
WEIGHT 1660 KG			



TRAVERSING I-BEAM	A x B x t	Zx (Cm3)	C
I 300x150x10t	12700	849	490
I 350x150x12t	22400	1280	490
I 400x150x10t	24100	1200	490
I 450x175x13t	48800	2170	505
I 600x190x13t	98400	3280	520

NO.	DESCRIPTIONS	MTL	SET QTY	UNIT	TOTAL WEIGHT KG.	REMARKS
5	I-BEAM	SS400	-			
4	UPPER LIMIT S/W	SS400	1			
3	SAFETY LATCH	SS400	1			
2	PUSH BUTTON S/W	-	1			
1	LOAD LIMITER	-	1			
PROJECT						DATE
TITLE						SCALE
DRAWN						A3/15 /
DESIGNED						REF DRAWING
CHECKED						
APPROVED						
SHEET NO.						DRAWING NO.
KDC10-L30-M-H						KDC10M3000H

극동호이스트 주식회사
KUK DONG HOIST CO., LTD.



KOREA OCCUPATIONAL SAFETY & HEALTH AGENCY

DESCRIPTION	SYMBOLS
NO FUSE BREAKER 2 PHASE	
NO FUSE BREAKER 3 PHASE	
EARTH LEAKAGE BREAKER 2 PHASE	
EARTH LEAKAGE BREAKER 3 PHASE	
TRANSFORMER	
CURRENT TRANSFORMER	
POTENTIAL TRANSFORMER	
FUSE	
FUSE WITH CONTACTOR	
THYRISTOR UNIT	

[illegible]

MK	DATE	R E V I S I O N S			CHK.	APP.						
CUSTOMER							DRAWING TITLE					
-----SYMBOL LIST 1/2-----												
DRAWING	DESIGN	CHECKED	APPROVED	SCALE	DATE	ORDER NO.						
				NONE								
KUK DONG HOIST CO., LTD.							DWG. NO. KDSM0001					

DESCRIPTION	SYMBOLS	DESCRIPTION	SYMBOLS	DESCRIPTION	SYMBOLS
WIRE INTERNAL TO ENCLOSURE		CONTROLLER OR REMOTE CONTROLLER CONTACTOR		SOLENOID COIL	
WIRE EXTERNAL TO ENCLOSURE		UPPER LIMIT SWITCH (LS-II)		RESISTER	
WIRE NOT CONNECTED		THERMAL RELAY		VARIABLE RESISTOR	
WIRE CONNECTED		PILOT(SIGNAL) LAMP		SLIP RING	
TERMINAL		ROTARY LAMP		CABLE REEL	
GROUND (EARTH)		WARNING SIREN		SPACE HEATER	
PLUG & RECEPTACLE		BUZZER		SURGE ABSORBER	
MAGNETIC CONTACTOR COIL		AMMETER		LOAD CELL	
AUX. RELAY COIL		VOLT METER		BALLAST WITH RECEPTACLE	
TIMER COIL		FLUORESCENCE LAMP		FAN	

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[illegible]

ELECTRICAL SPECIFICATION

POWER SOURCE : AC 3Φ 220V, 380V, 440V, 460V, 480V 60Hz

CONTROL SOURCE : AC 1Φ 110V(120V) 60Hz

OBJECT	MOTOR OUTPUT	220V		380V		440V		460V		480V		440, 460, 480V		REMARK
		STATOR CURRENT	1st CABLE SIZE	STATOR CURRENT	1st CABLE SIZE	STATOR CURRENT	1st CABLE SIZE	STATOR CURRENT	1st CABLE SIZE	STATOR CURRENT	1st CABLE SIZE	1st CABLE SIZE	BRAKE	
MAIN HOIST	9KW x 8P 30 MIN	45.00 A	16.0 sq	26.00 A	16.0 sq	22.5 A	16.0 sq	21.5 A	16.0 sq	20.6 A	16.0 sq	10.0 sq	DC MAG. BRAKE	
CREEP HOIST	1.1KW x 8P 30 MIN	8.00 A	4.0 sq	4.60 A	4.0 sq	4.0 A	4.0 sq	3.8 A	4.0 sq	3.6 A	4.0 sq	4.0 sq	DC MAG. BRAKE	
TRAVERSING	HIGH	4.10 A	4.0 sq	2.40 A	4.0 sq	2.00 A	4.0 sq	2.00 A	4.0 sq	1.90 A	4.0 sq	4.0 sq	DC MAG. BRAKE	1 DRIVE
	LOW	3.40 A	4.0 sq	2.00 A	4.0 sq	1.70 A	4.0 sq	1.70 A	4.0 sq	1.60 A	4.0 sq	4.0 sq	DC MAG. BRAKE	1 DRIVE
	HIGH/LOW	4.80 A	4.0 sq	2.78 A	4.0 sq	2.40 A	4.0 sq	2.30 A	4.0 sq	2.30 A	4.0 sq	4.0 sq	DC MAG. BRAKE	1 DRIVE
	HIGH/LOW	3.20 A	4.0 sq	1.85 A	4.0 sq	1.80 A	4.0 sq	1.78 A	4.0 sq	1.76 A	4.0 sq	4.0 sq	DC MAG. BRAKE	1 DRIVE
CONTROL CIRCUIT		2 A	2.5 sq	2 A	2.5 sq	2 A	2.5 sq	2 A	2.5 sq	2 A	2.5 sq	2.5 sq		
LIGHTING & ACC'Y CIRCUIT														
SUB TOTAL (PEAK LOAD)		51.10 A	25.0 sq	30.40 A	16.0 sq	26.50 A	16.0 sq	25.50 A	16.0 sq	24.50 A	16.0 sq	10.0 sq	I(A)=M/H + T/S + ASS'Y	
SUB TOTAL (NORMAL LOAD)		50.40 A	25.0 sq	30.00 A	16.0 sq	26.20 A	16.0 sq	25.20 A	16.0 sq	24.20 A	16.0 sq	10.0 sq	I(A)=M/H + T/S + ASS'Y	

*. 위 계산은 HIGH(MAX.)일때와 LOW(MIN.)일때만 계산한것임.

*. 위 계산은 LIFT 9M에 적용.

ELECTRICAL SPECIFICATION

POWER SOURCE : AC 3Φ 220V, 380V, 440V, 460V, 480V 60Hz
CONTROL SOURCE : AC 1Φ 110V 60Hz

OBJECT	MOTOR OUTPUT	220V		380V		440V	460V	480V	440, 460, 480V	BRAKE	REMARK
		STATOR CURRENT	1st CABLE SIZE	STATOR CURRENT	1st CABLE SIZE	STATOR CURRENT	STATOR CURRENT	STATOR CURRENT	1st CABLE SIZE		
MAIN HOIST	9KW x 8P 30 MIN	45.00 A	16.0 sq	26.00 A	16.0 sq	22.5 A	21.5 A	20.6 A	10.0 sq	DC MAG. BRAKE	
CREEP HOIST	1.1KW x 8P 30 MIN	8.00 A	4.0 sq	4.60 A	4.0 sq	4.0 A	3.8 A	3.6 A	4.0 sq	DC MAG. BRAKE	
TRAVERSING	HIGH	4.10 A	4.0 sq	2.40 A	4.0 sq	2.00 A	2.00 A	1.90 A	4.0 sq	DC MAG. BRAKE	2 DRIVE
	LOW	3.40 A	4.0 sq	2.00 A	4.0 sq	1.70 A	1.70 A	1.60 A	4.0 sq	DC MAG. BRAKE	2 DRIVE
	HIGH/LOW	4.80 A	4.0 sq	2.78 A	4.0 sq	2.40 A	2.30 A	2.30 A	4.0 sq	DC MAG. BRAKE	2 DRIVE
	HIGH/LOW	3.20 A	4.0 sq	1.85 A	4.0 sq	1.80 A	1.78 A	1.76 A	4.0 sq	DC MAG. BRAKE	2 DRIVE
CONTROL CIRCUIT		2 A	2.5 sq	2 A	2.5 sq	2 A	2 A	2 A	2.5 sq		
LIGHTING & ACC'Y CIRCUIT											
SUB TOTAL (NORMAL LOAD)		53.80 A	25.0 sq	30.00 A	16.0 sq	27.9 A	26.90 A	25.80 A	10.0 sq	I(A)=M/H + T/S + ASS'Y	
SUB TOTAL (PEAK LOAD)		55.20 A	25.0 sq	30.40 A	16.0 sq	28.5 A	27.50 A	26.40 A	10.0 sq	I(A)=M/H + T/S + ASS'Y	

*. 위 계산은 HIGH(MAX.) 일때와 LOW(MIN.) 일때만 계산한것임.

*. 위 계산은 LIFT 12, 18, 24, 30M에 적용.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
															NO	DESCRIPTION	CABLE SIZE		
															1	MAIN EARTH LINE	USER SCOPE		
															2	POWER SOURCE	USER SCOPE		
															3	TROLLEY BAR	USER SCOPE		
															4	POWER SOURCE WITH EARTH	USER SCOPE		
															5	HOIST POWER SOURCE WITH EARTH	VCT 25(16,10)SQ x 1C		
															6	HOISTING MOTOR WITH EARTH	VCT 16(10)SQ x 1C		
															7	CREEP MOTOR WITH EARTH	VCT 4.0SQ x 1C		
															8	TRAVERSING MOTOR WITH EARTH	VCT 4.0SQ x 1C		

* CV CABLE 4C중 1C는 EARTH로 사용함.

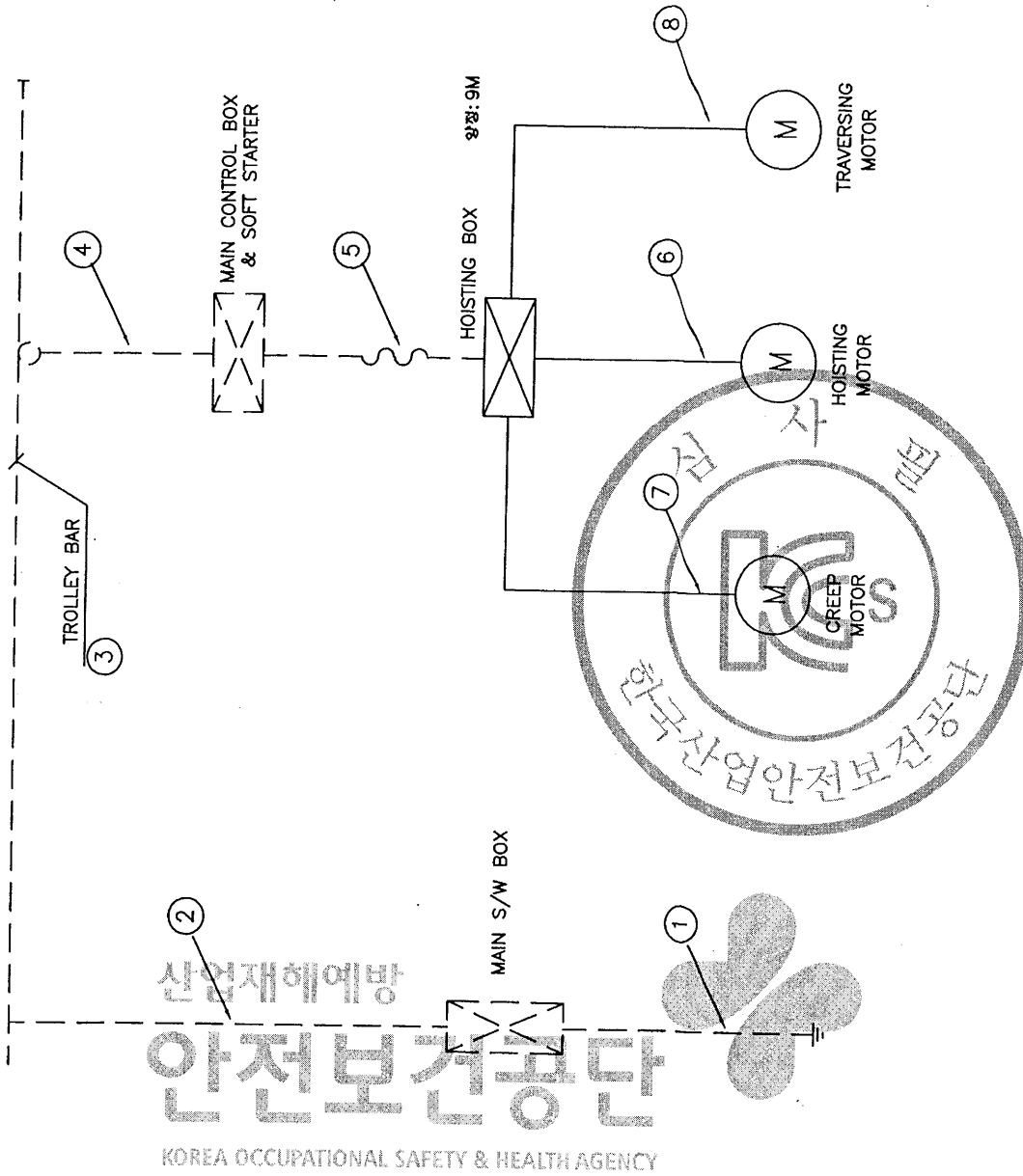
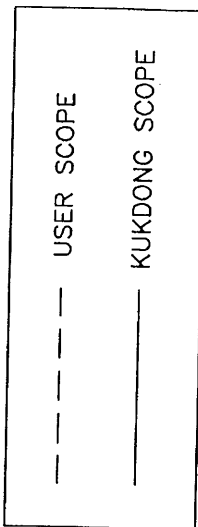
- NOTE -

1. 전동기 외관, 제어반의 프레임 등은 접지하여 그 접지 저항은

400V 미만 : 100옴 이하일것.(3종 접지)

400V 이상 : 10옴 이하일것.(별 3종접지)

2.MAIN S/W BOX는 3종 접지 요.



동전위접지

1. 전기장비와 기계의 노출된 모든 도선부분은 보호회로방호회로에 연결되어야 하며 적절한 접지연속성 기능이 유지되어야함.

2. 보호회로방호회로에는 개폐기, 과전류보호장치가 부착되지 않아야 한다.

시험대상 전선의 최소 유효단면적	최고전압강하(V)
1.0	3.3
1.5	2.6
2.5	1.6
4.0	1.4
>6.0	1.0

DRAWING	DESIGN	CHECKED	APPROVED	SCALE	DATE	ORDER NO.
				NONE		
KUKDONG HOIST CO., LTD.						DWG. NO
KUKDONG HOIST CO., LTD.						
EARTH DETAILS DRAWING						
CUSTOMER						
DRAWING TITLE						
DATE	REVISIONS	CHK.	APP.			

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
															NO	DESCRIPTION	CABLE SIZE		
															1	MAIN EARTH LINE	USER SCOPE		
															2	POWER SOURCE	USER SCOPE		
															3	TROLLEY BAR	USER SCOPE		
															4	POWER SOURCE WITH EARTH	USER SCOPE		
															5	HOIST POWER SOURCE WITH EARTH	VCT 25(16,10)SQ x 1C		
															6	HOISTING MOTOR WITH EARTH	VCT 16(10)SQ x 1C		
															7	CREEP MOTOR WITH EARTH	VCT 4.0SQ x 1C		
															8	TRAVERSING MOTOR WITH EARTH	VCT 4.0SQ x 1C		

• CV CABLE 4C중 1C는 EARTH로 사용함.

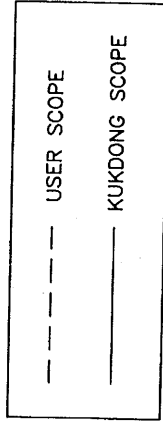
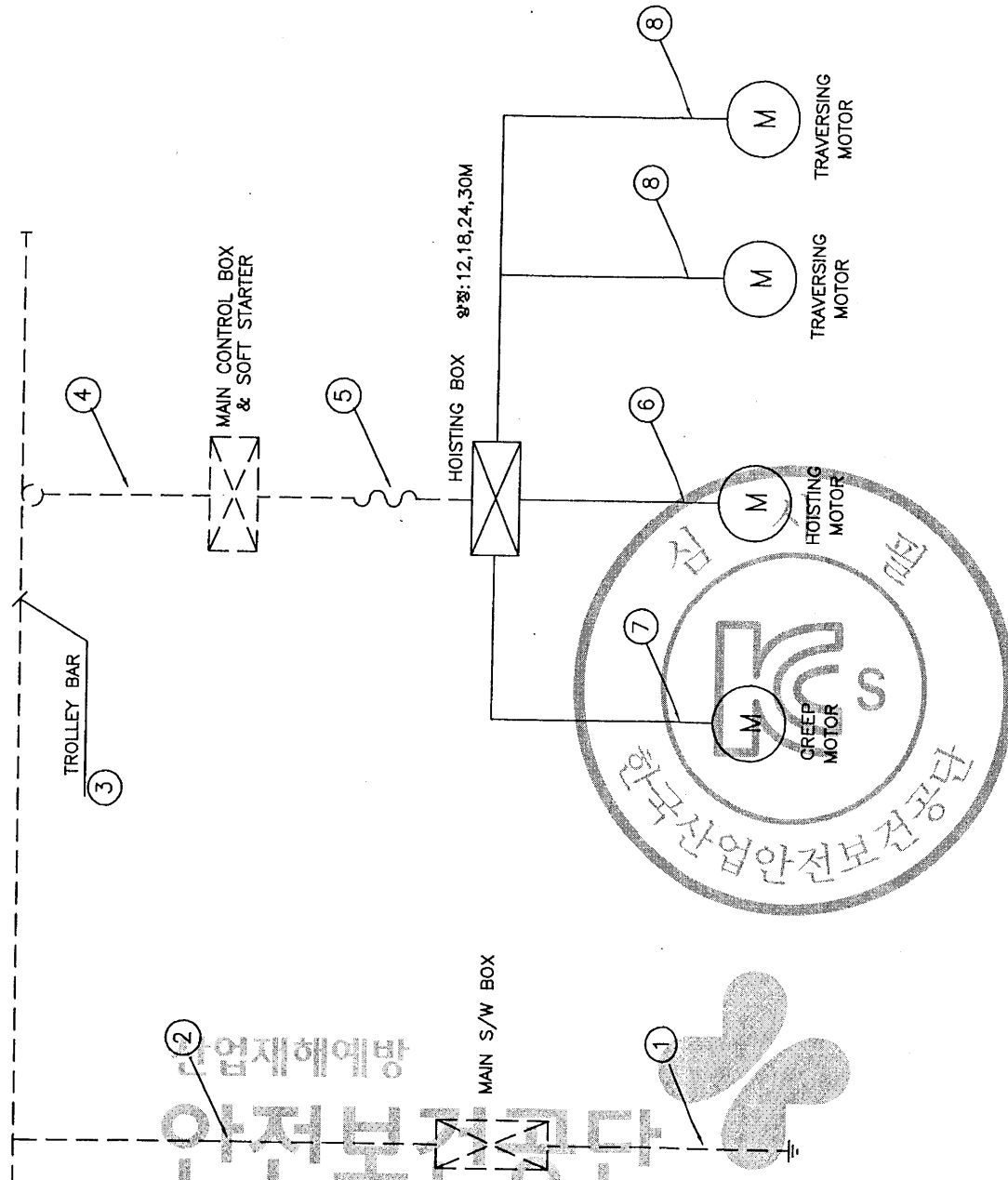
- NOTE -

1. 전동기 외함, 제어반의 프레임 등은 접지하여 그 접지 저항은

400V 미만 : 100옴 이하(3중 접지)

400V 이상 : 10옴 이하(접지, 3중 접지)

2. MAIN S/W BOX는 3중 접지 요.



동전위접지

1. 전기장비와 기계의 노출된 모든 도전부는 보호접지선에 연결되어야 하며 적절한 접지연속성 기능이 유지되어야 함.

2. 보호접지선에는 개폐기, 과전류보호장치기 부착되지 않아야 한다.

시험대상 전선의 최소 유효단면적	최고전압강하(V)
1.0	3.3
1.5	2.6
2.5	1.6
4.0	1.4
>6.0	1.0

DRAWING				APPROVED				DATE				ORDER NO.			
DESIGN				CHECKED				SCALE							
EARTH DETAILS DRAWING								NONE							
CUSTOMER				DWG. NO											
DRAWING TITLE				KUKDONG HOIST CO., LTD.											
REVISIONS				CHK. APP.											
DATE															

The technical drawing consists of two views of a mechanical device. The top view is a plan view showing a central cylindrical component with a flange, a motor-like base on the left, and a circular component on the right. The bottom view is a side elevation showing the device's profile, including a large cylindrical body, a central vertical shaft, and a motor-like base. Four numbered callouts are present: 1 points to the motor-like base in the side view; 2 points to the central vertical shaft; 3 points to the central cylindrical component in the plan view; and 4 points to the large cylindrical body in the side view.

본 도면은 EARTH를 명기하기 위한 도면으로서
실제 배치와 다를 수 있으며 HOIST 본체와의
EARTH용 CABLE은 REFERENCE임

*3종 접지공사 100Ω 이하 (AC 3PH 400V 미만)
*부 중 접지공사 10Ω 이하 (AC 3PH 400V 이상)

1. 전기장비와 기계의 노출된 모든 도전부는 보호접지공회로에 연결되어야 하며, 접지선, 접지연속 기능이 유지되어야 함.

NO	CABLE					REMARK
	TYPE	SIZE				
		220V	380V	TYPE		
1	VCT	16sq	16sq	VCT	10sq	HOISTING MOTOR WITH EARTH
2	VCT	4.0sq	4.0sq	VCT	4.0sq	CREEP MOTOR WITH EARTH
3	VCT	4.0sq	4.0sq	VCT	4.0sq	T/S MOTOR WITH EARTH (2UNIT)
4	VFCT	25sq	16sq	VFCT	10sq	MAIN POWER WITH EARTH

시험대상 전신의 최소 유효단면적	최고전압강하(V)
1.0	3.3
1.5	2.6
2.5	1.6
4.0	1.4
>6.0	1.0

[illegible]

[illegible]

본 도면은 EARTH를 명기하기 위한 도면으로서
실제 배치와 다를 수 있으며 HOIST 본체와의
EARTH용 CABLE은 REFERENCE임

*3종 접지공사 100Ω 이하 (AC 3PH 400V 미만)
*4종 접지공사 10Ω 이하 (AC 3PH 400V 이상)

이성현

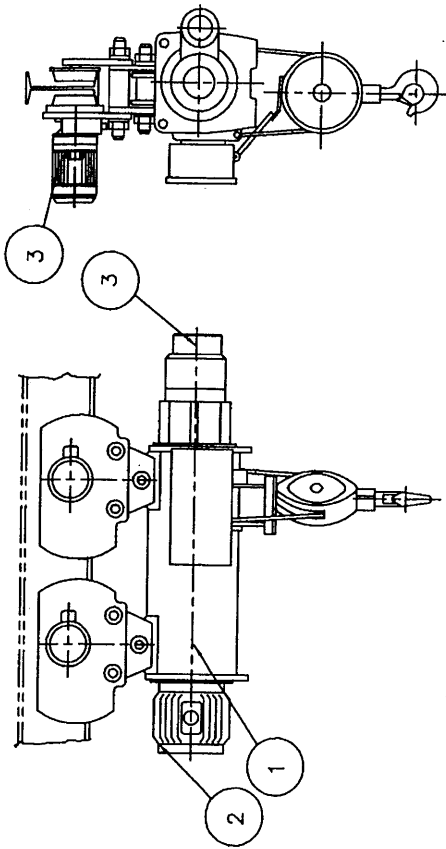
1. 전기장비와 기계의 노출된 모든 전부는 보호덮개로써 연결되어야 하며 적절할 점지연속성 기능이 유지되어야 함

시험대상 전선의 최소 유효 단면적	최고전압강하(V)
1.0	3.3
1.5	2.6
2.5	1.6
4.0	1.4
>6.0	1.0

NO	TYPE	CABLE SIZE		REMARK
		220V	380V	
1	VCT	16sq	16sq	HOISTING MOTOR WITH EARTH
2	VCT	4.0sq	4.0sq	GREEP MOTOR WITH EARTH
3	VCT	4.0sq	4.0sq	T/S MOTOR WITH EARTH (2UNIT)
4	VFCT	25sq	16sq	MAIN POWER WITH EARTH

[illegible]

* MAIN POWER : AC 3PH 220V,380V,440V,480 60Hz (LIFT 9, 12, 18, 24, 30M)



산업재해예방
안전보건공단
KOREA OCCUPATIONAL SAFETY & HEALTH AGENCY

ELECTRIC WIRE ROPE HOIST									
MODEL		RATING	min						
CAPACITY	Kg	LIFT	m						
HOIST SPEED	m/min	POWER SOURCE	V	Hz					
HOIST MOTOR	Kw	P	AMP.S	R&T	HOIST				
TRAV.SPEED	m/min	AMP.S	R&T	TRAV.					
TRAV.MOTOR	Kw	P	AMP.S	R&T	WIRE ROPE				
WIDTH OF RAIL	mm	WEIGHT	Kg						
DATE		SERIAL							
KUKDONG HOIST CO.,LTD									

3 PHASE INDUCTION MOTOR									
KW		P	TYPE	TENV					
VOLTS		V	RATING						
AMP.S		A	AMP.TEMP	40°C					
HEARTS		INS.CLASS	F						
R.P.M		BEARING							
ROTOR	C	BEARING							
SERIAL		DATE							
KUKDONG HOIST CO.,LTD									

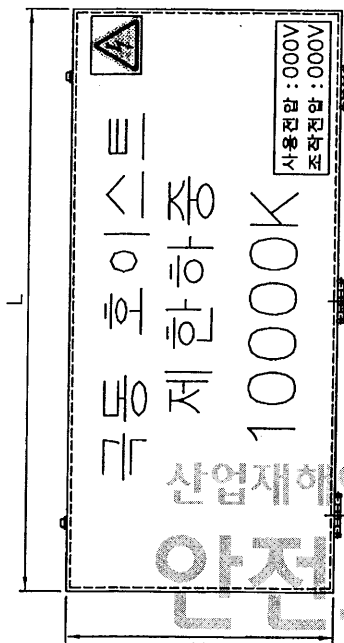
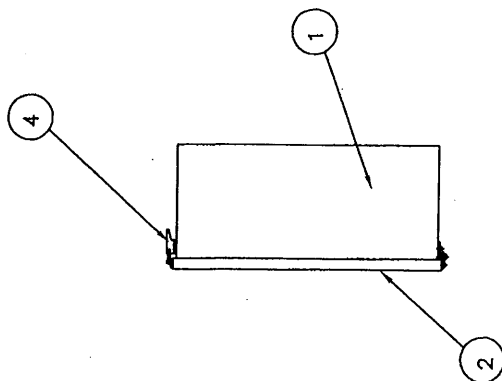
3 PHASE INDUCTION MOTOR									
KW		P	TYPE	TENV					
VOLTS		V	RATING						
AMP.S		A	AMP.TEMP	40°C					
HEARTS		INS.CLASS	F						
R.P.M		BEARING							
ROTOR	C	BEARING							
SERIAL		DATE							
KUKDONG HOIST CO.,LTD									

DRAWING		DESIGN	CHECKED	APPROVED	SCALE	DATE	ORDER NO.
WIRE HOIST NAME PLATE					NONE		
CUSTOMER		국동호이스트 주식회사 KUK DONG HOIST CO., LTD.					
DRAWING TITLE		KUKDONG HOIST CO.,LTD					
REVISIONS		CHK.	APP.	DWG. NO			
DATE				KD10E0601			

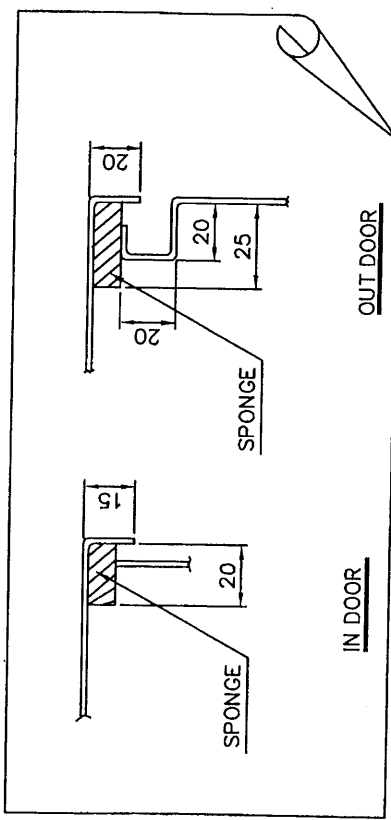
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

ADR'S NO.

NO	DESCRIPTION	MT'L	REMARKS
1	PANEL CASE	SPC	1.6t
2	PANEL COVER	SPC	1.6t
3	HINGE	PUR'	
4	CLAMP	PUR'	
5	SPONGE	PUR'	



산업재해예방
안전보건공단
KOREA OCCUPATIONAL SAFETY & HEALTH AGENCY



NOTE

- PROTECTION DEGREE :
A. INDOOR TYPE : DUST PROOF
B. OUT DOOR TYPE : SPLASH PROOF
- FINAL PAINTING COLOR (MUNSELL NO.)
A. IN SIDE : 10B 3/5
B. OUT SIDE : 10B 3/5
- PAINTING THICKNESS : ABOVE 40 μ m
- APPLICATION VOLTAGE : 220V, 380V, 440V, 460V, 480V
- 제어용 전선 : 2.5sq KIV, H/V
- 외함 개방 구조는 다음과 같다.
1) 외함 개방시 충전 부분이 차단되도록 한다.
2) 외함 개방 후 충전되어있는 부분은 IP2X 이상의 직접 접촉 방호가 되어있을것.

SELECTION	HOIST CAPACITY	DESCRIPTION	IN DOOR			OUT DOOR			REMARK
			A	B	L	A	B	L	
	10 TON	CREEP	450	200	710	450	200	710	
		T/S	230	150	350	230	150	350	

DRAWING	DESIGN	CHECKED	APPROVED	SCALE	DATE	ORDER NO.
				NONE		
극동호이스트 주식회사 KUK DONG HOIST CO., LTD.						DWG. NO
HOISTING CONTROL BOX						KDC10EB00
LAY-OUT						
CUSTOMER						
DRAWING TITLE						
REVISIONS	CHK.	APP.				
DATE						

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
POWER CIRCUIT TRAVELLING POWER SUPPLY SYSTEM																			
ADRI'S NO. A1																			

1. 전선의 색상은 다음과 같다.

1) 흑 색 : 고루 및 직류 전원선

2) 적 색 : 교류제어선

3) 청 색 : 직류제어선

4) 녹색 또는 녹색과 황색 혼용 : 접지

5) 흰색 : 중립

2. 표시등의 색상은 다음과 같다.

1) 적 색 : 비상

2) 황 색 : 비정상

3) 녹색 : 정상

4) 청 색 : 의무

5) 흰색 : 중립

3. 조작 버튼의 색상은 다음과 같다.

1) 적 색 : 비상

2) 황 색 : 비정상

3) 청 색 : 의무

4) 녹색, 적색 또는 녹색 : 지정된 의미없음

1. --- MARKED OWNER SCOPE

2. EARTH : 제 3종접지 공사(400V 미만전압 : 100 OHM 이하)

 * 제 3종접지 공사(400V 이상전압 : 10 OHM 이하)

SELECTION	VOLTAGE	F1	F2	F3	MCB100	TR10
	220V	2A	3A	103AF/75AT	220/110,120V 200VA	
	380V	1A	3A	53AF/50AT	380/110,120V 200VA	
	440V	1A	3A	53AF/40AT	440/110,120V 200VA	
	460V	1A	3A	53AF/40AT	460/110,120V 200VA	
	480V	1A	3A	53AF/40AT	480/110,120V 200VA	

MAIN POWER

CRANE MAKER SCOPE

T/S POWER

안전보건공단

KOREA OCCUPATIONAL SAFETY & HEALTH AGENCY



NOTES

1. सुखं न भवति सुखं न भवति।

- 1) $\frac{1}{2}x^2 + \frac{1}{3}x + \frac{1}{4}$ 2) $\frac{1}{2}x^2 + \frac{1}{3}x + \frac{1}{4}$ 3) $\frac{1}{2}x^2 + \frac{1}{3}x + \frac{1}{4}$ 4) $\frac{1}{2}x^2 + \frac{1}{3}x + \frac{1}{4}$
- 5) $\frac{1}{2}x^2 + \frac{1}{3}x + \frac{1}{4}$

2. CABLE MATERIAL: Γ -KIV OR EQUIVALENT

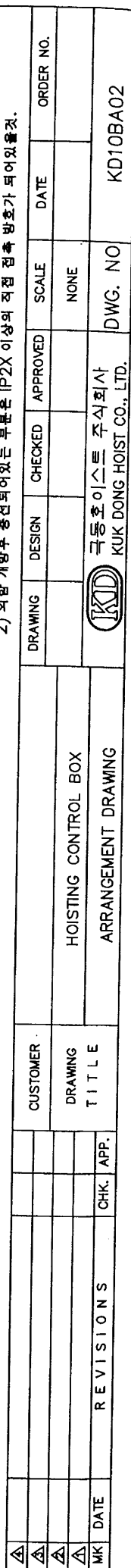
MIN SIZE : 2.5sq

3. 제어용 전선 : 2.5mm KIV,HIV

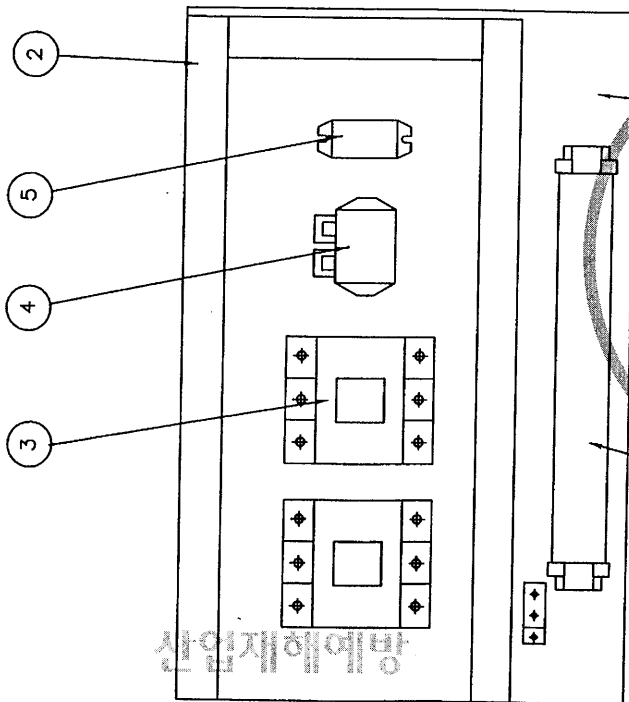
4. 제작성| 다소 변경될수있음.

5. 외함 개방구조는 다움과 같을것.

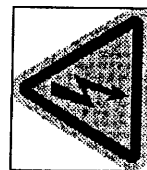
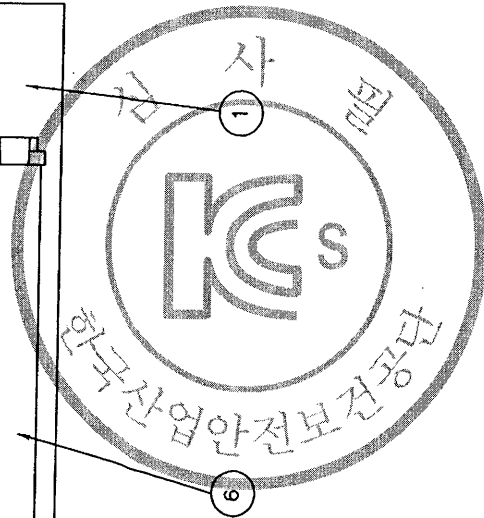
- 1) 의합 개방시 충전부분이 차단되도록 할것.
- 2) 의합 개방후 충전되어있는 부분은 IP2X 이상여 직접 접촉 방호가 되어있을것.



1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20.
																			ADR'S NO.



