ZD7-630/1000/1250HA pro
SUBMERGED ARC WELDING MACHINE

MANUAL INSTRUCTION

(PLEASE READ IT CAREFULLY BEFORE OPERATION)

Safety Depends on You

HUAYUAN arc welding and cutting equipments are designed and built with ample safety consideration. However, proper installing and operating the machine can increase your safety.

DO NOT INSTALL, OPERATE OR REPAIR THIS EQUIPMENT CASUALLY WITHOUT READING THIS MANUAL THROUGHOUT.

Special Notes (Very Important):

1. Pay attention to avoiding the machine falling down when it is placed on the gradient ground.

2. It is forbidden to unfreeze the pipeline by the cutter.

3. The shield rank of this series of cutter is IP21S, so working in rain is not suitable.

4. The external static characteristic of this series welding machine includes CC and CV mode. The rated duty cycle is 100%, which means the machine can work continuously at the rated cutting current. The machine has the function of thermal protection. When the internal temperature exceeds a set temperature, thermal protection moves on and the abnormity indicator lamp on the panel turns ON, then there is no output in machine. The machine can become normal and work only after the internal temperature drops down and the abnormity indicator lamp on the panel turns OFF.

Purchase Date：_____

Serial Number：_____

Machine Model：_____

Purchase Place：_____

Cautions	Arc and arc rays can hurt.

All performing welding workers ought to have health qualification from the authority organization to prevent you and others from arc radiation and burn. It should be prevented for children to enter into dangerous area as well.
Be careful reading the following important items and the welder safety byelaw from the authority organization. Be sure that qualified professionals perform all installation, maintenances and repair procedures.

1 **Electric shock:** The welding circuits are not insulated when welding. If you touch the two output electrodes of the machine with your bare skin at the same time, it will lead to electric shock, sometimes even fatal dangers. Users need to follow the items below to avoid electric shocks:

If possible, lay some insulating materials, which are dry and large enough, in your working field. Otherwise, use the automatic or semiautomatic welding machine, DC welding machine as possible as you can.
Components in the automatic and semiautomatic welding machine such as the welding wire reel, feed wheel, contact tip and welding head are all electriferous.
Always be sure the machine has been connected perfectly to the work piece with the work cables and should be as close as possible to the working area.
The work piece should be grounded perfectly.
Make sure that the insulating material of the electrode holder, the grounding clamp, the welding cable and the welding head are not affected by damp, mildewed or spoilt, and be replaced momentarily.
Never dip the electrode in water for cooling.
Never touch electriferous parts of two welding machines at the same time, because this voltage is supposed to be two times of welding voltage while the grounding mode is not clear.
While working high above the ground or other places having the risk of falling, please be sure to wear safety belt to avoid losing balance caused by electric shock.

2 **Arc:** Use an arc welding mask to protect your eyes and skin from sparks and the rays of the arc, pay special attention to the filter glass, which must be conformable to the national standard.
Use clothing made from durable flame-resistant material or sailcloth to protect your skin from hurting by the arc rays.
Remind other nearby personnel before working lest arc rays hurt them by accident.

3 **Fumes and Gases:** Welding may produce fumes and gases hazardous to health. Avoid breathing these fumes and gases. While working in limited room, use enough ventilation and/or exhaust to keep fumes and gases away from the breathing zone, or use the respirator. Do not weld at the same time when using of degreasing, cleaning or spraying operations. The heat and rays of the arc can react with these gases to form phosgene, a highly toxic gas,
Some protective gases used in welding might displace the oxygen in the air, and can lead to hurt or even death.
Read and understand the manufacturer's instructions for this equipment, and validate the health certification of consumptive materials, make sure they are innocuous.

