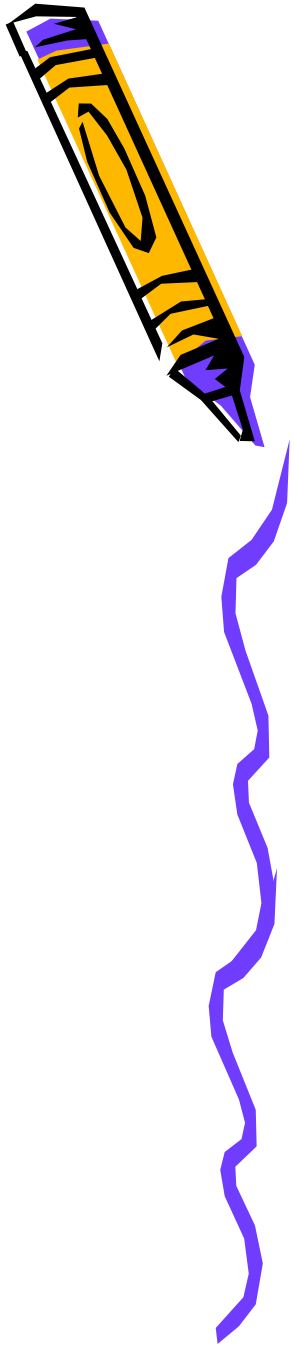
MIG 200P training manual

Shanghai WTL Welding Equipment Manufacture Co.,Ltd

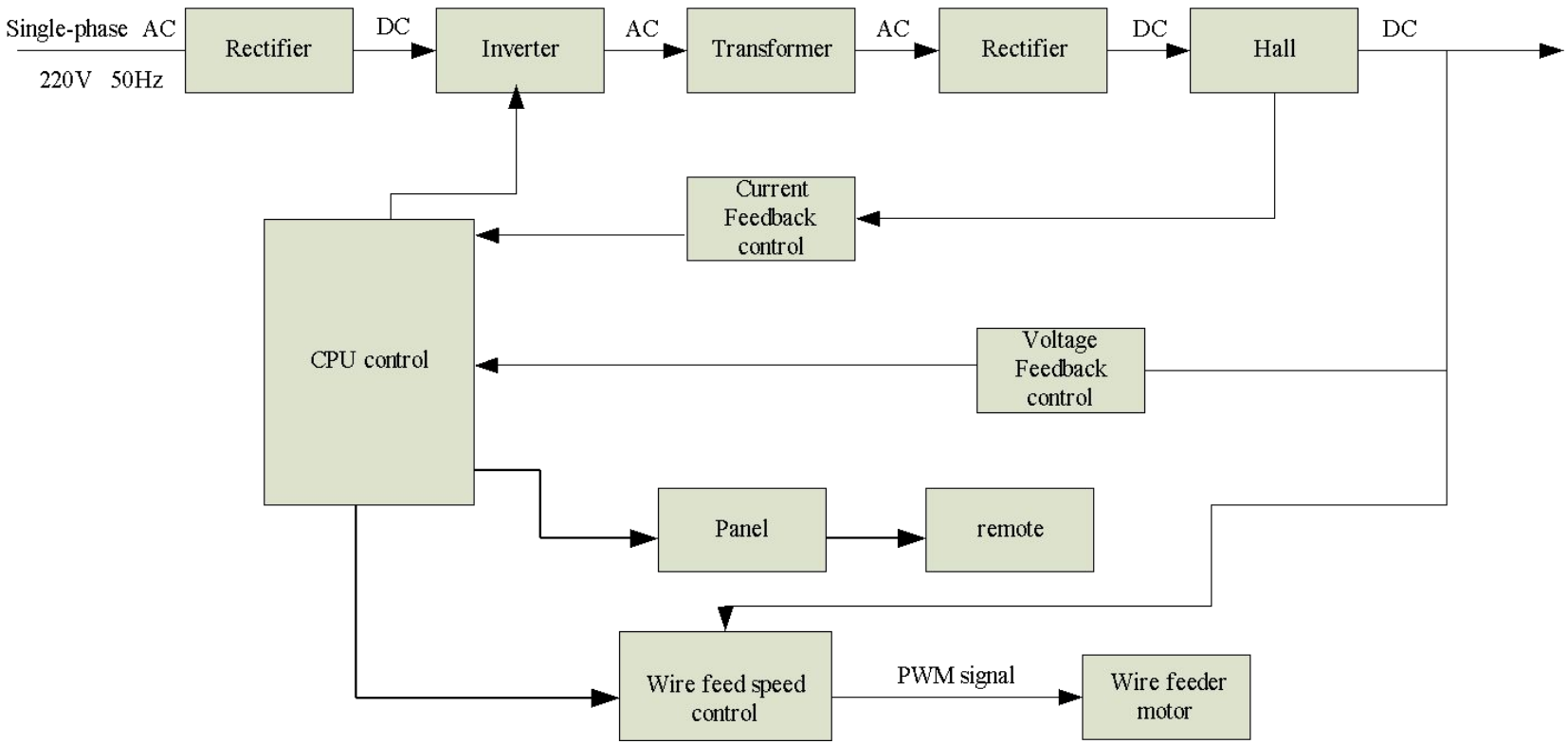
March.2011

Catalogue

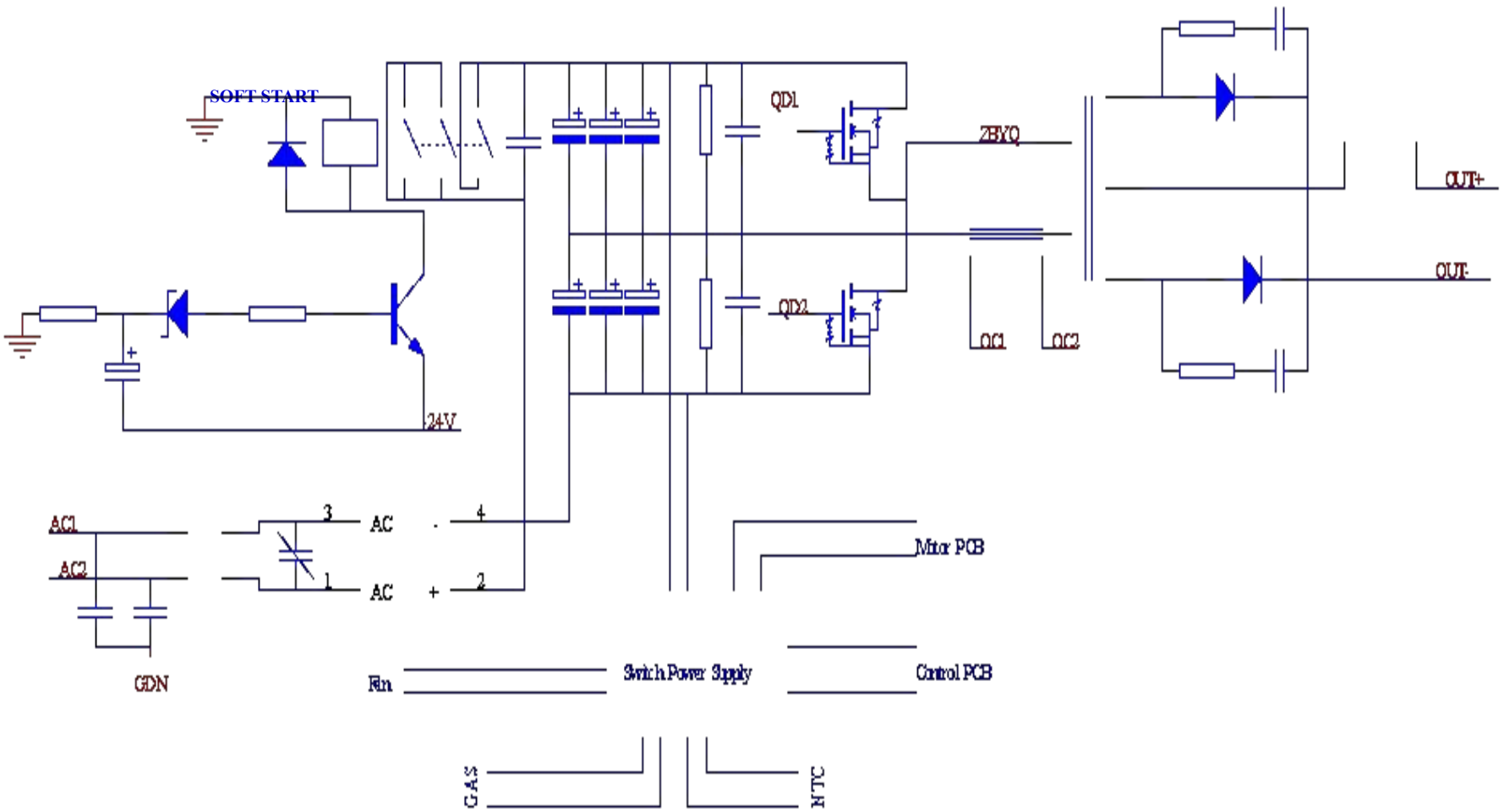


- 1、Introduction of working principle
- 2、Introduction of main circuit（parts different from MMA）
- 3、Introduction of control circuit（parts different from MMA）
- 4、Introduction of panel circuit
- 5、 Introduction of remote circuit
- 6、Troubleshooting
- 7、Appendix