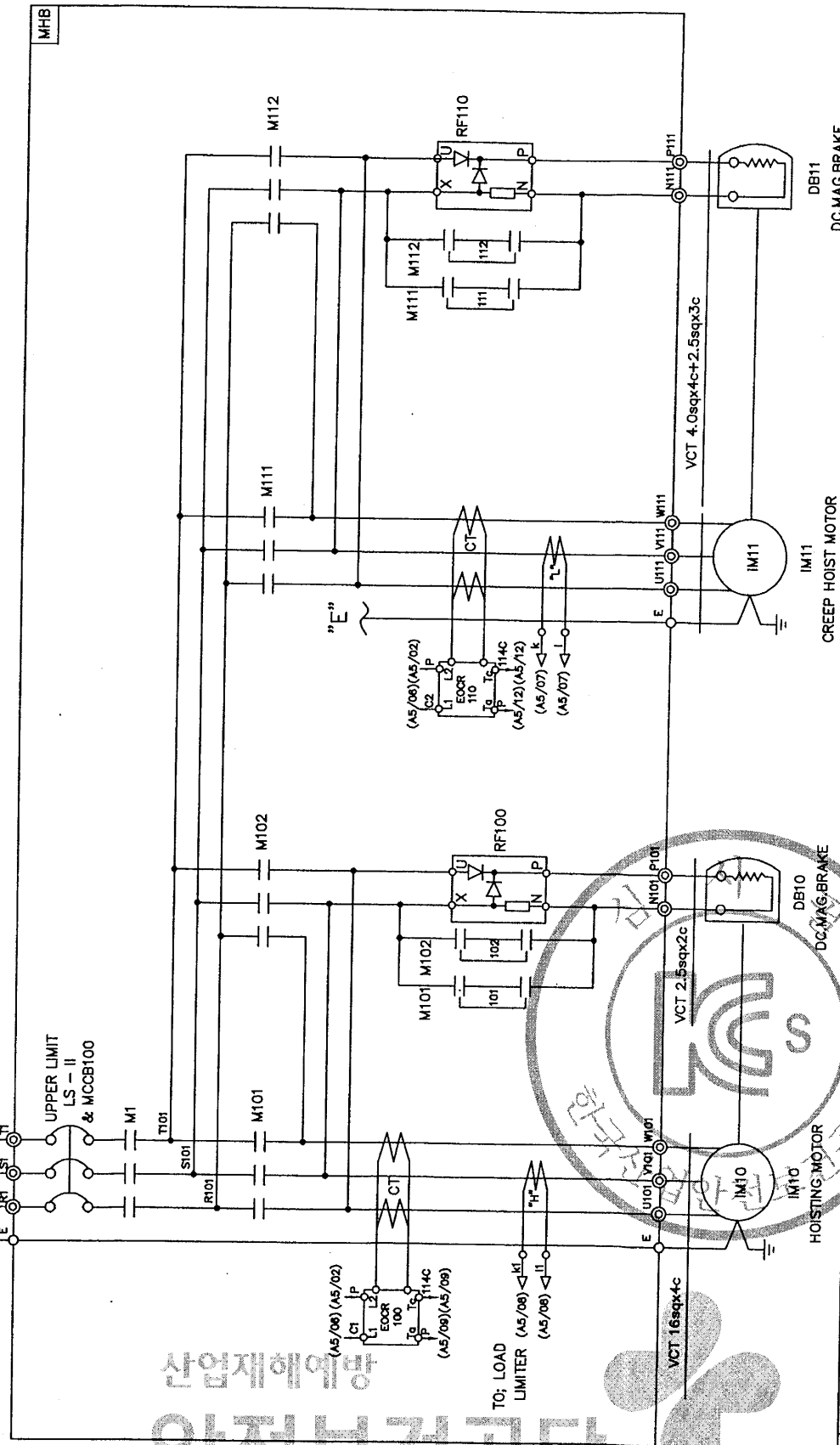
산업재해예방
안전보건공단
 KOREA OCCUPATIONAL SAFETY & HEALTH AGENCY



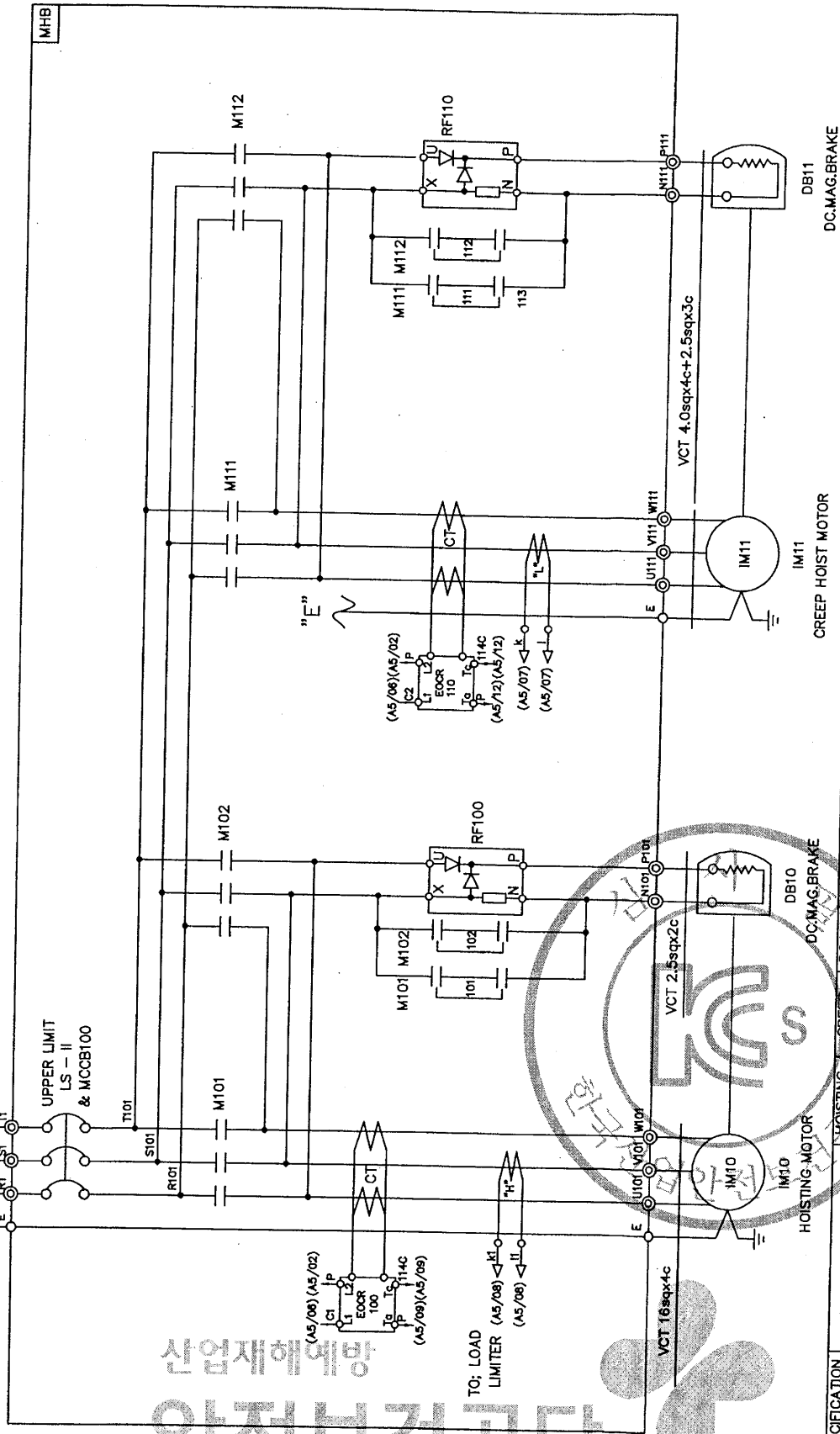
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1	CHASSIS PLATE	-	1	아 연 도 금
2	CABLE DUCT	-	1	
3	MAGNET CONTACTOR	DMC22C	2	TRAVERSING
4	E.O.C.R	SS-05	1	TRAVERSING
5	SILICON RECTIFIER	SR-30	1	TRAVERSING
6	TERMINAL BLOCK	25A , 15A	1	TRAVERSING

DRAWING		DESIGN	CHECKED	APPROVED	SCALE	DATE	ORDER NO.
TRAVERSING POWER CONTROL BOX					NONE		
ARRANGEMENT DRAWING		KUD			KUK DONG HOIST CO., LTD.		KDc10bt22
DATE	REVISIONS	CHK.	APP.				

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
POWER CIRCUIT										CREEP HOIST MOTION									
HOISTING MOTION										CREEP HOIST MOTION									
(A1/06)(A1/08)(A1/07)(A1/07)										B1									

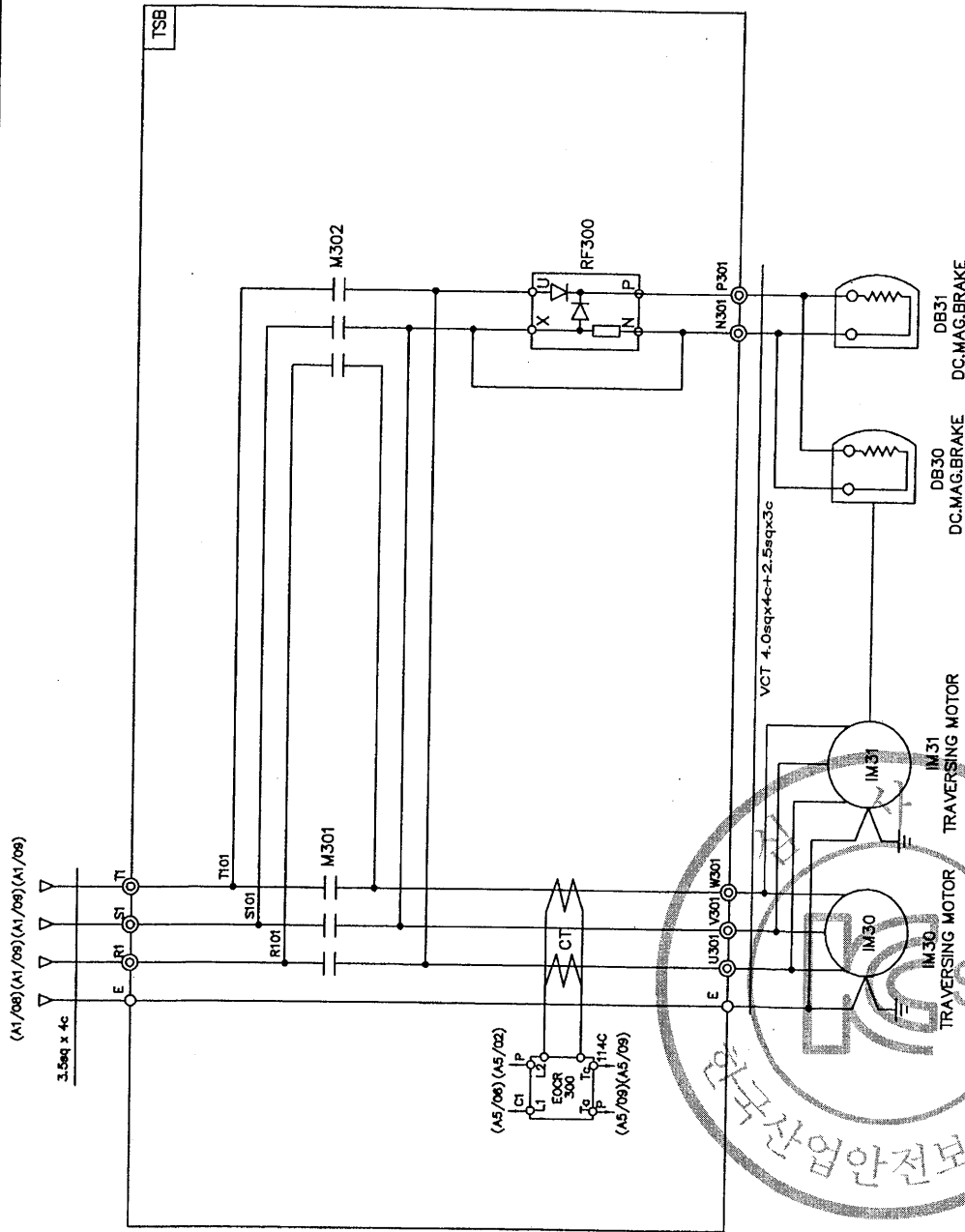


SPECIFICATION SYMBOLS	HOISTING POWER	HOISTING MOTOR	HOISTING MOTOR	HOISTING MOTOR	HOISTING MOTOR	HOISTING MOTOR	HOISTING MOTOR	HOISTING MOTOR	HOISTING MOTOR	HOISTING MOTOR	HOISTING MOTOR	HOISTING MOTOR	HOISTING MOTOR	HOISTING MOTOR	HOISTING MOTOR	HOISTING MOTOR	HOISTING MOTOR	HOISTING MOTOR	HOISTING MOTOR
DESCRIPTION	10TON AC3PH 220V 60Hz	9KWx8P	1.1KWx8P	1.1KWx8P	1.1KWx8P	1.1KWx8P	1.1KWx8P	1.1KWx8P	1.1KWx8P	1.1KWx8P	1.1KWx8P	1.1KWx8P	1.1KWx8P	1.1KWx8P	1.1KWx8P	1.1KWx8P	1.1KWx8P	1.1KWx8P	1.1KWx8P
SELECTION	MAKER	KUK DONG	KUK DONG	KUK DONG	KUK DONG	KUK DONG	KUK DONG	KUK DONG	KUK DONG	KUK DONG	KUK DONG	KUK DONG	KUK DONG	KUK DONG	KUK DONG	KUK DONG	KUK DONG	KUK DONG	KUK DONG
DATE	REVISIONS	CHK.	APP.	CUSTOMER	DRAWING TITLE	CREEP HOISTING POWER & CONTROL	CIRCUIT DIAGRAM	DWG. NO.	KDC10E21	ORDER NO.	DATE	SCALE	APPROVED	CHECKED	DESIGN	LS	DONG-A	ASECO	DONGIL
DATE	REVISIONS	CHK.	APP.	CUSTOMER	DRAWING TITLE	CREEP HOISTING POWER & CONTROL	CIRCUIT DIAGRAM	DWG. NO.	KDC10E21	ORDER NO.	DATE	SCALE	APPROVED	CHECKED	DESIGN	LS	DONG-A	ASECO	DONGIL

[illegible]

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20																																			
																			ADR'S NO.																																			
																			C1																																			
POWER CIRCUIT																																																						
TRAVERSING MOTION																																																						
(A1/08) (A1/09) (A1/10) (A1/11) (A1/12) (A1/13) (A1/14) (A1/15) (A1/16) (A1/17) (A1/18) (A1/19) (A1/20) 3.5sq x 4c E R1 S1 T1 T101 S101 R101 M301 F101 F102 M302 R102 F103 M303 R103 F104 M304 R104 F105 M305 R105 F106 M306 R106 F107 M307 R107 F108 M308 R108 F109 M309 R109 F110 M310 R110 F111 M311 R111 F112 M312 R112 F113 M313 R113 F114 M314 R114 F115 M315 R115 F116 M316 R116 F117 M317 R117 F118 M318 R118 F119 M319 R119 F120 M320 R120 (A5/08) (A5/09) (A5/10) (A5/11) (A5/12) (A5/13) (A5/14) (A5/15) (A5/16) (A5/17) (A5/18) (A5/19) (A5/20) G1 P L1 L2 L3 L4 L5 L6 L7 L8 L9 L10 L11 L12 L13 L14 L15 L16 L17 L18 L19 L20 E U301 V301 W301 IM30 IM30 TRAVERSING MOTOR VCT 4.0sqx4x2.5sqx3c DB30 DC MAG. BRAKE TSB																																																						
<table border="1"> <thead> <tr> <th>SPECIFICATION</th> <th>TRAVERSING MOTOR</th> <th>DC MAG. BRAKE</th> <th>MAGNET CONTACTOR</th> <th>SILICON RECTIFIER</th> <th>ELECTRIC OVER CURRENT RELAY</th> <th>LIMIT SWITCH</th> </tr> </thead> <tbody> <tr> <td>SYMBOLS</td> <td>IM 30</td> <td>DB 30</td> <td>M301, M302</td> <td>RF 300</td> <td>EOCR 300</td> <td>LS-301, LS-302</td> </tr> <tr> <td>DESCRIPTION</td> <td>0.75KW x 4P AC 3PH 220V 60Hz</td> <td>DC 100V</td> <td>DMC22C</td> <td>SR-30</td> <td>SS-30</td> <td>HY - W904</td> </tr> <tr> <td>SELECTION</td> <td>0.5KW x 6P AC 3PH 220V 60Hz</td> <td>DC 100V</td> <td>DMC22C</td> <td>SR-30</td> <td>SS-30</td> <td>HY - W904</td> </tr> <tr> <td>MAKER</td> <td>KUKDONG</td> <td></td> <td>DONG-A</td> <td>ASECO</td> <td></td> <td></td> </tr> </tbody> </table>																			SPECIFICATION	TRAVERSING MOTOR	DC MAG. BRAKE	MAGNET CONTACTOR	SILICON RECTIFIER	ELECTRIC OVER CURRENT RELAY	LIMIT SWITCH	SYMBOLS	IM 30	DB 30	M301, M302	RF 300	EOCR 300	LS-301, LS-302	DESCRIPTION	0.75KW x 4P AC 3PH 220V 60Hz	DC 100V	DMC22C	SR-30	SS-30	HY - W904	SELECTION	0.5KW x 6P AC 3PH 220V 60Hz	DC 100V	DMC22C	SR-30	SS-30	HY - W904	MAKER	KUKDONG		DONG-A	ASECO			
SPECIFICATION	TRAVERSING MOTOR	DC MAG. BRAKE	MAGNET CONTACTOR	SILICON RECTIFIER	ELECTRIC OVER CURRENT RELAY	LIMIT SWITCH																																																
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MAKER	KUKDONG		DONG-A	ASECO																																																		
CUSTOMER																			ORDER NO.																																			
DRAWING TITLE																			DATE																																			
TRAVERSING POWER CONTROL CIRCUIT																			SCALE																																			
DIAGRAM																			NONE																																			
KUKDONG HOIST CO., LTD.																			DWG. NO																																			
KDC10E23																																																						
DATE	REVISIONS	CHK.	APP.																																																			

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POWER CIRCUIT																			
TRAVERSING MOTION																			
ADR'S NO.																			C2



SPECIFICATION SYMBOLS		DESCRIPTION		SELECTION		DRAWING		CHECKED		APPROVED		SCALE		DATE		ORDER NO.	
TRAVERSING MOTOR		IM 30, 1M31		0.75KW x 4P AC 3PH 220V 60Hz		DC MAG' BRAKE		DB 30, 31		DC 100V		MAGNET CONTACTOR		M301, M302		ELECTRIC OVER CURRENT RELAY	
TRAVERSING MOTOR		IM 31		0.5KW x 6P AC 3PH 220V 60Hz		DC MAG. BRAKE		DC 100V		DMC22C		SR-30		SS-30		LS-301, LS-302	
LIMIT SWITCH		HY - W904		HY - W904		DONG-A		ASECO		NONE		KDC10E24					
CUSTOMER		KUK DONG		KUK DONG		DRAWING TITLE		TRAVERSING POWER CONTROL CIRCUIT		DRAWING NO.		DWG. NO.		DATE		ORDER NO.	
DRAWING		KUK DONG		KUK DONG		REVISIONS		CHK.		APP.							
DATE																	
MK																	

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
POWER CIRCUIT																			
TRAVERSING MOTION																			
C2																			
ADR'S NO.																			

SPECIFICATION SYMBOLS	DESCRIPTION	DC MAG' BRAKE	MAGNET CONTACTOR	SILICON RECTIFIER	ELECTRIC OVER CURRENT RELAY	TRANSFORMER
DB30	TRAVERSING MOTOR IM 30	DB30	M301, M302, M303	RF 300	EOCR 301,302	TR300
220V	0.8/0.4KWx4/8P AC3PH 220V 60Hz	DC 100V	DMC22C	SR-30	SS-30	AC220/220V, 300VA
220V	0.5/0.25KWx6/12P AC3PH 220V 60Hz	DC 100V	DMC22C	SR-30	SS-30	AC220/220V, 300VA

DONG-A				ASECO				SHINHAN	
DRAWING	DESIGN	CHECKED	APPROVED	SCALE	DATE	DATE	DATE	DATE	DATE
				NONE					

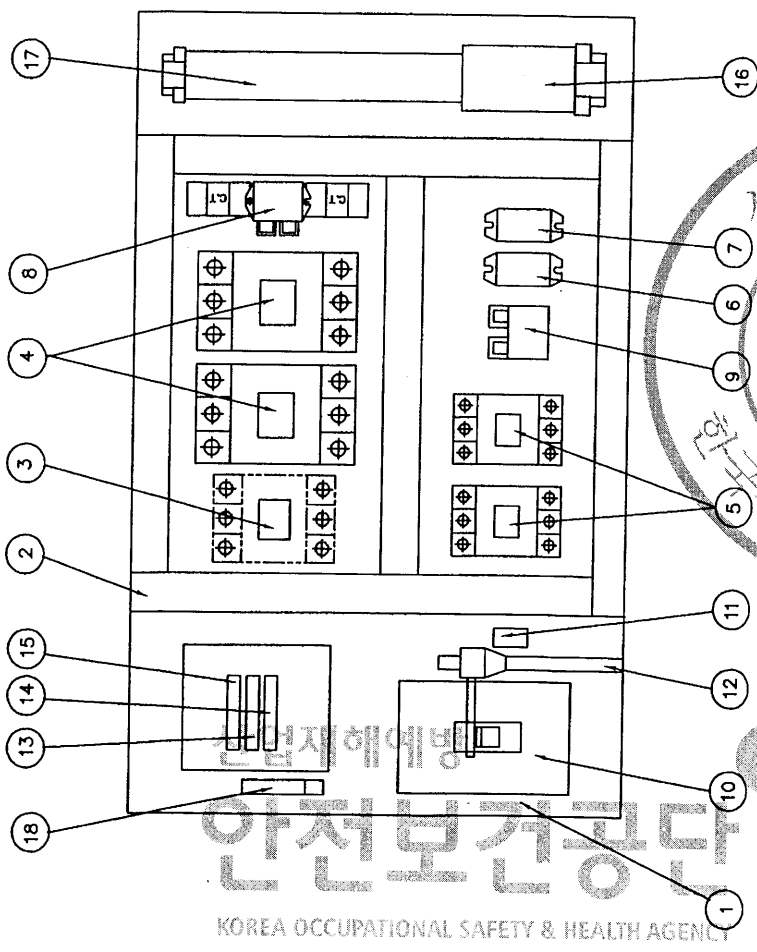
TRAVERSING POWER CONTROL CIRCUIT			DIAGRAM		
CUSTOMER	DRAWING TITLE	CHK.	APP.	DWG. NO	ORDER NO.
				KDC10E25	

KUK DONG HOIST CO., LTD.

NO	DESCRIPTION	SPECIFICATION	Q'TY	REMARK
1	CHASSIS PLATE		1	아연 도금
2	CABLE DUCT	-	1	
3	MAGNET CONTACT	DMC40C	1	M1, MAIN MAG.
4	MAGNET CONTACT	DMC85C	2	HOISTING
5	MAGNET CONTACT	DMC22C	2	CREEP
6	SILICON RECTIFIER	SR-60	1	HOISTING
7	SILICON RECTIFIER	SR-30	1	CREEP
8	E.O.C.R	SS-60	1	HOISTING
9	E.O.C.R	SS-05	1	CREEP
10	MCCB100	53AF/50AT	1	LS-2
11	UPPER LIMIT	AC 600V/3A	1	LS-1
12	LIMIT LEVER	SS-400	1	
13	FUSE (F11,F12)	2 A	2	
14	FUSE (F13)	5 A	1	
15	TRANSFORMER	380V/110,120V, 200VA	1	
16	TERMINAL BLOCK	60A,25A		
17	TERMINAL BLOCK	15A		
18	EARTH TERMINAL	5x25x50	1	

NOTE

- 전선의 색상은 다음과 같다.
 - 축색 : 교류 및 직류 전원선으로
 - 회색 : 교류 제어회로
 - 주황색 : 외부 전원에서 공급되는 연동장치 제어회로
 - 녹색 또는 녹색과 황색 혼용 : 접지선
2. CABLE MATERIAL : KIV OR EQUIVALENT
MIN SIZE : 2.5sq
3. 제어용 전선 : 2.5mm KIV,HIV
4. 제작시 다소 변경될수있음.
5. 외함 개방구조는 다음과 같을것.
- 외함 개방시 충전부분이 차단되도록 할것.
 - 외함 개방후 충전되어있는 부분은 IP2X 이상의 직접 접촉 방호가 되어있을것.



NOTE

- UPPER LIMIT LS-1의 정격 허용 전류 용량 : AC 600V, 3A
- UPPER LIMIT LS-2의 정격 허용 전류 용량 : NFB 53AF
- EARTH TERMINAL RESISTANCE : 0.018 Ω
- POWER SOURCE : AC 3φ 380V 60HZ



MK	DATE	REVISIONS	CHK.	APP.	CUSTOMER	DRAWING TITLE	HOISTING CONTROL BOX	ARRANGEMENT DRAWING	DRAWING DESIGN	CHECKED	APPROVED	SCALE	DATE	ORDER NO.
													NONE	

국동호이스트 주식회사
KUK DONG HOIST CO., LTD.

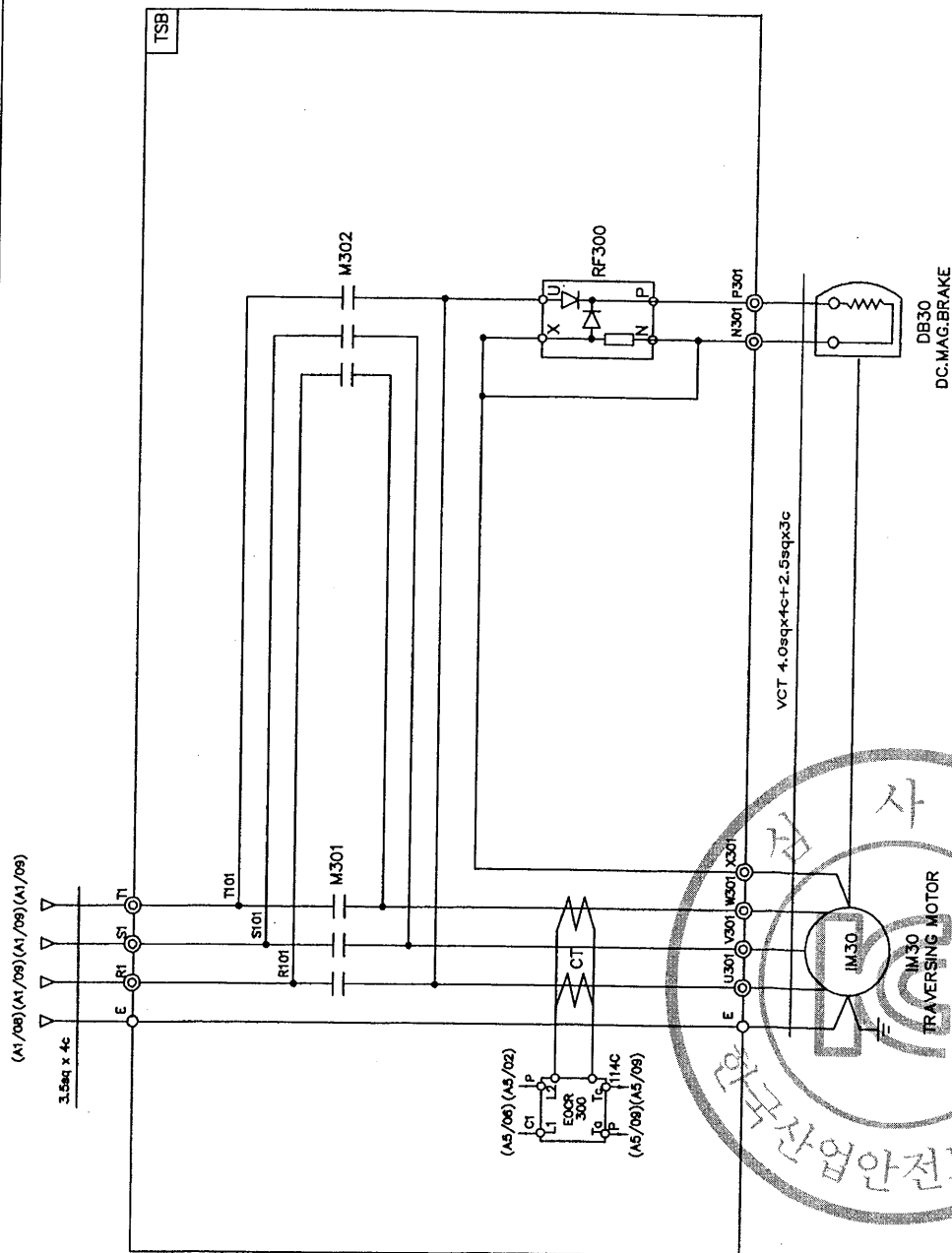
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POWER CIRCUIT										TRAVERSING MOTION									
ADR'S NO.																			C1



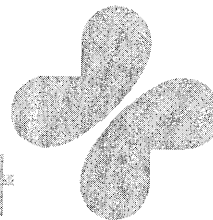
SPECIFICATION		TRAVERSING MOTOR		DC MAG' BRAKE		MAGNET CONTACTOR		SILICON RECTIFIER		ELECTRIC OVER CURRENT RELAY		LIMIT SWITCH							
SYMBOLS DESCRIPTION		IM 30		DB 30		M301, M302		RF 300		EOCR 300		LS-301, LS-302							
		0.75KW x 4P AC 3PH 380V 60Hz		DC 100V		DMC22C		SR-30		SS-05		HY - W904							
SELECTION		0.5KW x 6P AC 3PH 380V 60Hz		DC 100V		DMC22C		SR-30		SS-05		HY - W904							
MAKER		KUKDONG				DONG-A		ASECO											
CUSTOMER						DRAWING		DESIGN		CHECKED		APPROVED		SCALE		DATE		ORDER NO.	
DRAWING TITLE																			
REVISIONS																			
DATE																			
CHK. APP.																			
MK																			

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
POWER CIRCUIT																			
TRAVERSING MOTION																			
C2																			
ADR'S NO.																			
C2																			

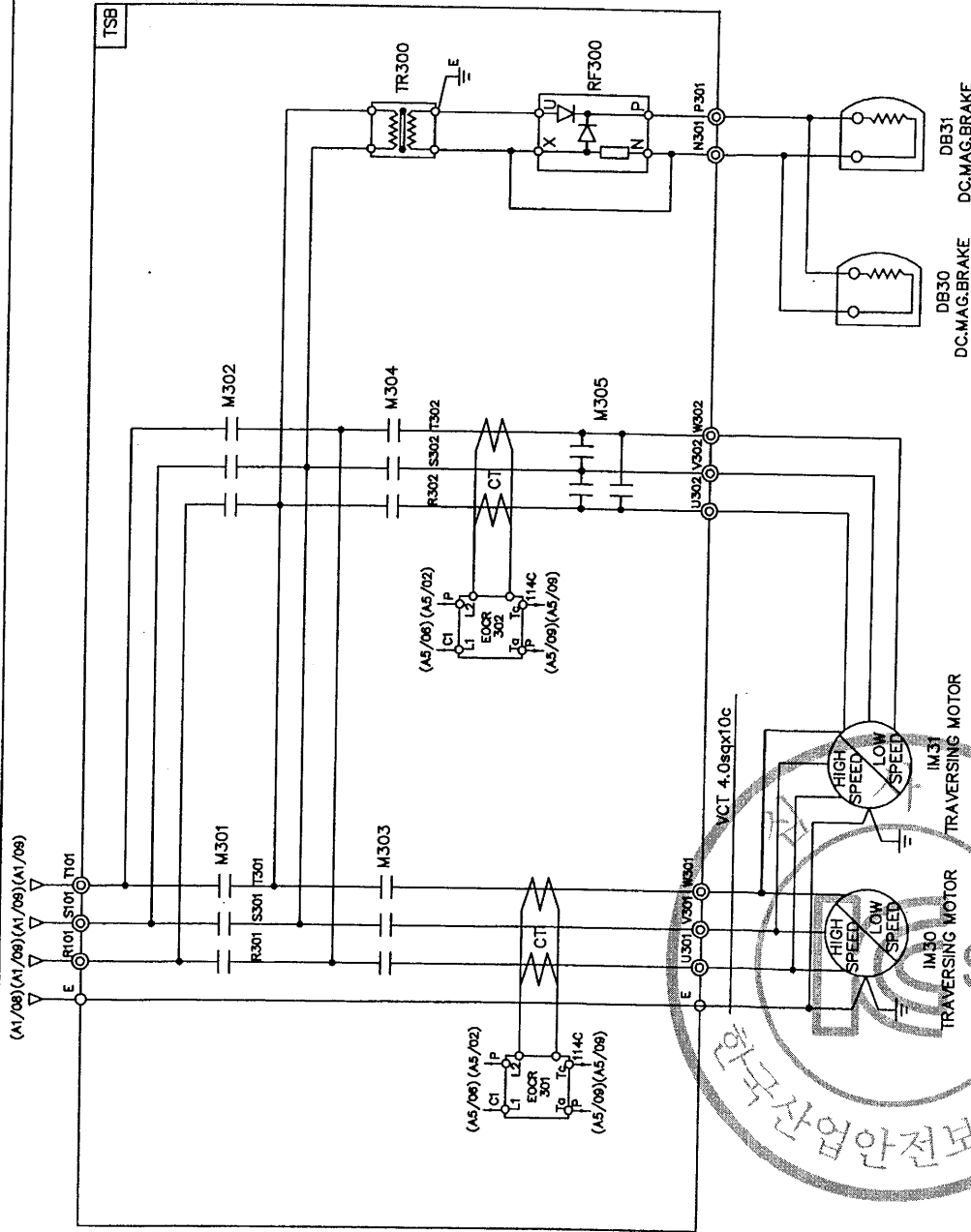
SPECIFICATION	SYMBOLS	DESCRIPTION	TRAVERSING MOTOR	DC MAG. BRAKE	MAGNET CONTACTOR	SILICON RECTIFIER	ELECTRIC OVER CURRENT RELAY	TRANSFORMER				
			IM 30	DB30	M301, M302, M303	RF 300	EOCR 301,302	TR300				
		380V	0.8/0.4KWx4/8P AC3PH 380V 60Hz	DC 100V	DMC22C	SR-30	SS-30	AC380/220V, 300VA				
		380V	0.5/0.25KWx6/12P AC3PH 380V 60Hz	DC 100V	DMC22C	SR-30	SS-30	AC380/220V, 300VA				
SELECTION	MAKER	KUKDONG			DONG-A		ASECO					
		CUSTOMER		DRAWING		DESIGN	CHECKED	APPROVED	SCALE	DATE	ORDER NO.	
		DRAWING		TITLE		TRAVERSING POWER CONTROL CIRCUIT		DWG. NO		KDC10E35		
		REVISIONS		CHK.		APP.						
		DATE										

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국동호이스트 주식회사
KUK DONG HOIST CO., LTD.



1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
POWER CIRCUIT																			
TRAVERSING MOTION																			
ADR'S NO.																			C2



SPECIFICATION	SYMBOLS	DESCRIPTION	TRAVERSING MOTOR	DC MAG. BRAKE	MAGNET CONTACTOR	SILICON RECTIFIER	ELECTRIC OVER CURRENT RELAY	TRANSFORMER
			IM 30, 1M31	DB30, DB31	M301, M302, M303	RF 300	EOCR 301, 302	TR300
			0.8/0.4KWx4/8P AC3PH 380V 60Hz	DC 100V	DMC22C	SR-30	SS-30	AC380/220V, 300VA
			0.5/0.25KWx6/12P AC3PH 380V 60Hz	DC 100V	DMC22C	SR-30	SS-30	AC380/220V, 300VA
SELECTION	MAKER	DONG-A						
		KUKDONG						
CUSTOMER	DRAWING	DESIGN	CHECKED	APPROVED	SCALE	DATE	ORDER NO.	
					NONE			
DWG. NO.	KDC10E36							

국동호이스트 주식회사
KUK DONG HOIST CO., LTD.

DIAGRAM

TRAVERSING POWER CONTROL CIRCUIT

TITLE

CHK. APP.

REVISIONS

DATE

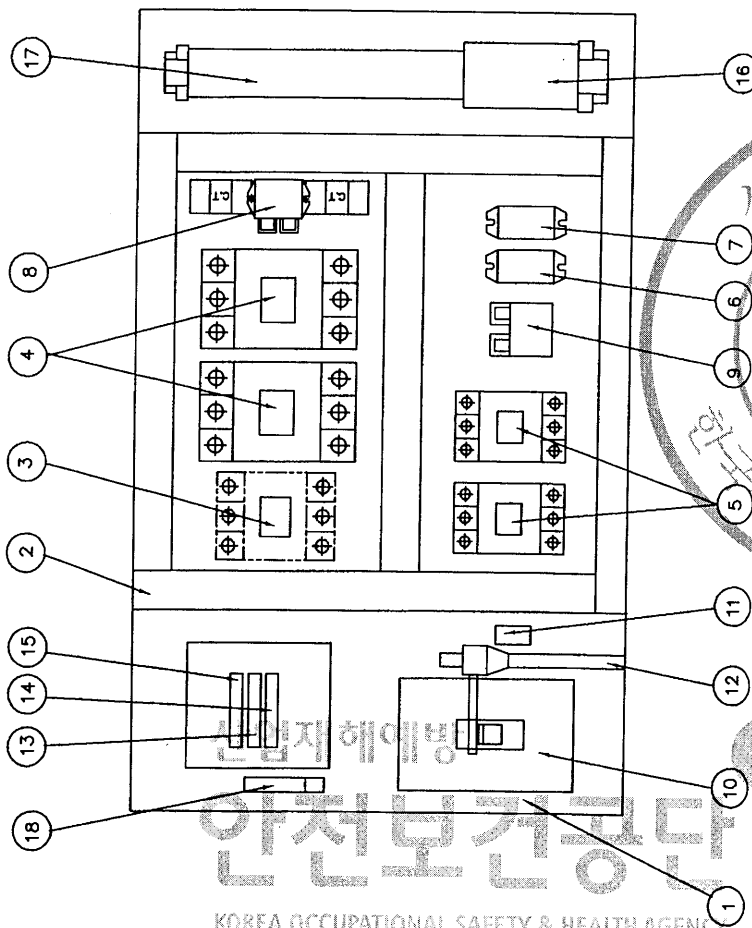
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ADR'S NO.

NO	DESCRIPTION	SPECIFICATION	Q'TY	REMARK
1	CHASSIS PLATE		1	아연 도금
2	CABLE DUCT	-	1	
3	MAGNET CONTACT	DMC40C	1	M1, MAIN MAG.
4	MAGNET CONTACT	DMC65C	2	HOISTING
5	MAGNET CONTACT	DMC22C	2	CREEP
6	SILICON RECTIFIER	SR-60	1	HOISTING
7	SILICON RECTIFIER	SR-30	1	CREEP
8	E.O.C.R	SS-60	1	HOISTING
9	E.O.C.R	SS-05	1	CREEP
10	MCCB100	53AF/40AT	1	LS-2
11	UPPER LIMIT	AC 600V/3A	1	LS-1
12	LIMIT LEVER	SS-400	1	
13	FUSE (F11,F12)	2 A	2	
14	FUSE (F13)	5 A	1	
15	TRANSFORMER	440V/110V,120V, 200VA	1	
16	TERMINAL BLOCK	60A,25A		
17	TERMINAL BLOCK	15A		
18	EARTH TERMINAL	5tx25x50	1	

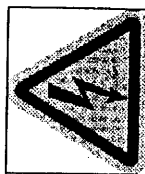
NOTE

- 전선의 색상은 다음과 같다.
1) 흑색 : 교류 및 직류 전원선으로 5) 청색 : 직류 제어선으로
 - 적색 : 교류제어회로
 - 주항색 : 외부 전원에서 공급되는 운동장치 제어회로
 - 녹색 또는 녹색과 황색 혼용 : 접지선
2. CABLE MATERIAL : ☐ KIV OR EQUIVALENT
MIN SIZE : 2.5sq
- 제어용 전선 : 2.5mm KIV,HIV
 - 제작시 다스 변경될수있음.
 - 외함 개방구조는 다음과 같을것.
 - 외함 개방시 충전부분이 차단되도록 할것.
 - 외함 개방후 충전되어있는 부분은 IP2X 이상의 직접 접촉 방호가 되어있을것.

