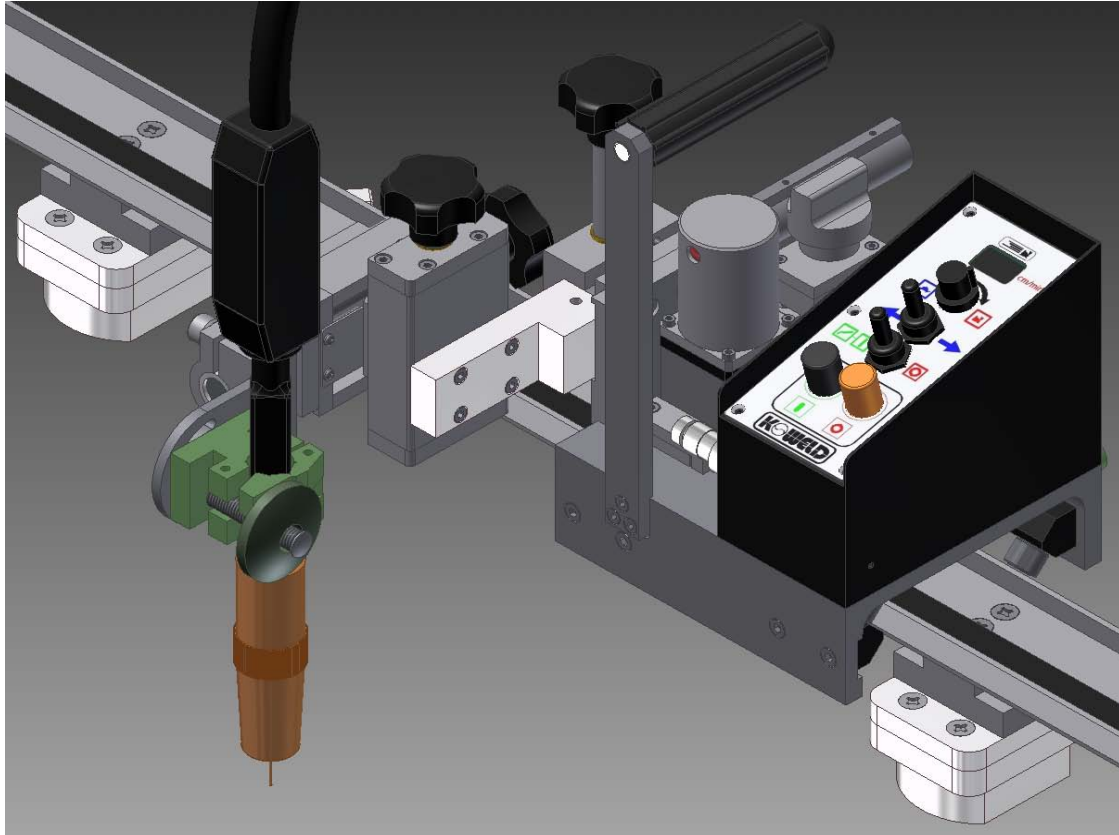


CS-201 USER MANUAL



CHUNG SONG INDUSTRY CO., LTD.