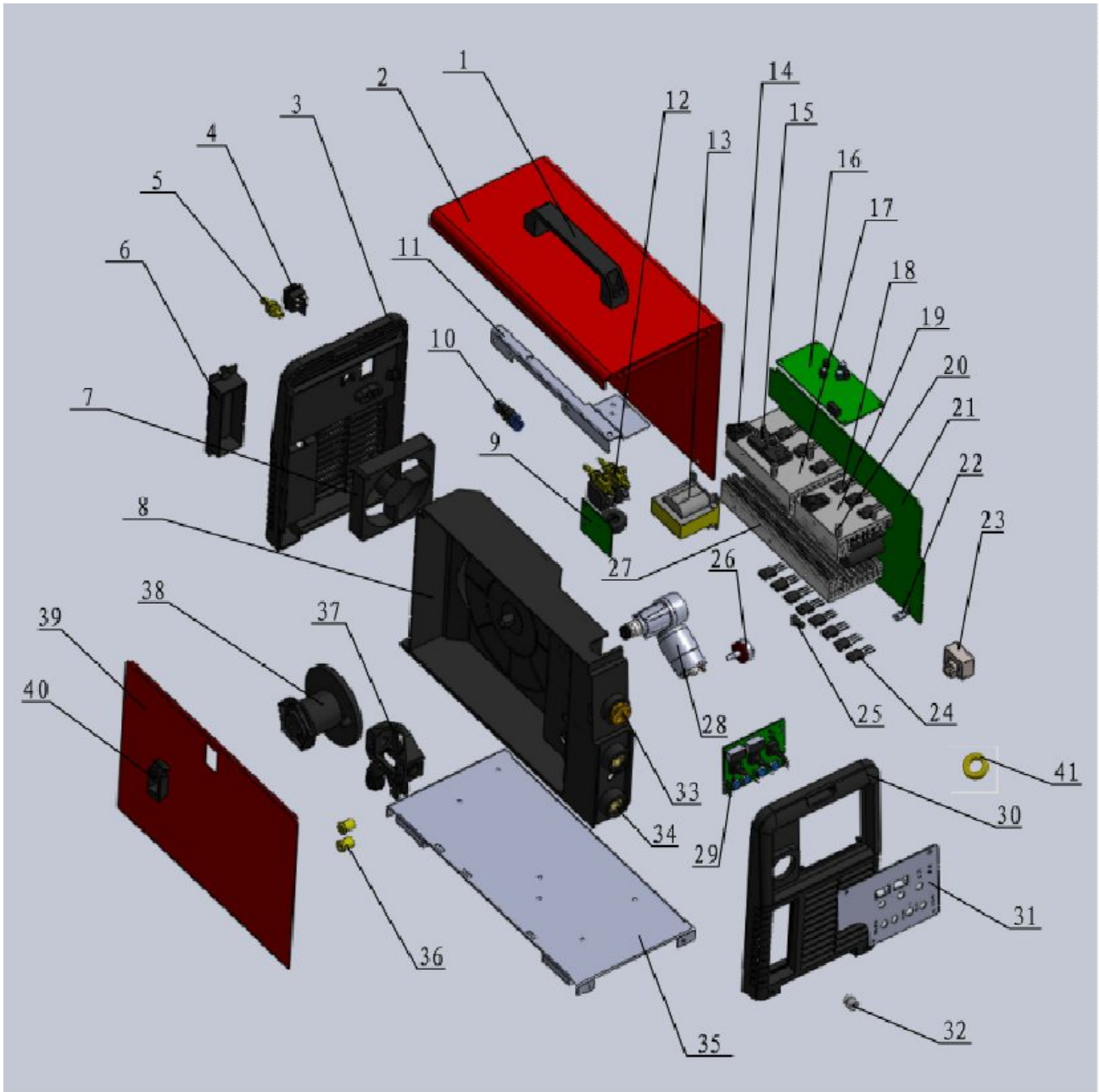
1、Introduction of working principle



Working principle



System chart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No.	Name	Code	Unit
1	HANDLE	8.253.020	1
2	LEFT BOARD	8.050.112	1
3	REAR PANEL	8.068.984	1
4	SWITCH	7.232.730	1
5	AIR INLET	8.462.180	1
6	SPARE AND TOOL BOX	8.831.010	1
7	FAN	7.720.005-B	1
8	CLAPBOARD	8.124.623	1
9	MIG EMC BAN	5.496.067	1
10	Y TYPE THREE-WAY CONNECTION	7.624.281	1
11	GAS VALVES MUNTING PLATE	8.123.159-B	1
12	TWO-POSITION SOLENOID VALVE	7.253.013	2
13	TRANSFORMER	6.185.119	1
14	SHORE	8.123.620	1
15	RECTIFIER	7.411.015	2
16	MIG CONTROL PCB	5.496.996-E	1
17	HEAT SINK II	8.425.119	1
18	TRANSISTOR	7.425.631	6
19	HEAT SINK III	8.425.120	1
20	HEXAGON KEEP POST	7.503.530	4
21	MAIN PCB	5.496.068-A	1
22	SHORE	8.123.633	2
23	HALL	7.321.105	1

24	DIODE	7.421.107	8
25	NTC HOT RESISTANCE	7.445.401	1
26	CHARFILM POTENTIAL	7.456.126	1
27	HEAT SINK I	8.425.118	1
28	MIG FEDDER POWER	4.021.000	1
29	MIG FACEPLATE	5.495.994-B	1
30	FRONT PANEL	8.069.984	1
31	FRONT BLANKING PLATE	8.306.115	1
32	TRIPLEX AVIATION SOCKET	7.132.303	1
33	TRANSEND NEB	8.178.110	1
34	35～70MM^2 SOCKET	7.152.315	1
35	BASE	8.055.118	1
36	CHANGEOVER CONNECTOR	8.462.181	2
37	FEED FIGHT	8.081.110	1
38	FEED PLATE	8.199.130	1
39	RIGHT BOARD	8.051.112	1
40	SQUARENESS BIN	7.686.300	1
41	INDUCTANCE	6.271.132	1