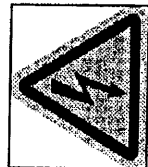
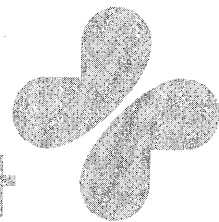


NOTE

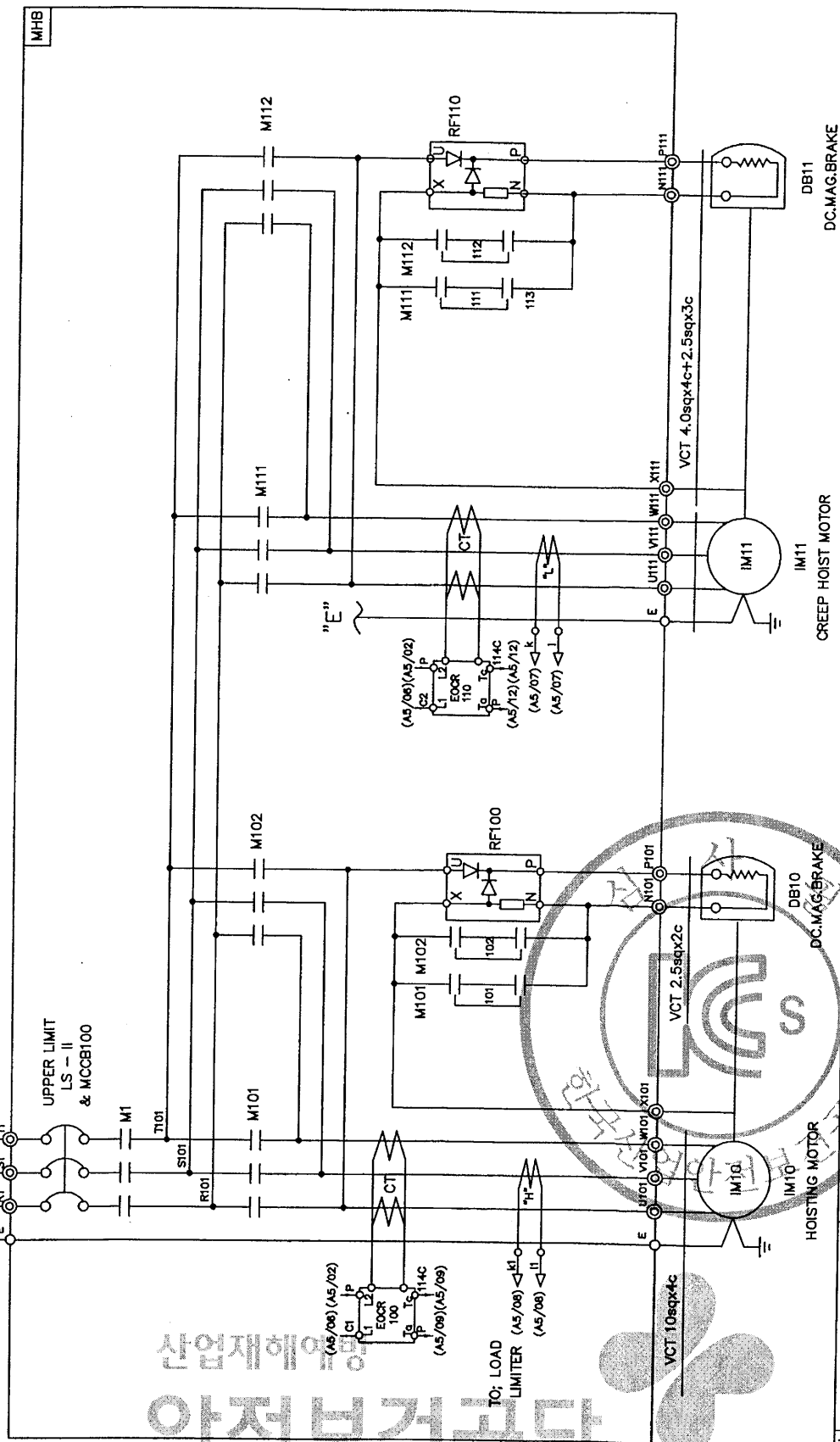
- UPPER LIMIT LS-1의 점진 허용 전류 용량 : AC 500V, 3A
- UPPER LIMIT LS-2의 점진 허용 전류 용량 : NFB 53AF
- EARTH TERMINAL RESISTANCE : 0.018 Ω
- POWER SOURCE : AC 3Ø 440V 60HZ



DRAWING	DESIGN	CHECKED	APPROVED	SCALE	DATE	ORDER NO.
				NONE		
KUK DONG HOIST CO., LTD.						KD10BA04
HOISTING CONTROL BOX						
ARRANGEMENT DRAWING						
CUSTOMER						
DRAWING TITLE						
REVISIONS						
DATE						
CHK.						
APP.						

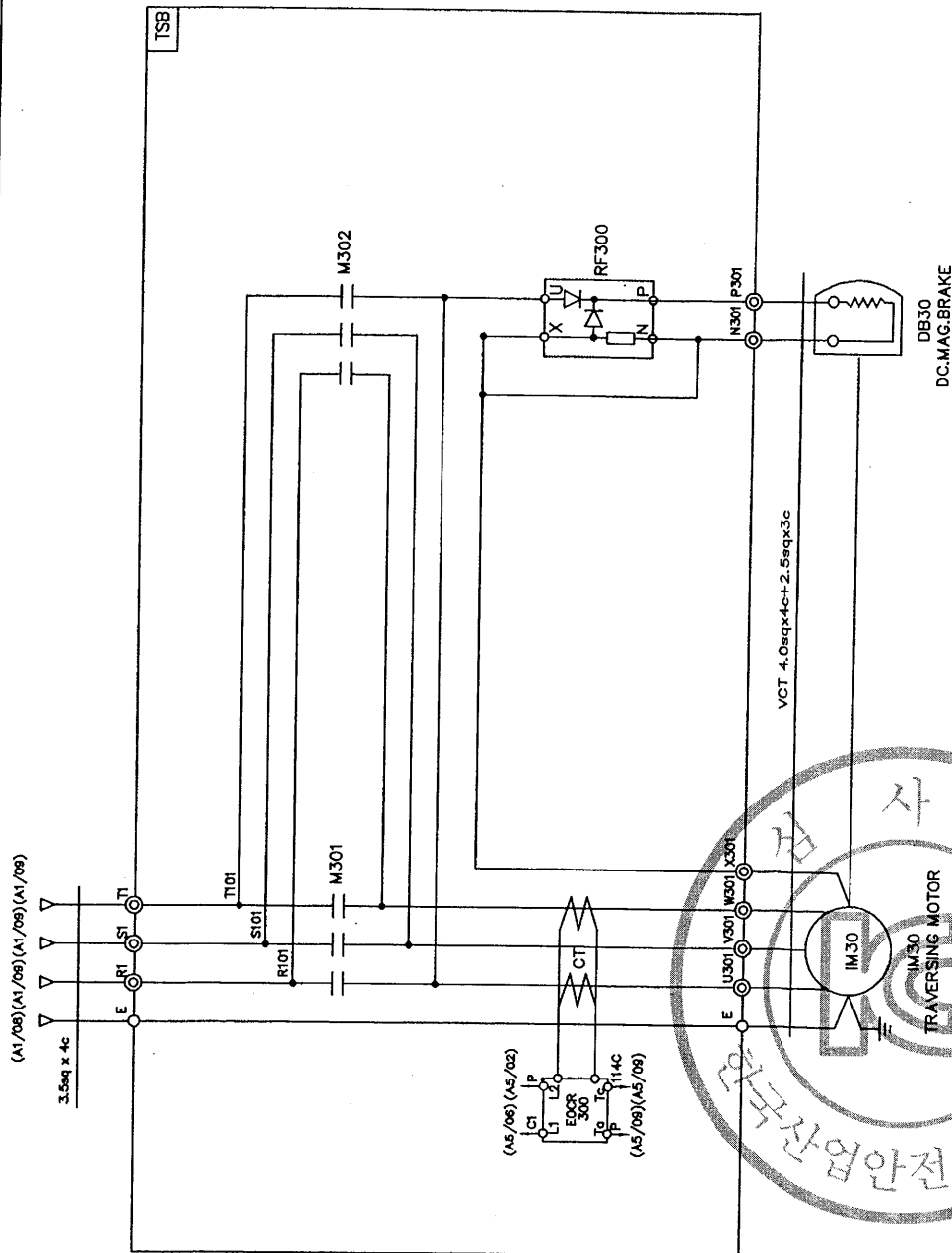
[illegible]

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
POWER CIRCUIT										CREEP HOIST MOTION									
HOISTING MOTION										CREEP HOIST MOTION									
C20-01										B1									
ADP'S NO.										B1									

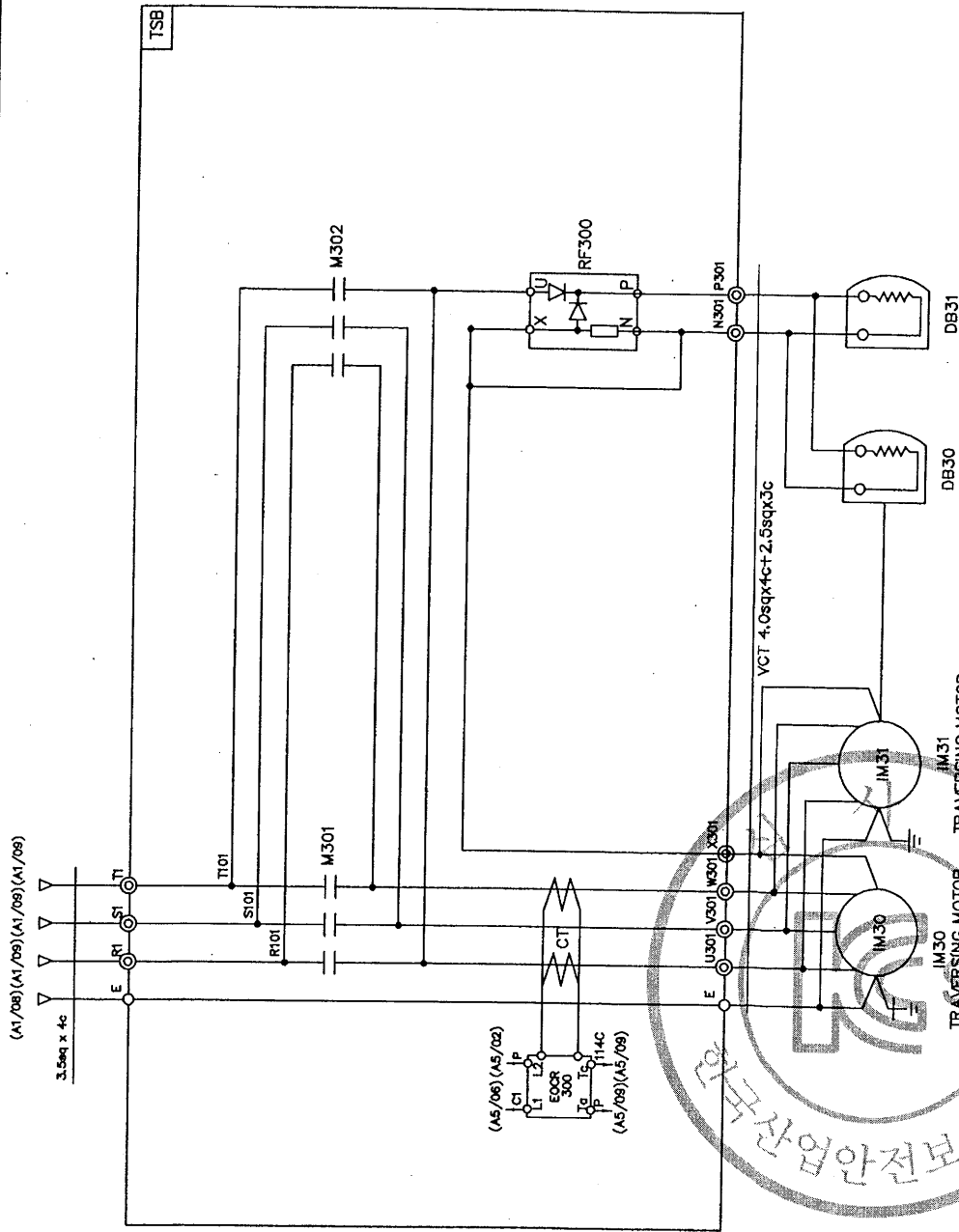


SPECIFICATION SYMBOLS	DESCRIPTION	HOISTING POWER	HOISTING MOTOR	CREEP MOTOR	DC MAG. BRAKE	DC MAG. BREAKER	TRANSFORMER	FUSE	MAIN MAGNET	MAGNET CONTACTOR	UPPER LIMIT	ELECTRIC OVER CURRENT RELAY	SILICON RECTIFIER	LOAD LIMITER	CABLE				
		10TON AC3PH 440V 60Hz	IM 10	IM 11	DB10, 11	LS-II & MCCB100	TR 1	F1, F2 F13	M1	M101, M102	LS-I, LS-II	EOCR100	RF100	RF110	C20-01				
SELECTION MAKER	DESCRIPTION	HOISTING POWER	HOISTING MOTOR	CREEP MOTOR	DC MAG. BRAKE	DC MAG. BREAKER	TRANSFORMER	FUSE	MAIN MAGNET	MAGNET CONTACTOR	UPPER LIMIT	ELECTRIC OVER CURRENT RELAY	SILICON RECTIFIER	LOAD LIMITER	CABLE				
		10TON AC3PH 440V 60Hz	IM 10	IM 11	DB10, 11	LS-II & MCCB100	TR 1	F1, F2 F13	M1	M101, M102	LS-I, LS-II	EOCR100	RF100	RF110	C20-01				
DATE	REVISIONS	CHK.	APP.	CUSTOMER	DRAWING TITLE	CREEP HOISTING POWER & CONTROL	CIRCUIT DIAGRAM	DWG. NO.	KDC10E41	DATE	SCALE	APPROVED	DESIGN	CHECKED	DESIGN	APPROVED	DESIGN	DATE	ORDER NO.

192.168.11.38 / 2012-12-07 13:22:27

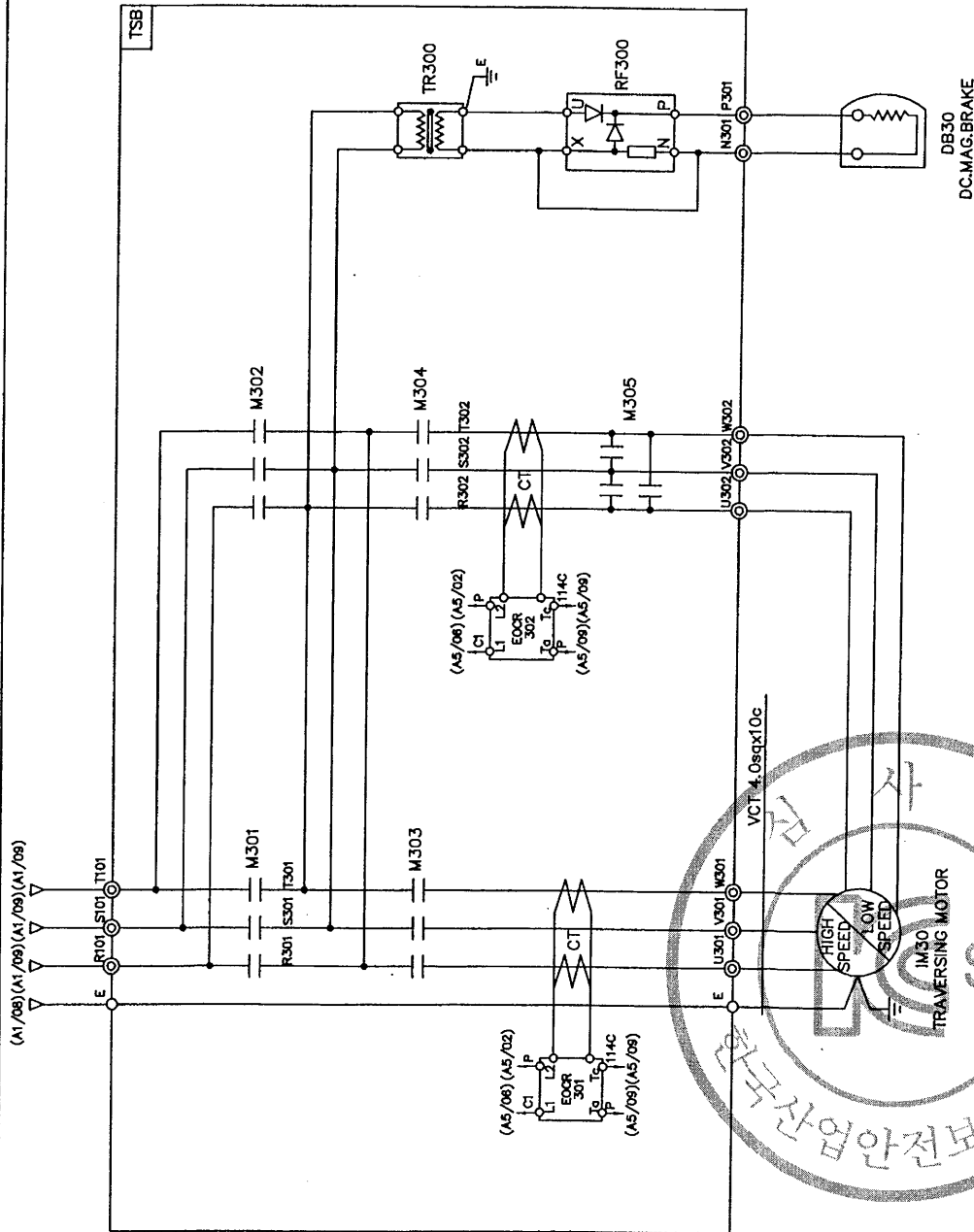
[illegible]

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
POWER CIRCUIT																			
TRAVERSING MOTION																			
ADR'S NO.																			C2



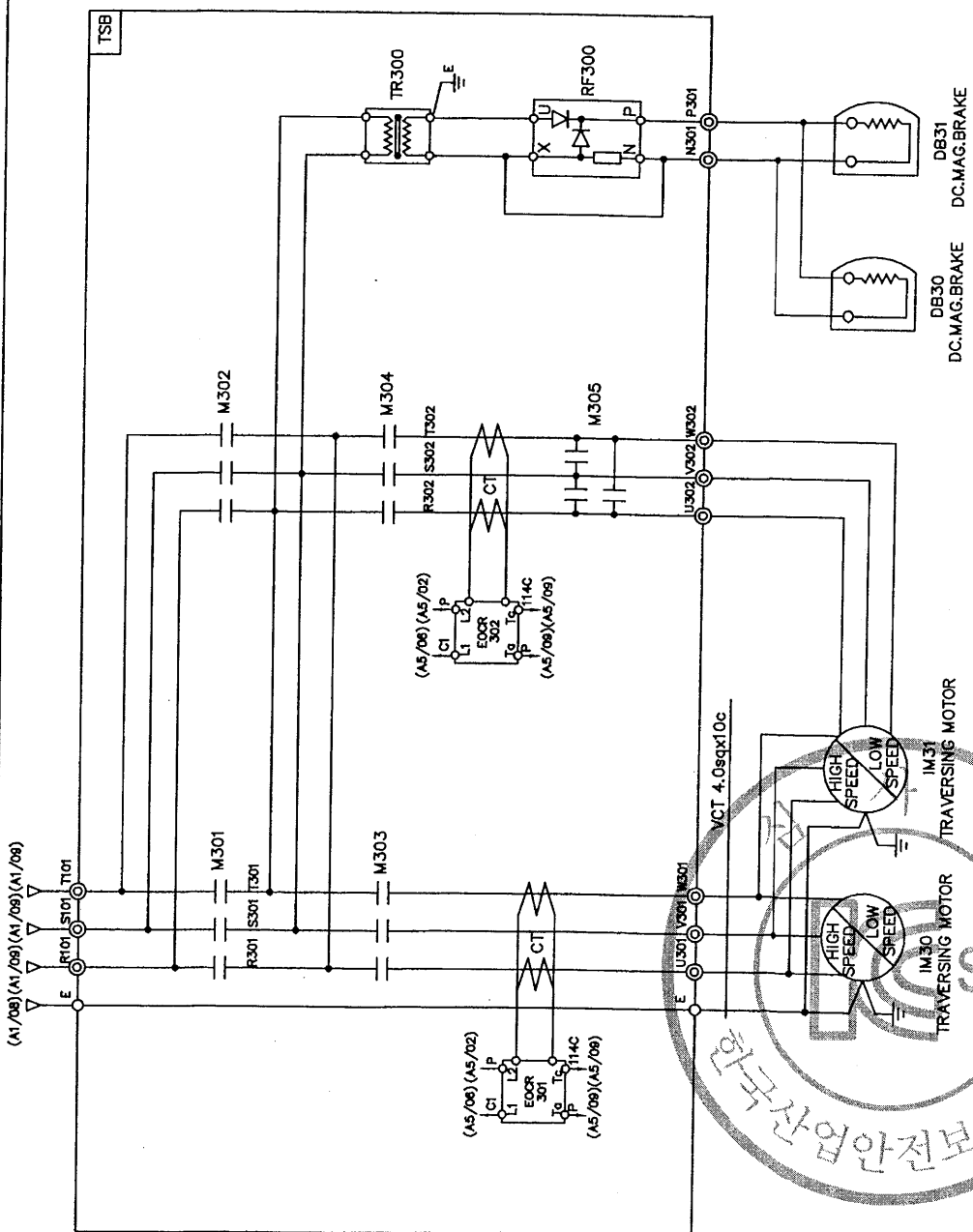
SPECIFICATION		SYMBOLS		DESCRIPTION		SELECTION		MAKER		CUSTOMER		DRAWING		TITLE		REVISIONS		DATE		CHK.		APP.		REVIEWS		DATE		ORDER NO.		DWG. NO		KDC10E44	
TRAVERSING MOTOR		IM 30, 1M31		0.75KW x 4P AC 3PH 440V 60Hz		0.5KW x 6P AC 3PH 440V 60Hz		KUK DONG		KUK DONG		TRAVERSING POWER CONTROL CIRCUIT		TRAVERSING POWER CONTROL CIRCUIT		TRAVERSING POWER CONTROL CIRCUIT		TRAVERSING POWER CONTROL CIRCUIT		TRAVERSING POWER CONTROL CIRCUIT		TRAVERSING POWER CONTROL CIRCUIT		TRAVERSING POWER CONTROL CIRCUIT		TRAVERSING POWER CONTROL CIRCUIT		TRAVERSING POWER CONTROL CIRCUIT		TRAVERSING POWER CONTROL CIRCUIT		TRAVERSING POWER CONTROL CIRCUIT	
DC MAG. BRAKE		DB 30, 31		DC 100V		DC 100V		KUK DONG		KUK DONG		TRAVERSING POWER CONTROL CIRCUIT		TRAVERSING POWER CONTROL CIRCUIT		TRAVERSING POWER CONTROL CIRCUIT		TRAVERSING POWER CONTROL CIRCUIT		TRAVERSING POWER CONTROL CIRCUIT		TRAVERSING POWER CONTROL CIRCUIT		TRAVERSING POWER CONTROL CIRCUIT		TRAVERSING POWER CONTROL CIRCUIT		TRAVERSING POWER CONTROL CIRCUIT		TRAVERSING POWER CONTROL CIRCUIT		TRAVERSING POWER CONTROL CIRCUIT	
MAGNET CONTACTOR		M301, M302		DC 100V		DC 100V		KUK DONG		KUK DONG		TRAVERSING POWER CONTROL CIRCUIT		TRAVERSING POWER CONTROL CIRCUIT		TRAVERSING POWER CONTROL CIRCUIT		TRAVERSING POWER CONTROL CIRCUIT		TRAVERSING POWER CONTROL CIRCUIT		TRAVERSING POWER CONTROL CIRCUIT		TRAVERSING POWER CONTROL CIRCUIT		TRAVERSING POWER CONTROL CIRCUIT		TRAVERSING POWER CONTROL CIRCUIT		TRAVERSING POWER CONTROL CIRCUIT		TRAVERSING POWER CONTROL CIRCUIT	
SILICON RECTIFIER		RF 300		DC 100V		DC 100V		KUK DONG		KUK DONG		TRAVERSING POWER CONTROL CIRCUIT		TRAVERSING POWER CONTROL CIRCUIT		TRAVERSING POWER CONTROL CIRCUIT		TRAVERSING POWER CONTROL CIRCUIT		TRAVERSING POWER CONTROL CIRCUIT		TRAVERSING POWER CONTROL CIRCUIT		TRAVERSING POWER CONTROL CIRCUIT		TRAVERSING POWER CONTROL CIRCUIT		TRAVERSING POWER CONTROL CIRCUIT		TRAVERSING POWER CONTROL CIRCUIT		TRAVERSING POWER CONTROL CIRCUIT	
ELECTRIC OVER CURRENT RELAY		EOCR 300		DC 100V		DC 100V		KUK DONG		KUK DONG		TRAVERSING POWER CONTROL CIRCUIT		TRAVERSING POWER CONTROL CIRCUIT		TRAVERSING POWER CONTROL CIRCUIT		TRAVERSING POWER CONTROL CIRCUIT		TRAVERSING POWER CONTROL CIRCUIT		TRAVERSING POWER CONTROL CIRCUIT		TRAVERSING POWER CONTROL CIRCUIT		TRAVERSING POWER CONTROL CIRCUIT		TRAVERSING POWER CONTROL CIRCUIT		TRAVERSING POWER CONTROL CIRCUIT		TRAVERSING POWER CONTROL CIRCUIT	
LIMIT SWITCH		LS-301, LS-302		DC 100V		DC 100V		KUK DONG		KUK DONG		TRAVERSING POWER CONTROL CIRCUIT		TRAVERSING POWER CONTROL CIRCUIT		TRAVERSING POWER CONTROL CIRCUIT		TRAVERSING POWER CONTROL CIRCUIT		TRAVERSING POWER CONTROL CIRCUIT		TRAVERSING POWER CONTROL CIRCUIT		TRAVERSING POWER CONTROL CIRCUIT		TRAVERSING POWER CONTROL CIRCUIT		TRAVERSING POWER CONTROL CIRCUIT		TRAVERSING POWER CONTROL CIRCUIT		TRAVERSING POWER CONTROL CIRCUIT	
HY - W904		HY - W904		DC 100V		DC 100V		KUK DONG		KUK DONG		TRAVERSING POWER CONTROL CIRCUIT		TRAVERSING POWER CONTROL CIRCUIT		TRAVERSING POWER CONTROL CIRCUIT		TRAVERSING POWER CONTROL CIRCUIT		TRAVERSING POWER CONTROL CIRCUIT		TRAVERSING POWER CONTROL CIRCUIT		TRAVERSING POWER CONTROL CIRCUIT		TRAVERSING POWER CONTROL CIRCUIT		TRAVERSING POWER CONTROL CIRCUIT		TRAVERSING POWER CONTROL CIRCUIT		TRAVERSING POWER CONTROL CIRCUIT	
HY - W904		HY - W904		DC 100V		DC 100V		KUK DONG		KUK DONG		TRAVERSING POWER CONTROL CIRCUIT		TRAVERSING POWER CONTROL CIRCUIT		TRAVERSING POWER CONTROL CIRCUIT		TRAVERSING POWER CONTROL CIRCUIT		TRAVERSING POWER CONTROL CIRCUIT		TRAVERSING POWER CONTROL CIRCUIT		TRAVERSING POWER CONTROL CIRCUIT		TRAVERSING POWER CONTROL CIRCUIT		TRAVERSING POWER CONTROL CIRCUIT		TRAVERSING POWER CONTROL CIRCUIT		TRAVERSING POWER CONTROL CIRCUIT	

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
POWER CIRCUIT										TRAVERSING MOTION									
ADR'S NO.										C2									



SPECIFICATION		SYMBOLS		DESCRIPTION		MAGNET CONTACTOR		SILICON RECTIFIER		ELECTRIC OVER CURRENT RELAY		TRANSFORMER	
TRAVERSING MOTOR		IM 30		0.8/0.4KWx4/8P AC3PH 440V 60Hz		M301, M302, M303		RF 300		EOCR 301,302		TR300	
DC MAG. BRAKE		DB30		DC 100V		DMC22C		SR-30		SS-05		AC440/220V, 300VA	
SELECTION MAKER		KUKDONG		440V 0.5/0.25KWx6/12P AC3PH 440V 60Hz		DMC22C		SR-30		SS-05		AC440/220V, 300VA	
CUSTOMER		KUKDONG		DRAWING		DESIGN		APPROVED		SCALE		DATE	
DRAWING TITLE		TRAVERSING POWER CONTROL CIRCUIT		TITLE		DONG-A		ASECO		NONE		KDC10E45	
REVISIONS		CHK. APP.		DIAGRAM		KUKDONG HOIST CO., LTD.		DWG. NO.		ORDER NO.			
DATE		MK											

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
POWER CIRCUIT																			
TRAVERSING MOTION																			
ADR'S NO.																			C2



SPECIFICATION	SYMBOLS	DESCRIPTION	DC MAG' BRAKE	MAGNET CONTACTOR	SILICON RECTIFIER	ELECTRIC OVER CURRENT RELAY	TRANSFORMER
		TRAVERSING MOTOR	DB30, DB31	M301, M302, M303	RF 300	EOCR 301,302	TR300
		IM 30, IM31	DC 100V	M304, M305	SR-30	SS-30	AC440/220V, 300VA
		0.8/0.4KWx4/8P AC3PH 440V 60Hz	DC 100V	DMC22C	SR-30	SS-30	AC440/220V, 300VA
		0.5/0.25KWx6/12P AC3PH 440V 60Hz	DC 100V	DMC22C	SR-30	SS-30	AC440/220V, 300VA
SELECTION	MAKER	DONG-A					
		KUKDONG					
CUSTOMER		DRAWING	DESIGN	CHECKED	APPROVED	SCALE	DATE
		TRAVERSING POWER CONTROL CIRCUIT					
		DIAGRAM					
DATE	REVISIONS	CHK.	APP.	KUK DONG HOIST CO., LTD.			
				KDC10E46			

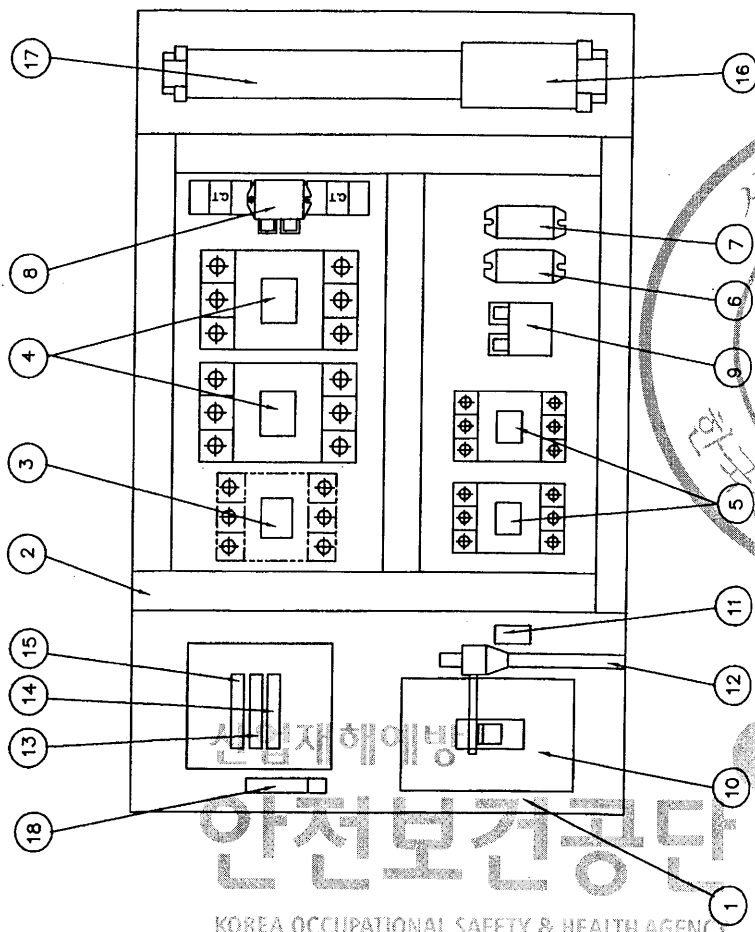
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20.

ADR'S NO.

NO	DESCRIPTION	SPECIFICATION	Q'TY	REMARK
1	CHASSIS PLATE		1	아연 도금
2	CABLE DUCT	-	1	
3	MAGNET CONTACT	DMC40C	1	M1, MAIN MAG.
4	MAGNET CONTACT	DMC65C	2	HOISTING
5	MAGNET CONTACT	DMC22C	2	CREEP
6	SILICON RECTIFIER	SR-60	1	HOISTING
7	SILICON RECTIFIER	SR-30	1	CREEP
8	E.O.C.R	SS-60	1	HOISTING
9	E.O.C.R	SS-05	1	CREEP
10	MCB100	53AF/40AT	1	LS-2
11	UPPER LIMIT	AC 600V/3A	1	LS-1
12	LIMIT LEVER	SS-41	1	
13	FUSE (F1,F12)	2 A	2	
14	FUSE (F13)	5 A	1	
15	TRANSFORMER	460V/110V,120V, 200VA	1	
16	TERMINAL BLOCK	60A,25A		
17	TERMINAL BLOCK	15A		
18	EARTH TERMINAL	5t×25×50	1	

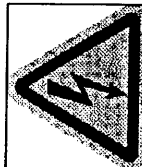
NOTE

1. 전선의 색상은 다음과 같다.
 - 1) 황색 : 교류 및 직류 전원선으로
 - 2) 적색 : 교류제어회로
 - 3) 주황색 : 외부 전원에서 공급되는 연동장치 제어회로
 - 4) 녹색 또는 녹색과 황색 혼용 : 접지선
2. CABLE MATERIAL : KIV OR EQUIVALENT
MIN SIZE : 2.5sq
3. 제어용 전선 : 2.5mm KIV/HIV
 4. 제작시 다소 변경될수있음.
 5. 외함 개방시 충전부분이 차단되도록 할것.
- 1) 외함 개방후 충전되어있는 부분은 IP2X 이상의 직접 접촉 방호가 되어있을것.
 - 2) 외함 개방후 충전되어있는 부분은 IP2X 이상의 직접 접촉 방호가 되어있을것.



NOTE

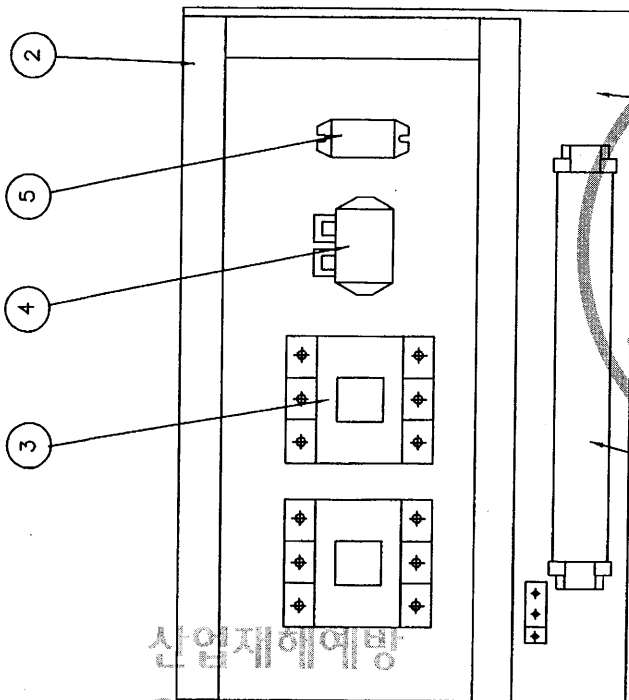
1. UPPER LIMIT LS-1의 정점 허용 전류 용량 : AC 600V, 3A
2. UPPER LIMIT LS-2의 정점 허용 전류 용량 : NFB 53AF
3. EARTH TERMINAL RESISTANCE : 0.018 Ω
4. POWER SOURCE : AC 3φ 460V 60HZ



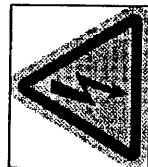
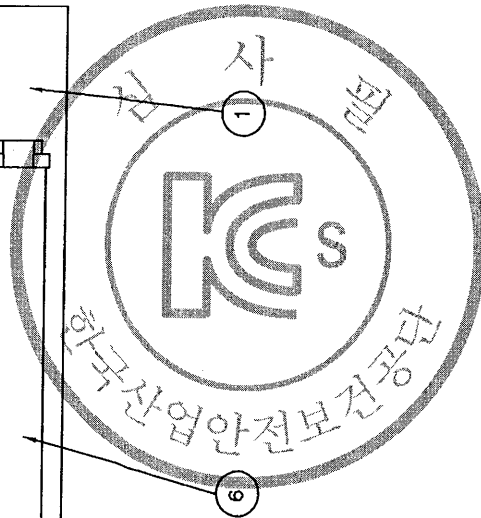
DRAWING	DESIGN	CHECKED	APPROVED	SCALE	DATE	ORDER NO.
				NONE		
DRAWING	CUSTOMER	DRAWING	TITLE	CHK.	APP.	
			HOISTING CONTROL BOX			
			ARRANGEMENT DRAWING			
DATE	REVISIONS	CHK.	APP.	DWG. NO		
				KD10BA05		



극동호이스트 주식회사
KUK DONG HOIST CO., LTD.