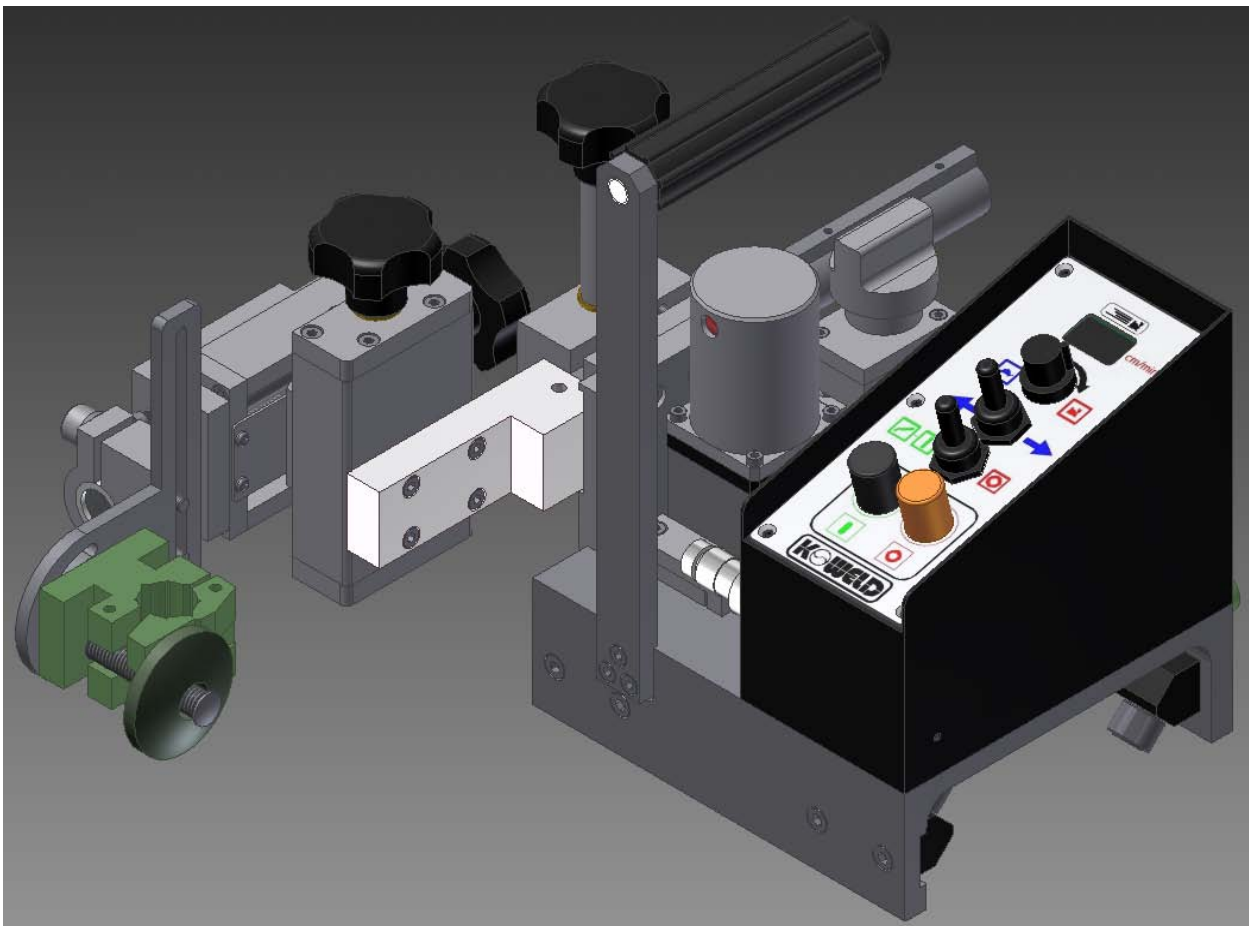
MADE IN KOREA

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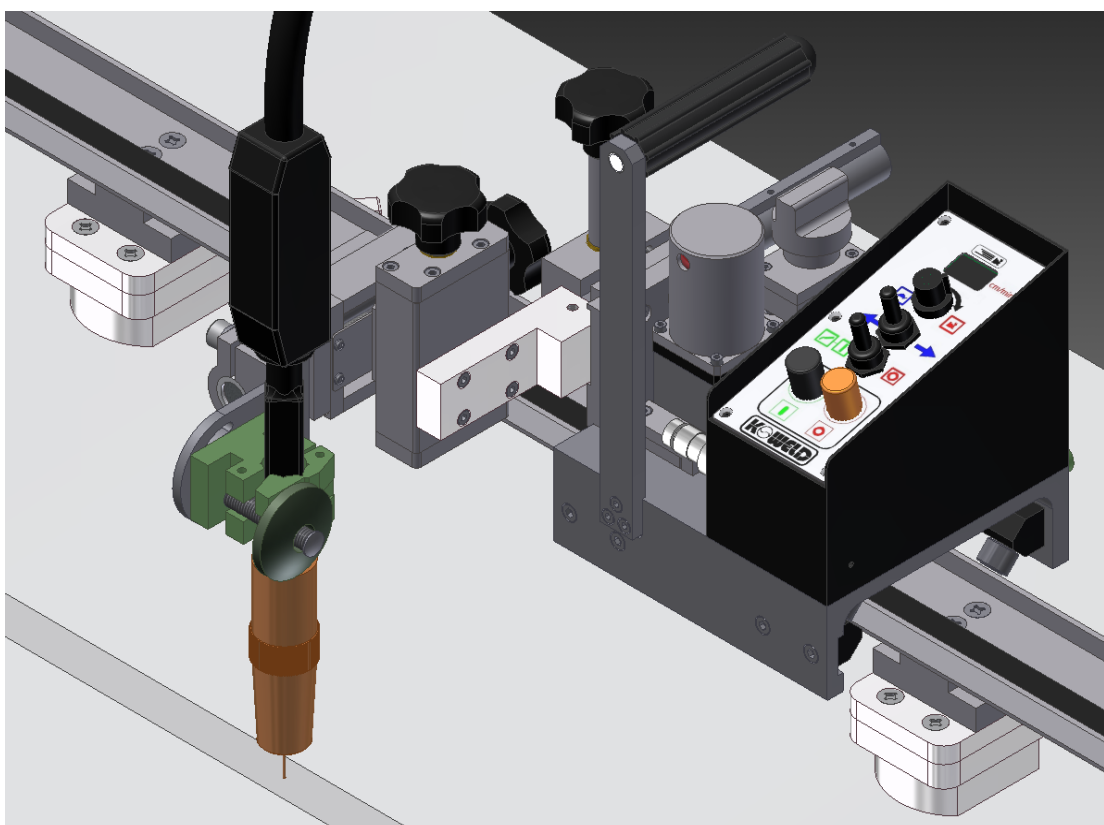
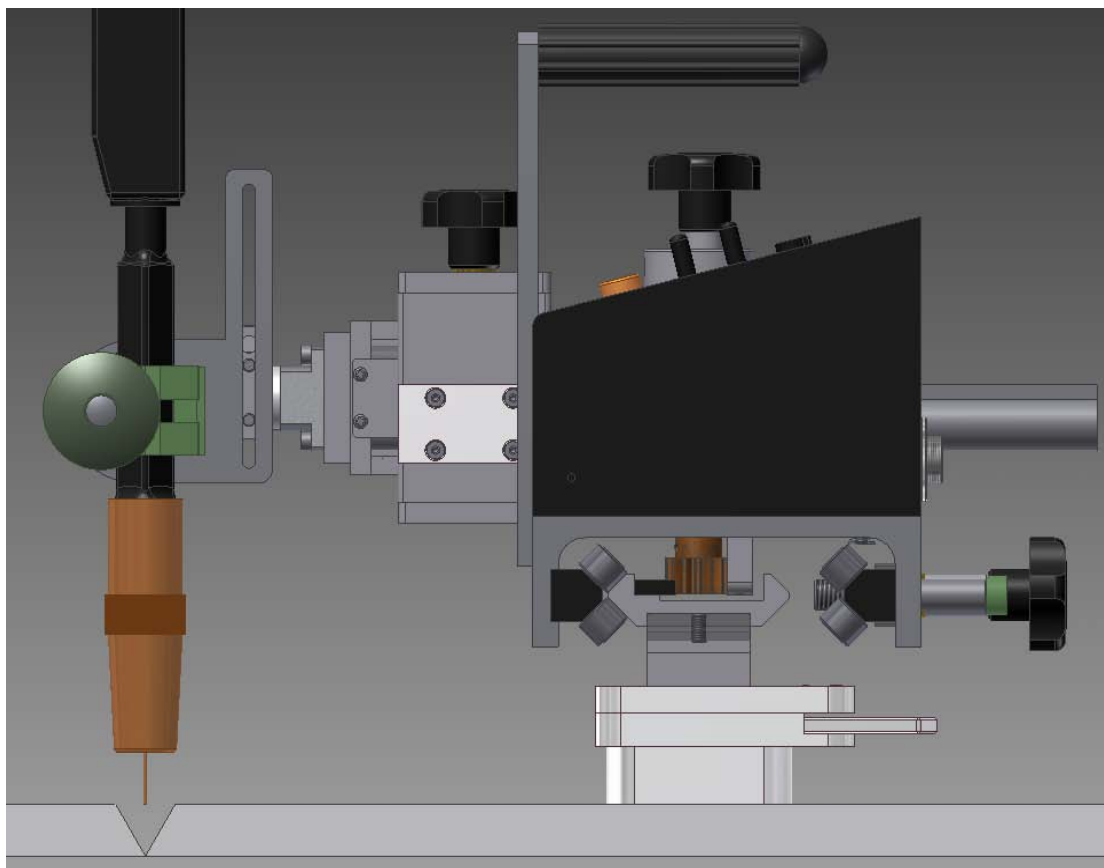
1) OUTLINE and CHARACTERISTICS