2、Introduction of main circuit（parts different from MMA）

Main Board----Motor circuit
Drive
Feedback
Input signal
Compensate

View of main board

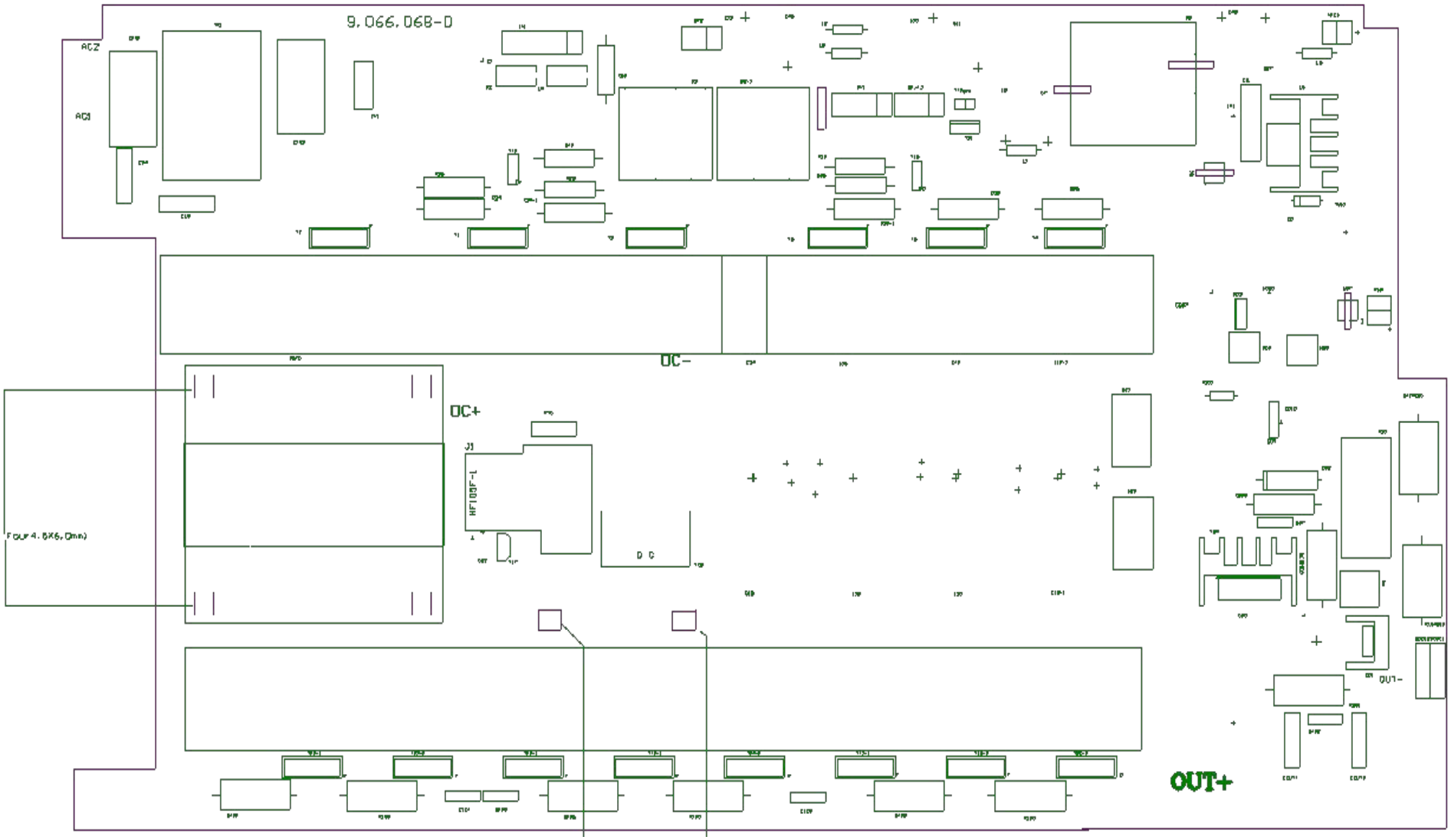


Photo of main board

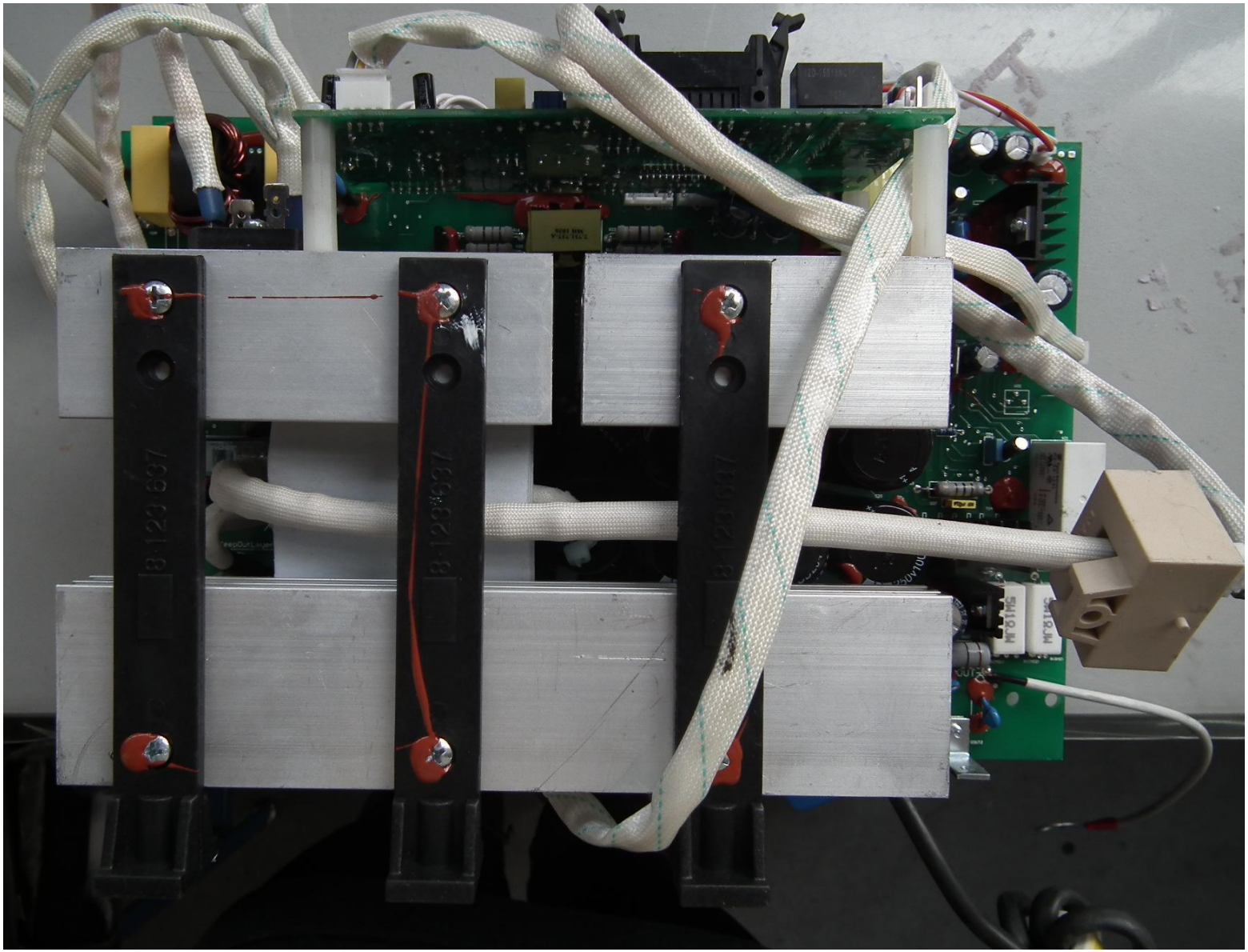
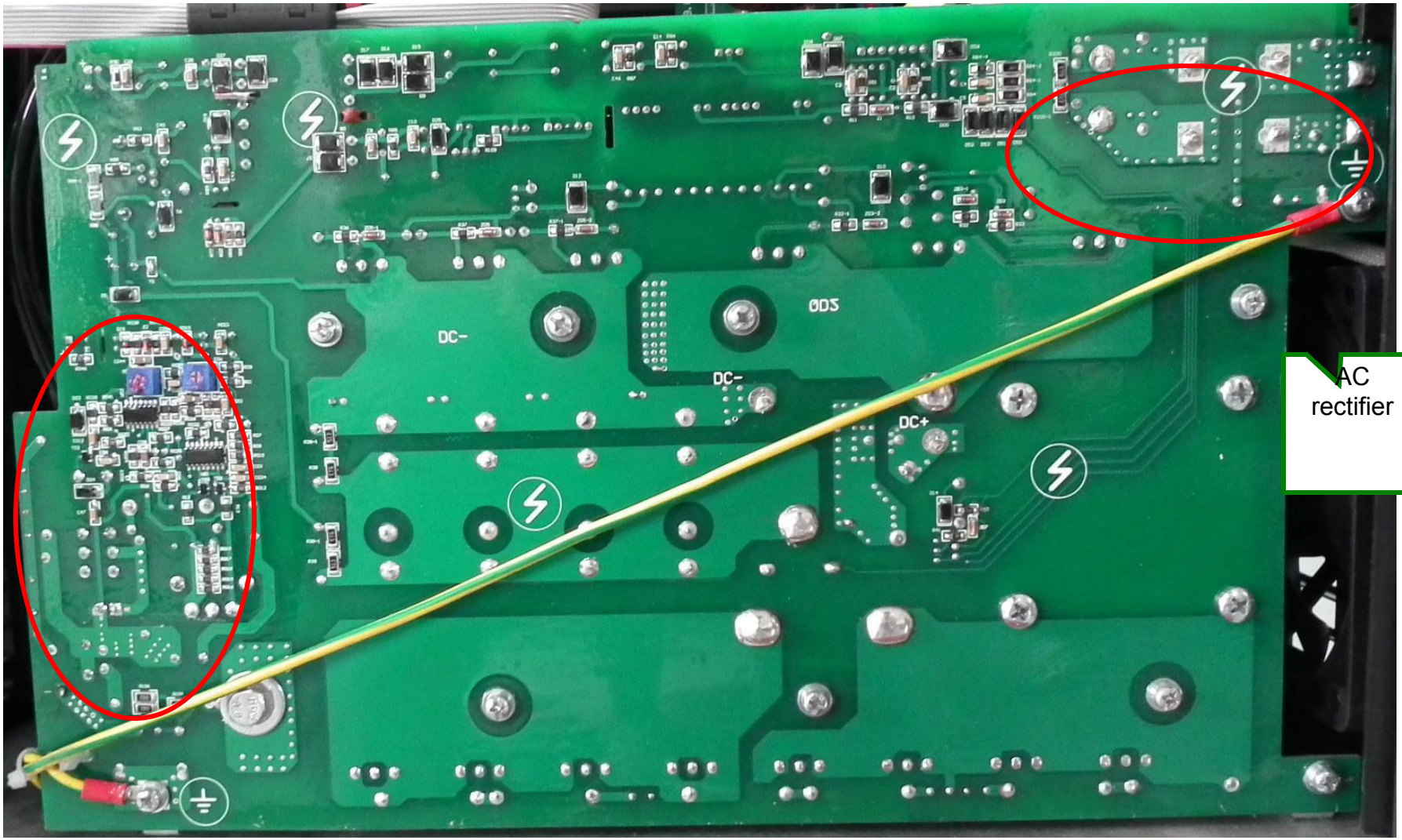
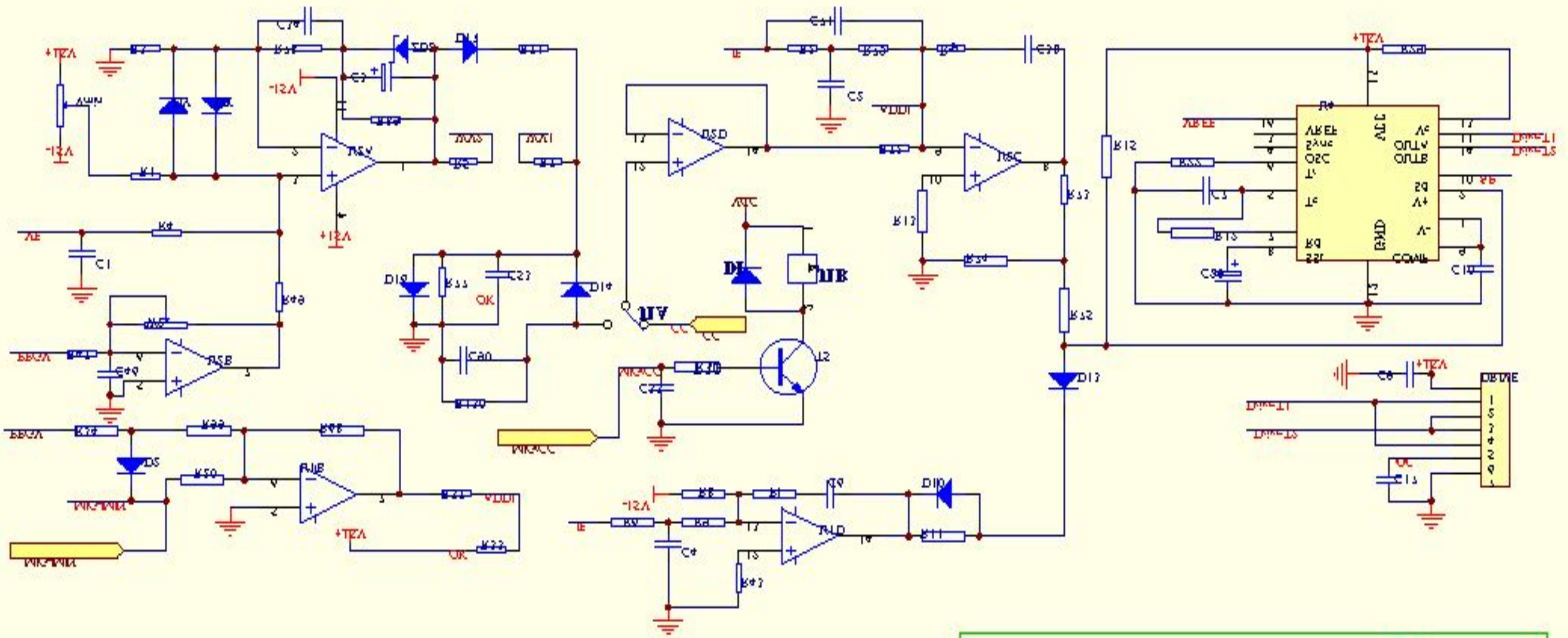