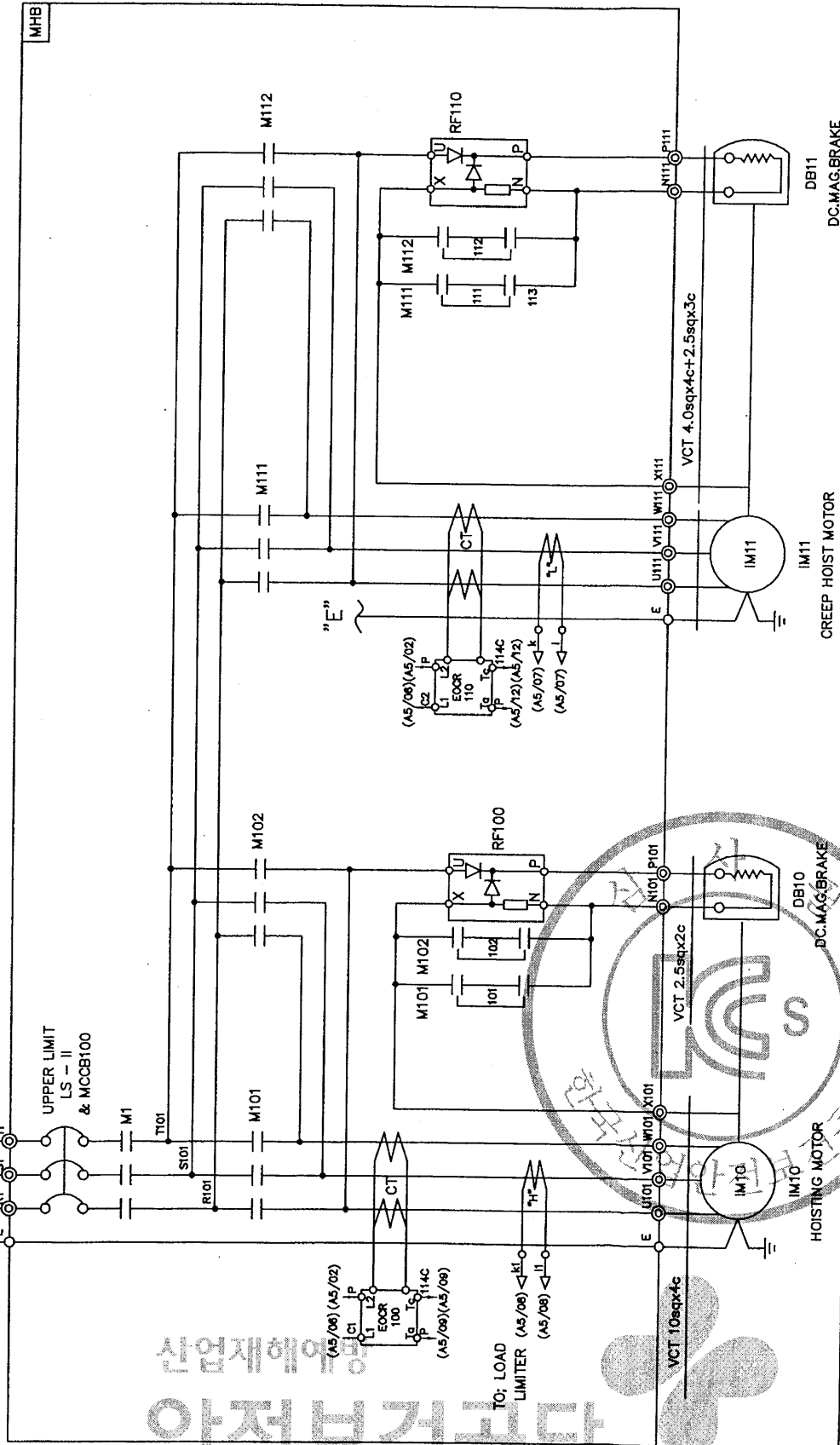


NO	DESCRIPTION	SPEC	Q'TY	REMARK
1	CHASSIS PLATE	-	1	아 연 도 금
2	CABLE DUCT	-	1	
3	MAGNET CONTACTOR	DMC22C	2	TRAVERSING
4	E.O.C.R	SS-05	1	TRAVERSING
5	SILICON RECTIFIER	SR-30	1	TRAVERSING
6	TERMINAL BLOCK	25A , 15A	1	TRAVERSING

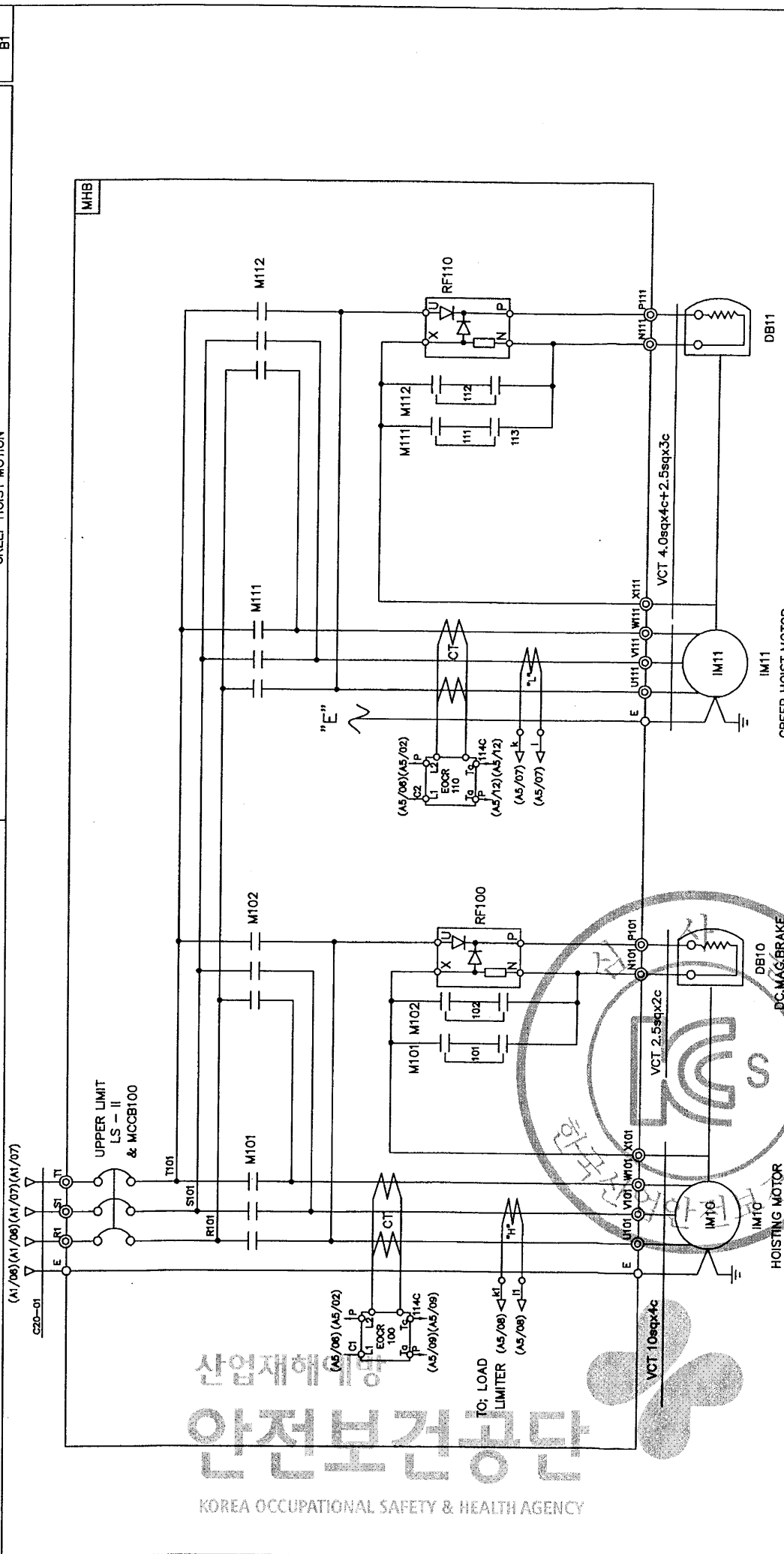


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1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
POWER CIRCUIT										CREEP HOIST MOTION									
HOISTING MOTION										CREEP HOIST MOTION									
(A1/06)(A1/06)(A1/07)(A1/07)										B1									

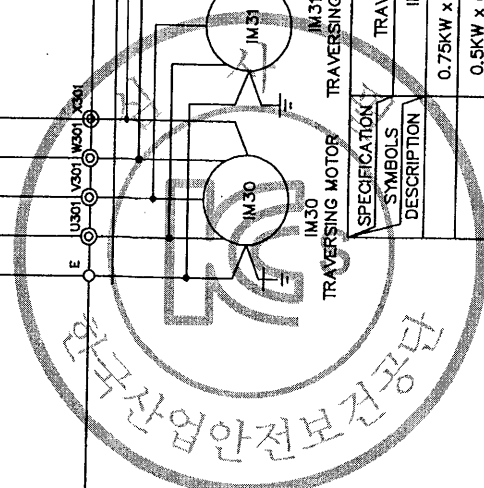


SPECIFICATION SYMBOLS	HOISTING POWER	HOISTING MOTOR	DC MAG. BRAKE	NO. FUSE BREAKER	TRANSFORMER	FUSE	MAIN MAGNET	MAGNET CONTACTOR	UPPER LIMIT	ELECTRIC OVER CURRENT RELAY	SILICON RECTIFIER	LOAD LIMITER	CABLE
DESCRIPTION	10TON AC3PH 460V 60Hz	IM 10	DB10, 11	LS-II & MCCB100	TR 1	F1, F12	M1	M101, M102	LS-I, LS-II	EOCR100	RF100	RF110	C20-01
SELECTION	10TON AC3PH 460V 60Hz	IM 10	DB10, 11	LS-II & MCCB100	TR 1	F1, F12	M1	M101, M102	LS-I, LS-II	EOCR100	RF100	RF110	C20-01
MAKER	KUK DONG	KUK DONG	LS	ABS-53AF/40AT	SHINHAN	2A	5A	DMC40C	AC 600V 3A	SS-60	SS-60	SR-60	VCT 10sqx4c
DATE													
REVISIONS													
CHK.													
APP.													
CUSTOMER	CREEP HOISTING POWER & CONTROL												
DRAWING TITLE	CREEP HOISTING POWER & CONTROL												
DWG. NO.	KDC10E51												
ORDER NO.	KUK DONG HOIST CO., LTD.												



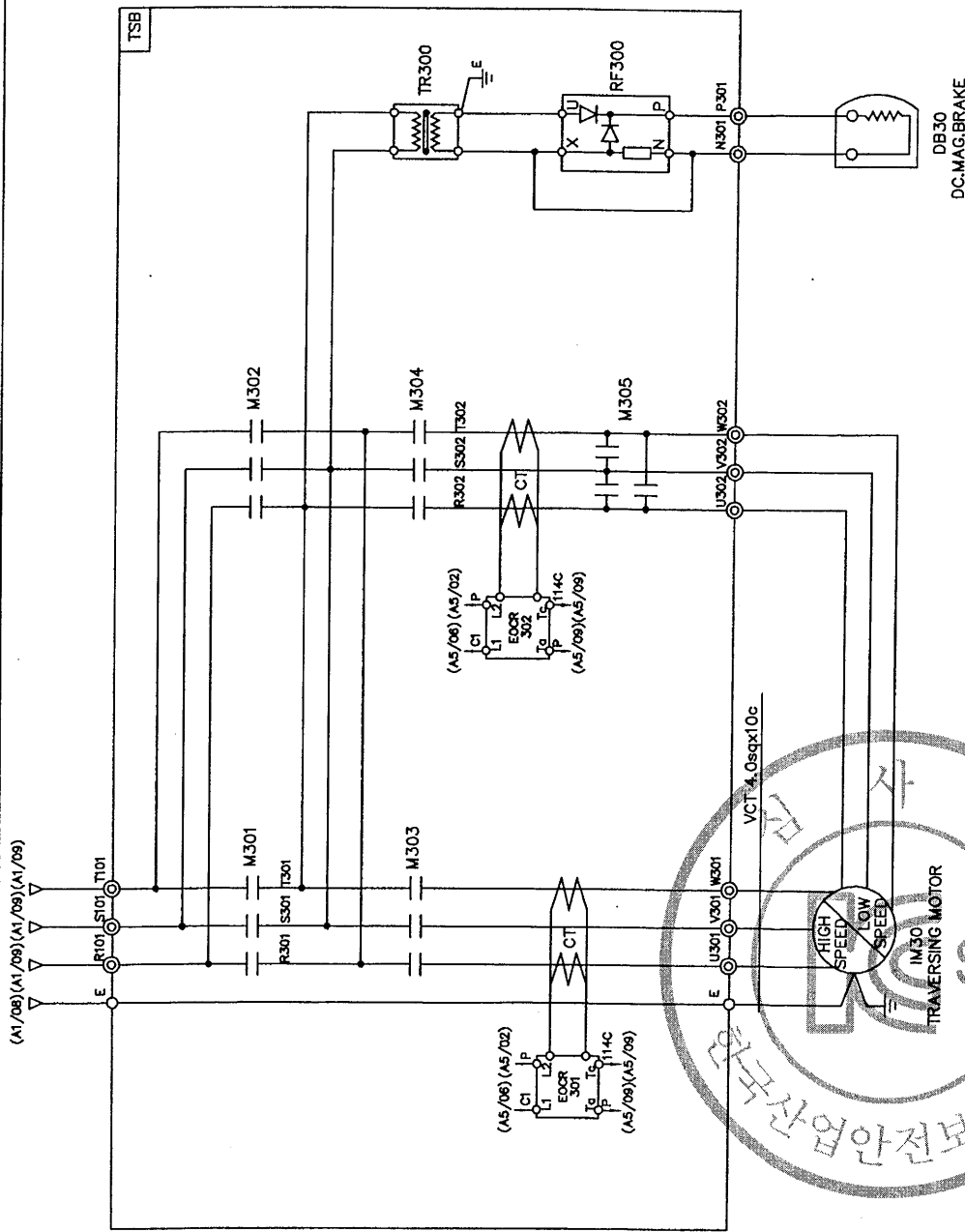
SPECIFICATION SYMBOLS		HOISTING POWER	HOISTING MOTOR	CREEP MOTOR	DC MAG. BRAKE	NO FUSE BREAKER	TRANSFORMER	FUSE	MAGNET CONTACTOR	UPPER LIMIT	ELECTRIC OVER CURRENT RELAY	SILICON RECTIFIER	LOAD LIMITER	CABLE
DESCRIPTION		HOIST	IM 10	IM 11	DB10, 11	LS-II & MCCB100	TR 1	F11, F12	F13	LS-I, LS-II	EOCR100	RF100	LOAD LIMITER	C20-01
SELECTION MAKER		10TON AC3PH 460V 60Hz	9KWx8P	11KWx8P	DC 100V	ABS-53AF /40AT	460/210V, 120V, 200VAC	2A	5A	AC 600V 3A	SS-60	SR-60	JDL-100	VCT 10sqx4c
			KUKDONG		LS		SHINHAN	-		KUK DONG		ASECO		DONGIL
			CUSTOMER											
			DRAWING TITLE		CREEP HOISTING POWER & CONTROL									
			CHK. APP.											
REVISIONS														
DATE														
MK														
			 KDK HOIST CO., LTD.											
			DWG. NO. KDC10E52											

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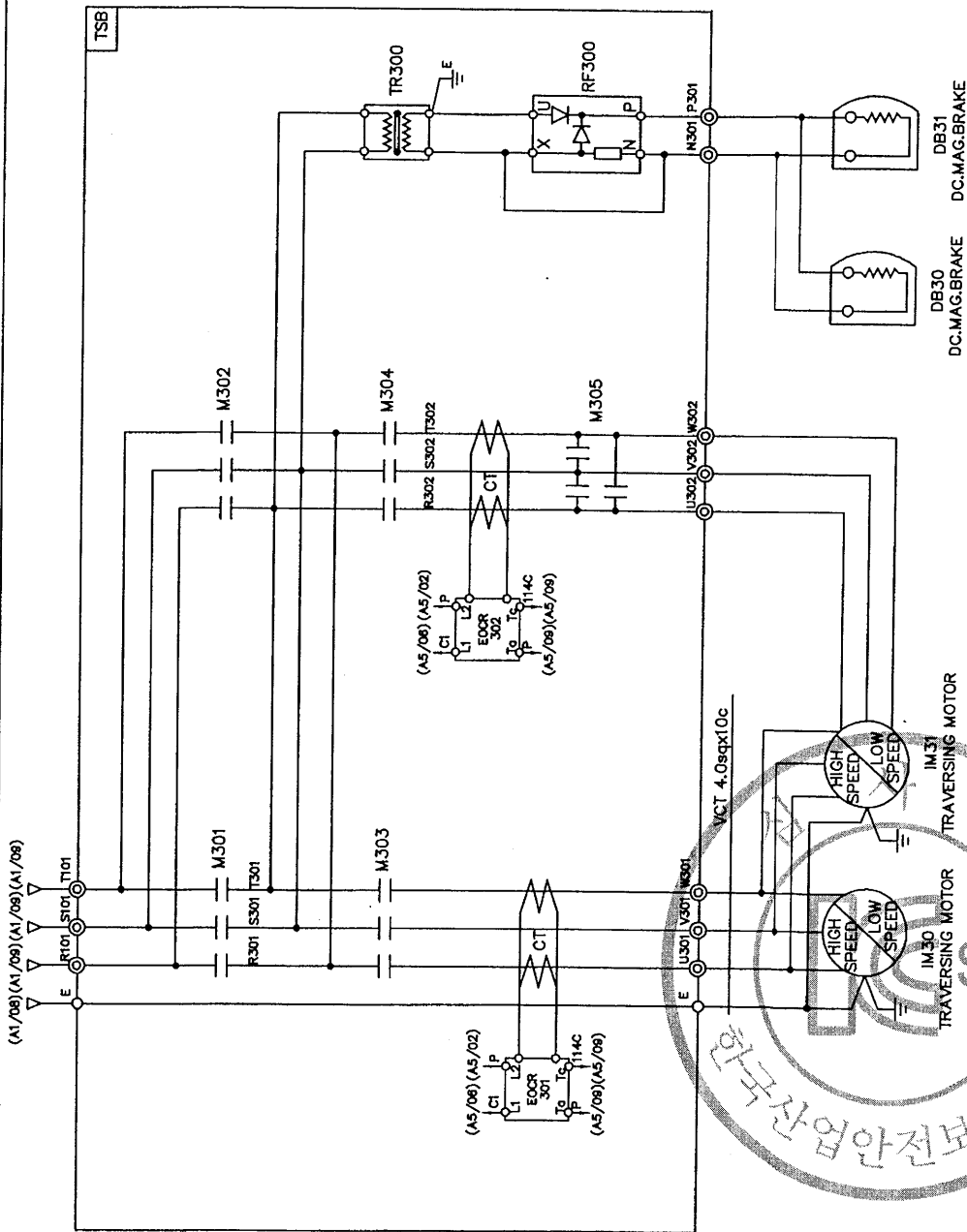
SPECIFICATION SYMBOLS DESCRIPTION		TRAVERSING MOTOR IM 30 , 1M31	DC MAG' BRAKE DB 30,31	MAGNET CONTACTOR M301 , M302	SILICON RECTIFIER RF 300	ELECTRIC OVER CURRENT RELAY EOCR 300	LIMIT SWITCH LS-301 , LS-302		
		0.75KW x 4P AC 3PH 460V 60Hz	DC 100V	DMC22C	SR-30	SS-30	HY - W904		
SELECTION MAKER		0.5KW x 6P AC 3PH 460V 60Hz	DC 100V	DMC22C	SR-30	SS-30	HY - W904		
KUK DONG				DONG-A		ASECO			
CUSTOMER		DRAWING		DESIGN	CHECKED	APPROVED	SCALE	DATE	ORDER NO.
DRAWING TITLE		TRAVERSING POWER CONTROL CIRCUIT							
DATE		DIAGRAM							
REVISIONS		KDK							
CHK.		극동호이스트 주식회사							
APP.		KUK DONG HOIST CO., LTD.							
DWG. NO		KDC10E54							

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
POWER CIRCUIT																			
TRAVERSING MOTION																			
ADR'S NO.																			C2



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1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
POWER CIRCUIT																			
TRAVERSING MOTION																			
ADR'S NO.																			C2



SPECIFICATION		TRAVERSING MOTOR		DC MAG' BRAKE		MAGNET CONTACTOR		SILICON RECTIFIER		ELECTRIC OVER CURRENT RELAY		TRANSFORMER							
SYMBOLS		IM 30 , IM31		DB30 , DB31		M301 , M302 , M303		M304 , M305		EOCR 301,302		TR300							
DESCRIPTION		460V		0.8/0.4KWx4/8P AC3PH 460V 60Hz		DC 100V		DMC22C		SR-30		SS-30							
		480V		0.5/0.25KWx6/12P AC3PH 460V 60Hz		DC 100V		DMC22C		SR-30		SS-30							
SELECTION																			
MAKER				KUKDONG		DONG-A		ASECO				SHINHAN							
		CUSTOMER				DRAWING		DESIGN		CHECKED		APPROVED		SCALE		DATE		ORDER NO.	
		DRAWING		TRAVERSING POWER CONTROL CIRCUIT										NONE					
		TITLE		DIAGRAM															
REVISIONS		CHK. APP.												DWG. NO				KDC10E56	
DATE																			

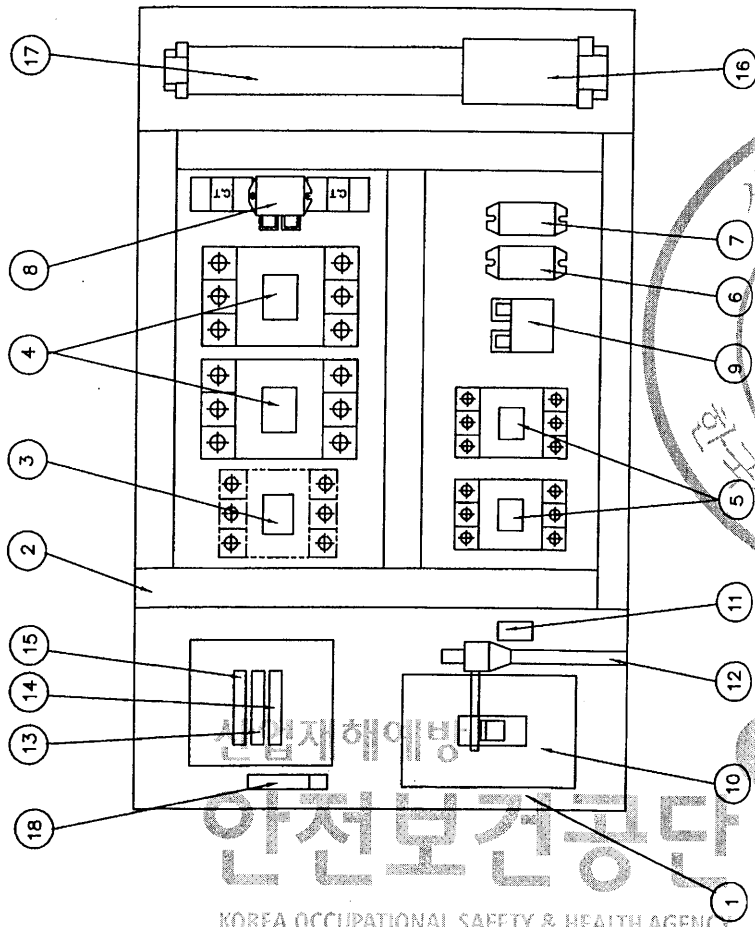
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20.

ADR'S NO.

NO	DESCRIPTION	SPECIFICATION	Q'TY	REMARK
1	CHASSIS PLATE		1	아연 도금
2	CABLE DUCT	-	1	
3	MAGNET CONTACT	DMC40C	1	M1, MAIN MAG.
4	MAGNET CONTACT	DMC65C	2	HOISTING
5	MAGNET CONTACT	DMC22C	2	CREEP
6	SILICON RECTIFIER	SR-60	1	HOISTING
7	SILICON RECTIFIER	SR-30	1	CREEP
8	E.O.C.R	SS-60	1	HOISTING
9	E.O.C.R	SS-05	1	CREEP
10	MCCB100	53AF/40AT	1	LS-2
11	UPPER LIMIT	AC 600V/3A	1	LS-1
12	LIMIT LEVER	SS-400	1	
13	FUSE (F11,F12)	2 A	2	
14	FUSE (F13)	5 A	1	
15	TRANSFORMER	480V/110V,120V, 200VA	1	
16	TERMINAL BLOCK	60A,25A		
17	TERMINAL BLOCK	15A		
18	EARTH TERMINAL	5t25x50	1	

NOTE

1. 전선의 색상은 다음과 같다.
- 1) 황색 : 교류 및 직류 전원선으로
- 2) 적색 : 교류제어회로
- 3) 주황색 : 외부 전원에서 공급되는 연동장치 제어회로
- 4) 녹색 또는 녹색과 황색 혼합 : 접지선
2. CABLE MATERIAL : KIV OR EQUIVALENT
MIN SIZE : 2.5sq
3. 제어용 전선 : 2.5mm KIV,HIV
4. 제작시 다소 변경될수있음.
5. 외함 개방구조는 다음과 같을것.
- 1) 외함 개방시 충전부분이 차단되도록 할것.
- 2) 외함 개방후 충전되어있는 부분은 IP2X 이상의 직접 접촉 방호가 되어있을것.



NOTE

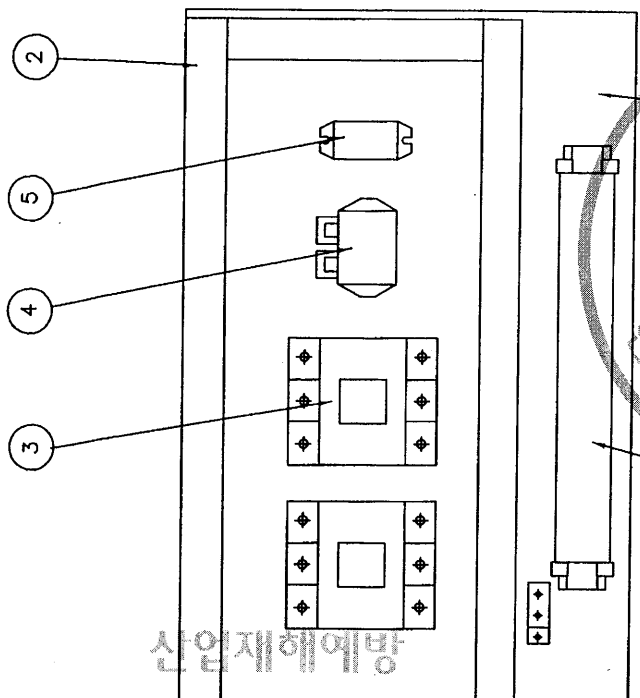
1. UPPER LIMIT LS-1의 전원 허용 전류 용량 : AC 500V, 3A
2. UPPER LIMIT LS-2의 전원 허용 전류 용량 : NFB 53AF
3. EARTH TERMINAL RESISTANCE : 0.018 Ω
4. POWER SOURCE : AC 3φ 480V 60HZ



DRAWING	DESIGN	CHECKED	APPROVED	SCALE	DATE	ORDER NO.
				NONE		
KUK DONG HOIST CO., LTD.						KD10BA06
KUK DONG HOIST CO., LTD.						
ARRANGEMENT DRAWING						
CUSTOMER						
DRAWING TITLE						
REVISIONS						
DATE		CHK.	APP.			
MK						

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20.
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ADR'S NO.



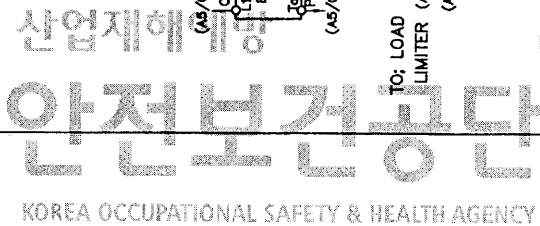
NO	DESCRIPTION	SPEC	Q'TY	REMARK
1	CHASSIS PLATE	-	1	아 연 보 금
2	CABLE DUCT	-	1	
3	MAGNET CONTACTOR	DMC22C	2	TRAVERSING
4	E.O.C.R	SS-05	1	TRAVERSING
5	SILICON RECTIFIER	SR-30	1	TRAVERSING
6	TERMINAL BLOCK	25A , 15A	1	TRAVERSING

 KUK DONG HOIST CO., LTD.	DRAWING	DESIGN	CHECKED	APPROVED	SCALE	DATE	ORDER NO.	
	TRAVERSING POWER CONTROL BOX ARRANGEMENT DRAWING							
CUSTOMER		KUK DONG HOIST CO., LTD.						
DRAWING TITLE		KDC10bt62						
DATE	REVISIONS	CHK.	APP.					

산업재해예방
안전보건공단
 KOSHA OCCUPATIONAL SAFETY & HEALTH AGENCY



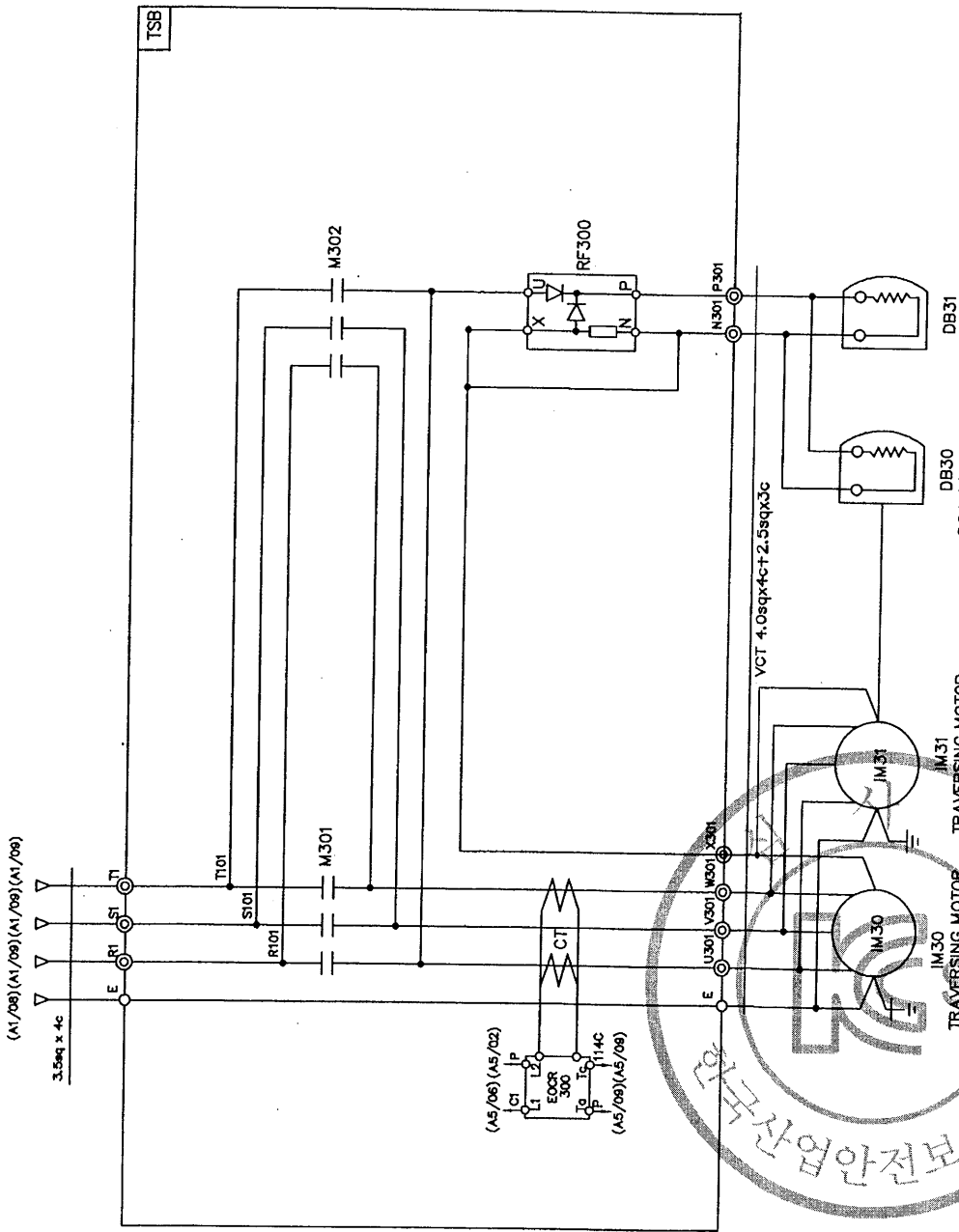
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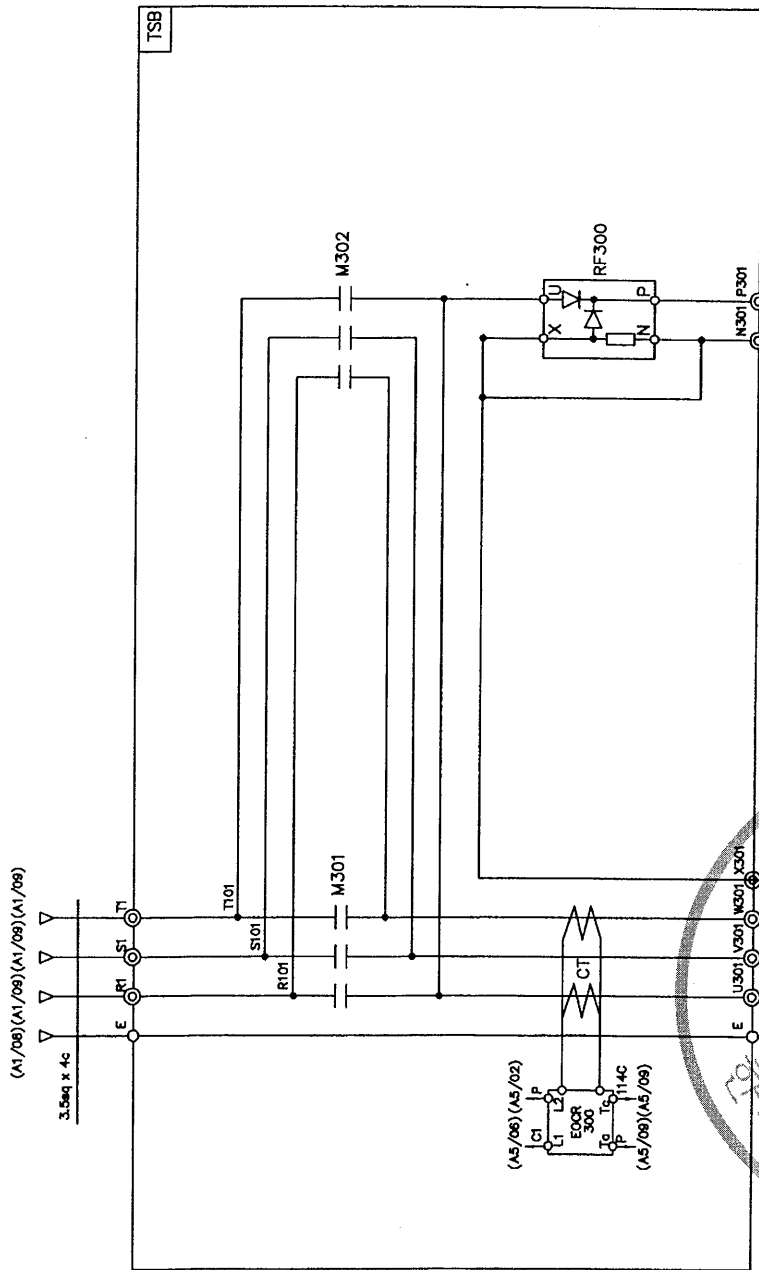
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1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
POWER CIRCUIT																			
TRAVERSING MOTION																			
ADR'S NO.																			C2



SPECIFICATION		SYMBOLS		DESCRIPTION		TRAVERSING MOTOR		DC MAG. BRAKE		MAGNET CONTACTOR		SILICON RECTIFIER		ELECTRIC OVER CURRENT RELAY		LIMIT SWITCH	
IM 30		IM 30		0.75KW x 4P AC 3PH 480V 60Hz		DB 30, 31		M301, M302		RF 300		EOCR 300		LS-301, LS-302		HY - W904	
IM 31		IM 31		0.5KW x 6P AC 3PH 480V 60Hz		DC 100V		DMC22C		SR-30		SS-30		SS-30		HY - W904	
SELECTION MAKER		KUK DONG		DONG-A		ASCO		ASCO		ASCO		ASCO		ASCO		ASCO	
CUSTOMER		KUK DONG		KUK DONG		KUK DONG		KUK DONG		KUK DONG		KUK DONG		KUK DONG		KUK DONG	
DRAWING TITLE		TRAVERSING POWER CONTROL CIRCUIT		TRAVERSING POWER CONTROL CIRCUIT		TRAVERSING POWER CONTROL CIRCUIT		TRAVERSING POWER CONTROL CIRCUIT		TRAVERSING POWER CONTROL CIRCUIT		TRAVERSING POWER CONTROL CIRCUIT		TRAVERSING POWER CONTROL CIRCUIT		TRAVERSING POWER CONTROL CIRCUIT	
DATE		REVISIONS		CHK.		APP.		DWG. NO.		DATE		SCALE		ORDER NO.		KDC10E64	
MK		DATE		CHK.		APP.		DWG. NO.		DATE		SCALE		ORDER NO.		KDC10E64	

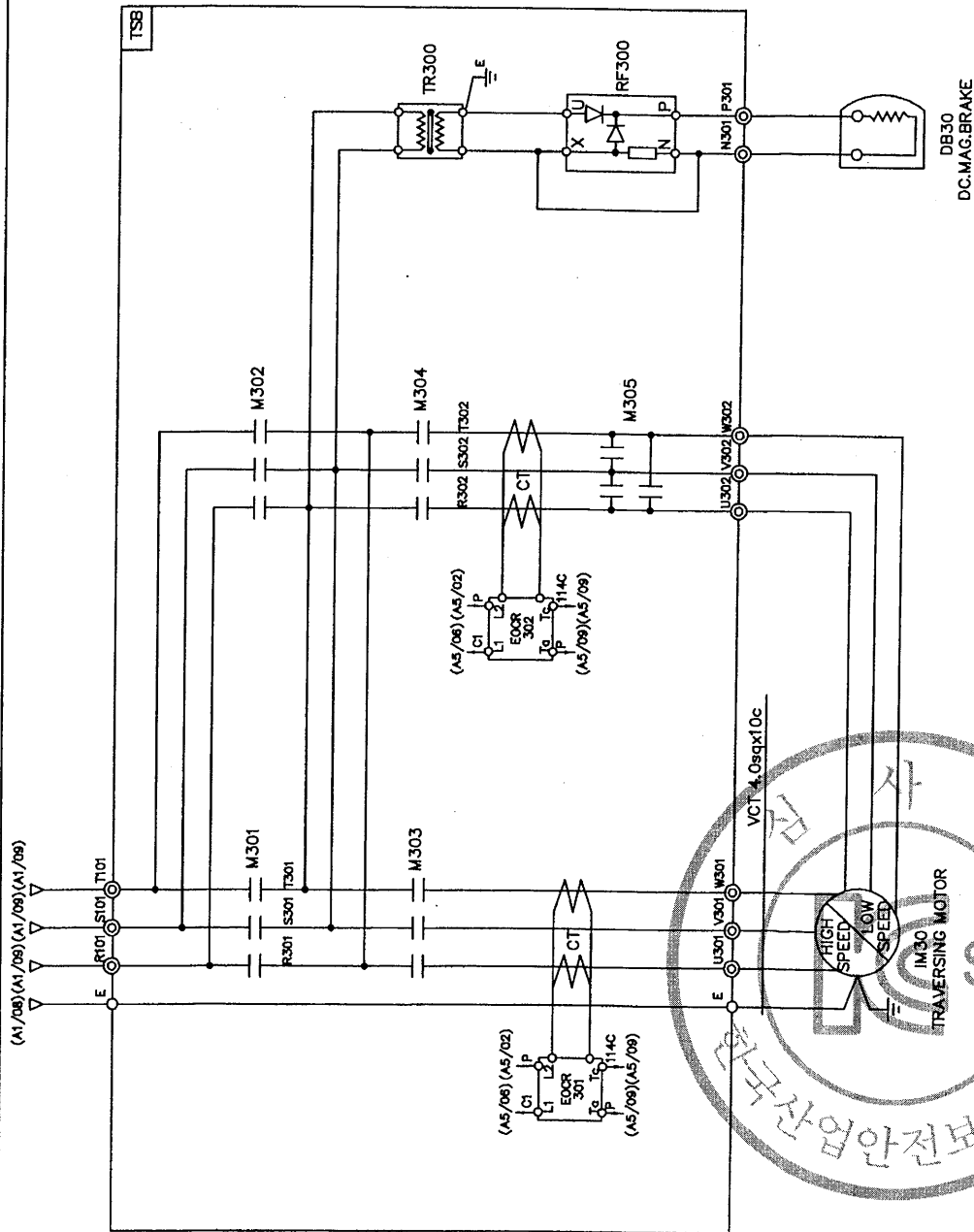
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
POWER CIRCUIT																			
TRAVERSING MOTION																			
ADR'S NO.																			C2