- * Butt/Fillet, multi-welder driving on the rigid aluminum rail.
- * Magnet On-Off switch type rail offers in-line adjustment easily.
- * Minimized gear backlash offers various constant speed/adjustable controls precisely thus the highest quality welding and a long life by means of a Special Motor with a Reducer.
- * Crate fill at the beginning and end of welding.
- * The travel speed is set either Cm/Min or Inch/Min programmable in acc with the User Manual.



2) APPLIED MATERIALS SHAPE and POSTURE

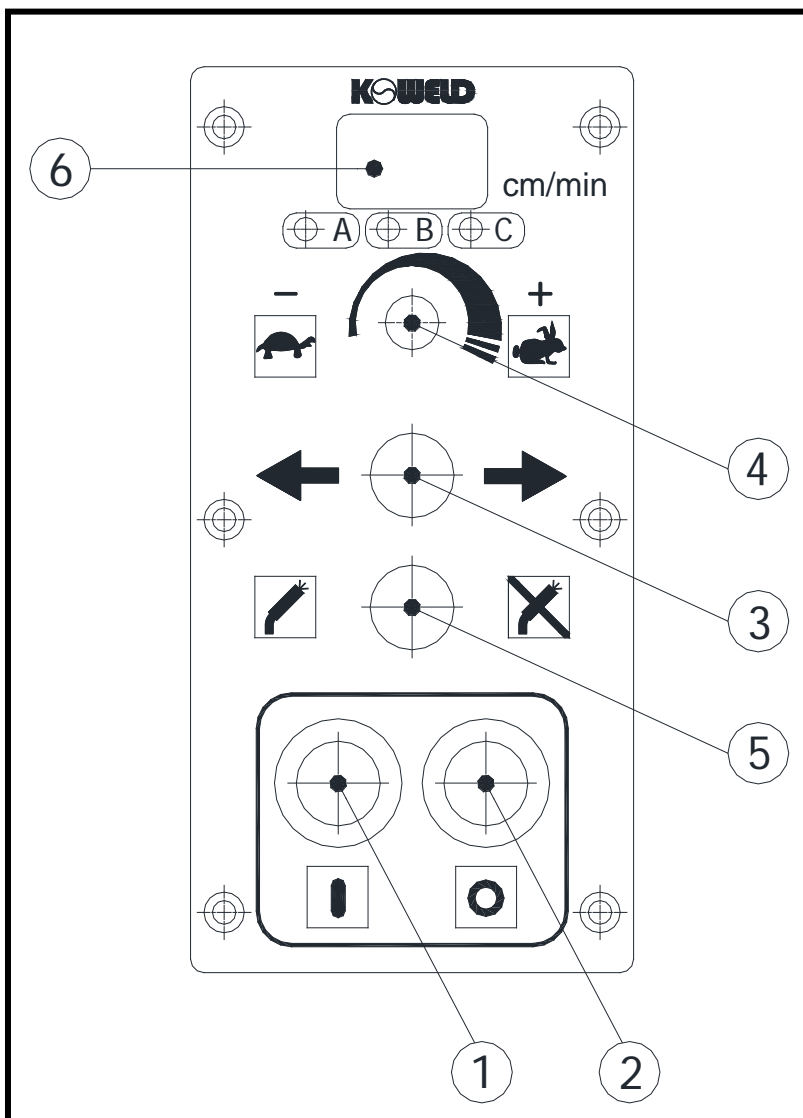
* APPLIED MATERIALS SHAPE



3) MAIN SPECIFICATIONS

Division	Configuration	Unit	Specification	Remarks
GENERAL	Model	Set	CS-201	Carriage
	Size (WxLxH)	mm	407(W) * 273(L) * 239(H)	-
	Weight	Kg	6.5 Kg	-
BODY	Driving Method	-	RACK&PINION RAIL DRIVE	-
	BODY	-	Material : AL6061	-
	Driving Motor	-	DC24V, 12W, 5000 RPM	-
	Gear Ratio	-	400 : 1	-
	Driving Speed	-	0~88 cm/min	-
	Input Power	mm/min	AC 110V-230V, 50/60Hz	-
X-Z SLIDE	ANGLE	mm	45° ± 10°	-
	RUNNING ANGLE	mm	±5°	-
	X-SLIDE	mm	0~50mm	
	Z-SLIDE	mm	0~50mm	
BODY CONTROL		-	Start, Stop, Driving Speed Adjust, Travel Direction Weld(1)/Not-Weld Stitch / Continuous fuction selection	-
OTHER	Standard Supply Scope Composed Items for Equipment Warehousing	-	1.CARRIAGE	1SET
			2.POWER CABLE 1.0SQ*3C*30M	1PC
			3.L-RENCH	1SET
			4.FUSE 2A	2PCS
			5.CONNECTOR POWER-1,TORCH-2	2PCS
			6.User Manual	1PC

4) CONTROL PANEL OPERATION EXPLANATION



① DRIVING START BUTTON

CARRIAGE starts operation, if BUTTON is pressed.