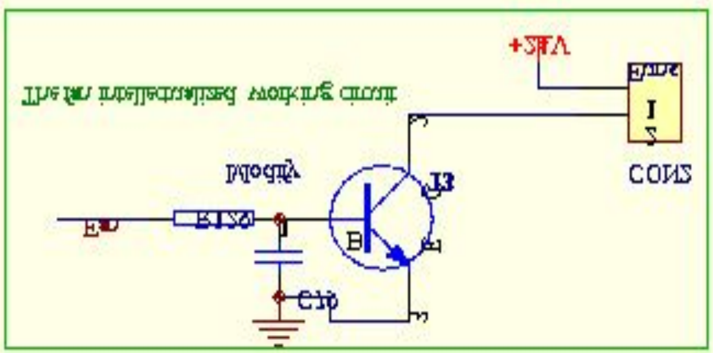
Photo of main PCB

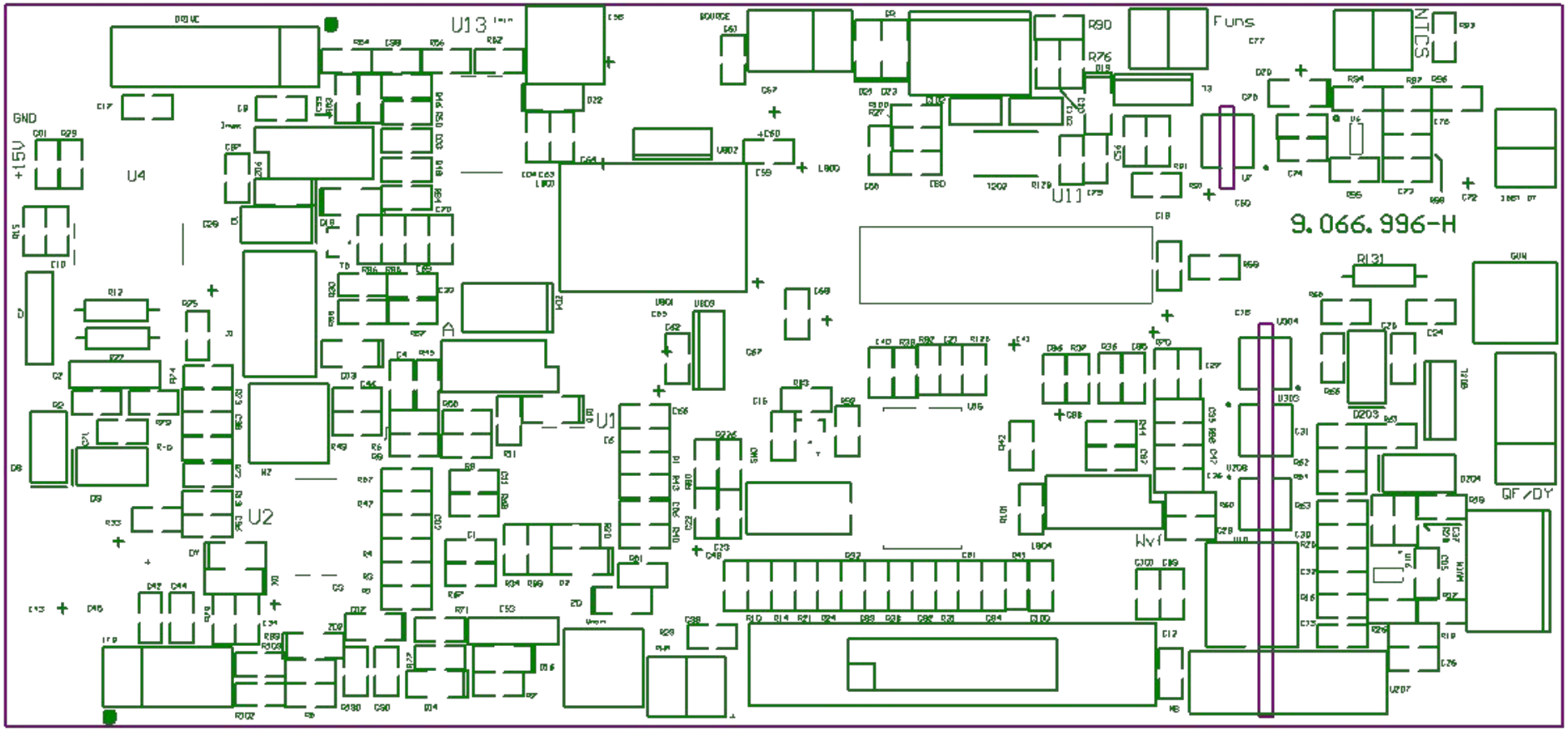


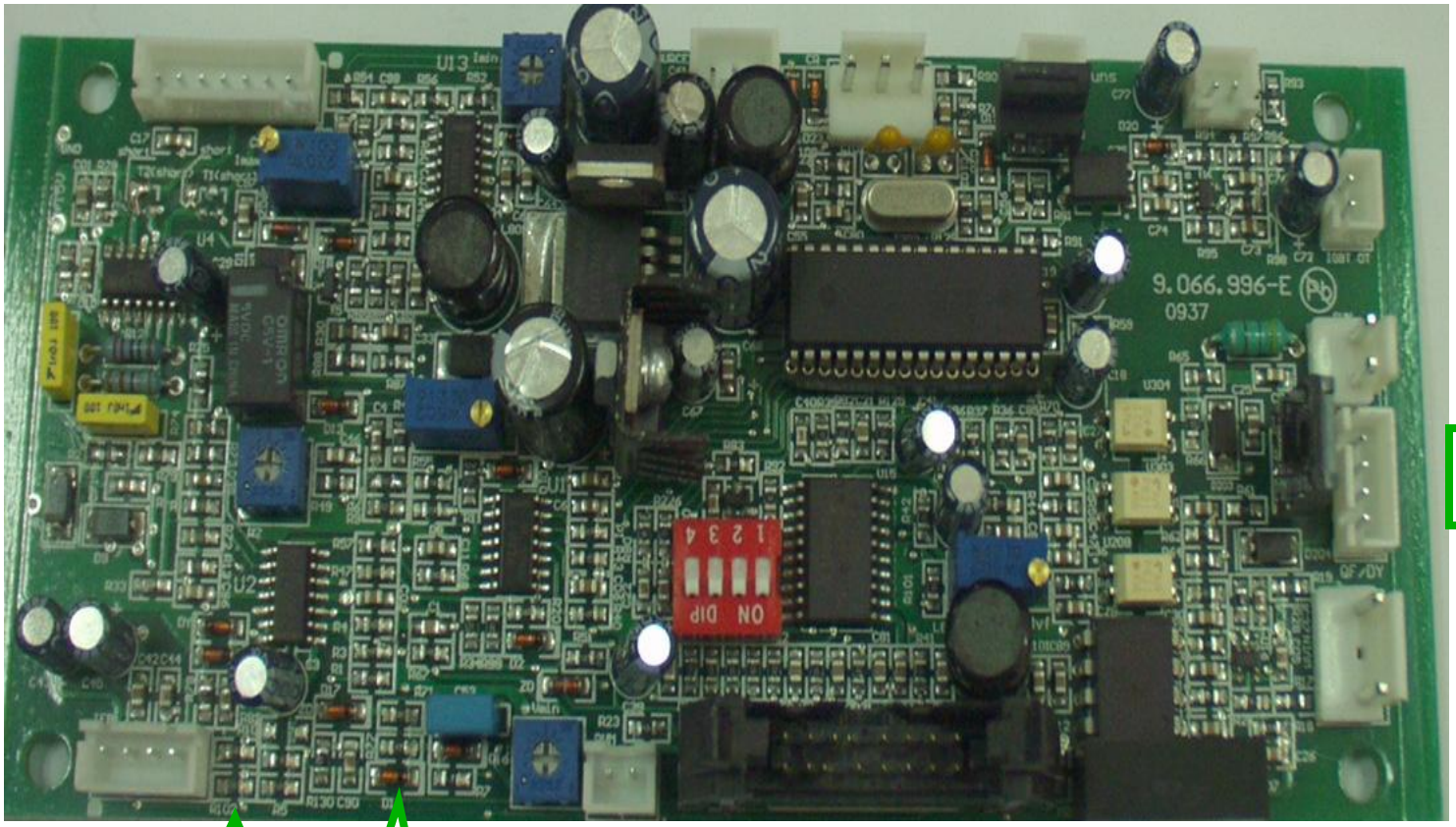
3、Introduction of control circuit（parts different from MMA）



Control Board----Wave adjust circuit




U13
U4
U2
U1
U11
9.066.996-H
GND
+15V
Funs
GF/DY


Drive
Imax
Imin
Power
CR
Funs
NTCS
IGBT OT
Gun
QF/DY
WVIN
IFB
W2
A
Vmin
PWM
MB
Wvf

- DRIVE--Connected with main board to provide drive signal for discrete IGBT.

Pin 1---- +15V；Pin 2~5---- Drive signal；Pin 6---- OC; Pin 7---- GND

- SOURCE--Connected with main board to provide control board with power source and test signal of tip.

Pin 1---- +24V；Pin 2---- GND；Pin 3---- -24V.

- MB--Connected with panel board to communicate.
- CR--Connected with crater arc potentiometer, Burn back signal .

Pin 1---- GND ；Pin 2---- crater arc；Pin 3---- +5V.

- GUN--Connected with the torch to provide signal of gun.
- QF/DY--Connected with the gas switch.

- IGBT OT--Connected with the IGBT NTC to provide over-temperature signal for MCU.
- WVIN--Connected with the output to sample voltage signal.

Pin 1---- cathode of output; Pin 2---- positive pole of output.

- IFB--Connected with HALL sensor to sample current signal.

Pin 1---- +15V; Pin 2---- -15V; Pin 3---- Output of HALL sensor; Pin4---- GND.

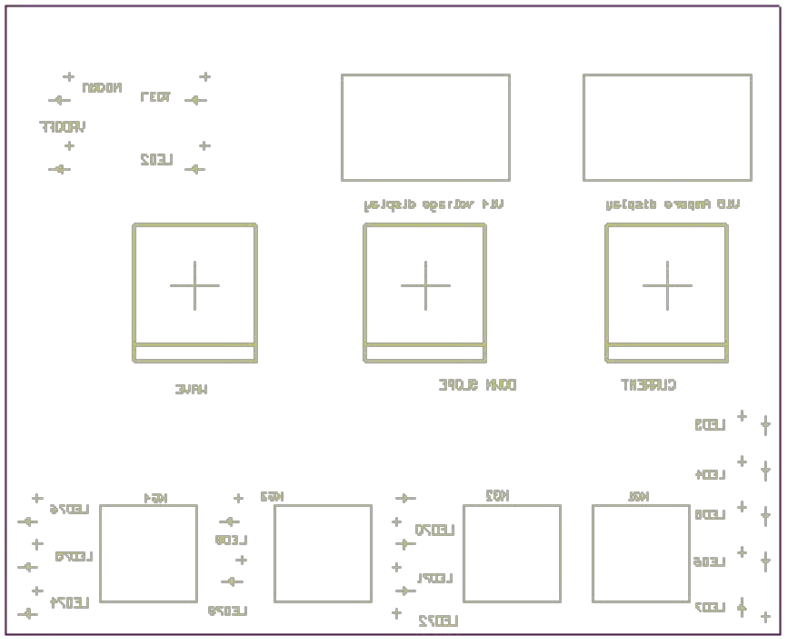
- PWM-- Connected with main board to control Motor speed (pulse).
- Fans-- Connected with the fan.