SPECIFICATION		SYMBOLS		DESCRIPTION		TRAVERSING MOTOR		DC MAG. BRAKE		MAGNET CONTACTOR		SILICON RECTIFIER		ELECTRIC OVER CURRENT RELAY		LIMIT SWITCH	
IM30		IM30		0.75KW x 4P AC 3PH 480V 60Hz		IM30		DB30		M301, M302		RF300		EOCR 300		LS-301, LS-302	
IM31		IM31		0.5KW x 6P AC 3PH 480V 60Hz		IM31		DB31		M301, M302		SR-30		SS-30		HY - W904	
VCT		VCT		4.0sqx4c+2.5sqx3c		VCT		DB30		M301, M302		SR-30		SS-30		HY - W904	
SELECTION MAKER		KUK DONG															
CUSTOMER																	
DRAWING TITLE																	
REVISIONS																	
DATE																	
CHK. APP.																	
DWG. NO.																	
KDC10E64																	

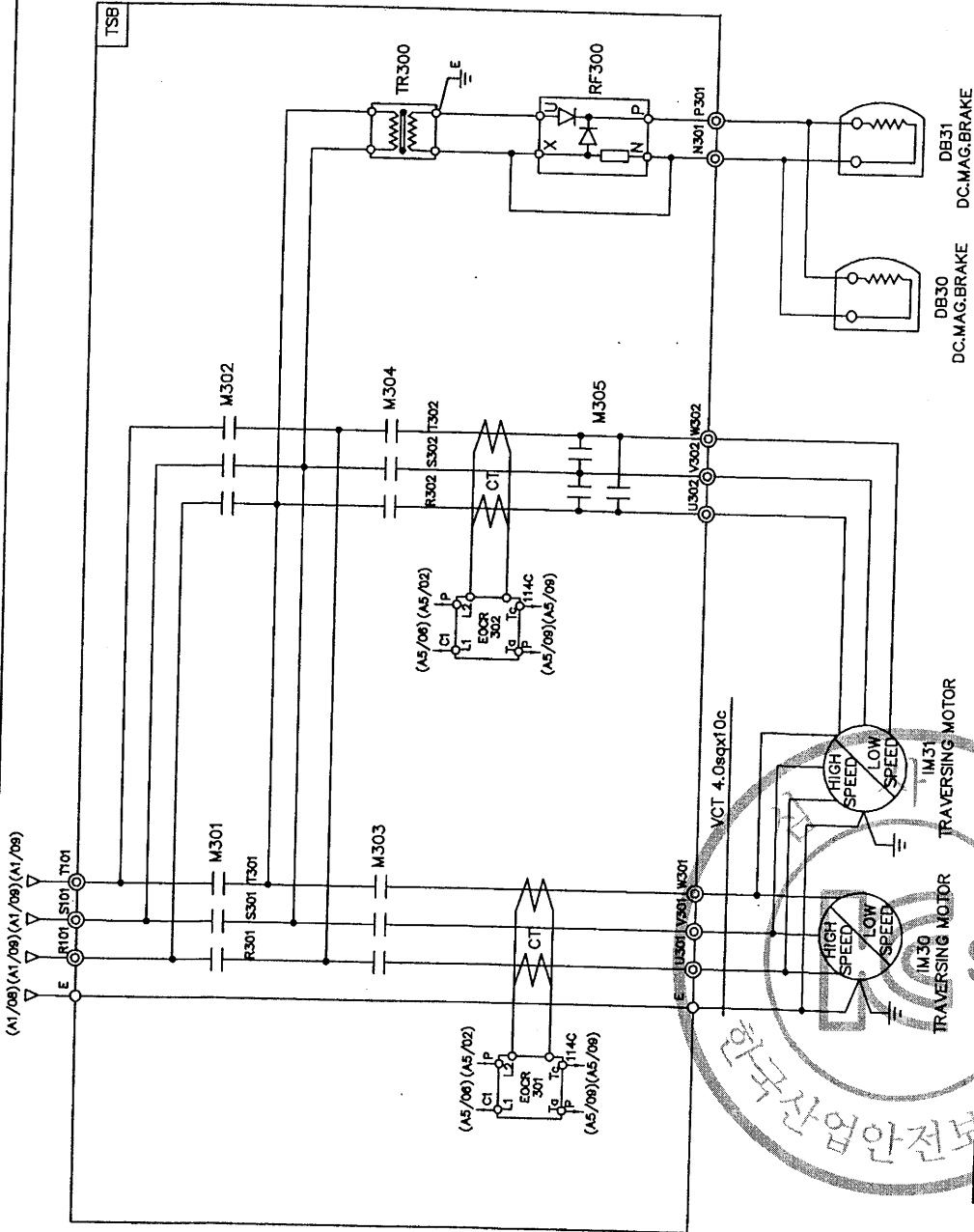
산업재해예방
안전보건공단
KOREA OCCUPATIONAL SAFETY & HEALTH AGENCY

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
POWER CIRCUIT																			
TRaversing Motion																			
ADR'S NO.																			C2

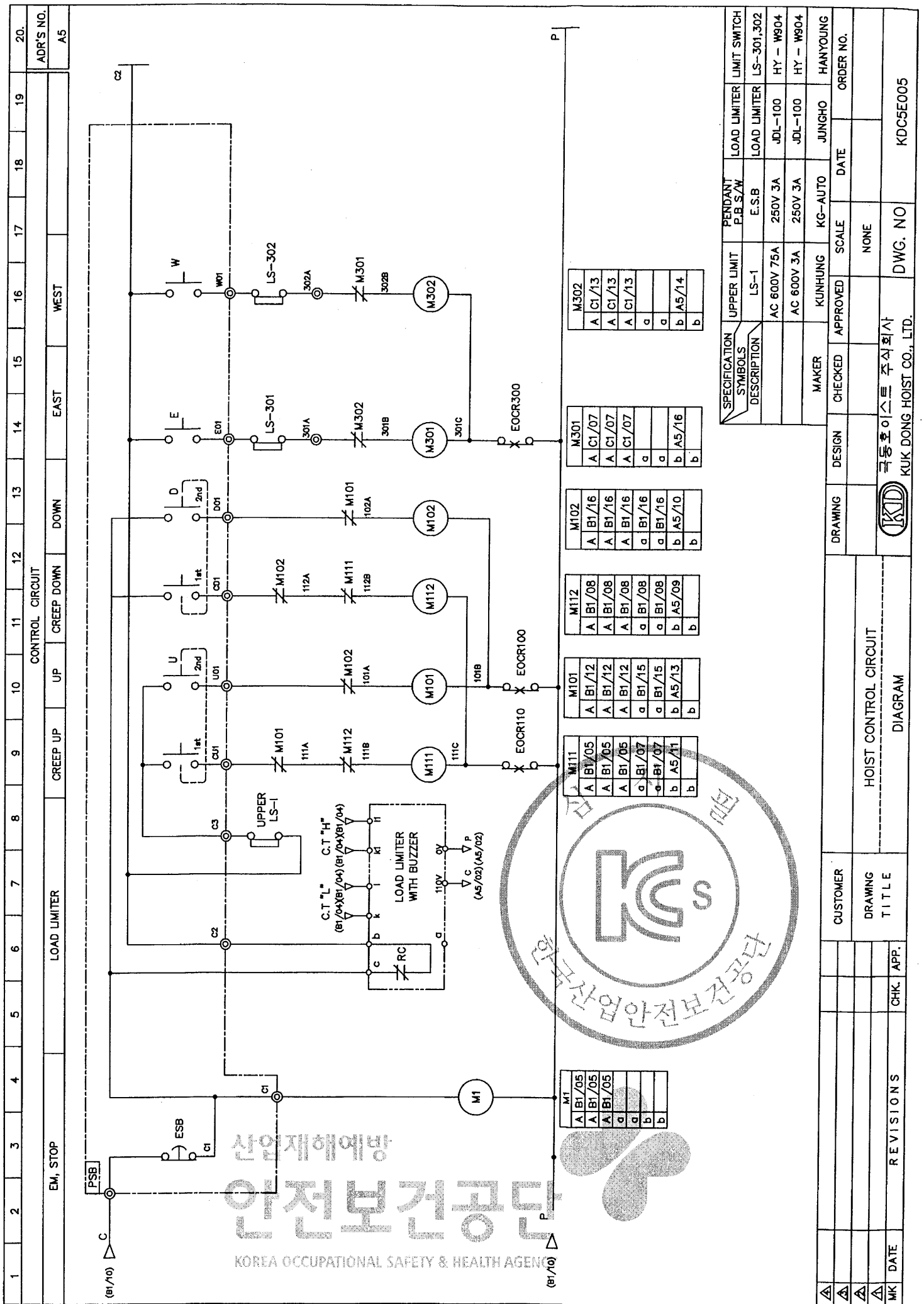


SPECIFICATION		TRAVERSING MOTOR		DC MAG' BRAKE		MAGNET CONTACTOR		SILICON RECTIFIER		ELECTRIC OVER CURRENT RELAY		TRANSFORMER	
SYMBOLS		IM 30		DB30		M301, M302, M303		M304, M305		EOCR 301,302		TR300	
DESCRIPTION		0.8/0.4KWx4/8P AC3PH 480V 60Hz		DC 100V		DMC22C		DMC22C		SR-30		AC480/220V, 300VA	
		480V		DC 100V		DMC22C		DMC22C		SS-05		AC480/220V, 300VA	
SELECTION		0.5/0.25KWx6/12P AC3PH 480V 60Hz		DC 100V		DMC22C		DMC22C		SS-05		AC480/220V, 300VA	
MAKER		KUKDONG		DONG-A		ASECO		SHINHAN					
		CUSTOMER		DRAWING		DESIGN		CHECKED		APPROVED		SCALE	
		DRAWING										DATE	
		TITLE										NONE	
		TRAVERSING POWER CONTROL CIRCUIT											
		DIAGRAM											
REVISIONS		CHK.		APP.		KUDONG HOIST CO., LTD.		DWG. NO		KDC10E65			
DATE													

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
POWER CIRCUIT																			
TRAVERSING MOTION																			
ADR'S NO.																			C2

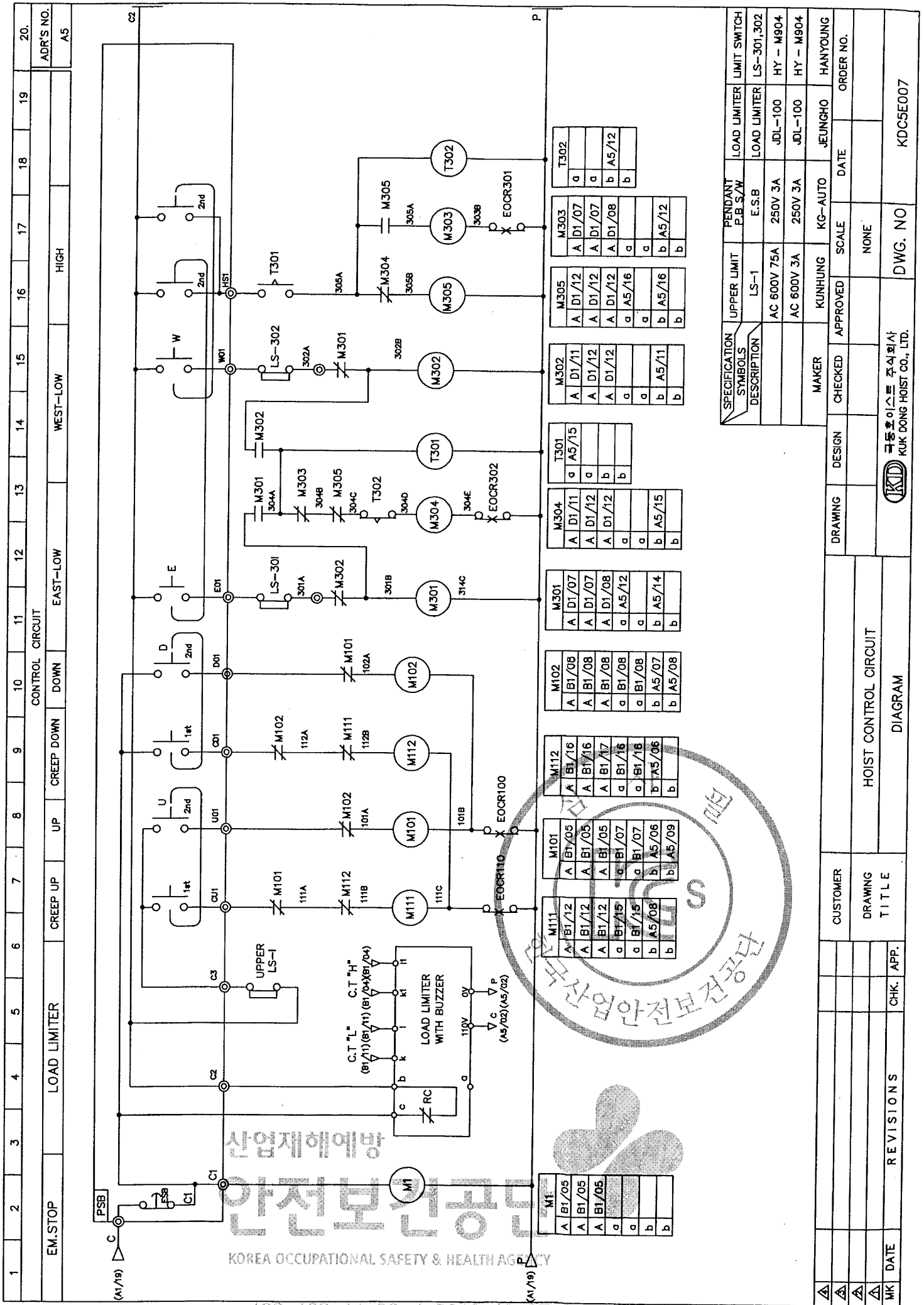


SPECIFICATION SYMBOLS DESCRIPTION		TRAVERSING MOTOR		DC MAG' BRAKE		MAGNET CONTACTOR		SILICON RECTIFIER		ELECTRIC OVER CURRENT RELAY		TRANSFORMER											
		IM 30 , 1M31		DB30 , DB31		M301 , M302 , M303		M304 , M305		EOCR 301,302		TR300											
		480V		0.8/0.4KWx4/8P AC3PH 480V 60Hz		DC 100V		DMC22C		SR-30		AC480/220V, 300VA											
		480V		0.5/0.25KWx6/12P AC3PH 480V 60Hz		DC 100V		DMC22C		SS-30		AC480/220V, 300VA											
SELECTION MAKER								DONG-A		ASECO		SHINHAN											
				CUSTOMER				DRAWING		DESIGN		CHECKED		APPROVED		SCALE		DATE		ORDER NO.			
				DRAWING TITLE														NONE					
MK		DATE		REVISIONS		CHK.		APP.															
										국동호이스트 주식회사										DWG. NO		KDC10E66	
										KUK DONG HOIST CO., LTD.													



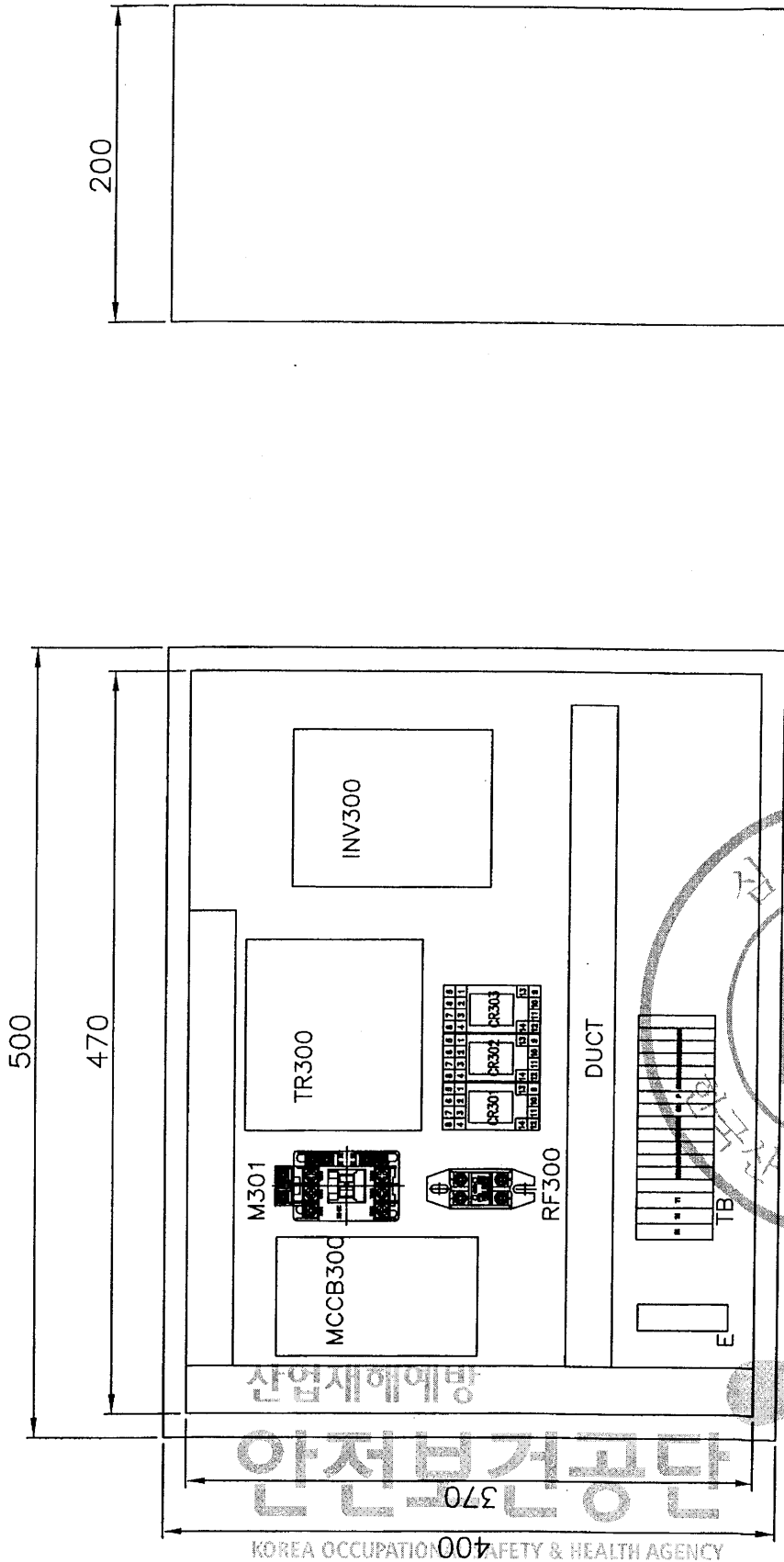
SPECIFICATION SYMBOLS		UPPER LIMIT	PENDANT P.B. S/W	LOAD LIMITER	LIMIT SWITCH
DESCRIPTION		LS-1	E.S.B	LOAD LIMITER	LS-301, 302
		AC 600V 75A	250V 3A	JDL-100	HY - W904
		AC 600V 3A	250V 3A	JDL-100	HY - W904
MAKER		KUNHUNG	KG-AUTO	JUNGHO	HANYOUNG
DRAWING	DESIGN	CHECKED	APPROVED	SCALE	DATE
HOIST CONTROL CIRCUIT		NONE			
CUSTOMER		KUK DONG HOIST CO., LTD.		ORDER NO.	
DRAWING TITLE		HOIST CONTROL CIRCUIT		DWG. NO	
REVISIONS		CHK. APP.		KDC5E005	
MK	DATE				

[illegible]



산업재해예방
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KOREA OCCUPATIONAL SAFETY & HEALTH AGENCY

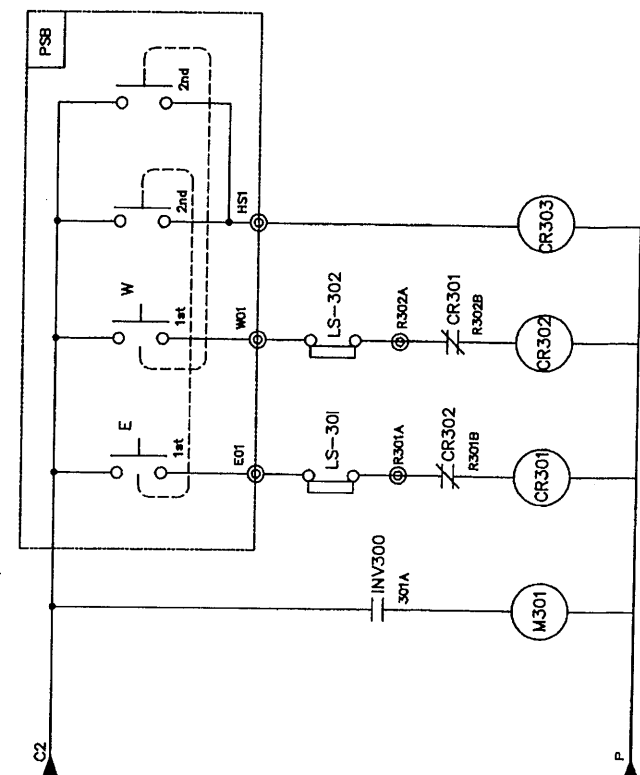
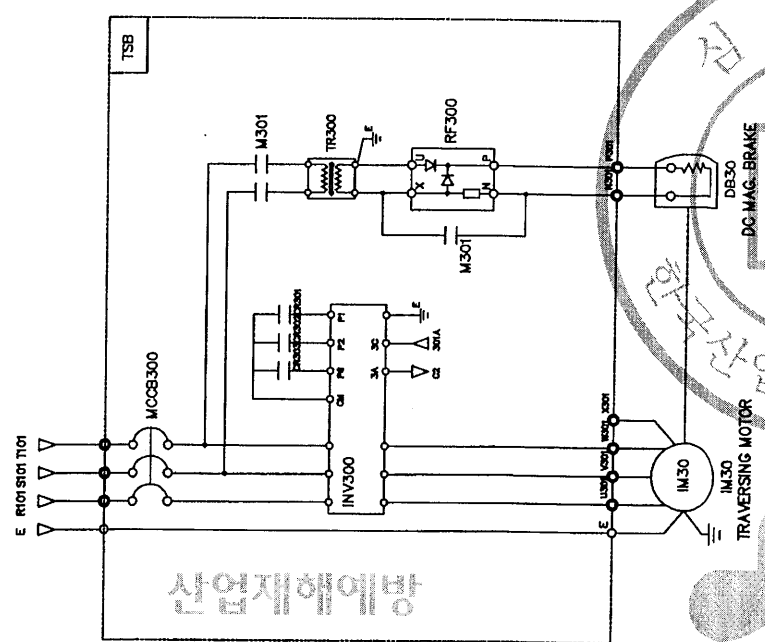
192.168.11.38 / 2012-12-07 13:22:27



2	속판	SS400	1							
1	T/S BOX	PUR	1							
NO.	DESCRIPTION	MTL	SUB	TOTAL	QTY	SUB	TOTAL	REMARKS.		
			WEIGHT(Kg)							
PROJECT						DATE	DIM			
TITLE		T/S CONTROL PANEL(INVERTER)				SCALE	PROJECTION			
DRAWN	DESIGNED	CHECKED	APPROVED			A3/3	3rd			
						REF. DRAWING				
 극동호이스트 주식회사 KUK DONG HOIST CO., LTD.				SHEET No.		DWG No.		KD05EI001		

11	EARTH BUS BAR	PUR	1		
10	DUCT	PUR	1		
9	TERMINAL BLOCK	PUR	1		
8	INVERTER	PUR	1		
7	TR	PUR	1		
6	RELAY & SCKET	PUR	1		
5	RF	PUR	1		
4	MC	PUR	1		
3	MCCB	PUR	1		

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
TRAVERSING MOTION										CONTROL CIRCUIT DIAGRAM									
POWER CIRCUIT DIAGRAM										HIGH SPEED									
BRAKE										WEST									
EAST										HIGH SPEED									
ADR'S NO.																			

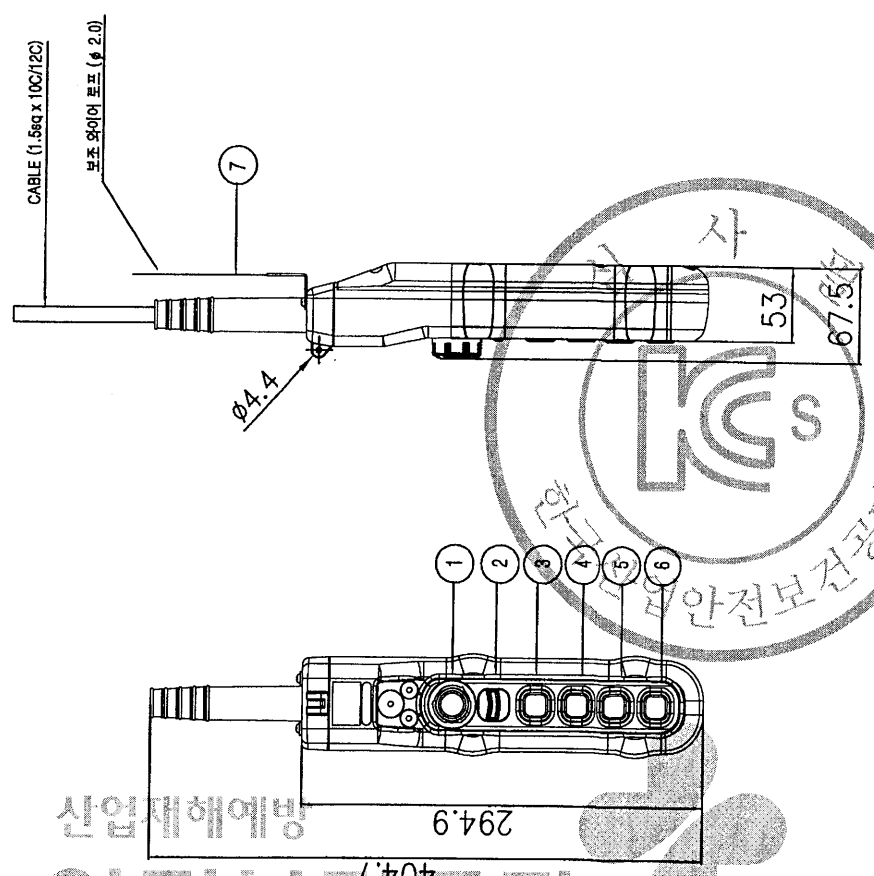


SPECIFICATION SYMBOLS DESCRIPTION	TRAVERSING POWER	TRAVERSING MOTOR	DC MAG. BRAKE	NO FUSE BREAKER	TRANSFORMER	BRAKE MAGNET	CONTROL RELAY	INVERTER	SILICON RECTIFIER
AC 3PH 220V 60Hz	AC 3PH 220V 60Hz	IM 30	DB30	MCCB300	TR 300	M301	CR301,302,303	INV300	RF300
AC 3PH 380(440,460,480)V 60Hz	AC 3PH 380(440,460,480)V 60Hz	0.75KW x 4P	DC 100V	ABE-33AF/10AT	220/220V,200VA	DMC22C	MINI 4a4b(Coil AC110V)	SV015IG5A-2	SR-30
AC 3PH 220V 60Hz	AC 3PH 220V 60Hz	0.5KW x 6P	DC 100V	ABE-33AF/10AT	380(440,460,480)/220V,200VA	DMC22C	MINI 4a4b(Coil AC110V)	SV015IG5A-4	SR-30
AC 3PH 380(440,460,480)V 60Hz	AC 3PH 380(440,460,480)V 60Hz	0.5KW x 6P	DC 100V	ABE-33AF/10AT	220/220V,200VA	DMC22C	MINI 4a4b(Coil AC110V)	SV015IG5A-2	SR-30
AC 3PH 380(440,460,480)V 60Hz	AC 3PH 380(440,460,480)V 60Hz	0.5KW x 6P	DC 100V	ABE-33AF/10AT	380(440,460,480)/220V,200VA	DMC22C	MINI 4a4b(Coil AC110V)	SV015IG5A-4	SR-30
SELECTION MAKER									
KUK DONG HOIST									
CUSTOMER									
INVERTER CONTROL									
DRAWING									
DESIGN									
CHECKED									
APPROVED									
SCALE									
DATE									
ORDER NO.									
DRAWING TITLE									
TRAVERSING POWER & CONTROL CIRCUIT									
DIAGRAM									
KUK DONG HOIST CO., LTD.									
극동호이스트 주식회사									
DWG. NO									
KD05E1004									

구분	색상	조작버튼	표시등
적색	비상	비상	비상
황색	비정상	비정상	비정상
녹색	정상	정상	정상
청색	의무	의무	의무
흰색, 회색-흑색	지정된의미없음	지정된의미없음	기타

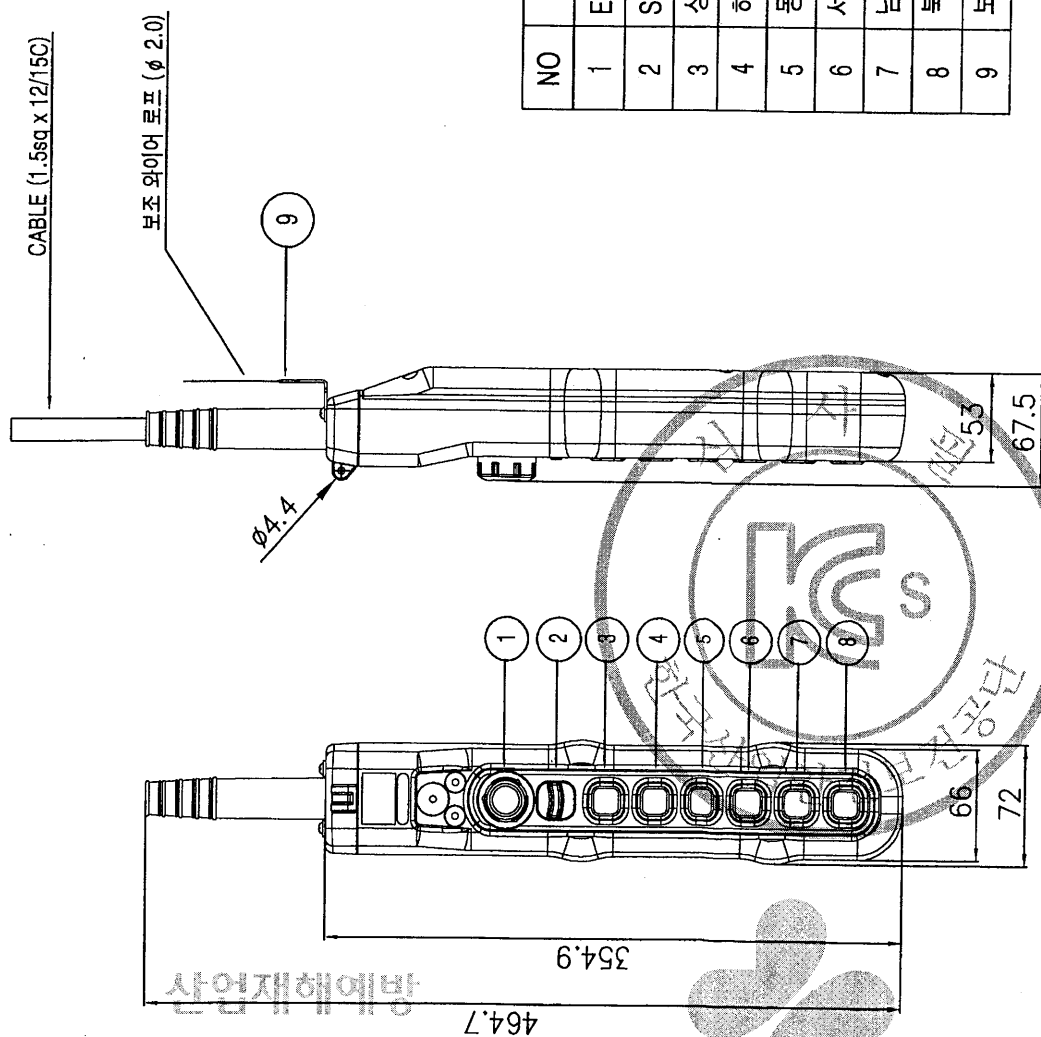
* MATERIAL : POLYCARBONATE(PLASTIC)
* BODY COLOR : YELLOW, BLACK
* IP : 55 이상

NO	SYMBOL	TYPE	SPEC.	COLOR
1	E.B.S	PUSH LOCK TURN RESET TYPE	250VAC x 6A	RED
2	SPARE			
3	상	1PUSH BUTTON 2STEP	250VAC x 6A	BLACK
4	하	1PUSH BUTTON 2STEP		
5	동(전)	1PUSH BUTTON 1STEP		
6	서(후)	1PUSH BUTTON 1STEP		
7	보조와이어	ø 2.0		



A	A	A	MK	DATE	REVISIONS				CHK.	APP.	CUSTOMER	DRAWING TITLE				DRAWING	DESIGN	CHECKED	APPROVED	SCALE	DATE
												PENDANT PUSH BUTTON SWITCH									
												KDD KUK DONG HOIST CO., LTD.				DWG. NO					

안전보건공단
KOSHA
산업재해예방



구분	조각버튼	표시음
원형	비상	비상
원형	비정상	비정상
원형	정상	정상
원형	무의	무의
원형 - 화상 원형 - 화상 원형 - 화상	지정된미없음	기타

* MATERIAL : POLYCARBOBATE(PLASTIC)

* BODY COLOR : YELLOW, BLACK

*|P : 55 0|상

NO	SYMBOL	TYPE	SPEC.	COLOR
1	E.B.S	PUSH LOCK TURN RESET TYPE	250VAC x 6A	RED
2	SPARE			BLACK
3	상	1PUSH BUTTON 2STEP		
4	하	1PUSH BUTTON 2STEP		
5	동 (좌)	1PUSH BUTTON 1STEP		
6	서 (우)	1PUSH BUTTON 1STEP		
7	남 (전)	1PUSH BUTTON 1STEP		
8	북 (후)	1PUSH BUTTON 1STEP		
9	보조 WIRE	ø 2.0		

△													
△													
△													
MK	DATE	REVISIONS	CHK.	APP.	CUSTOMER	DRAWING TITLE	PENDANT PUSH BUTTON SWITCH LAY OUT	DRAWING	DESIGN	CHECKED	APPROVED	SCALE	DATE
								KD	KUK DONG HOIST CO., LTD.		DWG. NO		

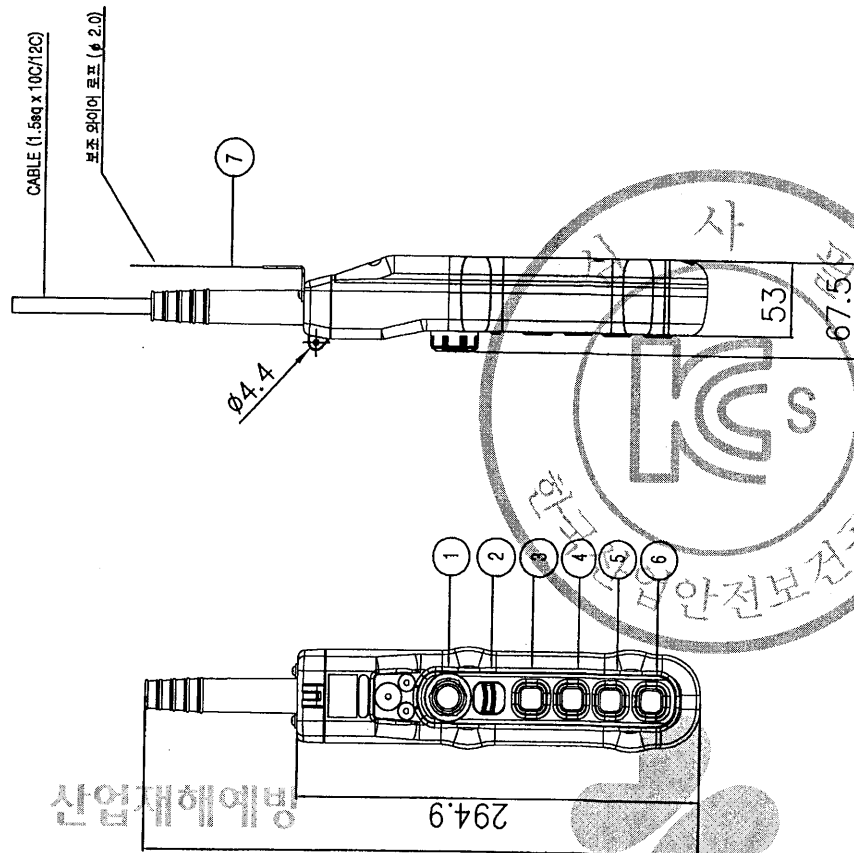
색상	표시등
구조	조각버튼
적색	비상
황색	비정상
녹색	정상
청색	의무
색상·형식·위치	기타
색상·형식·위치	지광표의미없음

* MATERIAL : POLYCARBOBATE(PLASTIC)