② DRIVING END BUTTON

All operations of CARRIAGE stop, if DRIVING END BUTTON is pressed during the operation of CARRIAGE.

③ UPWARD/DOWNWARD SELECTION SWITCH

This is a SWITCH to select the Driving Direction of the CARRIAGE.

CARRIAGE drives to upward direction if CARRIAGE is operated after SWITCH is set to upward direction, and drives to downward direction if CARRIAGE is operated after SWITCH is set to downward direction.

④ DRIVING SPEED ADJUSTMENT VOLUME

This is a VOLUME to adjust the DRIVING SPEED of the CARRIAGE.

DRIVING SPEED of the CARRIAGE becomes faster if VOLUME is turned clockwise.

※ Tip) When press travel Direction button the carriage travel wanted direction.

(when welding starts,press it)

⑤ WELDING/NON-WELDING SELECTION SWITCH (1)

This is the WELDING/NON-WELDING SELECTION SWITCH (1) of the TORCH.

⑥ DISPLAY (F.N.D)

Can see travel speed value as DISPLAY(F.N.D)

5) INSTALLATION AND OPERATION

(1) WELDING PREPARATION

- At first, tools for WELDING such as POWER SOURCE and WIRE FEEDER are needed.
- Welding Power Source (3Φ 440,380,220V AC) for the Driving and Control of CS-201 TYPE is needed.
- CO₂ Gas Tank for Welding is needed.
- TORCH for CO₂ Auto Welding is needed.
- Basic Preparation Tools of Welding Works are basically needed.

(2) CONNECTING METHOD of CARRIAGE

- WELDING TORCH CONDUIT CABLE of AUTO CARRIAGE should be connected to the WIRE FEEDER.
- CONNECTOR for TORCH S/W which come out of the WELDING TORCH should be connected to the MAIN CABLE CONNECTOR of the BODY.
- CONTROL CABLE should be connected to the CONTROL BOX CONNECTOR of the BODY. (OPTION)
- CONTROL POWER SOURCE CABLE should be connected to the POWER SOURCE

(3) WELDING PROCESS

- Switch ON the PRIMARY SIDE DISTRIBUTION BOARD of WELDING POWER SOURCE.
- Switch ON the CONTROL POWER SOURCE of FRONT PANEL of WELDING POWER SOURCE.
- Equip the WIRE FEEDER with WIRE, and feed it to the end of TORCH.
- Set the AUTO CARRIAGE at the WELDIING START POINT.
- Adjust the Target Angle and Position of the TORCH with the TORCH ADJUSTMENT SLIDER.
(Fine Adjustment of the Angle and Position is possible with Screw Type.)
- Set the Welding Condition that should be fit for a Work to the CARRIAGE.
- Check if CO₂ Gas is properly Supplied.
- Start Welding Work.
(Start the Welding Work by pressing the ①Driving Start BUTTON after switching ON the Welding Speed Switch ④of the Control Board.)
- Press the STOP BUTTON Switch ② if Welding Work of the Materials is finished.
- Confirm the Welding End.

6) Maintenance and checking

- The auto carriage should be regularly maintained and repaired to use it safely for a long time.

1. Is there much dust on the control panel?

→ Control box, torch adjustment switch should be kept clean, and wipe floating matters off. Be sure to clean around control box.

2. Aren't deposits stuck to?

→ Remove deposits and sputters from tip, nozzle, guide roller, driving wheels, magnets and slide adjustment part. They may cause problems for travelling carriage safely.

3. Are the screws in torch clamps and guide rollers loose?

→ The loose screws may cause bad travelling or uneven bead, and therefore all the screws should be tightened. Especially, floating matters such as dust should be wiped off well.

4. Isn't there any damage on connecter, power cable, and torch cable?

→ Check if connectors are loosely connected or damaged. Or, are cable, hose, and torch disconnected or damaged.

5. Isn't there any abnormal noise or overheating?

→ Check the wheel, motor, and welding torch.

7) Breakdown and measures

: If there is any problems with auto carriage, check instructions as follows.

1. Power display light of CONTROL Panel is not turned on.

Cause	Repair measure
Bad control cable (disconnection)	CABLE change(connection)
Control box fuse disconnection	fuse change (if it still makes troubles, contact After-sales team)

2. ARC is not generated, though welding button is pressed.

Cause	Repair measure
Non-welding is selected on welding/non-welding switch	Selected welding
Loose contact of wire	Remove slag(check earthing)
Bad welding start button	Check and repair the button, wiring. Check if stop sensor works.

3. Carriage does not travel, though welding start button is pressed.

Cause	Repair measure
	Check and repair motor driving part
Bad welding start button switch	Check and repair the button, wiring. Check if stop sensor works
Bad main PCB	change, refer to After sales service.

4. Torch targets wrong position.

Cause	Repair measure
Targeting position of torch clamp is loose	Check and tighten screws and change them, if damaged.

5. Slide is hard to adjust

Cause	Repair measure
Deposits or dust are on slide part	Clean slide part and spread around oil

6. Carriage stops during automatic welding.

Cause	Repair measure
Carriage has obstacles in the running	Remove obstacles(stop sensor operation)

7. ARC does not disappears, even though stop switch is pressed.

Cause	Repair measure
bad welding stop button switch	check the switch and change it with a new one
The switch on welding machine is on mode	change the crater switch to off mode