- Imax—used to adjust maximum welding current (MMA).
- Imin—used to adjust minimum welding current (MMA).
- A—used to adjust display current (MMA).
- W2—used to adjust maximum welding voltage (MIG).
- Vmin—used to adjust minimum voltage (MIG).
- Wvf —used to adjust display voltage (MIG).

4、Introduction of panel circuit

Knop
Digital Displays
Controller
Key
Display Driver

View of panel board



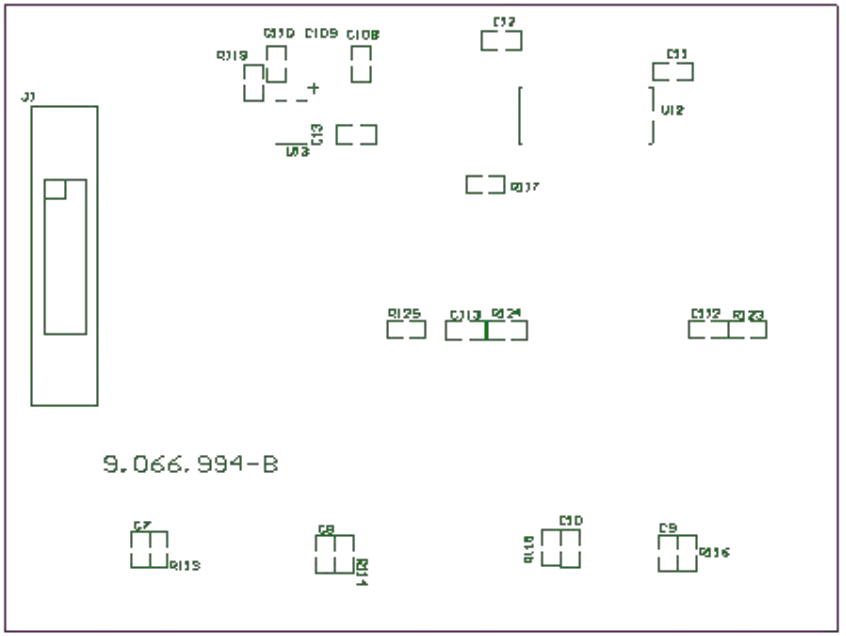


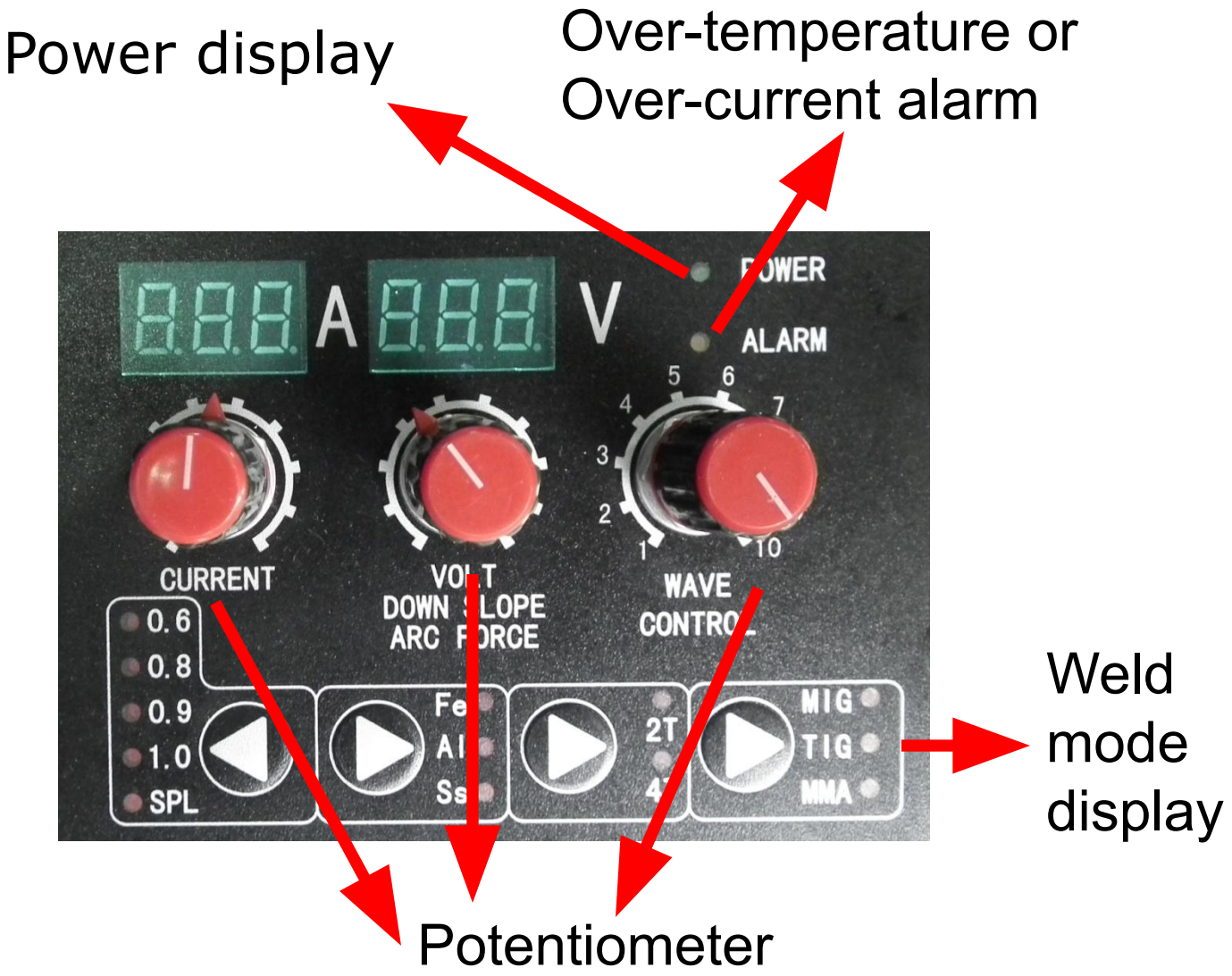
Photo of panel board

5、Troubleshooting

Series A: Troubles about panel display