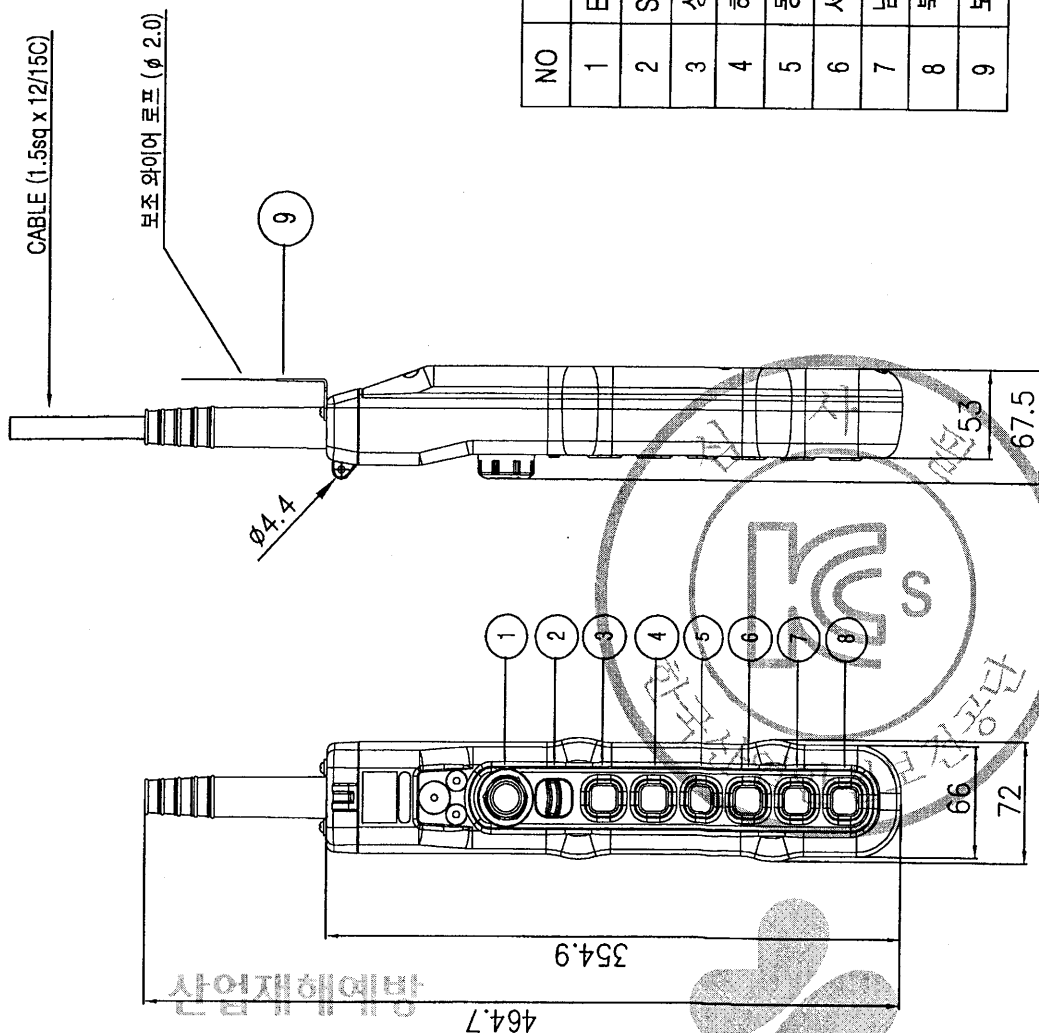
**** BODY COLOR : YELLOW, BLACK**

*|P : 55 이상

NO	SYMBOL	TYPE	SPEC.	COLOR
1	E.B.S	PUSH LOCK TURN RESET TYPE	250VAC x 6A	RED
2	SPARE			BLACK
3	상	1PUSH BUTTON 2STEP		
4	하	1PUSH BUTTON 2STEP		
5	등(전)	1PUSH BUTTON 2STEP		
6	서(후)	1PUSH BUTTON 2STEP		
7	보조 와이어	ø 2.0		



				CUSTOMER		DRAWING	DESIGN	CHECKED	APPROVED	SCALE	DATE
						PENDANT PUSH BUTTON SWITCH					
						LAY OUT					
MK	DATE	REVISIONS	CHK.	APP.			KDK KUK DONG HOIST CO., LTD.		DWG. NO		



구분	색상	조작버튼	표시등
적색	비상	비상	비상
황색	비정상	비정상	비정상
녹색	정상	정상	정상
청색	의무	의무	의무
흰색, 회색 - 흑색	지정된의미없음		기타

* MATERIAL : POLYCARBONATE (PLASTIC)

* BODY COLOR : YELLOW, BLACK

* IP : 55 이상

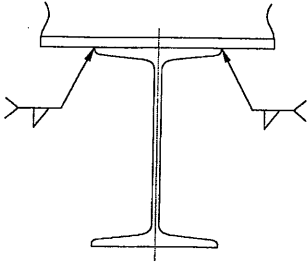
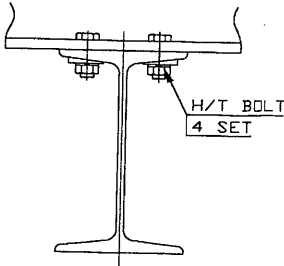
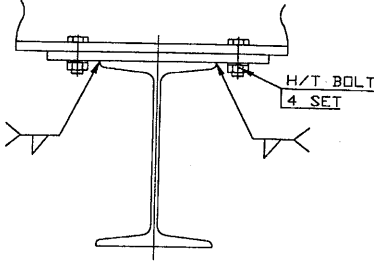
NO	SYMBOL	TYPE	SPEC.	COLOR
1	E.B.S	PUSH LOCK TURN RESET TYPE	250VAC x 6A	RED
2	SPARE			
3	상	1PUSH BUTTON 2STEP		BLACK
4	하	1PUSH BUTTON 2STEP		
5	동 (좌)	1PUSH BUTTON 2STEP		
6	서 (우)	1PUSH BUTTON 2STEP		
7	남 (전)	1PUSH BUTTON 1STEP		
8	북 (후)	1PUSH BUTTON 1STEP		
9	보조 WIRE	φ 2.0		

△	CUSTOMER	DRAWING	DESIGN	CHECKED	APPROVED	SCALE	DATE
△	DRAWING TITLE	PENDANT PUSH BUTTON SWITCH					
		LAY OUT					
△	REVISIONS	CHK.	APP.	DATE	DWG. NO	KUK DONG HOIST CO., LTD.	KDD

안전보건공단

KOREA OCCUPATIONAL SAFETY & HEALTH AGENCY

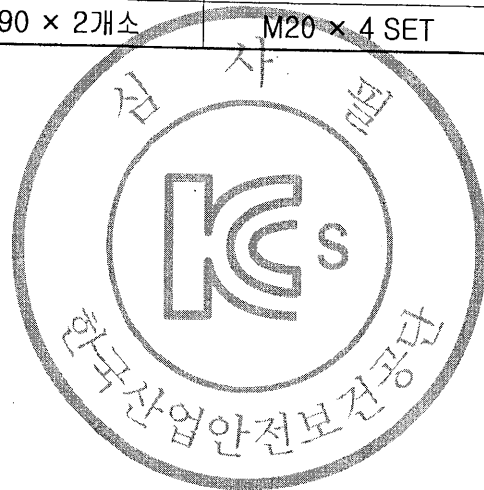
1. I-BEAM의 고정방법

용접구조	BOLT 체결구조	복합구조
	 H/T BOLT 4 SET	 H/T BOLT 4 SET

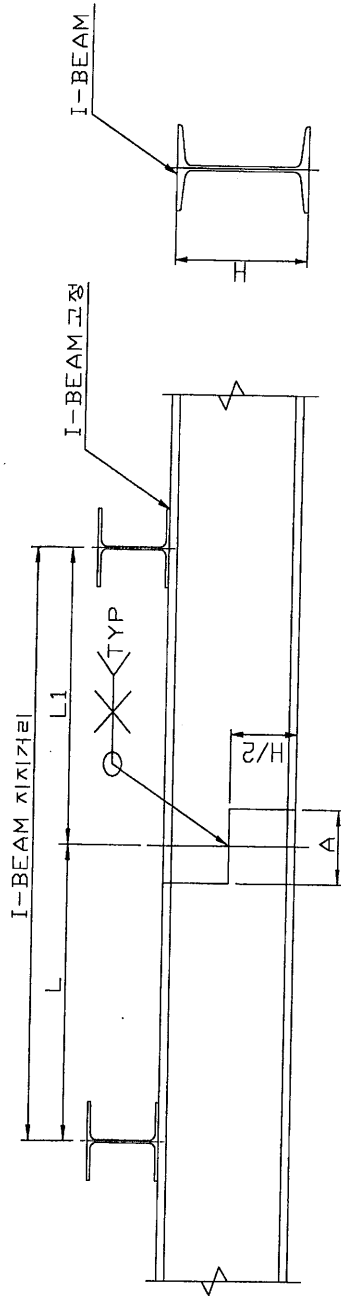
2. 기본조건 및 사양

- * 동하중에 의한 용접이음의 허용응력 (필릿용접 효율 80% 포함) : 560 kg/cm²
- * H/T BOLT의 허용 인장응력 : 2500kg/cm²

정격하중 (TON)	용접구조 (mm)		BOLT 체결구조
	용접두께	최소 용접길이	최소 BOLT SIZE
→ 10	1.4	150 × 2개소	M16 × 4 SET
15	1.8	175 × 2개소	M20 × 4 SET
20	2.4	190 × 2개소	M20 × 4 SET



3. I-BEAM의 연결방법



- * I-BEAM의 용접 연결부위는 I-BEAM 고정 지점과 동일 선상에 위치하지 않도록 한다. 구조 (단위 : mm)
- * 고정 지점 사이 중앙에 용접 연결부위가 일치하지 않도록 한다.



사용 I-BEAM	A	H	H/2	최대 지지거리		
				10 T	15 T	20 T
300×150×t10/18.5	300	300	150	1800		
350×150×t12/24	300	350	175	2800		
400×150×t10/18	300	400	200	1800	4400	3200
450×175×t13/26	300	450	225	4200	4400	3200
600×190×t16/35	300	600	300	5600	4400	3200

단, 사용 I-BEAM은 MODEL별 기술사항서의 BEAM 폭을 참조 할 것

* I-BEAM 고정 방법 중 용접 구조의 용접 강도

용접부 강도 $\sigma = 1.14 \times \frac{\text{I-BEAM자중} + 1.25 \times (\text{정격하중} + \text{Hoist자중})}{0.707 \times \text{용접두께} \times \text{용접길이}} \leq 560 \text{ kg/cm}^2$



I-BEAM 규격	BEAM 자중 (kg/m)	용접 두께 (cm)	최소 용접길이 (cm)	10 T		15 T		20 T	
				HOIST 자중 (KG)	용접강도 (kgal/cm ²)	HOIST 자중 (KG)	용접강도 (kgal/cm ²)	HOIST 자중 (KG)	용접강도 (kgal/cm ²)
300×150×t10/18.5	65.5	1.4	15×2	1210	540.5	-	-	-	-
350×150×t12/24	87.2	1.4	15×2	1210	541.3	-	-	-	-
400×150×t10/18	72	1.4	15×2	1210	540.7	2030	0.0	2430	0.0
450×175×t13/26	115	1.4	17.5×2	1210	464.9	2030	547.8	2430	540.4
600×190×t16/35	176	1.4	19.0×2	1210	430.0	2030	506.0	2430	498.8

단, 사용 I-BEAM은 MODEL 별 기술서양서의 BEAM 폭을 참조 할 것

* I-BEAM 고정 방법 중 BOLT 고정 강도

$$\text{BOLT 강도 } \sigma = 1.14 \frac{\text{I-BEAM 자중} + 1.25 \times (\text{정격하중} + \text{Hoist 자중})}{\text{BOLT 단면적} \times \text{BOLT 수}} \leq 2500 \text{ kg/cm}^2$$

I-BEAM 규격	BEAM 자중 (kg/m)	BOLT 규격	BOLT 수	BOLT 단면적 (cm ²)	10 T		15 T		20 T	
					HOIST 자중 (KG)	BOLT강도 (kg/cm ²)	HOIST 자중 (KG)	BOLT강도 (kg/cm ²)	HOIST 자중 (KG)	BOLT강도 (kg/cm ²)
300×150×t10/18.5	65.5	M16	4	2.01	1210	1996.1	-	-	-	-
350×150×t12/24	87.2	M16	4	2.01	1210	1999.2	-	-	-	-
400×150×t10/18	72	M20	4	3.15	1210	1274.3	2030	0.0	2430	0.0
450×175×t13/26	115	M20	4	3.15	1210	1278.2	2030	1936.4	2430	2547.1
600×190×t16/35	176	M20	4	3.15	1210	1283.7	2030	1941.9	2430	2552.7

I-5. I-BEAM의 최대 지지거리

5-1. 굽힘 MOMENT 계산

1. 수직하중에 의한 굽힘 MOMENT

$$\text{BEAM 자중에 의한 MOMENT : } M_s = \frac{M \times \text{I-BEAM 자중} \times (\text{지지거리})^2}{8} \quad \text{kg-cm}$$

$$M_s = \frac{1.05 \times 87.2 \times 180^2}{8} = 2785 \quad \text{kg-cm}$$

$$\text{이동하중에 의한 MOMENT : } M_d = F \times \frac{(\text{정격하중} + \text{호이스트 자중}) \times \text{지지거리}}{4} \quad \text{kg-cm}$$

$$M_d = 1.254 \times \frac{(10000 + 1210) \times 180}{4} = 632580 \quad \text{kg-cm}$$

$$* \text{ 호이스트 자중} = 1210 \text{ KG M} \quad \text{용 량 : } 10000 \text{ KG}$$

$$* \text{ DYNAMIC COEFFICIENT : } F = 1.254$$

$$* \text{ STATIC COEFFICIENT : } M = 1.05$$

$$\text{굽힘 MOMENT 합계 : } \Sigma M_v = M_s + M_d = 2785 + 632580 = 635366 \quad \text{kg-cm}$$

2. 풍하중에 의한 굽힘 MOMENT

$$\text{풍하중에 의한 MOMENT : } M_w = \frac{\text{풍하중}(W) \times \text{지지거리}}{2}$$

$$M_w = \frac{281.08 \times 180}{2} = 39351.3 \quad \text{kg-cm}$$

$$\begin{aligned} \text{풍하중 : } W &= \text{속도압}(q) \times \text{속도계수}(C) \times \text{압력을 받는 면적}(A) \text{ (kg)} \\ &= 23.66 \times 1.2 \times 9.9 = 281.08 \text{ (kg)} \end{aligned}$$

$$\text{속도압 : } q = 8.5 \times \sqrt[4]{h} \text{ (kg/m}^2\text{)} = 8.5 \times \sqrt[4]{60} = 23.66 \text{ (kg/m}^2\text{)}$$

$$\text{속도계수 : } C = 1.2 \text{ (크레인 제작기준 참조)}$$

$$\begin{aligned} \text{풍압을 받는 면적 } A &= \text{I-BEAM의 면적} + \text{HOIST의 면적 (m}^2\text{)} \\ &= 9 + 0.90 = 9.90 \text{ (m}^2\text{)} \end{aligned}$$

$$* \text{ 호이스트의 풍압을 받는 면적 } \approx 0.8 \text{ m}^2$$

I-BEAM 규격	BEAM 자중 (kg/m)	최 대 지지거리 (cm)	M _s (kg-cm)	M _d (kg-cm)	ΣM _v (kg-cm)	W (kg)	M _w (kg-cm)	A (m ²)
300×150×t10/18.5	65.5	180	2785.0	632580	635365	281.08	39351.3	9.90
350×150×t12/24	87.2	280	8972.9	984014	992987	323.67	45313.6	11.40
400×150×t10/18	72	180	3062	632580	635642	479.82	67175	16.90
450×175×t13/26	115	420	26625	1476021	1502646	562.16	78703	19.80
600×190×t16/35	176	560	72442	1968028	2040470	794.98	222593	28

단, 사용 I-BEAM은 MODEL별 기술서양서의 BEAM 폭을 참조 할 것

5-2. 굽힘 응력 계산

1. 수직하중에 의한 굽힘 응력

$$\begin{aligned} * \sigma_v &= \frac{\text{수직 굽힘 MOMENT 합계 : } \Sigma M_v}{\text{단면 계수 : } Z_x} \quad (\text{kg/cm}^2) \\ &= \frac{635365}{849} = 748.4 \quad (\text{kg/cm}^2) \end{aligned}$$

2. 풍하중에 의한 굽힘 응력

$$\begin{aligned} * \sigma_w &= \frac{\text{풍하중에 의한 굽힘 MOMENT : } M_w}{\text{단면 계수 : } Z_y} \quad (\text{kg/cm}^2) \\ &= \frac{39351.3}{118} = 333.5 \quad (\text{kg/cm}^2) \end{aligned}$$

2. 풍하중에 의한 굽힘 응력

$$* \Sigma \sigma = \sigma_v + \sigma_w \leq 0.8 \times 1449 = 1159 \text{ kg/cm}^2$$

I-BEAM 규격	단 면 계 수 Zx	단 면 계 수 Zy	ΣM_v (kg-cm)	Mw (kg-cm)	σ_v (kg/cm ²)	σ_w (kg/cm ²)	$\Sigma \sigma$ (kg/cm ²)
300×150×t10/18.5	849	118	635365	39351.3	748.4	333.5	1081.9
350×150×t12/24	1280	164	992987	45313.6	775.8	276.3	1052.1
400×150×t10/18	1220	115	635642	67175.5	521.0	584.1	1105.2
450×175×t13/26	2170	240	1502646	78702.6	692.5	327.9	1020.4
600×190×t16/35	4330	373	2040470	222593.3	471.2	596.8	1068.0

단, I-BEAM의 사용은 MODEL 별 기술사양서에 따른다.

산업재해예방

안전보건공단

KOREA OCCUPATIONAL SAFETY & HEALTH AGENCY

5-3. I-BEAM 처짐(DEFLECTION)

1. I-BEAM 자중에 의한 처짐

$$\begin{aligned} * \delta_s &= \frac{5 \times \text{I-BEAM 자중} \times \text{지지거리}^3}{384 \times 2100000 \times I_x} \quad (\text{cm}) \\ &= \frac{5 \times 65.5 \times 180^3}{384 \times 2100000 \times 12700} = 0.00186 \quad (\text{cm}) \end{aligned}$$

2. 이동하중에 의한 처짐 (DEFLECTION)

$$\begin{aligned} * \delta_d &= \frac{(\text{정격하중} + \text{호이스트자중}) \times \text{지지거리}^3}{48 \times 2100000 \times I_x} \quad (\text{cm}) \\ &= \frac{(10000 + 1210) \times 180^3}{48 \times 2100000 \times 12700} = 0.051 \quad (\text{cm}) \end{aligned}$$

3. 판 정

1) 이동하중에 의한 처짐판정(하단표기)

$$\begin{aligned} &\frac{\text{이동하중에 의한 처짐} : \delta_d}{\text{지지거리}} < \frac{1}{1000} \\ &= \frac{0.051}{180} = \frac{1}{3525} < \frac{1}{1000} \end{aligned}$$

2) 처짐량 합계에 의한 처짐판정 (하단표기)

$$\begin{aligned} &\frac{\text{I-BEAM 자중에 의한 처짐} : \delta_s + \text{이동하중에 의한 처짐} : \delta_d}{\text{지지거리}} < \frac{1}{800} \\ &= \frac{0.00186 + 0.051}{180} = \frac{1}{3400} < \frac{1}{800} \end{aligned}$$

I-BEAM 규격	단면2차 MOMENT I _x	BEAM 자중 (kg/m)	δ _s (cm)	δ _d (cm)	이동하중에 의한 처짐 판정	처짐량 합계에 의한 처짐판정
300×150×t10/18.5	12700	65.5	0.00186	0.051	1 / 3525	1 / 3400
350×150×t12/24	22400	87.2	0.0053	0.109	1 / 2569	1 / 2450
400×150×t10/18	24100	72	0.0011	0.101	1 / 1777	1 / 1763
450×175×t13/26	48800	115	0.0108	0.169	1 / 2488	1 / 2338
600×190×t16/35	130000	176	0.01474	0.150	1 / 3733	1 / 3399

단, I-BEAM의 사용은 MODEL 별 기술사양서에 따른다.

I-6. I-BEAM의 최대 지지거리

6-1. 굽힘 MOMENT 계산

1. 수직하중에 의한 굽힘 MOMENT

$$\text{BEAM 자중에 의한 MOMENT : } M_s = \frac{M \times \text{I-BEAM 자중} \times (\text{지지거리})^2}{8} \quad \text{kg-cm}$$

$$M_s = \frac{1.05 \times 87.2 \times 280^2}{8} = 8973 \quad \text{kg-cm}$$

$$\text{이동하중에 의한 MOMENT : } M_d = F \times \frac{(\text{정격하중} + \text{호이스트 자중}) \times \text{지지거리}}{4} \quad \text{kg-cm}$$

$$M_d = 1.254 \times \frac{(10000 + 1210) \times 280}{4} = 984014 \quad \text{kg-cm}$$

$$\text{* 호이스트 자중} = 1210 \text{ KG} \quad \text{용량 : } 10000 \text{ KG}$$

$$\text{* DYNAMIC COEFFICIENT : } F = 1.254$$

$$\text{* STATIC COEFFICIENT : } M = 1.05$$

$$\text{굽힘 MOMENT 합계 : } \Sigma M_v = M_s + M_d = 8973 + 984014 = 992987 \quad \text{kg-cm}$$

2. 풍하중에 의한 굽힘 MOMENT

$$\text{풍하중에 의한 MOMENT : } M_w = \frac{\text{풍하중}(W) \times \text{지지거리}}{2}$$

$$M_w = \frac{323.67 \times 280}{2} = 45313.6 \quad \text{kg-cm}$$

$$\begin{aligned} \text{풍하중 : } W &= \text{속도압}(q) \times \text{속도계수}(C) \times \text{압력을 받는 면적}(A) \text{ (kg)} \\ &= 23.66 \times 1.2 \times 11.4 = 323.67 \text{ (kg)} \end{aligned}$$

$$\text{속도압 : } q = 8.5 \times \sqrt[4]{h} \text{ (kg/m}^2\text{)} = 8.5 \times \sqrt[4]{60} = 23.66 \text{ (kg/m}^2\text{)}$$

$$\text{속도계수 : } C = 1.2 \text{ (크레인 제작기준 참조)}$$

$$\begin{aligned} \text{풍압을 받는 면적 } A &= \text{I-BEAM의 면적} + \text{HOIST의 면적 (m}^2\text{)} \\ &= 10.5 + 0.90 = 11.40 \text{ (m}^2\text{)} \end{aligned}$$

$$\text{* 호이스트의 풍압을 받는 면적 } \approx 0.8 \text{ m}^2$$

I-BEAM 규격	BEAM 자중 (kg/m)	최 대 지지거리 (cm)	M _s (kg-cm)	M _d (kg-cm)	ΣM _v (kg-cm)	W (kg)	M _w (kg-cm)	A (m ²)
300×150×t10/18.5	65.5	180	2785.0	632580	635365	281.08	39351.3	9.90
350×150×t12/24	87.2	280	8972.9	984014	992987	323.67	45313.6	11.40
400×150×t10/18	72	180	3062	632580	635642	479.82	67175	16.90
450×175×t13/26	115	420	26625	1476021	1502646	562.16	78703	19.80
600×190×t16/35	176	560	72442	1968028	2040470	794.98	222593	28

단, 사용 I-BEAM은 MODEL별 기술사양서의 BEAM 폭을 참조 할 것

6-2. 굽힘 응력 계산

1. 수직하중에 의한 굽힘 응력

$$\begin{aligned} * \sigma_v &= \frac{\text{수직 굽힘 MOMENT 합계 : } \Sigma M_v}{\text{단면 계수 : } Z_x} \quad (\text{kg/cm}^2) \\ &= \frac{992987}{1280} = 775.8 \quad (\text{kg/cm}^2) \end{aligned}$$

2. 풍하중에 의한 굽힘 응력

$$\begin{aligned} * \sigma_w &= \frac{\text{풍하중에 의한 굽힘 MOMENT : } M_w}{\text{단면 계수 : } Z_y} \quad (\text{kg/cm}^2) \\ &= \frac{45313.6}{164} = 276.3 \quad (\text{kg/cm}^2) \end{aligned}$$

2. 풍하중에 의한 굽힘 응력

$$* \Sigma \sigma = \sigma_v + \sigma_w \leq 0.8 \times 1449 = 1159 \text{ kg/cm}^2$$

I-BEAM 규격	단 면 계 수 Zx	단 면 계 수 Zy	ΣM_v (kg-cm)	M_w (kg-cm)	σ_v (kg/cm ²)	σ_w (kg/cm ²)	$\Sigma \sigma$ (kg/cm ²)
300×150×t10/18.5	849	118	635365	39351.3	748.4	333.5	1081.9
350×150×t12/24	1280	164	992987	45313.6	775.8	276.3	1052.1
400×150×t10/18	1220	115	635642	67175.5	521.0	584.1	1105.2
450×175×t13/26	2170	240	1502646	78702.6	692.5	327.9	1020.4
600×190×t16/35	4330	373	2040470	222593.3	471.2	596.8	1068.0

단, I-BEAM의 사용은 MODEL 별 기술사양서에 따른다.

산업재해예방

안전보건공단

KOREA OCCUPATIONAL SAFETY & HEALTH AGENCY

6-3. I-BEAM 처짐(DEFLECTION)

1. I-BEAM 자중에 의한 처짐

$$\begin{aligned} * \delta_s &= \frac{5 \times \text{I-BEAM 자중} \times \text{지지거리}^3}{384 \times 2100000 \times I_x} \quad (\text{cm}) \\ &= \frac{5 \times 87.2 \times 280^3}{384 \times 2100000 \times 22400} = 0.00530 \quad (\text{cm}) \end{aligned}$$

2. 이동하중에 의한 처짐 (DEFLECTION)

$$\begin{aligned} * \delta_d &= \frac{(\text{정격하중} + \text{호이스트자중}) \times \text{지지거리}^3}{48 \times 2100000 \times I_x} \quad (\text{cm}) \\ &= \frac{(10000 + 1210) \times 280^3}{48 \times 2100000 \times 22400} = 0.109 \quad (\text{cm}) \end{aligned}$$

3. 판 정

1) 이동하중에 의한 처짐판정(하단표기)

$$\begin{aligned} &\frac{\text{이동하중에 의한 처짐} : \delta_d}{\text{지지거리}} < \frac{1}{1000} \\ &= \frac{0.109}{280} = \frac{1}{2569} < \frac{1}{1000} \end{aligned}$$

2) 처짐량 합계에 의한 처짐판정 (하단표기)

$$\begin{aligned} &\frac{\text{I-BEAM 자중에 의한 처짐} : \delta_s + \text{이동하중에 의한 처짐} : \delta_d}{\text{지지거리}} < \frac{1}{800} \\ &= \frac{0.0053 + 0.109}{280} = \frac{1}{2450} < \frac{1}{800} \end{aligned}$$

I-BEAM 규격	단면2차 MOMENT I _x	BEAM 자중 (kg/m)	δ _s (cm)	δ _d (cm)	이동하중에 의한 처짐 판정	처짐량 합계에 의한 처짐판정
300×150×t10/18.5	12700	65.5	0.00186	0.051	1 / 3525	1 / 3400
350×150×t12/24	22400	87.2	0.0053	0.109	1 / 2569	1 / 2450
400×150×t10/18	24100	72	0.0011	0.101	1 / 1777	1 / 1763
450×175×t13/26	48800	115	0.0108	0.169	1 / 2488	1 / 2338
600×190×t16/35	130000	176	0.01474	0.150	1 / 3733	1 / 3399

단, I-BEAM의 사용은 MODEL 별 기술사양서에 따른다.

I-7. I-BEAM의 최대 지지거리

7-1. 굽힘 MOMENT 계산

1. 수직하중에 의한 굽힘 MOMENT

$$\text{BEAM 자중에 의한 MOMENT : } M_s = \frac{M \times \text{I-BEAM 자중} \times (\text{지지거리})^2}{8} \quad \text{kg-cm}$$

$$M_s = \frac{1.05 \times 72 \times 180^2}{8} = 3062 \quad \text{kg-cm}$$

$$\text{이동하중에 의한 MOMENT : } M_d = F \times \frac{(\text{정격하중} + \text{호이스트 자중}) \times \text{지지거리}}{4} \quad \text{kg-cm}$$

$$M_d = 1.254 \times \frac{(10000 + 1210) \times 180}{4} = 632580 \quad \text{kg-cm}$$

$$\text{* 호이스트 자중} = 1210 \text{ KG} \quad \text{용량 : } 10000 \text{ KG}$$

$$\text{* DYNAMIC COEFFICIENT : } F = 1.254$$

$$\text{* STATIC COEFFICIENT : } M = 1.05$$

$$\text{굽힘 MOMENT 합계 : } \Sigma M_v = M_s + M_d = 3062 + 632580 = 635642 \quad \text{kg-cm}$$

2. 풍하중에 의한 굽힘 MOMENT

$$\text{풍하중에 의한 MOMENT : } M_w = \frac{\text{풍하중}(W) \times \text{지지거리}}{2}$$

$$M_w = \frac{479.82 \times 180}{2} = 67175.5 \quad \text{kg-cm}$$

$$\begin{aligned} \text{풍하중 : } W &= \text{속도압}(q) \times \text{속도계수}(C) \times \text{압력을 받는 면적}(A) \text{ (kg)} \\ &= 23.66 \times 1.2 \times 16.9 = 479.82 \text{ (kg)} \end{aligned}$$

$$\text{속도압 : } q = 8.5 \times \sqrt[4]{h} \text{ (kg/m}^2\text{)} = 8.5 \times \sqrt[4]{60} = 23.66 \text{ (kg/m}^2\text{)}$$

$$\text{속도계수 : } C = 1.2 \text{ (크레인 제작기준 참조)}$$

$$\begin{aligned} \text{풍압을 받는 면적 } A &= \text{I-BEAM의 면적} + \text{HOIST의 면적 (m}^2\text{)} \\ &= 16 + 0.90 = 16.90 \text{ (m}^2\text{)} \end{aligned}$$

$$\text{* 호이스트의 풍압을 받는 면적} \approx 0.8 \text{ m}^2$$

I-BEAM 규격	BEAM 자중 (kg/m)	최대 지지거리 (cm)	M _s (kg-cm)	M _d (kg-cm)	ΣM _v (kg-cm)	W (kg)	M _w (kg-cm)	A (m ²)
300×150×t10/18.5	65.5	180	2785.0	632580	635365	281.08	39351.3	9.90
350×150×t12/24	87.2	280	8972.9	984014	992987	323.67	45313.6	11.40
400×150×t10/18	72	180	3062	632580	635642	479.82	67175.5	16.90
450×175×t13/26	115	420	26625	1476021	1502646	562.16	78703	19.80
600×190×t16/35	176	560	72442	1968028	2040470	794.98	222593	28

단, 사용 I-BEAM은 MODEL별 기술사양서의 BEAM 쪽을 참조 할 것

7-2. 굽힘 응력 계산

1. 수직하중에 의한 굽힘 응력

$$\begin{aligned} * \sigma_v &= \frac{\text{수직 굽힘 MOMENT 합계 : } \Sigma M_v}{\text{단면 계수 : } Z_x} \quad (\text{kg/cm}^2) \\ &= \frac{635642}{1220} = 521.0 \quad (\text{kg/cm}^2) \end{aligned}$$

2. 풍하중에 의한 굽힘 응력

$$\begin{aligned} * \sigma_w &= \frac{\text{풍하중에 의한 굽힘 MOMENT : } M_w}{\text{단면 계수 : } Z_y} \quad (\text{kg/cm}^2) \\ &= \frac{67175.5}{115} = 584.1 \quad (\text{kg/cm}^2) \end{aligned}$$

2. 풍하중에 의한 굽힘 응력

$$* \Sigma \sigma = \sigma_v + \sigma_w \leq 0.8 \times 1449 = 1159 \text{ kg/cm}^2$$

I-BEAM 규격	단 면 계 수 Zx	단 면 계 수 Zy	ΣM_v (kg-cm)	M_w (kg-cm)	σ_v (kg/cm ²)	σ_w (kg/cm ²)	$\Sigma \sigma$ (kg/cm ²)
300×150×t10/18.5	849	118	635365	39351.3	748.4	333.5	1081.9
350×150×t12/24	1280	164	992987	45313.6	775.8	276.3	1052.1
→ 400×150×t10/18	1220	115	635642	67175.5	521.0	584.1	1105.2
450×175×t13/26	2170	240	1502646	78702.6	692.5	327.9	1020.4
600×190×t16/35	4330	373	2040470	222593.3	471.2	596.8	1068.0

단, I-BEAM의 사용은 MODEL 별 기술사양서에 따른다.

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안전보건공단

KOREA OCCUPATIONAL SAFETY & HEALTH AGENCY

7-3. I-BEAM 처짐(DEFLECTION)

1. I-BEAM 자중에 의한 처짐

$$\begin{aligned} * \delta_s &= \frac{5 \times \text{I-BEAM 자중} \times \text{지지거리}^3}{384 \times 2100000 \times I_x} \quad (\text{cm}) \\ &= \frac{5 * 72 * 180^3}{384 * 2100000 * 24100} = 0.00108 \quad (\text{cm}) \end{aligned}$$

2. 이동하중에 의한 처짐 (DEFLECTION)

$$\begin{aligned} * \delta_d &= \frac{(\text{정격하중} + \text{호이스트자중}) \times \text{지지거리}^3}{48 \times 2100000 \times I_x} \quad (\text{cm}) \\ &= \frac{(10000 + 1210) \times 180^3}{48 * 2100000 * 24100} = 0.101 \quad (\text{cm}) \end{aligned}$$

3. 판 정

1) 이동하중에 의한 처짐판정(하단표기)

$$\begin{aligned} &\frac{\text{이동하중에 의한 처짐} : \delta_d}{\text{지지거리}} < \frac{1}{1000} \\ &= \frac{0.101}{180} = \frac{1}{1777} < \frac{1}{1000} \end{aligned}$$

2) 처짐량 합계에 의한 처짐판정 (하단표기)

$$\begin{aligned} &\frac{\text{I-BEAM 자중에 의한 처짐} : \delta_s + \text{이동하중에 의한 처짐} : \delta_d}{\text{지지거리}} < \frac{1}{800} \\ &= \frac{0.00108 + 0.101}{180} = \frac{1}{1758} < \frac{1}{800} \end{aligned}$$

I-BEAM 규격	단면2차 MOMENT I _x	BEAM 자중 (kg/m)	δ _s (cm)	δ _d (cm)	이동하중에 의한 처짐 판정	처짐량 합계에 의한 처짐판정
300×150×t10/18.5	12700	65.5	0.00186	0.051	1 / 3525	1 / 3400
350×150×t12/24	22400	87.2	0.0053	0.109	1 / 2569	1 / 2450
400×150×t10/18	24100	72	0.0011	0.101	1 / 1777	1 / 1763
450×175×t13/26	48800	115	0.0108	0.169	1 / 2488	1 / 2338
600×190×t16/35	130000	176	0.01474	0.150	1 / 8733	1 / 3399

단, I-BEAM의 사용은 MODEL 별 기술사양서에 따른다.

I-8. I-BEAM의 최대 지지거리

8-1. 굽힘 MOMENT 계산

1. 수직하중에 의한 굽힘 MOMENT

$$\text{BEAM 자중에 의한 MOMENT : } M_s = \frac{M \times \text{I-BEAM 자중} \times (\text{지지거리})^2}{8} \quad \text{kg-cm}$$

$$M_s = \frac{1.05 \times 115 \times 420^2}{8} = 26625 \quad \text{kg-cm}$$

$$\text{이동하중에 의한 MOMENT : } M_d = F \times \frac{(\text{정격하중} + \text{호이스트 자중}) \times \text{지지거리}}{4} \quad \text{kg-cm}$$

$$M_d = 1.254 \times \frac{(10000 + 1210) \times 420}{4} = 1476021 \quad \text{kg-cm}$$

$$\text{* 호이스트 자중} = 1210 \text{ KG} \quad \text{용량} : 10000 \text{ KG}$$

$$\text{* DYNAMIC COEFFICIENT : } F = 1.254$$

$$\text{* STATIC COEFFICIENT : } M = 1.05$$

$$\text{굽힘 MOMENT 합계 : } \Sigma M_v = M_s + M_d = 26625 + 1476021 = 1502646 \quad \text{kg-cm}$$

2. 풍하중에 의한 굽힘 MOMENT

$$\text{풍하중에 의한 MOMENT : } M_w = \frac{\text{풍하중}(W) \times \text{지지거리}}{2}$$

$$M_w = \frac{562.16 \times 420}{2} = 78702.6 \quad \text{kg-cm}$$

$$\begin{aligned} \text{풍하중 : } W &= \text{속도압}(q) \times \text{속도계수}(C) \times \text{압력을 받는 면적}(A) \text{ (kg)} \\ &= 23.66 \times 1.2 \times 19.8 = 562.16 \text{ (kg)} \end{aligned}$$

$$\text{속도압 : } q = 8.5 \times \sqrt[4]{h} \text{ (kg/m}^2\text{)} = 8.5 \times \sqrt[4]{60} = 23.66 \text{ (kg/m}^2\text{)}$$

$$\text{속도계수 : } C = 1.2 \text{ (크레인 제작기준 참조)}$$

$$\begin{aligned} \text{풍압을 받는 면적 } A &= \text{I-BEAM의 면적} + \text{HOIST의 면적 (m}^2\text{)} \\ &= 18.9 + 0.90 = 19.80 \text{ (m}^2\text{)} \end{aligned}$$

$$\text{* 호이스트의 풍압을 받는 면적 } \approx 0.8 \text{ m}^2$$

I-BEAM 규격	BEAM 자중 (kg/m)	최대 지지거리 (cm)	M _s (kg-cm)	M _d (kg-cm)	ΣM _v (kg-cm)	W (kg)	M _w (kg-cm)	A (m ²)
300×150×t10/18.5	65.5	180	2785.0	632580	635365	281.08	39351.3	9.90
350×150×t12/24	87.2	280	8972.9	984014	992987	323.67	45313.6	11.40
400×150×t10/18	72	180	3062	632580	635642	479.82	67175	16.90
450×175×t13/26	115	420	26625	1476021	1502646	562.16	78703	19.80
600×190×t16/35	176	560	72442	1968028	2040470	794.98	222593	28

단, 사용 I-BEAM은 MODEL별 기술 사양서의 BEAM 폭을 참조 할 것

8-2. 굽힘 응력 계산

1. 수직하중에 의한 굽힘 응력

$$\begin{aligned} * \sigma_v &= \frac{\text{수직 굽힘 MOMENT 합계 : } \Sigma M_v}{\text{단면 계수 : } Z_x} \quad (\text{kg/cm}^2) \\ &= \frac{1502646}{2170} = 692.5 \quad (\text{kg/cm}^2) \end{aligned}$$

2. 풍하중에 의한 굽힘 응력

$$\begin{aligned} * \sigma_w &= \frac{\text{풍하중에 의한 굽힘 MOMENT : } M_w}{\text{단면 계수 : } Z_y} \quad (\text{kg/cm}^2) \\ &= \frac{78702.6}{240} = 327.9 \quad (\text{kg/cm}^2) \end{aligned}$$

2. 풍하중에 의한 굽힘 응력

$$* \Sigma \sigma = \sigma_v + \sigma_w \leq 0.8 \times 1449 = 1159 \text{ kg/cm}^2$$

I-BEAM 규격	단 면 계 수 Zx	단 면 계 수 Zy	ΣM_v (kg-cm)	M_w (kg-cm)	σ_v (kg/cm ²)	σ_w (kg/cm ²)	$\Sigma \sigma$ (kg/cm ²)
300×150×t10/18.5	849	118	635365	39351.3	748.4	333.5	1081.9
350×150×t12/24	1280	164	992987	45313.6	775.8	276.3	1052.1
400×150×t10/18	1220	118	635642	67175.5	521.0	584.1	1105.2
450×175×t13/26	2170	240	1502646	78702.6	692.5	327.9	1020.4
600×190×t16/35	4330	373	2040470	222593.3	471.2	596.8	1068.0

단, I-BEAM의 사용은 MODEL 별 기술사양서에 따른다.