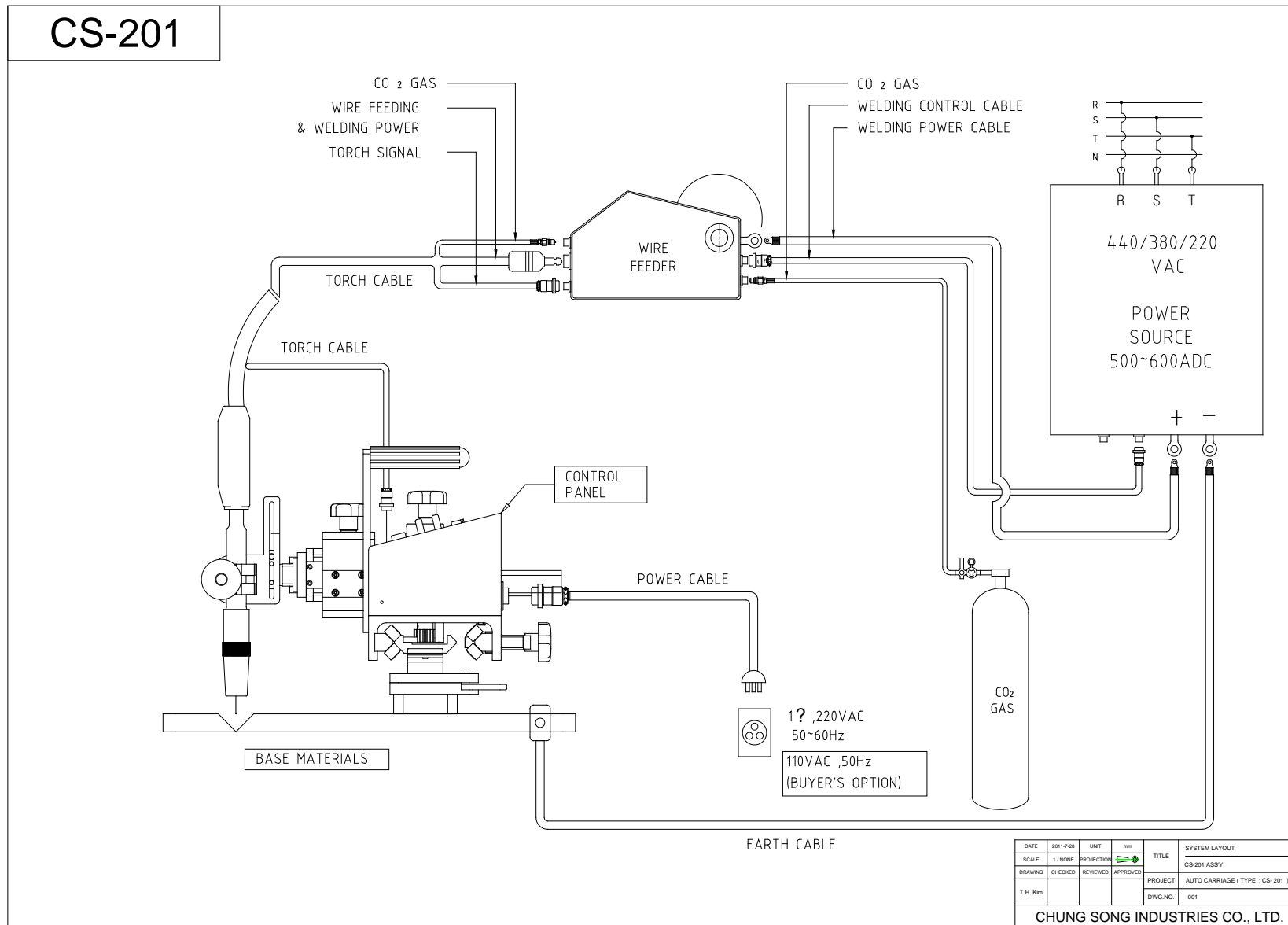
8) Part List

CS	NO.	DESCRIPTION	EA	MAT'	REMARK
BODY PART					
5	04	GRIP COVER	1	RUBBER	
7	26	GRIP BRACKET	1	AL6061	8T,L205
7	27	GRIP	1	SS400	
601	M01	DC BRUSHLESS MOTOR	1	-	12W,5000RPM
100C	10	MOTOR BASE BRACKET	1	AL6061	
100C	11	CLUTCH BRACKET	1	AL6061	
100C	16	BODY GUIDE BRACKET	1	AL6061	
100C	20	MOTOR COVER	1	AL6061	
100C	23	BOLT COVER	1	AL6N01	L25
100C	01	BODY BASE	1	AL6061	150*170*50
100C	03	MOTOR BASE PLATE	1	AL6061	
100C	04	DU BUSH	2	STEEL	
100C	05	CLUTCH SHAFT	1	S45C	
100C	07	CLUTCH HOUSING	1	AL6061	
100C	08	CLUTCH BASE BRACKET	1	AL6061	
100C	09	CLUTCH KNOB	1	AL6061	
100C	M-02	GEARD MOTOR	1	STEEL	400:1 ø8
BLDC	02-1	MOTOR BRACKET	1	AL6061	
M-EG	13	DU BUSH-08	1	S70C	DB0806-15F
M-EG	15	GUIDE SHAFT BUSH	2	AL6061	ø15
M-EG	24	KNOB SHAFT	1	S45C	L80 2Line Left Tab
M-EG	28	ROLLER	8	SCM440	JMC-CF6VUU
M-EG	88	CLUTCH SPRING	1	SP	ø1.2-L30
M-EG	02	GUIDE BRA-1	1	AL6061	L160
M-EG	04	GUIDE BRA-2	2	AL6061	L40
M-EG	05	GUIDE BAR PLATE	1	AL6061	2Line Left Tab M12
M-EG	08	GUIDE SHAFT	2	S45C	ø12-L40
M-EG	13-1	DU BUSH-12	2	S70C	DB1208-20F
V-UP	09	SPUR GEAR	1	S45C	M1.5 / Z15
SLIDE PART					
5	21	HORIZONTAL SLIDE HOUSING	1	AL6N01	
5	22	VERTICAL SLIDE HOUSING	1	AL6N01	
5	23	SLIDE UNIT BRACKET(U)	2	ALDC12	