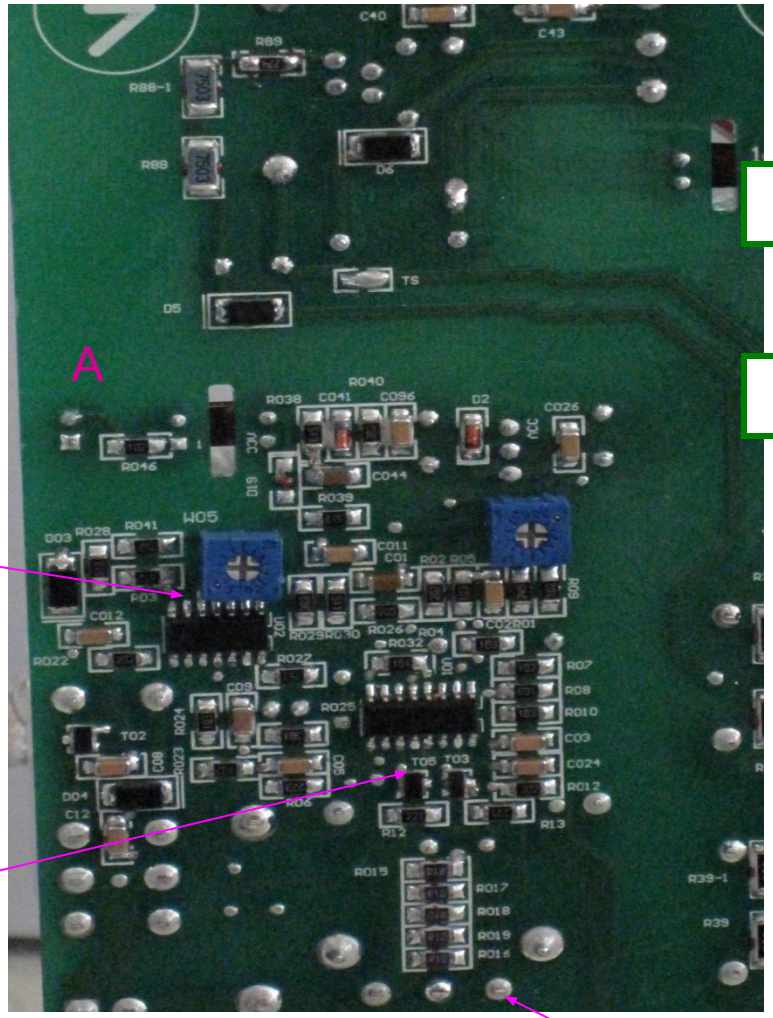
Series B: Troubles about power system

A、Presentation of panel



B、Presentation of wire-feeder

Motor drive circuit In Main PCB



Between the two Pins, is CPU speed Voltage

WD5--Max speed adjust

WD2--Min speed adjust

E/F/G wave point is the IC 1/2/3 P

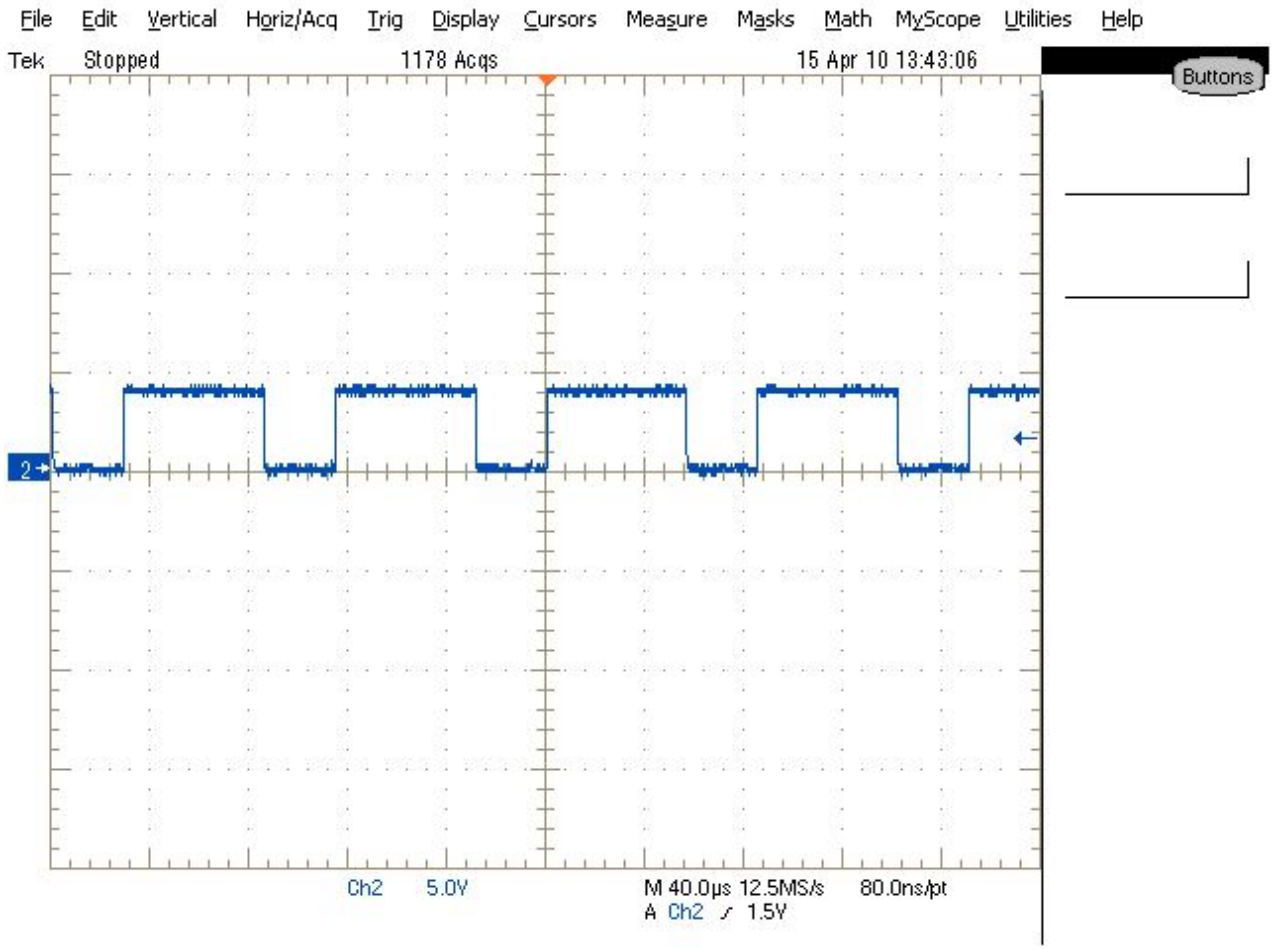
Drive transistor

Between the two Pins, is Motor voltage

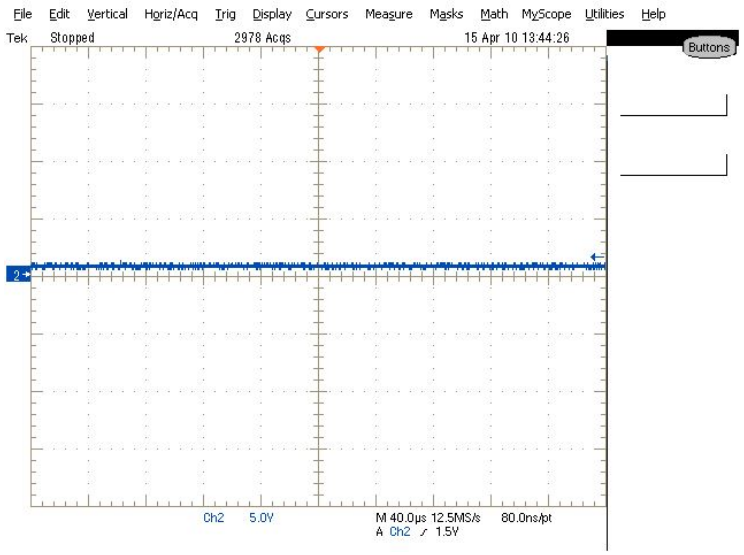
Motor circuit GND (common point)

Test point wave

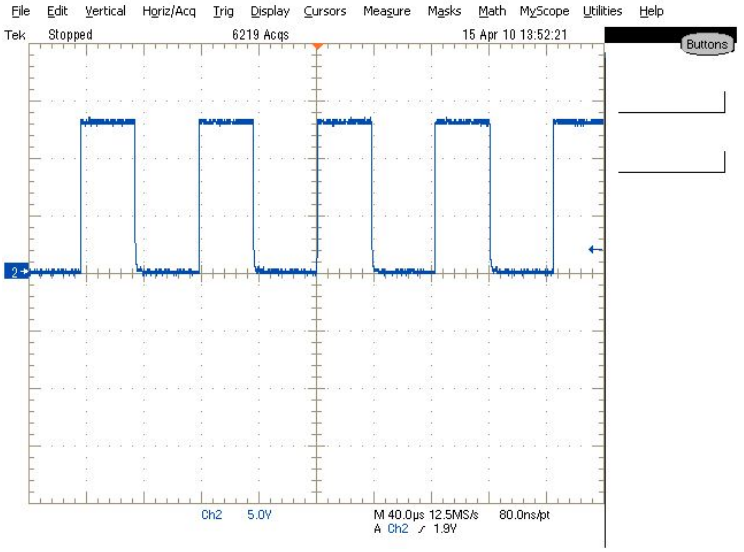
Point A wave :The PWM wave from digital control PCB