산업재해예방

안전보건공단

KOREA OCCUPATIONAL SAFETY & HEALTH AGENCY

8-3. I-BEAM 처짐(DEFLECTION)

1. I-BEAM 자중에 의한 처짐

$$\begin{aligned} * \delta_s &= \frac{5 \times \text{I-BEAM 자중} \times \text{지지거리}^3}{384 \times 2100000 \times I_x} \quad (\text{cm}) \\ &= \frac{5 \times 115 \times 420^3}{384 \times 2100000 \times 48800} = 0.01083 \quad (\text{cm}) \end{aligned}$$

2. 이동하중에 의한 처짐 (DEFLECTION)

$$\begin{aligned} * \delta_d &= \frac{(\text{정격하중} + \text{호이스트자중}) \times \text{지지거리}^3}{48 \times 2100000 \times I_x} \quad (\text{cm}) \\ &= \frac{(10000 + 1210) \times 420^3}{48 \times 2100000 \times 48800} = 0.169 \quad (\text{cm}) \end{aligned}$$

3. 판 정

1) 이동하중에 의한 처짐판정(하단표기)

$$\begin{aligned} \frac{\text{이동하중에 의한 처짐} : \delta_d}{\text{지지거리}} &< \frac{1}{1000} \\ &= \frac{0.169}{420} = \frac{1}{2488} < \frac{1}{1000} \end{aligned}$$

2) 처짐량 합계에 의한 처짐판정 (하단표기)

$$\begin{aligned} \frac{\text{I-BEAM 자중에 의한 처짐} : \delta_s + \text{이동하중에 의한 처짐} : \delta_d}{\text{지지거리}} &< \frac{1}{800} \\ &= \frac{0.0108+0.169}{420} = \frac{1}{2338} < \frac{1}{800} \end{aligned}$$

I-BEAM 규격	단면2차 MOMENT I _x	BEAM 자중 (kg/m)	δ _s (cm)	δ _d (cm)	이동하중에 의한 처짐 판정	처짐량 합계에 의한 처짐판정
300×150×t10/18.5	12700	65.5	0.00186	0.051	1 / 3525	1 / 3400
350×150×t12/24	22400	87.2	0.0053	0.109	1 / 2569	1 / 2450
400×150×t10/18	24100	72	0.0011	0.101	1 / 1777	1 / 1763
450×175×t13/26	48800	115	0.0108	0.169	1 / 2488	1 / 2338
600×190×t16/35	130000	176	0.01474	0.150	1 / 3733	1 / 3399

단, I-BEAM의 사용은 MODE 별 기술사양서에 따른다.

I-9. I-BEAM의 최대 지지거리

9-1. 굽힘 MOMENT 계산

1. 수직하중에 의한 굽힘 MOMENT

$$\text{BEAM 자중에 의한 MOMENT : } M_s = \frac{M \times \text{I-BEAM 자중} \times (\text{지지거리})^2}{8} \quad \text{kg-cm}$$

$$M_s = \frac{1.05 \times 176 \times 560^2}{8} = 72442 \quad \text{kg-cm}$$

$$\text{이동하중에 의한 MOMENT : } M_d = F \times \frac{(\text{정격하중} + \text{호이스트 자중}) \times \text{지지거리}}{4} \quad \text{kg-cm}$$

$$M_d = 1.254 \times \frac{(10000 + 1210) \times 560}{4} = 1968028 \quad \text{kg-cm}$$

$$\text{* 호이스트 자중} = 1210 \text{ KG} \quad \text{용량 : } 10000 \text{ KG}$$

$$\text{* DYNAMIC COEFFICIENT : } F = 1.254$$

$$\text{* STATIC COEFFICIENT : } M = 1.05$$

$$\text{굽힘 MOMENT 합계 : } \Sigma M_v = M_s + M_d = 72442 + 1968028 = 2040469 \quad \text{kg-cm}$$

2. 풍하중에 의한 굽힘 MOMENT

$$\text{풍하중에 의한 MOMENT : } M_w = \frac{\text{풍하중}(W) \times \text{지지거리}}{2}$$

$$M_w = \frac{794.98 \times 280}{2} = 222593 \quad \text{kg-cm}$$

$$\begin{aligned} \text{풍하중 : } W &= \text{속도압}(q) \times \text{속도계수}(C) \times \text{압력을 받는 면적}(A) \text{ (kg)} \\ &= 23.66 \times 1.2 \times 28 = 794.98 \text{ (kg)} \end{aligned}$$

$$\text{속도압 : } q = 8.5 \times \sqrt[4]{h} \text{ (kg/m}^2\text{)} = 8.5 \times \sqrt[4]{60} = 23.66 \text{ (kg/m}^2\text{)}$$

$$\text{속도계수 : } C = 1.2 \text{ (크레인 제작기준 참조)}$$

$$\begin{aligned} \text{풍압을 받는 면적 } A &= \text{I-BEAM의 면적} + \text{HOIST의 면적 (m}^2\text{)} \\ &= 28.0 + 0.90 = 28.90 \text{ (m}^2\text{)} \end{aligned}$$

$$\text{* 호이스트의 풍압을 받는 면적} \approx 0.8 \text{ m}^2$$

I-BEAM 규격	BEAM 자중 (kg/m)	최대 지지거리 (cm)	M _s (kg-cm)	M _d (kg-cm)	ΣM _v (kg-cm)	W (kg)	M _w (kg-cm)	A (m ²)
300×150×t10/18.5	65.5	180	2785.0	632580	635365	281.08	39351.3	9.90
350×150×t12/24	87.2	280	8972.9	984014	992987	323.67	45313.6	11.40
400×150×t10/18	72	180	3062	632580	635642	479.82	67175	16.90
450×175×t13/26	115	420	26625	1476021	1502646	562.16	78703	19.80
600×190×t16/35	176	560	72442	1968028	2040470	794.98	222593	28

단, 사용 I-BEAM은 MODEL별 기술사항서의 BEAM 폭을 참조 할 것

9-2. 굽힘 응력 계산

1. 수직하중에 의한 굽힘 응력

$$\begin{aligned} * \sigma_v &= \frac{\text{수직 굽힘 MOMENT 합계 : } \Sigma M_v}{\text{단면 계수 : } Z_x} \quad (\text{kg/cm}^2) \\ &= \frac{2040470}{4330} = 471.2 \quad (\text{kg/cm}^2) \end{aligned}$$

2. 풍하중에 의한 굽힘 응력

$$\begin{aligned} * \sigma_w &= \frac{\text{풍하중에 의한 굽힘 MOMENT : } M_w}{\text{단면 계수 : } Z_y} \quad (\text{kg/cm}^2) \\ &= \frac{222593.3}{373} = 596.8 \quad (\text{kg/cm}^2) \end{aligned}$$

2. 풍하중에 의한 굽힘 응력

$$* \Sigma \sigma = \sigma_v + \sigma_w \leq 0.8 \times 1449 = 1159 \text{ kg/cm}^2$$

I-BEAM 규격	단 면 계 수 Zx	단 면 계 수 Zy	ΣM_v (kg-cm)	Mw (kg-cm)	σ_v (kg/cm ²)	σ_w (kg/cm ²)	$\Sigma \sigma$ (kg/cm ²)
300×150×t10/18.5	849	118	635365	39351.3	748.4	333.5	1081.9
350×150×t12/24	1280	164	992987	45313.6	775.8	276.3	1052.1
400×150×t10/18	1220	118	635642	67175.5	521.0	584.1	1105.2
450×175×t13/26	2170	240	1502646	78702.6	692.5	327.9	1020.4
→ 600×190×t16/35	4330	373	2040470	222593.3	471.2	596.8	1068.0

단, I-BEAM의 사용은 MODEL 별 기술사양서에 따른다.

산업재해예방

안전보건공단

KOREA OCCUPATIONAL SAFETY & HEALTH AGENCY

9-3. I-BEAM 처짐(DEFLECTION)

1. I-BEAM 자중에 의한 처짐

$$\begin{aligned} * \delta_s &= \frac{5 \times \text{I-BEAM 자중} \times \text{지지거리}^3}{384 \times 2100000 \times I_x} \quad (\text{cm}) \\ &= \frac{5 \times 176 \times 560^3}{384 \times 2100000 \times 130000} = 0.01474 \quad (\text{cm}) \end{aligned}$$

2. 이동하중에 의한 처짐 (DEFLECTION)

$$\begin{aligned} * \delta_d &= \frac{(\text{정격하중} + \text{호이스트자중}) \times \text{지지거리}^3}{48 \times 2100000 \times I_x} \quad (\text{cm}) \\ &= \frac{(10000 + 1210) \times 560^3}{48 \times 2100000 \times 130000} = 0.150 \quad (\text{cm}) \end{aligned}$$

3. 판 정

1) 이동하중에 의한 처짐판정(하단표기)

$$\begin{aligned} &\frac{\text{이동하중에 의한 처짐} : \delta_d}{\text{지지거리}} < \frac{1}{1000} \\ &= \frac{0.150}{560} = \frac{1}{3728} < \frac{1}{1000} \end{aligned}$$

2) 처짐량 합계에 의한 처짐판정 (하단표기)

$$\begin{aligned} &\frac{\text{I-BEAM 자중에 의한 처짐} : \delta_s + \text{이동하중에 의한 처짐} : \delta_d}{\text{지지거리}} < \frac{1}{800} \\ &= \frac{0.01474 + 0.15}{560} = \frac{1}{3394} < \frac{1}{800} \end{aligned}$$

I-BEAM 규격	단면2차 MOMENT I _x	BEAM 자중 (kg/m)	δ _s (cm)	δ _d (cm)	이동하중에 의한 처짐 판정	처짐량 합계에 의한 처짐판정
300×150×t10/18.5	12700	65.5	0.00186	0.051	1 / 3525	1 / 3400
350×150×t12/24	22400	87.2	0.0053	0.109	1 / 2569	1 / 2450
400×150×t10/18	24100	72	0.0011	0.101	1 / 1777	1 / 1763
450×175×t13/26	48800	115	0.0108	0.169	1 / 2488	1 / 2338
600×190×t16/35	130000	176	0.01474	0.150	1 / 3733	1 / 3399

단, I-BEAM의 사용은 MODEL 별 기술사양서에 따른다.

THREE PHASE INDUCTION MOTOR DATE SHEET

SCHEDULE OF TECHNICAL DATA

1. SERVICE	HOISTNG HIGH
2. MANUFACTURE	KUK DONG HOIST (주)
3. FRAME NUMBER	200M
4. RATED POWER	13 KW x 6 P
5. RATED VOLTAGE AND FREQUENCY	220 V 60 Hz
6. MOTOR TYPE	SQUIRREL CAGE ROTOR TYPE
7. SERVICE FACTOR AND RATting	1.0 , 30 MIN
8. LOCATION AND INSULATION CLASS	INDOOR ,OUTDOOR, B CLASS
9. DESIGN TRMPERATURE RISE(BY RESISTANCE)	80 deg °C
10. FULL LOAD CURRENT	53.0 A
11. LOCKED MOTOR CURRENT	318.0 A
12. MINIMUM STARTING VOLTAGE	200 V
13. EFFICIENCY AT 100% RATED LOAD	83.5 %
14. POWER FACTOR AT 100% RATED LOAD	77 %
15. SLIP (FULL LOAD)	5.8 %
16. FULL LOAD TORQUE	20.18 Kg.m
17. SITE ALTITUDE(UNDER)	1000 m
18. ENCLOSURE & COOLING METHOD	T E N V
19. TYPE OF BEARING	PL 6311zz OPE 6310zz
20. MOUNTING	HORIZONTAL
21. MAXIMUM AMBIENT TEMPURE	40 °C
22. BEARING LUBRICATION	GREASE
23. MOTOR NET WEIGHT (ABOUT)	205 Kg
24. SERIAL NO	

안전보건공단

KOREA OCCUPATIONAL SAFETY & HEALTH AGENCY

THREE PHASE INDUCTION MOTOR DATE SHEET

SCHEDULE OF TECHNICAL DATA

1. SERVICE	HOISTING HIGH
2. MANUFACTURE	KUK DONG HOIST (주)
3. FRAME NUMBER	200M
4. RATED POWER	13 KW x 6 P
5. RATED VOLTAGE AND FREQUENCY	380 V 60 Hz
6. MOTOR TYPE	SQUIRREL CAGE ROTOR TYPE
7. SERVICE FACTOR AND RATTING	1.0 , 30 MIN
8. LOCATION AND INSULATION CLASS	INDOOR ,OUTDOOR, B CLASS
9. DESIGN TRMPERATURE RISE(BY RESISTANCE)	80 deg °C
10. FULL LOAD CURRENT	30.7 A
11. LOCKED MOTOR CURRENT	184.1 A
12. MINIMUM STARTING VOLTAGE	345 V
13. EFFICIENCY AT 100% RATED LOAD	83.5 %
14. POWER FACTOR AT 100% RATED LOAD	77 %
15. SLIP (FULL LOAD)	5.8 %
16. FULL LOAD TORQUE	20.18 Kg.m
17. SITE ALTTITUDE(UNDER)	1000 m
18. ENCLOSURE & COOLING METHOD	T E N V
19. TYPE OF BEARING	PL 6311zz OPL 6310zz
20. MOUNTING	HORIZONTAL
21. MAXIMUM AMBIENT TEMPURE	40 °C
22. BEARING LUBRICATION	GREASE
23. MOTOR NET WEIGHT (ABOUT)	205 Kg
24. SERIAL NO	

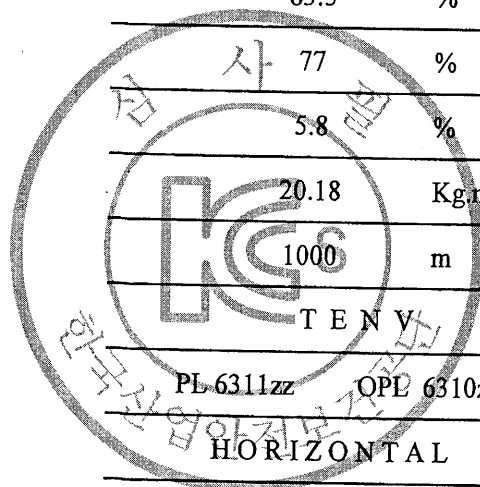
안전보건공단

KOREA OCCUPATIONAL SAFETY & HEALTH AGENCY

THREE PHASE INDUCTION MOTOR DATE SHEET

SCHEDULE OF TECHNICAL DATA

1. SERVICE	HOISTNG HIGH
2. MANUFACTURE	KUK DONG HOIST (주)
3. FRAME NUMBER	200M
4. RATED POWER	13 KW x 6 P
5. RATED VOLTAGE AND FREQUENCY	440 V 60 Hz
6. MOTOR TYPE	SQUIRREL CAGE ROTOR TYPE
7. SERVICE FACTOR AND RATting	1.0 , 30 MIN
8. LOCATION AND INSULATION CLASS	INDOOR ,OUTDOOR, B CLASS
9. DESIGN TRMPERATURE RISE(BY RESISTANCE)	80 deg °C
10. FULL LOAD CURRENT	26.5 A
11. LOCKED MOTOR CURRENT	159.0 A
12. MINIMUM STARTING VOLTAGE	400 V
13. EFFICIENCY AT 100% RATED LOAD	83.5 %
14. POWER FACTOR AT 100% RATED LOAD	77 %
15. SLIP (FULL LOAD)	5.8 %
16. FULL LOAD TORQUE	20.18 Kg.m
17. SITE ALTTITUDE(UNDER)	1000 m
18. ENCLOSURE & COOLING METHOD	T E N V
19. TYPE OF BEARING	PL-6311zz OPE 6310zz
20. MOUNTING	HORIZONTAL
21. MAXIMUM AMBIENT TEMPURE	40 °C
22. BEARING LUBRICATION	GREASE
23. MOTOR NET WEIGHT (ABOUT)	205 Kg
24. SERIAL NO	



안전보건공단

KOREA OCCUPATIONAL SAFETY & HEALTH AGENCY

THREE PHASE INDUCTION MOTOR DATE SHEET

SCHEDULE OF TECHNICAL DATA

1. SERVICE	HOISTNG HIGH
2. MANUFACTURE	KUK DONG HOIST (주)
3. FRAME NUMBER	200M
4. RATED POWER	13 KW x 6 P
5. RATED VOLTAGE AND FREQUENCY	460 V 60 Hz
6. MOTOR TYPE	SQUIRREL CAGE ROTOR TYPE
7. SERVICE FACTOR AND RATTING	1.0 , 30 MIN
8. LOCATION AND INSULATION CLASS	INDOOR ,OUTDOOR, B CLASS
9. DESIGN TRMPERATURE RISE(BY RESISTANCE)	80 deg °C
10. FULL LOAD CURRENT	25.4 A
11. LOCKED MOTOR CURRENT	152.4 A
12. MINIMUM STARTING VOLTAGE	418 V
13. EFFICIENCY AT 100% RATED LOAD	83.5 %
14. POWER FACTOR AT 100% RATED LOAD	77 %
15. SLIP (FULL LOAD)	5.8 %
16. FULL LOAD TORQUE	20.18 Kg.m
17. SITE ALTTITUDE(UNDER)	1000 m
18. ENCLOSURE & COOLING METHOD	T E N V
19. TYPE OF BEARING	PL 6311zz OPL 6310zz
20. MOUNTING	HORIZONTAL
21. MAXIMUM AMBIENT TEMPURE	40 °C
22. BEARING LUBRICATION	GREASE
23. MOTOR NET WEIGHT (ABOUT)	205 Kg
24. SERIAL NO	

안전보건공단

KOREA OCCUPATIONAL SAFETY & HEALTH AGENCY

THREE PHASE INDUCTION MOTOR DATE SHEET

SCHEDULE OF TECHNICAL DATA

1. SERVICE	HOISTNG HIGH
2. MANUFACTURE	KUK DONG HOIST (주)
3. FRAME NUMBER	200M
4. RATED POWER	13 KW x 6 P
5. RATED VOLTAGE AND FREQUENCY	480 V 60 Hz
6. MOTOR TYPE	SQUIRREL CAGE ROTOR TYPE
7. SERVICE FACTOR AND RATting	1.0 , 30 MIN
8. LOCATION AND INSULATION CLASS	INDOOR ,OUTDOOR, B CLASS
9. DESIGN TRMPERATURE RISE(BY RESISTANCE)	80 deg °C
10. FULL LOAD CURRENT	24.3 A
11. LOCKED MOTOR CURRENT	146.1 A
12. MINIMUM STARTING VOLTAGE	436 V
13. EFFICIENCY AT 100% RATED LOAD	83.5 %
14. POWER FACTOR AT 100% RATED LOAD	77 %
15. SLIP (FULL LOAD)	5.8 %
16. FULL LOAD TORQUE	20.18 Kg.m
17. SITE ALTTITUDE(UNDER)	1000 m
18. ENCLOSURE & COOLING METHOD	T E N V
19. TYPE OF BEARING	PL 6311zz OPE 6310zz
20. MOUNTING	HORIZONTAL
21. MAXIMUM AMBIENT TEMPURE	40 °C
22. BEARING LUBRICATION	GREASE
23. MOTOR NET WEIGHT (ABOUT)	205 Kg
24. SERIAL NO	

THREE PHASE INDUCTION MOTOR DATE SHEET

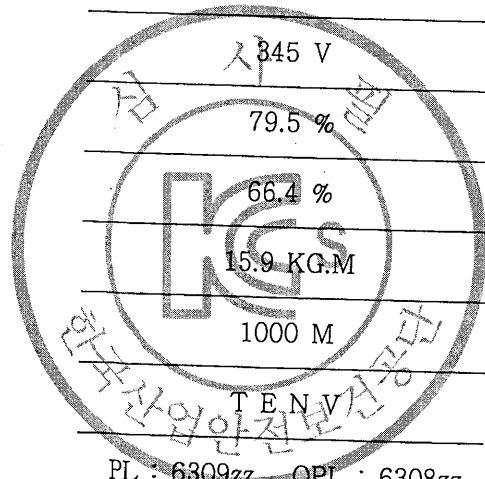
SCHEDULE OF TECHNICAL DATA

1. SERVICE	HOISTING
2. MANUFACTURE	극동 호이스트 (주)
3. FRAME NUMBER	160 L
4. RATED POWER	9.0 KW x 8 P
5. RATED VOLTAGE AND FREQUENCY	220 V 60 Hz
6. MOTOR TYPE	SQUIRREL CAGE ROTOR TYPE
7. SERVICE FACTOR AND RATting	1.0 , 30 MIN
8. LOCATION AND INSULATION CLASS	INDOOR, OUTDOOR, B CLASS
9. DESIGN TRMPERATURE RISE(BY RESISTANCE)	80 ℃
10. FULL LOAD SPEED	846 RPM
11. FULL LOAD CURRENT	45.0 A
12. STARTING CURRENT AT RATED VOLTAGE	213 A
13. MINIMUM STARTING VOLTAGE	200 V
14. EFFICIENCY AT 100% RATED LOAD	79.5 %
15. POWER FACTOR AT 100% RATED LOAD	66.4 %
16. STARTING TORQUE	15.9 KG.M
17. SITE ALTTITUDE(UNDER)	1000 M
18. ENCLOSURE & COOLING METHOD	TEN V
19. TYPE OF BEARING	PL : 6309zz OPL : 6308zz
20. MOUNTING	HORIZONTAL
21. MAXIMUM AMBIENT TEMPURE	40 ℃
22. BEARING LUBRICATION	GREASE
23. STARTING METHOD	FULL VOLTAGE

THREE PHASE INDUCTION MOTOR DATE SHEET

SCHEDULE OF TECHNICAL DATA

1. SERVICE	HOISTING
2. MANUFACTURE	극동 호이스트 (주)
3. FRAME NUMBER	160 L
4. RATED POWER	9.0 KW x 8 P
5. RATED VOLTAGE AND FREQUENCY	380 V 60 Hz
6. MOTOR TYPE	SQUIRREL CAGE ROTOR TYPE
7. SERVICE FACTOR AND RATting	1.0 , 30 MIN
8. LOCATION AND INSULATION CLASS	INDOOR, OUTDOOR, B CLASS
9. DESIGN TRMPERATURE RISE(BY RESISTANCE)	80 ℃
10. FULL LOAD SPEED	846 RPM
11. FULL LOAD CURRENT	26.0 A
12. STARTING CURRENT AT RATED VOLTAGE	122.9 A
13. MINIMUM STARTING VOLTAGE	345 V
14. EFFICIENCY AT 100% RATED LOAD	79.5 %
15. POWER FACTOR AT 100% RATED LOAD	66.4 %
16. STARTING TORQUE	15.9 KG.M
17. SITE ALTITUDE(UNDER)	1000 M
18. ENCLOSURE & COOLING METHOD	TENV
19. TYPE OF BEARING	PL : 6309zz OPL : 6308zz
20. MOUNTING	HORIZONTAL
21. MAXIMUM AMBIENT TEMPURE	40 ℃
22. BEARING LUBRICATION	GREASE
23. STARTING METHOD	FULL VOLTAGE



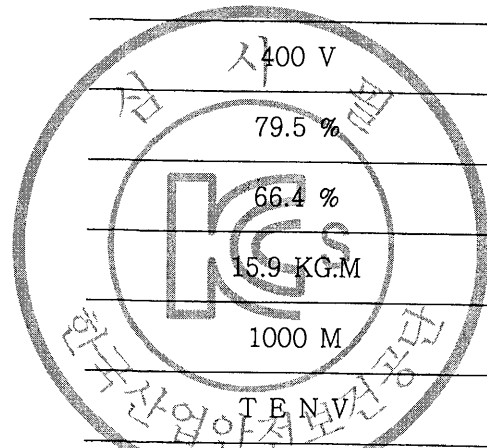
작업재해예방

안전보건공단

THREE PHASE INDUCTION MOTOR DATE SHEET

SCHEDULE OF TECHNICAL DATA

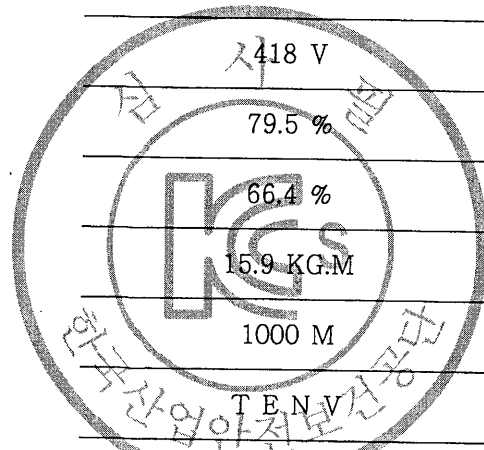
1. SERVICE	HOISTING
2. MANUFACTURE	극동 호이스트 (주)
3. FRAME NUMBER	160 L
4. RATED POWER	9.0 KW x 8 P
5. RATED VOLTAGE AND FREQUENCY	440 V 60 Hz
6. MOTOR TYPE	SQUIRREL CAGE ROTOR TYPE
7. SERVICE FACTOR AND RATting	1.0 , 30 MIN
8. LOCATION AND INSULATION CLASS	INDOOR, OUTDOOR, B CLASS
9. DESIGN TRMPERATURE RISE(BY RESISTANCE)	80 ℃
10. FULL LOAD SPEED	846 RPM
11. FULL LOAD CURRENT	22.5 A
12. STARTING CURRENT AT RATED VOLTAGE	106.0 A
13. MINIMUM STARTING VOLTAGE	사 400 V
14. EFFICIENCY AT 100% RATED LOAD	79.5 %
15. POWER FACTOR AT 100% RATED LOAD	66.4 %
16. STARTING TORQUE	15.9 KG·M
17. SITE ALTTITUDE(UNDER)	1000 M
18. ENCLOSURE & COOLING METHOD	T E N V
19. TYPE OF BEARING	PL : 6309zz OPL : 6308zz
20. MOUNTING	H O R I Z O N T A L
21. MAXIMUM AMBIENT TEMPURE	40 ℃
22. BEARING LUBRICATION	G R E A S E
23. STARTING METHOD	F U L L V O L T A G E



THREE PHASE INDUCTION MOTOR DATE SHEET

SCHEDULE OF TECHNICAL DATA

1. SERVICE	HOISTING
2. MANUFACTURE	극동 호이스트 (주)
3. FRAME NUMBER	160 L
4. RATED POWER	9.0 KW x 8 P
5. RATED VOLTAGE AND FREQUENCY	460 V 60 Hz
6. MOTOR TYPE	SQUIRREL CAGE ROTOR TYPE
7. SERVICE FACTOR AND RATting	1.0 , 30 MIN
8. LOCATION AND INSULATION CLASS	INDOOR, OUTDOOR, B CLASS
9. DESIGN TRMPERATURE RISE(BY RESISTANCE)	80 ℃
10. FULL LOAD SPEED	846 RPM
11. FULL LOAD CURRENT	21.5 A
12. STARTING CURRENT AT RATED VOLTAGE	102.2 A
13. MINIMUM STARTING VOLTAGE	418 V
14. EFFICIENCY AT 100% RATED LOAD	79.5 %
15. POWER FACTOR AT 100% RATED LOAD	66.4 %
16. STARTING TORQUE	15.9 KG·M
17. SITE ALTTITUDE(UNDER)	1000 M
18. ENCLOSURE & COOLING METHOD	TENV
19. TYPE OF BEARING	PL : 6309zz OPL : 6308zz
20. MOUNTING	HORIZONTAL
21. MAXIMUM AMBIENT TEMPURE	40 ℃
22. BEARING LUBRICATION	GREASE
23. STARTING METHOD	FULL VOLTAGE



THREE PHASE INDUCTION MOTOR DATE SHEET

SCHEDULE OF TECHNICAL DATA

1. SERVICE	HOISTING
2. MANUFACTURE	극동 호이스트 (주)
3. FRAME NUMBER	160 L
4. RATED POWER	9.0 KW x 8 P
5. RATED VOLTAGE AND FREQUENCY	480 V 60 Hz
6. MOTOR TYPE	SQUIRREL CAGE ROTOR TYPE
7. SERVICE FACTOR AND RATting	1.0 , 30 MIN
8. LOCATION AND INSULATION CLASS	INDOOR, OUTDOOR, B CLASS
9. DESIGN TRMPERATURE RISE(BY RESISTANCE)	80 ℃
10. FULL LOAD SPEED	846 RPM
11. FULL LOAD CURRENT	20.6 A
12. STARTING CURRENT AT RATED VOLTAGE	97.97 A
13. MINIMUM STARTING VOLTAGE	436 V
14. EFFICIENCY AT 100% RATED LOAD	79.5 %
15. POWER FACTOR AT 100% RATED LOAD	66.4 %
16. STARTING TORQUE	15.9 KG.M
17. SITE ALTITUDE(UNDER)	1000 M
18. ENCLOSURE & COOLING METHOD	TEN V
19. TYPE OF BEARING	PL : 6309zz OPL : 6308zz
20. MOUNTING	HORIZONTAL
21. MAXIMUM AMBIENT TEMPURE	40 ℃
22. BEARING LUBRICATION	GREASE
23. STARTING METHOD	FULL VOLTAGE

THREE PHASE INDUCTION MOTOR DATE SHEET

SCHEDULE OF TECHNICAL DATA

1. SERVICE	HOISTING
2. MANUFACTURE	극동 호이스트 (주)
3. FRAME NUMBER	200 M
4. RATED POWER	6.0 KW x 12 P
5. RATED VOLTAGE AND FREQUENCY	220 V 60 Hz
6. MOTOR TYPE	SQUIRREL CAGE ROTOR TYPE
7. SERVICE FACTOR AND RATting	1.0 , 30 MIN
8. LOCATION AND INSULATION CLASS	INDOOR, OUTDOOR, B CLASS
9. DESIGN TRMPERATURE RISE(BY RESISTANCE)	80 ℃
10. FULL LOAD SPEED	564 RPM
11. FULL LOAD CURRENT	45.4 A
12. STARTING CURRENT AT RATED VOLTAGE	192.8 A
13. MINIMUM STARTING VOLTAGE	200 V
14. EFFICIENCY AT 100% RATED LOAD	76.0 %
15. POWER FACTOR AT 100% RATED LOAD	45.5 %
16. STARTING TORQUE	15.9 KG.M
17. SITE ALTITUDE(UNDER)	1000 M
18. ENCLOSURE & COOLING METHOD	TEN.V
19. TYPE OF BEARING	PL : 6311zz OPL : 6310zz
20. MOUNTING	HORIZONTAL
21. MAXIMUM AMBIENT TEMPURE	40 ℃
22. BEARING LUBRICATION	GREASE
23. STARTING METHOD	FULL VOLTAGE

THREE PHASE INDUCTION MOTOR DATE SHEET

SCHEDULE OF TECHNICAL DATA

1. SERVICE	HOISTING
2. MANUFACTURE	극동 호이스트 (주)
3. FRAME NUMBER	200 M
4. RATED POWER	6.0 KW x 12 P
5. RATED VOLTAGE AND FREQUENCY	380 V 60 Hz
6. MOTOR TYPE	SQUIRREL CAGE ROTOR TYPE
7. SERVICE FACTOR AND RATting	1 . 0 , 30 MIN
8. LOCATION AND INSULATION CLASS	INDOOR, OUTDOOR, B CLASS
9. DESIGN TRMPERATURE RISE(BY RESISTANCE)	80 ℃
10. FULL LOAD SPEED	564 RPM
11. FULL LOAD CURRENT	26.3 A
12. STARTING CURRENT AT RATED VOLTAGE	11.62 A
13. MINIMUM STARTING VOLTAGE	345 V
14. EFFICIENCY AT 100% RATED LOAD	76.0 %
15. POWER FACTOR AT 100% RATED LOAD	45.5 %
16. STARTING TORQUE	15.9 KG.M
17. SITE ALTTITUDE(UNDER)	1000 M
18. ENCLOSURE & COOLING METHOD	T E N V
19. TYPE OF BEARING	PL : 6311zz OPL : 6310zz
20. MOUNTING	H O R I Z O N T A L
21. MAXIMUM AMBIENT TEMPURE	40 ℃
22. BEARING LUBRICATION	G R E A S E
23. STARTING METHOD	F U L L V O L T A G E

THREE PHASE INDUCTION MOTOR DATE SHEET

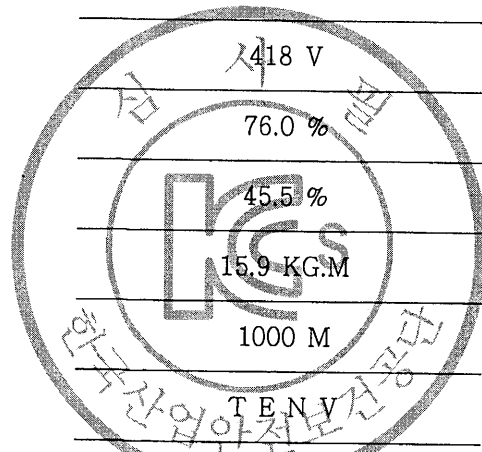
SCHEDULE OF TECHNICAL DATA

1. SERVICE	HOISTING
2. MANUFACTURE	극동 호이스트 (주)
3. FRAME NUMBER	200 M
4. RATED POWER	6.0 KW x 12 P
5. RATED VOLTAGE AND FREQUENCY	440 V 60 Hz
6. MOTOR TYPE	SQUIRREL CAGE ROTOR TYPE
7. SERVICE FACTOR AND RATting	1.0 , 30 MIN
8. LOCATION AND INSULATION CLASS	INDOOR, OUTDOOR, B CLASS
9. DESIGN TRMPERATURE RISE(BY RESISTANCE)	80 ℃
10. FULL LOAD SPEED	564 RPM
11. FULL LOAD CURRENT	22.7 A
12. STARTING CURRENT AT RATED VOLTAGE	96.4 A
13. MINIMUM STARTING VOLTAGE	400 V
14. EFFICIENCY AT 100% RATED LOAD	76.0 %
15. POWER FACTOR AT 100% RATED LOAD	45.5 %
16. STARTING TORQUE	15.9 KG.M
17. SITE ALTTITUDE(UNDER)	1000 M
18. ENCLOSURE & COOLING METHOD	TENV
19. TYPE OF BEARING	PL : 6311zz OPL : 6310zz
20. MOUNTING	HORIZONTAL
21. MAXIMUM AMBIENT TEMPURE	40 ℃
22. BEARING LUBRICATION	GREASE
23. STARTING METHOD	FULL VOLTAGE

THREE PHASE INDUCTION MOTOR DATE SHEET

SCHEDULE OF TECHNICAL DATA

1. SERVICE	HOISTING
2. MANUFACTURE	극동 호이스트 (주)
3. FRAME NUMBER	200 M
4. RATED POWER	6.0 KW x 12 P
5. RATED VOLTAGE AND FREQUENCY	460 V 60 Hz
6. MOTOR TYPE	SQUIRREL CAGE ROTOR TYPE
7. SERVICE FACTOR AND RATting	1.0 , 30 MIN
8. LOCATION AND INSULATION CLASS	INDOOR, OUTDOOR, B CLASS
9. DESIGN TRMPERATURE RISE(BY RESISTANCE)	80 ℃
10. FULL LOAD SPEED	564 RPM
11. FULL LOAD CURRENT	21.9 A
12. STARTING CURRENT AT RATED VOLTAGE	92.12 A
13. MINIMUM STARTING VOLTAGE	418 V
14. EFFICIENCY AT 100% RATED LOAD	76.0 %
15. POWER FACTOR AT 100% RATED LOAD	45.5 %
16. STARTING TORQUE	15.9 KG.M
17. SITE ALTITUDE(UNDER)	1000 M
18. ENCLOSURE & COOLING METHOD	TENV
19. TYPE OF BEARING	PL : 6311zz OPL : 6310zz
20. MOUNTING	HORIZONTAL
21. MAXIMUM AMBIENT TEMPURE	40 ℃
22. BEARING LUBRICATION	GREASE
23. STARTING METHOD	FULL VOLTAGE



THREE PHASE INDUCTION MOTOR DATE SHEET

SCHEDULE OF TECHNICAL DATA

1. SERVICE	HOISTING
2. MANUFACTURE	극동 호이스트 (주)
3. FRAME NUMBER	200 M
4. RATED POWER	6.0 KW x 12 P
5. RATED VOLTAGE AND FREQUENCY	480 V 60 Hz
6. MOTOR TYPE	SQUIRREL CAGE ROTOR TYPE
7. SERVICE FACTOR AND RATting	1.0 , 30 MIN
8. LOCATION AND INSULATION CLASS	INDOOR, OUTDOOR, B CLASS
9. DESIGN TRMPERATURE RISE(BY RESISTANCE)	80 ℃
10. FULL LOAD SPÉED	564 RPM
11. FULL LOAD CURRENT	21.2 A
12. STARTING CURRENT AT RATED VOLTAGE	88.36 A
13. MINIMUM STARTING VOLTAGE	사 436 V
14. EFFICIENCY AT 100% RATED LOAD	76.0 %
15. POWER FACTOR AT 100% RATED LOAD	45.5 %
16. STARTING TORQUE	15.9 KG.M
17. SITE ALTTITUDE(UNDER)	1000 M
18. ENCLOSURE & COOLING METHOD	TEN V
19. TYPE OF BEARING	PL : 6311zz OPL : 6310zz
20. MOUNTING	HORIZONTAL
21. MAXIMUM AMBIENT TEMPURE	40 ℃
22. BEARING LUBRICATION	GREASE
23. STARTING METHOD	FULL VOLTAGE

THREE PHASE INDUCTION MOTOR DATE SHEET

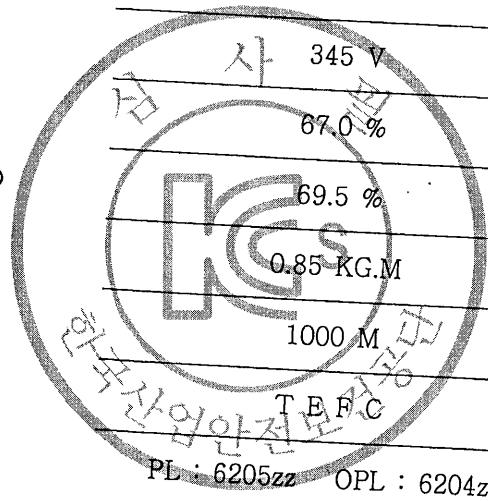
SCHEDULE OF TECHNICAL DATA

1. SERVICE	TRAVERSING
2. MANUFACTURE	극동 호이스트 (주)
3. FRAME NUMBER	90 S
4. RATED POWER	0.75 KW x 4 P
5. RATED VOLTAGE AND FREQUENCY	220 V 60 Hz
6. MOTOR TYPE	SQUIRREL CAGE ROTOR TYPE
7. SERVICE FACTOR AND RATting	1 . 0 , 30 MIN
8. LOCATION AND INSULATION CLASS	INDOOR, OUTDOOR, B CLASS
9. DESIGN TRMPERATURE RISE(BY RESISTANCE)	80 ℃
10. FULL LOAD SPEED	1764 RPM
11. FULL LOAD CURRENT	4.1 A
12. STARTING CURRENT AT RATED VOLTAGE	22.1 A
13. MINIMUM STARTING VOLTAGE	200 V
14. EFFICIENCY AT 100% RATED LOAD	66.0 %
15. POWER FACTOR AT 100% RATED LOAD	73.5 %
16. STARTING TORQUE	1.02 KG.M
17. SITE ALTITUDE(UNDER)	1000 M
18. ENCLOSURE & COOLING METHOD	TEN V
19. TYPE OF BEARING	PL : 6205zz OPL : 6204zz
20. MOUNTING	HORIZONTAL
21. MAXIMUM AMBIENT TEMPURE	40 ℃
22. BEARING LUBRICATION	GREASE
23. STARTING METHOD	FULL VOLTAGE