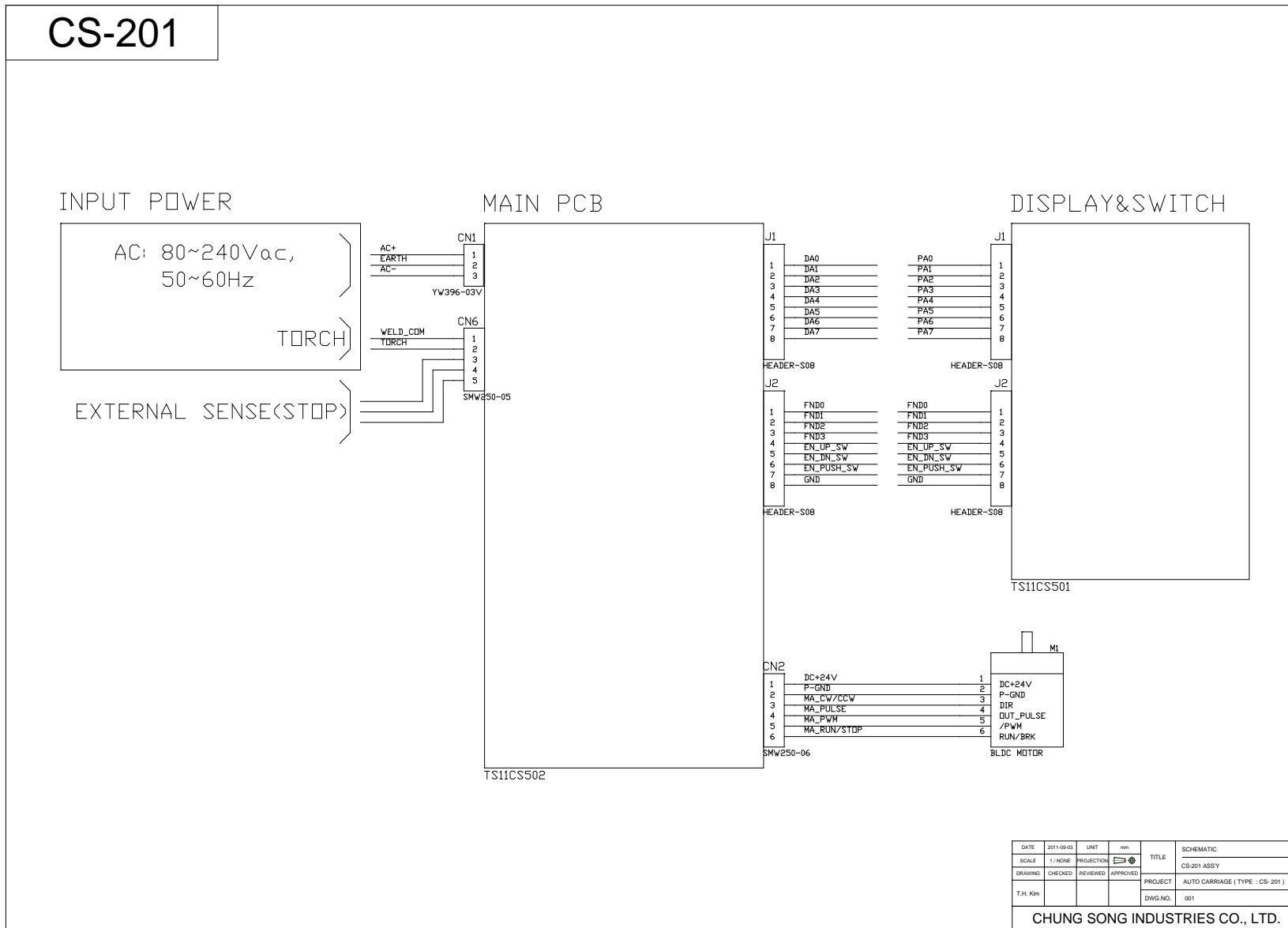
CS	NO.	DESCRIPTION	EA	MAT'	REMARK
5	24	SLIDE UNIT BRACKET(D)	2	ALDC12	
5	25	X-Y SLIDE PLATE	1	ALDC12	
5	26	SLIDE BLOCK(L)	1	AL6N01	2Line Left Tab
5	27	SLIDE BOLT(L)	1	S45C	2Line Left screw
5	29	GUIDE BAR	4	S45C	
5	30	SLIDE COVER	2	AL6061	
5	32	TORCH CLAMP SUPPORT	1	ALDC12	
5	26-1	SLIDE BLOCK(R)	1	AL6N01	2Line Right Tab
5	27-1	SLIDE BOLT(R)	1	S45C	2Line Right screw
20	60	SLIDE FLANGE-1	1	AL6061	
20	61	SLIDE FLANGE-2	1	AL6061	
201	58-1	SLIDE FIXED BRACKET-1	1	AL6061	
100B	55	SLIDE BAR	1	S45C	
100B	56	RACK KEY	1	S45C	6*8*180
100B	57	SLIDE CLAMP	1	AL6061	
100B	59	PINION GEAR	1	S45C	M1,Z13
100B	60	SLIDE SHAFT COVER	1	AL6061	
TORCH CLAMP PART					
5	31	CLAMP	1	AL6061	
5	33	CLAMP BUSH	1	BAKELITE	
5	34	TORCH CLAMP(L)	1	AL6061	
5	35	TORCH CLAMP(T)	1	AL6061	
5	36	CLAMP FIXED BOLT	1	S45C	
7	32	CLAMP FIXED KNOB	1	AL6061	S-TYPE
100B	80	TORCH CLAMP BASE	1	SS400	
PANEL PART					
24	CP01	PANEL	1	SS41(검정)	BLACK
5A	60	MAIN PCB	1	PLASTIC	
5A	03	NAME PANEL(2-1pole)	1	AL6061	
P	40	PUSH BUTTON	2	-	SP-103C
P	41	TOGGLE SWITCH	2	PLASTIC	WJT 2216 2STEP
P	42	TOGGLE SWITCH COVER	2	RUBBER	Hex Socket
P	43	PUSH BUTTON COVER-1	1	RUBBER	BLACK
P	44	PUSH BUTTON COVER-2	1	RUBBER	ORANGE
P	45	VOLUME KNOB	1	PLASTIC	F9