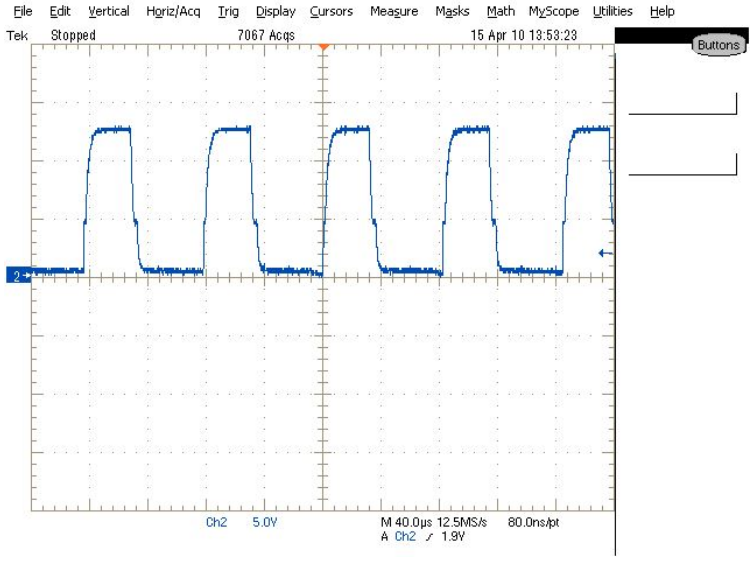
Point B wave :The PWM set point from 6P of U02



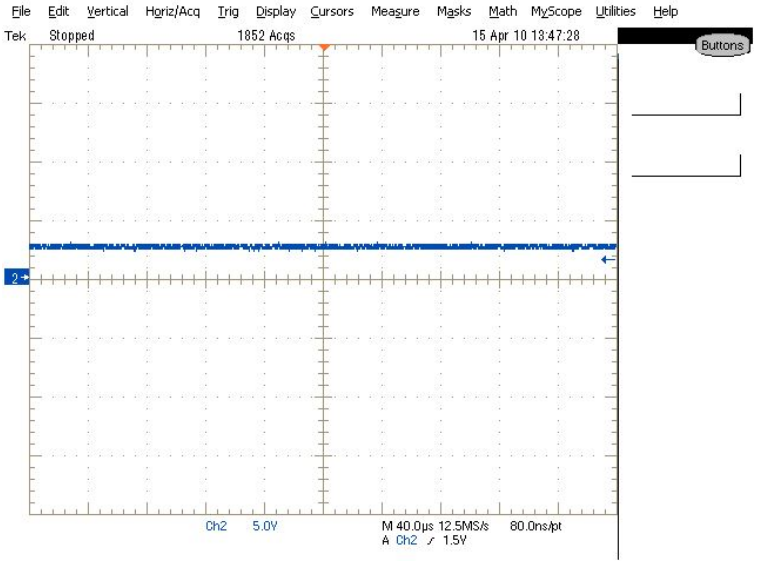
Point C wave :The drive PWM from SG3524 11P



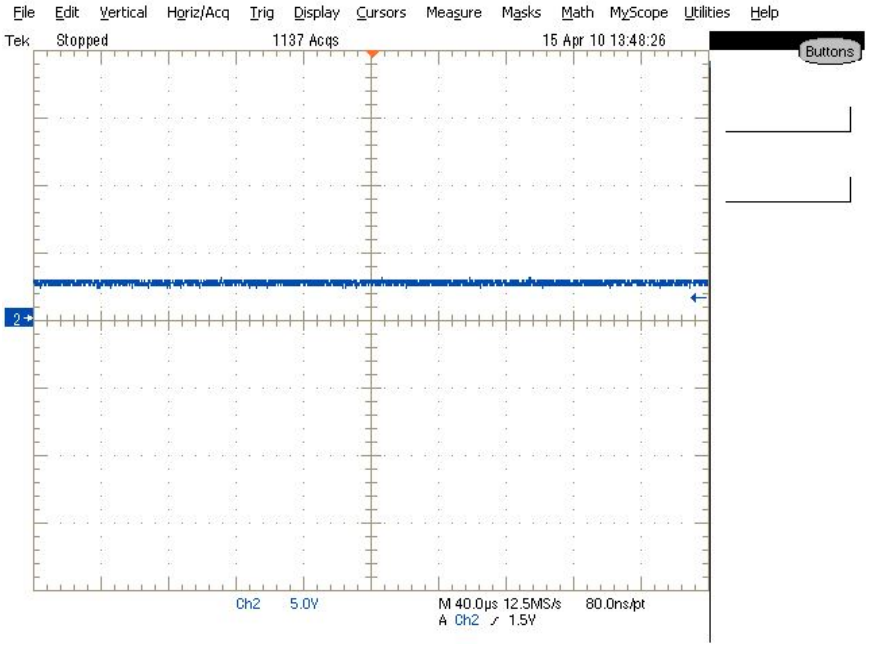
Point D wave :The MOSFET gate drive PWM



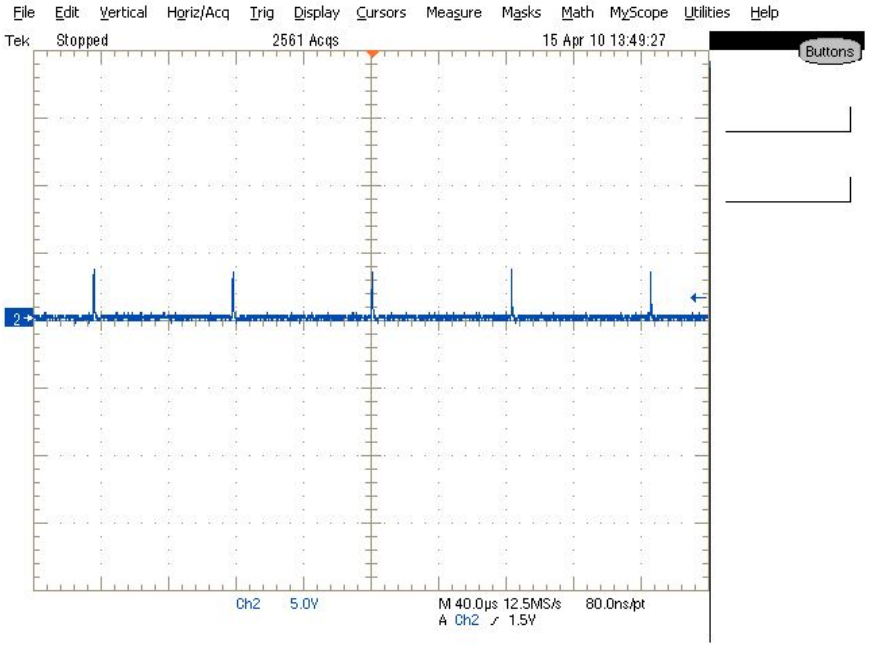
Point E wave : U01 SG3524 1P



Point F wave : U01 SG3524 2P



Point G wave :U01 SG3524 3P



Wire-feeder doesn't work	**Wire reel doesn't work**	**Motor damaged**	**Check and change it**
		Control circuit damaged	**May be the MOS or DIODE in the board is damaged, check it according to the above information.**
	Wire reel works	**The press wheel is loosen or weld wire skids**	**Press it tightly again**
		The wheel doesn't fit with the diameter of weld wire	**Change the wheel**
		Wire reel damaged	**Change it**
		Wire feed pipe or tip is jammed	**Repair or change it**
Fan don't work	**According to page16, check the socket Funs, there isn't +24V,**		**Check +24V power source and whether the socket link is good.**
	If there is +24V,check netlabel Fan , there isn't 5V.		**Change control PCB**
	If there is +5V,check T3, there isn't 0.7V between B and E.		**Change T3**
No gas	**reference to 170HF**		

List of spare part

Title	Unit	
Hall	1	
Rectifier	1	
MIG panel	1	
MIG sole plate	1	
NTC	1	
Waterproof switch	1	
Control PCB	1	
Wire feed frame	1	
Plastic front panel	1	
Plastic rear panel	1	
Insulated potentiometer	3	

Thanks for your attention!!!