THREE PHASE INDUCTION MOTOR DATE SHEET

SCHEDULE OF TECHNICAL DATA

1. SERVICE	TRAVELLING
2. MANUFACTURE	극동 호이스트 (주)
3. FRAME NUMBER	90 S
4. RATED POWER	0.75 KW x 4 P
5. RATED VOLTAGE AND FREQUENCY	380 V 60 Hz
6. MOTOR TYPE	SQUIRREL CAGE ROTOR TYPE
7. SERVICE FACTOR AND RATTING	1.0 , 30 MIN
8. LOCATION AND INSULATION CLASS	INDOOR, OUTDOOR, B CLASS
9. DESIGN TRMPERATURE RISE(BY RESISTANCE)	80 ℃
10. FULL LOAD SPEED	1764 RPM
11. FULL LOAD CURRENT	2.4 A
12. STARTING CURRENT AT RATED VOLTAGE	13.5 A
13. MINIMUM STARTING VOLTAGE	345 V
14. EFFICIENCY AT 100% RATED LOAD	67.0 %
15. POWER FACTOR AT 100% RATED LOAD	69.5 %
16. STARTING TORQUE	0.85-KG.M
17. SITE ALTITUDE(UNDER)	1000 M
18. ENCLOSURE & COOLING METHOD	TEFC
19. TYPE OF BEARING	PL : 6205zz OPL : 6204zz
20. MOUNTING	HORIZONTAL
21. MAXIMUM AMBIENT TEMPURE	40 ℃
22. BEARING LUBRICATION	GREASE
23. STARTING METHOD	FULL VOLTAGE



안전재해예방

안전보건공단

KOREA OCCUPATIONAL SAFETY & HEALTH AGENCY

THREE PHASE INDUCTION MOTOR DATE SHEET

SCHEDULE OF TECHNICAL DATA

1. SERVICE	TRAVERSING
2. MANUFACTURE	극동 호이스트 (주)
3. FRAME NUMBER	90 S
4. RATED POWER	0.75 KW x 4 P
5. RATED VOLTAGE AND FREQUENCY	440 V 60 Hz
6. MOTOR TYPE	SQUIRREL CAGE ROTOR TYPE
7. SERVICE FACTOR AND RATTING	1.0 , 30 MIN
8. LOCATION AND INSULATION CLASS	INDOOR, OUTDOOR, B CLASS
9. DESIGN TRMPERATURE RISE(BY RESISTANCE)	80 ℃
10. FULL LOAD SPEED	1764 RPM
11. FULL LOAD CURRENT	2.0 A
12. STARTING CURRENT AT RATED VOLTAGE	11.1 A
13. MINIMUM STARTING VOLTAGE	시 400 V
14. EFFICIENCY AT 100% RATED LOAD	67.0 %
15. POWER FACTOR AT 100% RATED LOAD	73.5 %
16. STARTING TORQUE	1.02-KG.M
17. SITE ALTTITUDE(UNDER)	1000 M
18. ENCLOSURE & COOLING METHOD	TENV
19. TYPE OF BEARING	PL : 6205zz OPL : 6204zz
20. MOUNTING	HORIZONTAL
21. MAXIMUM AMBIENT TEMPURE	40 ℃
22. BEARING LUBRICATION	GREASE
23. STARTING METHOD	FULL VOLTAGE

THREE PHASE INDUCTION MOTOR DATE SHEET

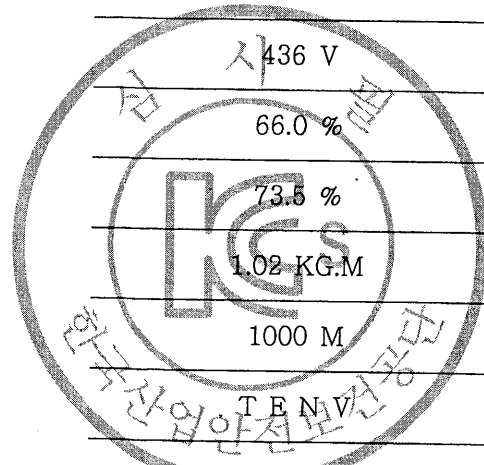
SCHEDULE OF TECHNICAL DATA

1. SERVICE	TRAVERSING
2. MANUFACTURE	극동 호이스트 (주)
3. FRAME NUMBER	90 S
4. RATED POWER	0.75 KW x 4 P
5. RATED VOLTAGE AND FREQUENCY	460 V 60 Hz
6. MOTOR TYPE	SQUIRREL CAGE ROTOR TYPE
7. SERVICE FACTOR AND RATting	1.0 , 30 MIN
8. LOCATION AND INSULATION CLASS	INDOOR, OUTDOOR, B CLASS
9. DESIGN TRMPERATURE RISE(BY RESISTANCE)	80 ℃
10. FULL LOAD SPEED	1764 RPM
11. FULL LOAD CURRENT	2.0 A
12. STARTING CURRENT AT RATED VOLTAGE	10.6 A
13. MINIMUM STARTING VOLTAGE	418 V
14. EFFICIENCY AT 100% RATED LOAD	66.0 %
15. POWER FACTOR AT 100% RATED LOAD	73.5 %
16. STARTING TORQUE	1.02 KG·M
17. SITE ALTITUDE(UNDER)	1000 M
18. ENCLOSURE & COOLING METHOD	TEN V
19. TYPE OF BEARING	PL : 6205zz OPL : 6204zz
20. MOUNTING	HORIZONTAL
21. MAXIMUM AMBIENT TEMPURE	40 ℃
22. BEARING LUBRICATION	GREASE
23. STARTING METHOD	FULL VOLTAGE

THREE PHASE INDUCTION MOTOR DATE SHEET

SCHEDULE OF TECHNICAL DATA

1. SERVICE	TRAVERSING
2. MANUFACTURE	극동 호이스트 (주)
3. FRAME NUMBER	90 S
4. RATED POWER	0.75 KW x 4 P
5. RATED VOLTAGE AND FREQUENCY	480 V 60 Hz
6. MOTOR TYPE	SQUIRREL CAGE ROTOR TYPE
7. SERVICE FACTOR AND RATting	1.0 , 30 MIN
8. LOCATION AND INSULATION CLASS	INDOOR, OUTDOOR, B CLASS
9. DESIGN TRMPERATURE RISE(BY RESISTANCE)	80 ℃
10. FULL LOAD SPEED	1764 RPM
11. FULL LOAD CURRENT	1.9 A
12. STARTING CURRENT AT RATED VOLTAGE	10.2 A
13. MINIMUM STARTING VOLTAGE	436 V
14. EFFICIENCY AT 100% RATED LOAD	66.0 %
15. POWER FACTOR AT 100% RATED LOAD	73.5 %
16. STARTING TORQUE	1.02 KG.M
17. SITE ALTTITUDE(UNDER)	1000 M
18. ENCLOSURE & COOLING METHOD	TENV
19. TYPE OF BEARING	PL : 6205zz OPL : 6204zz
20. MOUNTING	HORIZONTAL
21. MAXIMUM AMBIENT TEMPURE	40 ℃
22. BEARING LUBRICATION	GREASE
23. STARTING METHOD	FULL VOLTAGE



THREE PHASE INDUCTION MOTOR DATE SHEET

SCHEDULE OF TECHNICAL DATA

1. SERVICE	TRAVERSING
2. MANUFACTURE	극동 호이스트 (주)
3. FRAME NUMBER	90 S
4. RATED POWER	0.5 KW x 6 P
5. RATED VOLTAGE AND FREQUENCY	220 V 60 Hz
6. MOTOR TYPE	SQUIRREL CAGE ROTOR TYPE
7. SERVICE FACTOR AND RATTING	1 . 0 , 30 MIN
8. LOCATION AND INSULATION CLASS	INDOOR, OUTDOOR, B CLASS
9. DESIGN TRMPERATURE RISE(BY RESISTANCE)	80 ℃
10. FULL LOAD SPEED	1176 RPM
11. FULL LOAD CURRENT	3.4 A
12. STARTING CURRENT AT RATED VOLTAGE	16.4 A
13. MINIMUM STARTING VOLTAGE	200 V
14. EFFICIENCY AT 100% RATED LOAD	64.0 %
15. POWER FACTOR AT 100% RATED LOAD	59.5 %
16. STARTING TORQUE	0.80 KG·M
17. SITE ALTITUDE(UNDER)	1000 M
18. ENCLOSURE & COOLING METHOD	T E N V
19. TYPE OF BEARING	PL : 6205zz OPL : 6204zz
20. MOUNTING	H O R I Z O N T A L
21. MAXIMUM AMBIENT TEMPURE	40 ℃
22. BEARING LUBRICATION	G R E A S E
23. STARTING METHOD	F U L L V O L T A G E

THREE PHASE INDUCTION MOTOR DATE SHEET

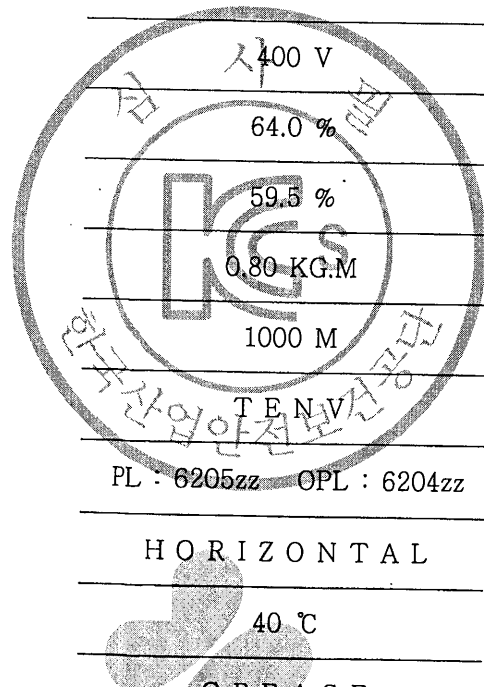
SCHEDULE OF TECHNICAL DATA

1. SERVICE	TRAVERSING
2. MANUFACTURE	극동 호이스트 (주)
3. FRAME NUMBER	90 S
4. RATED POWER	0.5 KW x 6 P
5. RATED VOLTAGE AND FREQUENCY	380 V 60 Hz
6. MOTOR TYPE	SQUIRREL CAGE ROTOR TYPE
7. SERVICE FACTOR AND RATting	1.0 , 30 MIN
8. LOCATION AND INSULATION CLASS	INDOOR, OUTDOOR, B CLASS
9. DESIGN TRMPERATURE RISE(BY RESISTANCE)	80 ℃
10. FULL LOAD SPEED	1176 RPM
11. FULL LOAD CURRENT	2.0 A
12. STARTING CURRENT AT RATED VOLTAGE	9.5 A
13. MINIMUM STARTING VOLTAGE	345 V
14. EFFICIENCY AT 100% RATED LOAD	64.0 %
15. POWER FACTOR AT 100% RATED LOAD	59.5 %
16. STARTING TORQUE	0.80 KG·M
17. SITE ALTTITUDE(UNDER)	1000 M
18. ENCLOSURE & COOLING METHOD	TENV
19. TYPE OF BEARING	PL : 6205zz OPL : 6204zz
20. MOUNTING	HORIZONTAL
21. MAXIMUM AMBIENT TEMPURE	40 ℃
22. BEARING LUBRICATION	GREASE
23. STARTING METHOD	FULL VOLTAGE

THREE PHASE INDUCTION MOTOR DATE SHEET

SCHEDULE OF TECHNICAL DATA

1. SERVICE	TRAVERSING
2. MANUFACTURE	극동 호이스트 (주)
3. FRAME NUMBER	90 S
4. RATED POWER	0.5 KW x 6 P
5. RATED VOLTAGE AND FREQUENCY	440 V 60 Hz
6. MOTOR TYPE	SQUIRREL CAGE ROTOR TYPE
7. SERVICE FACTOR AND RATting	1.0 , 30 MIN
8. LOCATION AND INSULATION CLASS	INDOOR, OUTDOOR, B CLASS
9. DESIGN TRMPERATURE RISE(BY RESISTANCE)	80 ℃
10. FULL LOAD SPEED	1176 RPM
11. FULL LOAD CURRENT	1.7 A
12. STARTING CURRENT AT RATED VOLTAGE	8.2 A
13. MINIMUM STARTING VOLTAGE	400 V
14. EFFICIENCY AT 100% RATED LOAD	64.0 %
15. POWER FACTOR AT 100% RATED LOAD	59.5 %
16. STARTING TORQUE	0.80 KG.M
17. SITE ALTTITUDE(UNDER)	1000 M
18. ENCLOSURE & COOLING METHOD	TEN V
19. TYPE OF BEARING	PL : 6205zz OPL : 6204zz
20. MOUNTING	HORIZONTAL
21. MAXIMUM AMBIENT TEMPURE	40 ℃
22. BEARING LUBRICATION	GREASE
23. STARTING METHOD	FULL VOLTAGE



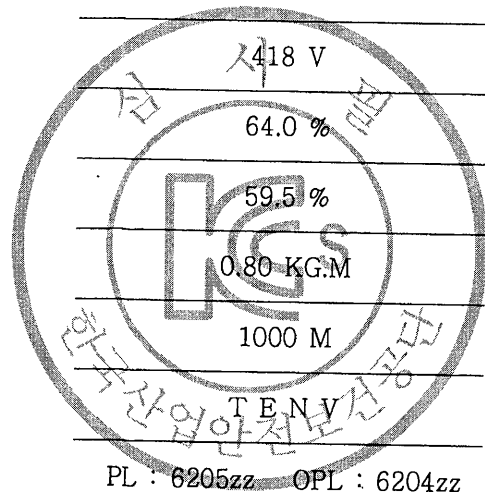
산업재해예방

안전보건공단

THREE PHASE INDUCTION MOTOR DATE SHEET

SCHEDULE OF TECHNICAL DATA

1. SERVICE	TRAVERSING
2. MANUFACTURE	극동 호이스트 (주)
3. FRAME NUMBER	90 S
4. RATED POWER	0.5 KW x 6 P
5. RATED VOLTAGE AND FREQUENCY	460 V 60 Hz
6. MOTOR TYPE	SQUIRREL CAGE ROTOR TYPE
7. SERVICE FACTOR AND RATting	1.0 , 30 MIN
8. LOCATION AND INSULATION CLASS	INDOOR, OUTDOOR, B CLASS
9. DESIGN TRMPERATURE RISE(BY RESISTANCE)	80 ℃
10. FULL LOAD SPEED	1176 RPM
11. FULL LOAD CURRENT	1.7 A
12. STARTING CURRENT AT RATED VOLTAGE	7.9 A
13. MINIMUM STARTING VOLTAGE	418 V
14. EFFICIENCY AT 100% RATED LOAD	64.0 %
15. POWER FACTOR AT 100% RATED LOAD	59.5 %
16. STARTING TORQUE	0.80 KG.M
17. SITE ALTITUDE(UNDER)	1000 M
18. ENCLOSURE & COOLING METHOD	TENV
19. TYPE OF BEARING	PL : 6205zz OPL : 6204zz
20. MOUNTING	HORIZONTAL
21. MAXIMUM AMBIENT TEMPURE	40 ℃
22. BEARING LUBRICATION	GREASE
23. STARTING METHOD	FULL VOLTAGE



THREE PHASE INDUCTION MOTOR DATE SHEET

SCHEDULE OF TECHNICAL DATA

1. SERVICE	TRAVERSING
2. MANUFACTURE	극동 호이스트 (주)
3. FRAME NUMBER	90 S
4. RATED POWER	0.5 KW x 6 P
5. RATED VOLTAGE AND FREQUENCY	480 V 60 Hz
6. MOTOR TYPE	SQUIRREL CAGE ROTOR TYPE
7. SERVICE FACTOR AND RATTING	1.0 , 30 MIN
8. LOCATION AND INSULATION CLASS	INDOOR, OUTDOOR, B CLASS
9. DESIGN TRMPERATURE RISE(BY RESISTANCE)	80 ℃
10. FULL LOAD SPEED	1176 RPM
11. FULL LOAD CURRENT	1.6 A
12. STARTING CURRENT AT RATED VOLTAGE	7.5 A
13. MINIMUM STARTING VOLTAGE	436 V
14. EFFICIENCY AT 100% RATED LOAD	64.0 %
15. POWER FACTOR AT 100% RATED LOAD	59.5 %
16. STARTING TORQUE	0.80 KG.M
17. SITE ALTTITUDE(UNDER)	1000 M
18. ENCLOSURE & COOLING METHOD	TENV
19. TYPE OF BEARING	PL : 6205zz OPL : 6204zz
20. MOUNTING	HORIZONTAL
21. MAXIMUM AMBIENT TEMPURE	40 ℃
22. BEARING LUBRICATION	GREASE
23. STARTING METHOD	FULL VOLTAGE

THREE PHASE INDUCTION MOTOR DATE SHEET

SCHEDULE OF TECHNICAL DATA

1. SERVICE	TRAVERSING
2. MANUFACTURE	극동 호이스트 (주)
3. FRAME NUMBER	90 M
4. RATED POWER	0.8 / 0.4 KW x 4 / 8 P
5. RATED VOLTAGE AND FREQUENCY	220 V 60 Hz
6. MOTOR TYPE	SQUIRREL CAGE ROTOR TYPE
7. SERVICE FACTOR AND RATting	1.0 , 30 MIN
8. LOCATION AND INSULATION CLASS	INDOOR, OUTDOOR, B CLASS
9. DESIGN TRMPERATURE RISE(BY RESISTANCE)	80 ℃
10. FULL LOAD SPEED	1750 / 850 RPM
11. FULL LOAD CURRENT	4.8 / 4.25 A
12. LOCKED ROTOR CURRENT	14.2 / 13.6 A
13. MINIMUM STARTING VOLTAGE	200 V
14. EFFICIENCY AT 100% RATED LOAD	72.8 / 65.8 %
15. POWER FACTOR AT 100% RATED LOAD	82.3 / 75.0 %
16. FULL LOAD TORQUE	0.80 KG.M
17. SITE ALTTITUDE(UNDER)	1000 M
18. ENCLOSURE & COOLING METHOD	TEN V
19. TYPE OF BEARING	PL : 6205zz OPL : 6204zz
20. MOUNTING	HORIZONTAL
21. MAXIMUM AMBIENT TEMPURE	40 ℃
22. BEARING LUBRICATION	GREASE
23. STARTING METHOD	FULL VOLTAGE

THREE PHASE INDUCTION MOTOR DATE SHEET

SCHEDULE OF TECHNICAL DATA

1. SERVICE	TRAVERSING
2. MANUFACTURE	극동 호이스트 (주)
3. FRAME NUMBER	90 M
4. RATED POWER	0.8 / 0.4 KW x 4 / 8 P
5. RATED VOLTAGE AND FREQUENCY	380 V 60 Hz
6. MOTOR TYPE	SQUIRREL CAGE ROTOR TYPE
7. SERVICE FACTOR AND RATting	1.0 , 30 MIN
8. LOCATION AND INSULATION CLASS	INDOOR, OUTDOOR, B CLASS
9. DESIGN TRMPERATURE RISE(BY RESISTANCE)	80 ℃
10. FULL LOAD SPEED	1750 / 850 RPM
11. FULL LOAD CURRENT	2.78 / 2.63 A
12. LOCKED ROTOR CURRENT	9.2 / 6.3 A
13. MINIMUM STARTING VOLTAGE	345 V
14. EFFICIENCY AT 100% RATED LOAD	72.8 / 65.8 %
15. POWER FACTOR AT 100% RATED LOAD	82.3 / 75.0 %
16. FULL LOAD TORQUE	0.80 KG·M
17. SITE ALTITUDE(UNDER)	1000 M
18. ENCLOSURE & COOLING METHOD	TEN V
19. TYPE OF BEARING	PL : 6205zz OPL : 6204zz
20. MOUNTING	HORIZONTAL
21. MAXIMUM AMBIENT TEMPURE	40 ℃
22. BEARING LUBRICATION	GREASE
23. STARTING METHOD	FULL VOLTAGE

THREE PHASE INDUCTION MOTOR DATE SHEET

SCHEDULE OF TECHNICAL DATA

1. SERVICE	TRAVERSING
2. MANUFACTURE	극동 호이스트 (주)
3. FRAME NUMBER	90 M
4. RATED POWER	0.8 / 0.4 KW x 4 / 8 P
5. RATED VOLTAGE AND FREQUENCY	440 V 60 Hz
6. MOTOR TYPE	SQUIRREL CAGE ROTOR TYPE
7. SERVICE FACTOR AND RATting	1.0 , 30 MIN
8. LOCATION AND INSULATION CLASS	INDOOR, OUTDOOR, B CLASS
9. DESIGN TRMPERATURE RISE(BY RESISTANCE)	80 ℃
10. FULL LOAD SPEED	1750 / 850 RPM
11. FULL LOAD CURRENT	2.4 / 2.27 A
12. LOCKED ROTOR CURRENT	8.6 / 6.2 A
13. MINIMUM STARTING VOLTAGE	400 V
14. EFFICIENCY AT 100% RATED LOAD	72.8 / 65.8 %
15. POWER FACTOR AT 100% RATED LOAD	82.3 / 75.0 %
16. FULL LOAD TORQUE	0.80-KG·M
17. SITE ALTTITUDE(UNDER)	1000 M
18. ENCLOSURE & COOLING METHOD	TENV
19. TYPE OF BEARING	PL : 6205zz OPL : 6204zz
20. MOUNTING	HORIZONTAL
21. MAXIMUM AMBIENT TEMPURE	40 ℃
22. BEARING LUBRICATION	GREASE
23. STARTING METHOD	FULL VOLTAGE

THREE PHASE INDUCTION MOTOR DATE SHEET

SCHEDULE OF TECHNICAL DATA

1. SERVICE	TRAVERSING
2. MANUFACTURE	극동 호이스트 (주)
3. FRAME NUMBER	90 M
4. RATED POWER	0.8 / 0.4 KW x 4 / 8 P
5. RATED VOLTAGE AND FREQUENCY	460 V 60 Hz
6. MOTOR TYPE	SQUIRREL CAGE ROTOR TYPE
7. SERVICE FACTOR AND RATTING	1.0 , 30 MIN
8. LOCATION AND INSULATION CLASS	INDOOR, OUTDOOR, B CLASS
9. DESIGN TRMPERATURE RISE(BY RESISTANCE)	80 ℃
10. FULL LOAD SPEED	1750 / 850 RPM
11. FULL LOAD CURRENT	2.3 / 2.17 A
12. LOCKED ROTOR CURRENT	8.5 / 6.2 A
13. MINIMUM STARTING VOLTAGE	418 V
14. EFFICIENCY AT 100% RATED LOAD	72.8 / 65.8 %
15. POWER FACTOR AT 100% RATED LOAD	82.3 / 75.0 %
16. FULL LOAD TORQUE	0.80 KG.M
17. SITE ALTTITUDE(UNDER)	1000 M
18. ENCLOSURE & COOLING METHOD	TEN V
19. TYPE OF BEARING	PL : 6205zz OPL : 6204zz
20. MOUNTING	HORIZONTAL
21. MAXIMUM AMBIENT TEMPURE	40 ℃
22. BEARING LUBRICATION	GREASE
23. STARTING METHOD	FULL VOLTAGE

THREE PHASE INDUCTION MOTOR DATE SHEET

SCHEDULE OF TECHNICAL DATA

1. SERVICE	TRAVERSING
2. MANUFACTURE	극동 호이스트 (주)
3. FRAME NUMBER	90 M
4. RATED POWER	0.8 / 0.4 KW x 4 / 8 P
5. RATED VOLTAGE AND FREQUENCY	480 V 60 Hz
6. MOTOR TYPE	SQUIRREL CAGE ROTOR TYPE
7. SERVICE FACTOR AND RATting	1.0 , 30 MIN
8. LOCATION AND INSULATION CLASS	INDOOR, OUTDOOR, B CLASS
9. DESIGN TRMPERATURE RISE(BY RESISTANCE)	80 ℃
10. FULL LOAD SPEED	1750 / 850 RPM
11. FULL LOAD CURRENT	2.3 / 2.1 A
12. LOCKED ROTOR CURRENT	8.4 / 6.15 A
13. MINIMUM STARTING VOLTAGE	436 V
14. EFFICIENCY AT 100% RATED LOAD	72.8 / 65.8 %
15. POWER FACTOR AT 100% RATED LOAD	82.3 / 75.0 %
16. FULL LOAD TORQUE	0.80 KG.M
17. SITE ALTITUDE(UNDER)	1000 M
18. ENCLOSURE & COOLING METHOD	TENV
19. TYPE OF BEARING	PL : 6205zz OPL : 6204zz
20. MOUNTING	HORIZONTAL
21. MAXIMUM AMBIENT TEMPURE	40 ℃
22. BEARING LUBRICATION	GREASE
23. STARTING METHOD	FULL VOLTAGE

THREE PHASE INDUCTION MOTOR DATE SHEET

SCHEDULE OF TECHNICAL DATA

1. SERVICE	TRAVERSING
2. MANUFACTURE	극동호이스트 (주)
3. FRAME NUMBER	90 L
4. RATED POWER	0.5/025 KW x 6/12 P
5. RATED VOLTAGE AND FREQUENCY	220 V 60 Hz
6. MOTOR TYPE	SQUIRREL CAGE ROTOR TYPE
7. SERVICE FACTOR AND RATTING	1.0 , 30 MIN
8. LOCATION AND INSULATION CLASS	INDOOR, OUTDOOR, B CLASS
9. DESIGN TRMPERATURE RISE(BY RESISTANCE)	80 ℃
10. FULL LOAD SPEED	1050/460 RPM
11. FULL LOAD CURRENT	3.2/3.6 A
12. STARTING CURRENT AT RATED VOLTAGE	12.8/10.8 A
13. MINIMUM STARTING VOLTAGE	200 V
14. EFFICIENCY AT 100% RATED LOAD	57.5/35 %
15. POWER FACTOR AT 100% RATED LOAD	64.5/50 %
16. STARTING TORQUE	0.757/0.506 KG.M
17. SITE ALTTITUDE(UNDER)	1000 M
18. ENCLOSURE & COOLING METHOD	TENV
19. TYPE OF BEARING	PL : 6205zz OPL : 6204zz
20. MOUNTING	HORIZONTAL
21. MAXIMUM AMBIENT TEMPURE	40 ℃
22. BEARING LUBRICATION	GREASE
23. STARTING METHOD	FULL VOLTAGE

THREE PHASE INDUCTION MOTOR DATE SHEET

SCHEDULE OF TECHNICAL DATA

1. SERVICE	TRAVERSING
2. MANUFACTURE	극동호이스트 (주)
3. FRAME NUMBER	90 L
4. RATED POWER	0.5/025 KW x 6/12 P
5. RATED VOLTAGE AND FREQUENCY	480 V 60 Hz
6. MOTOR TYPE	SQUIRREL CAGE ROTOR TYPE
7. SERVICE FACTOR AND RATting	1.0 , 30 MIN
8. LOCATION AND INSULATION CLASS	INDOOR, OUTDOOR, B CLASS
9. DESIGN TRMPERATURE RISE(BY RESISTANCE)	80 °C
10. FULL LOAD SPEED	1050/460 RPM
11. FULL LOAD CURRENT	1.4/1.6 A
12. STARTING CURRENT AT RATED VOLTAGE	5.82/4.93 A
13. MINIMUM STARTING VOLTAGE	436 V
14. EFFICIENCY AT 100% RATED LOAD	57.5/35 %
15. POWER FACTOR AT 100% RATED LOAD	64.5/50 %
16. STARTING TORQUE	0.757/0.506 K.G.M
17. SITE ALTITUDE(UNDER)	1000 M
18. ENCLOSURE & COOLING METHOD	TENV
19. TYPE OF BEARING	PL : 6205zz OPL : 6204zz
20. MOUNTING	HORIZONTAL
21. MAXIMUM AMBIENT TEMPURE	40 °C
22. BEARING LUBRICATION	GREASE
23. STARTING METHOD	FULL VOLTAGE

THREE PHASE INDUCTION MOTOR DATE SHEET

SCHEDULE OF TECHNICAL DATA

1. SERVICE	TRAVERSING
2. MANUFACTURE	극동호이스트 (주)
3. FRAME NUMBER	90 L
4. RATED POWER	0.5/025 KW x 6/12 P
5. RATED VOLTAGE AND FREQUENCY	380 V 60 Hz
6. MOTOR TYPE	SQUIRREL CAGE ROTOR TYPE
7. SERVICE FACTOR AND RATting	1.0 , 30 MIN
8. LOCATION AND INSULATION CLASS	INDOOR, OUTDOOR, B CLASS
9. DESIGN TRMPERATURE RISE(BY RESISTANCE)	80 ℃
10. FULL LOAD SPEED	1050/460 RPM
11. FULL LOAD CURRENT	1.85/2.08 A
12. STARTING CURRENT AT RATED VOLTAGE	7.41/6.25 A
13. MINIMUM STARTING VOLTAGE	345 V
14. EFFICIENCY AT 100% RATED LOAD	57.5/35 %
15. POWER FACTOR AT 100% RATED LOAD	64.5/50 %
16. STARTING TORQUE	0.757/0.506 KGM
17. SITE ALTTITUDE(UNDER)	1000 M
18. ENCLOSURE & COOLING METHOD	TENV
19. TYPE OF BEARING	PL : 6205zz OPL : 6204zz
20. MOUNTING	HORIZONTAL
21. MAXIMUM AMBIENT TEMPURE	40 ℃
22. BEARING LUBRICATION	GREASE
23. STARTING METHOD	FULL VOLTAGE

THREE PHASE INDUCTION MOTOR DATE SHEET

SCHEDULE OF TECHNICAL DATA

1. SERVICE	TRAVERSING
2. MANUFACTURE	극동호이스트 (주)
3. FRAME NUMBER	90 L
4. RATED POWER	0.5/025 KW x 6/12 P
5. RATED VOLTAGE AND FREQUENCY	440 V 60 Hz
6. MOTOR TYPE	SQUIRREL CAGE ROTOR TYPE
7. SERVICE FACTOR AND RATting	1.0 , 30 MIN
8. LOCATION AND INSULATION CLASS	INDOOR, OUTDOOR, B CLASS
9. DESIGN TRMPERATURE RISE(BY RESISTANCE)	80 ℃
10. FULL LOAD SPEED	1050/460 RPM
11. FULL LOAD CURRENT	1.6/1.8 A
12. STARTING CURRENT AT RATED VOLTAGE	6.4/5.4 A
13. MINIMUM STARTING VOLTAGE	400 V
14. EFFICIENCY AT 100% RATED LOAD	57.5/35 %
15. POWER FACTOR AT 100% RATED LOAD	64.5/50 %
16. STARTING TORQUE	0.757/0.506 KG.M
17. SITE ALTITUDE(UNDER)	1000 M
18. ENCLOSURE & COOLING METHOD	T E N V
19. TYPE OF BEARING	PL : 6205zz OPL : 6204zz
20. MOUNTING	HORIZONTAL
21. MAXIMUM AMBIENT TEMPURE	40 ℃
22. BEARING LUBRICATION	GREASE
23. STARTING METHOD	FULL VOLTAGE

THREE PHASE INDUCTION MOTOR DATE SHEET

SCHEDULE OF TECHNICAL DATA

1. SERVICE	TRAVERSING
2. MANUFACTURE	극동호이스트 (주)
3. FRAME NUMBER	90 L
4. RATED POWER	0.5/025 KW x 6/12 P
5. RATED VOLTAGE AND FREQUENCY	460 V 60 Hz
6. MOTOR TYPE	SQUIRREL CAGE ROTOR TYPE
7. SERVICE FACTOR AND RATting	1.0 , 30 MIN
8. LOCATION AND INSULATION CLASS	INDOOR, OUTDOOR, B CLASS
9. DESIGN TRMPERATURE RISE(BY RESISTANCE)	80 ℃
10. FULL LOAD SPEED	1050/460 RPM
11. FULL LOAD CURRENT	1.5/1.72 A
12. STARTING CURRENT AT RATED VOLTAGE	6.2/5.3 A
13. MINIMUM STARTING VOLTAGE	418 V
14. EFFICIENCY AT 100% RATED LOAD	57.5/35 %
15. POWER FACTOR AT 100% RATED LOAD	64.5/50 %
16. STARTING TORQUE	0.757/0.506 KG.M
17. SITE ALTTITUDE(UNDER)	1000 M
18. ENCLOSURE & COOLING METHOD	T-E-N-V
19. TYPE OF BEARING	PL : 6205zz OPL : 6204zz
20. MOUNTING	HORIZONTAL
21. MAXIMUM AMBIENT TEMPURE	40 ℃
22. BEARING LUBRICATION	GREASE
23. STARTING METHOD	FULL VOLTAGE



ORIGINAL

CERT NO. 201201WRU56901

DATE May. 11, 2012

MILL TEST CERTIFICATE

THIS IS TO CERTIFY THAT THE MATERIAL DESCRIBED BELOW WAS MANUFACTURED
IN ACCORDANCE WITH KISWIRE LTD SPECIFICATION AND APPLICABLE SECTIONS

OF KSD 3514-2002 (B GRADE)

TO MESSRS

MATERIAL DESCRIPTION UNGALVANIZED STEEL WIRE ROPE

06 X 37 + FC 100M X 7 REEL

EX NO. PW9074

ORDER NO. 1W4164 REEL NO. 1~7 SAMPLING NO. 1

DIAMETER OF ROPE 16.00 mm TYPE OF CORE Fiber Core

SPECIFIED BREAKING LOAD 145.0 kN SAMPLE BROKE AT 152.3 kN

WT. OF ZINC COATING OF OUTER WIRE MIN. g/m²

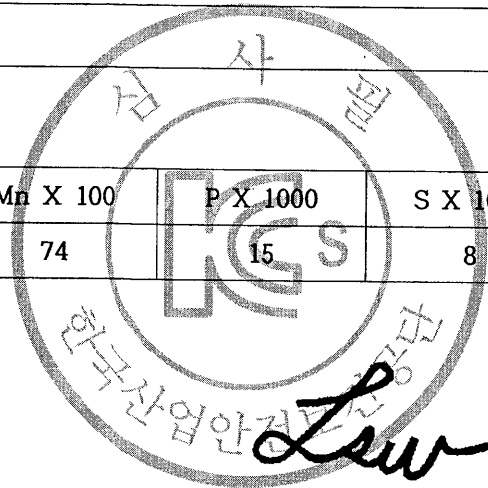
ROPE LAY RHRL LAY LENGTH 105.8 mm

LUBRICATION A-2

CHEMICAL ANALYSIS OF WIRE ROD

CHARGE NO.	C X 100	Si X 100	Mn X 100	P X 1000	S X 1000
SW01779	74	22	74	15	8

DATE OF SAMPLE TEST May 11, 2012



Approved by Q.C Manager S.W. LEE
KISWIRE LTD., KOREA



KS



JIS



API



ABS



KR



NK



G.Lloyd's



DNV



LR



BV

EN 60 947-5-1			
Clause	Requirement - Test	Result - Remark	Verdict

Annex C of IEC 60947-1			P
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Annex C	Degree of protection of enclosed control circuit-devices		P
C.1	Scope		
	This annex applies to degrees of protection of enclosed switchgear and control gear at rated voltages not exceeding 1000 V a.c. or 1500 V d.c. hereafter referred as "equipment"		
C.2	Object		
	Clause 2 of IEC 60529 applies with additional requirements of this annex		
C.3	Definitions		
	Clause 3 of IEC 60529 applies except that "Enclosure" is replaced by the following:		
	"A part providing a specified degree of protection of equipment against certain external influences and a specified degree of protection against approach to or contact with live parts and moving parts"		
C.4	Designation		
	Clause 4 of IEC 60529 applies except for letters H, M and S		N/A
C.5	Degrees of protection against access to hazardous parts and against ingress of solid foreign objects indicated by the first characteristic numeral		
	Clause 5 of IEC 60529 applies	6	P
C.6	Degrees of protection against ingress of water indicated by the second characteristic numeral		
	Clause 6 of IEC 60529 applies	5	P
C.7	Degrees of protection against access to hazardous parts indicated by the additional letter		
	Clause 7 of IEC 60529 applies		N/A
C.8	Supplementary letters		
	Clause 8 of IEC 60529 applies		N/A
C.9	Examples of designations with IP Code		
	Clause 9 of IEC 60529 applies		P
C.10	Marking		P

TRF-No.: IEC60947_5_1A

산업재해예방

C.5, C.6항이 IP65 PASS를 뜻함.

안전보건공단

KOREA OCCUPATIONAL SAFETY & HEALTH AGENCY

SUB VENDOR LIST

구분	NO	DESCRIPTION	SUB VENDOR	TEL NO.	REMARK
기 계	1	WIRE ROPE	만호 로우프(주)	051-332-3131	
			고려제강 (주)	02-776-4131	
	2	MAGNET CORE	극동호이스트(주)	031-491-5311	
	3	DRUM	극동호이스트(주)	031-491-5311	
	4	GEAR	극동호이스트(주)	031-491-5311	
	5	HOOK ASS'Y	제 일 단 철	032-527-2817	
			대 흥 단 조	032-561-0541	
	6	MIDDLE SHAFT	극동호이스트(주)	031-491-5311	
	7	RAIL CHANNEL ANGLE	인천제철(주)	032-763-5000	
			강원산업(주)	032-756-8881	
전 기	8	MAG CONTACTOR	L.G 전선 (주)	02-273-4140	전 품
			(주) 대 룡	02-242-4141	한국공업협회
			(주) 대성디에스	055-338-3125	
	9	E.O.C.R	삼화기연 (주)	032-62-1331	K.S
			아산 전기	02-2636-8035	
	10	PUSH BUTTON	한영전기 (주)	02-742-0430	전 품
			(주)케이치오토	02-247-3131	전 품
			반도기계 (주)	031-495-8353-4	전 품
	11	LOAD LIMITER	보 창 기 전	032-431-0150	산 안 검
			반도기계 (주)	031-495-8353-4	산 안 검
			정호 엔지니어링	02-681-0553	산 안 검
	12	SILICON	반도기계 (주)	031-495-8353-4	
			아산 전기	02-2636-8035	
			보 창 기 전	032-431-0150	

산업재해예방

안전보건공단

KOREA OCCUPATIONAL SAFETY & HEALTH AGENCY