CS	NO.	DESCRIPTION	EA	MAT'	REMARK
P	46	PUSH BUTTON COVER(BS)	2	B.S	
P	47	POWER CONNECTOR	1	-	SCK-20-3R
P	48	TORCH CONNECTOR	1	PLASTIC	SCK-16-2R
P	49	FUSE	1	PLASTIC	F8303 Fuse Holder

9) Block Diagram



10) Circuit diagram

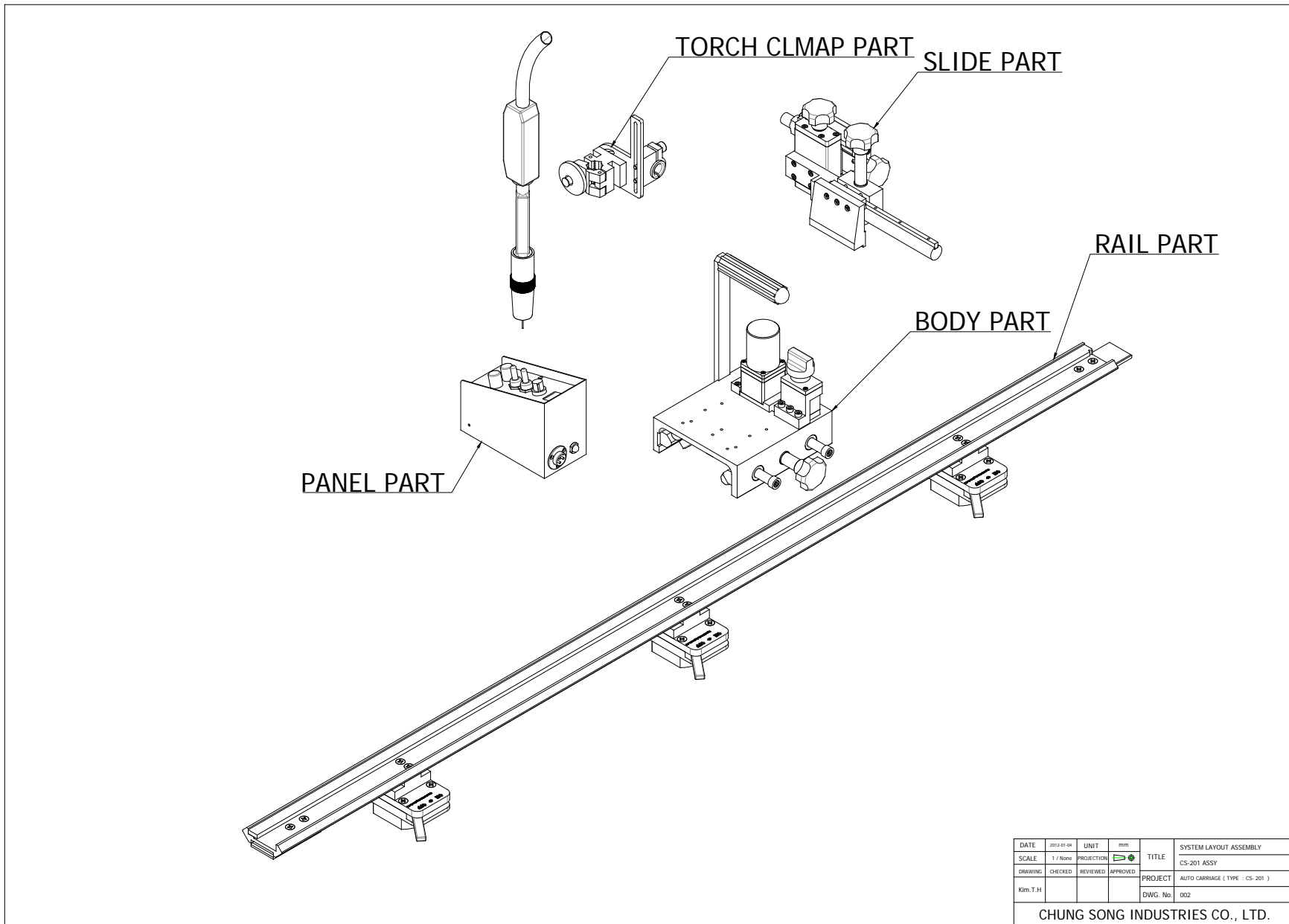


11) Assembly plan

CS-201

GENERAL SPECIFICATION		
구분	형식 및 사양	중량(Kg)
형식	주행 방식 : RAIL 구동 RACK-PINION, RAIL 형 GUIDE ROLLER 장착형	
재량	DIMENSION : 273(L) X 407(W) X 239(H)	6.5 Kg
BODY	주행속도 : 25~88 cm/min±5%, 견인력 : 10Kg 주행 모터 : DC24V 12W 5000RPM-BLDC, 광속기 400 : 1	
전후 슬라이드	전후 이동 거리 : 0~100mm	
X-SLIDE	좌우 이동 거리 : 0~50mm	
Z-SLIDE	상하 이동 거리 : 0~50mm	
LEVER	고정형	
TORCH CLAMP	작업 각도 조절 35° ~ 55° 전행각도 조절 ±5°	
CONTROL PANEL	입력전원 : 220V, 속도조절, 시작/정지, 용접/비용접, 전행방향 CONNECTOR : 전원 SCK 20-3PIN, 토치 SCK 16-2PIN	
RAIL	전장 1.5M, MAG SWITCH-3EA	5.4 Kg

DATE	2022-01-04	UNIT	mm	SYSTEM LAYOUT ASSEMBLY	
SCALE	1/1mm	PROJECTION			TITLE
DRAWING	CHECKED	REVIEWED	APPROVED	PROJECT	AUTO CARRIAGE (TYPE : CS-201)
Kim.T.H				DWG. No.	001
CHUNG SONG INDUSTRIES CO., LTD.					



DATE	2012-01-04	UNIT	mm	TITLE	SYSTEM LAYOUT ASSEMBLY
SCALE	1 / None	PROJECTION			CS-201 ASSY
DRAWING	CHECKED	REVIEWED	APPROVED	PROJECT	AUTO CARRIAGE (TYPE : CS-201)
Kim.T.H				DWG. No.	002
CHUNG SONG INDUSTRIES CO., LTD.					

Parts List						Parts List					
CS	NO	DESCRIPTION	MATERIAL	Q'T	COMMENTS	CS	NO	DESCRIPTION	MATERIAL	Q'T	COMMENTS
5	32	TORCH CLAMP SUPPORT	ALDC12	1		100C	01	BODY BASE	AL6061	1	150*170*50
100B	80	TORCH CLAMP BASE	SS400	1		100C	03	MOTOR BASE PLATE	AL6061	1	
5	31	CLAMP	AL6061	1		100C	04	DU BUSH	STEEL	2	
5	33	CLAMP BUSH	BAKELITE	1		100C	05	CLUTCH SHAFT	S45C	1	
5	34	TORCH CLAMP(L)	AL6061	1		100C	07	CLUTCH HOUSING	AL6061	1	
5	35	TORCH CLAMP(T)	AL6061	1		100C	08	CLUTCH BASE BRACKET	AL6061	1	
5	36	CLAMP FIXED BOLT	S45C	1		100C	09	CLUTCH KNOB	AL6061	1	
7	32	CLAMP FIXED KNOB	AL6061	1	S-TYPE	100C	10	MOTOR BASE BRACKET	AL6061	1	
						100C	11	CLUTCH BRACKET	AL6061	1	
						100C	16	BODY GUIDE BRACKET	AL6061	1	
						100C	20	MOTOR COVER	AL6061	1	
						100C	23	BOLT COVER	AL6N01	1	L25
						100C	M-02	GEARD MOTOR	STEEL	1	400:1 ?8
						5	04	GRIP COVER	RUBBER	1	
						601	M01	DC BRUSHLESS MOTOR		2	12W 5000RPM
						7	26	GRIP BRACKET	AL6061	1	8T L205
						7	27	GRIP	SS400	1	
						M-EG	02	GUIDE BRA-1	AL6061	1	L160
						M-EG	04	GUIDE BRA-2	AL6061	2	L40
						M-EG	05	GUIDE BAR PLATE	AL6061	1	2중 좌첩 M12
						M-EG	08	GUIDE SHAFT	S45C	2	? 12-L40
						M-EG	13	DU BUSH-08	S70C	1	DB0806-15F
						M-EG	13-1	DU BUSH-12	S70C	2	DB1208-20F
						M-EG	15	GUIDE SHAFT BUSH	AL6061	2	? 15
						M-EG	24	KNOB SHAFT	S45C	1	L80 2중좌첩
						M-EG	28	ROLLER	SCM440	8	JMC-CF6VUU
						M-EG	88	CLUTCH SPRING	SP	1	? 1.2-L30
						V-UP	09	SPUR GEAR	S45C	1	M1.5 / Z15
						BLDC	02-1	MOTOR BRACKET	AL6061	1	
						20	CP01	PANEL	SS41(경광)	1	BLACK
						5	40	PUSH BUTTON		2	SP-103C
						5	41	TOGGLE SWITCH	PLASTIC	3	WJT 2216 2단
						5	42	TOGGLE SWITCH COVER	RUBBER	3	흑각황수캡
						5	43	PUSH BUTTON COVER-1	RUBBER	1	BLACK
						5	44	PUSH BUTTON COVER-2	RUBBER	1	ORANGE
						5	45	VOLUME KNOB	PLASTIC	1	F9
						5	46	PUSH BUTTON COVER(BS)	B.S	2	
						5	49	FUSE	PLASTIC	1	F8303 퓨즈홀더
						5A	03	NAME PANEL(2-1pole)	AL6061	1	
						5A	60	MAIN PCB	PLASTIC	1	
						5WB	47	POWER CONNECTOR		1	SCK-20-3R
						7W	48	TORCH CONNECTOR	PLASTIC	2	SCK-16-2R
						100B	55	SLIDE BAR	S45C	1	
						100B	56	RACK KEY	S45C	1	6*8*180
						100B	57	SLIDE CLAMP	AL6061	1	
						100B	59	PINION GEAR	S45C	1	M1. Z13
						100B	60	SLIDE SHAFT COVER	AL6061	1	
						20	60	SLIDE FLANGE-1	AL6061	1	
						20	61	SLIDE FLANGE-2	AL6061	1	
						201	58-1	SLIDE FIXED BRACKET-1	AL6061	1	
						5	21	HORIZONTAL SLIDE HOUSING	AL6N01	1	
						5	22	VERTICAL SLIDE HOUSING	AL6N01	1	
						5	23	SLIDE UNIT BRACKET(L)	ALDC12	2	
						5	24	SLIDE UNIT BRACKET(D)	ALDC12	2	
						5	25	X-Y SLIDE PLATE	ALDC12	1	
						5	26	SLIDE BLOCK(L)	AL6N01	1	2중 좌첩
						5	26-1	SLIDE BLOCK(R)	AL6N01	1	2중 우첩
						5	27	SLIDE BOLT(L)	S45C	1	2중 좌너사
						5	27-1	SLIDE BOLT(R)	S45C	1	2중 우너사
						5	29	GUIDE BAR	S45C	4	
						5	30	SLIDE COVER	AL6061	2	

DATE	2012-01-04	UNIT	mm	TITLE	BODY ASSEMBLY
SCALE	1 / 100%	PRODUCTION		TITLE	BODY ASSY
DRAWING	CHECKED	REVIEWED	APPROVED	PROJECT	AUTO CARRIAGE (TYPE : CS-100C)
KTH				DWG. No.	003

CHUNG SONG INDUSTRIES CO., LTD.