4 **Spatter**: Spatter can cause fire or explosion.
Remove fire hazards from the welding area. Remember that spatter from welding can easily go through small cracks and touch fire hazards. Protect all kinds of lines going though welding area, including hydraulic lines in the wild.
Where compressed gases are to be used in the field, special precautions should be used to prevent explosion.
When welding stops, make certain that no live part is touching the work piece or the work stage. Accidental contact can create a fire hazard.
Do not weld containers or lines, which are not proved to be innocuous.
It is very dangerous to heat, cut or weld tanks or containers at entry holes. Does not start work until the proper steps have been taken to insure that there is no flammable or toxic gas.
Spatter might cause burn. Wear leather gloves, heavy shirt, cuffless trousers, high shoes and a cap over your hair to prevent from burning by spatter. Wear the ear shield when performing sideways or face up welding. Always wear safety glasses with side shields when being in a welding area.
The welding cables should be as close to the welding area as possible, and the short, the better. Avoid welding cables going through the building framework, lifting chains, AC or DC cables of other welding machines and appliances. The welding current is strong enough to damage them while having short circuit with them.

5 **Cylinder**: Damage of it might cause explosion.
Make sure that the gas in the storage cylinder is qualified for welding, and the decompression flow-meter, the adapter and the pipe are all in good condition.
Make sure that the installation of cylinder is by the wall and bundled tightly by a chain.
Be sure to put the cylinder in the working space with no crash or shake, and far from welding area.
It is forbidden to touch cylinder with the welding clamp or the work cables.
Avoid facing the cylinder while installing the decompression flow-meter or the gasometer.
When not working, please tighten the valve.

6 **Power:** (For electrically powered welding and cutting equipment) Turn off input power before installation, maintenances and repair, so that avoid accident.

HUAYUAN welding equipment is I class safeguard equipment; please install the equipment in accordance with the manufacturer's recommendations by specific persons.

Ground the equipment perfectly in accordance with the manufacturer's recommendations.

7 **Power**:(For engine driven welding and cutting equipment)

Work in ventilated place or outdoors.

Do not add fuel near to fire or during engine starting or welding. When not working, add fuel after engine is cooling down; otherwise, the evaporation of hot fuel would result in dangers. Do not splash fuel out of the fuel tank, and do not start the engine until complete evaporation of the outside fuel.

Make sure that all the safeguard equipments, machine cover and devices are all in a good condition. Be sure that arms, clothes and all the tools do not touch all the moving and rotating components including V belt, gear and fan etc.

Sometimes having to dismantle some parts of the device during maintenance, but must keep safety awareness strongly every time.

Do not put your hand close to fans and do not move the brake handle while operating.

Please remove the connection between the engine and the welding equipment to avoid sudden starting during maintenances.

When engine is hot, it is forbidden to open the airtight cover of the radiator water tank to avoid hurt by the hot vapor.

8 **Electromagnetic**: Welding current going though any area can generate electromagnetic, as well as the welding equipment itself.

Electromagnetic would affect cardiac pacemaker, the cardiac pacemaker users should consult one's doctor first.

The effect of electromagnetic to one's health is not confirmed, so it might have some negative effect to one's health.

Welders may use following method to reduce the hazardous of electromagnetic:

a. Bundle the cable connected to the work piece and the welding cable together.

b. Do not enwind partially or entirely your body with the cable.

c. Do not place yourself between the welding cable and the ground (work piece) cable, if the welding cable is by your left side, then the ground cable should be by your left side too.

d. The Welding cable and the ground cable are as short as possible.

e. Do not work near to the welding power source.

9 **Lift Equipment**: carton or wooden boxes package the welding machines supplied by HUAYUAN. There is no lifting equipment in its wrapper. Users can move it to the prospective area by a fork-lift truck, and then open the box.

If having rings, the machine can be transited using rings. While HUAYUAN Welding Machine Manufacture reminds users, there is possible risk to damage the welding machine. It is better to push the welding machine moving in use of its rollers unless special situations.

Be sure that the appurtenances are all removed off when lifting.

When lifting, make sure that there is no person below the welding machine, and remind people passing by at any moment.

Do not move the hoist too fast.

10 **Noise**: HUAYUAN Welding Machine Manufacture reminds users: Noise beyond the limit (over 80 db) can cause injury to vision, heart and audition depending on oneself. Please consult local medical institution. Use the equipment with doctor's permission would help to keeping healthy.

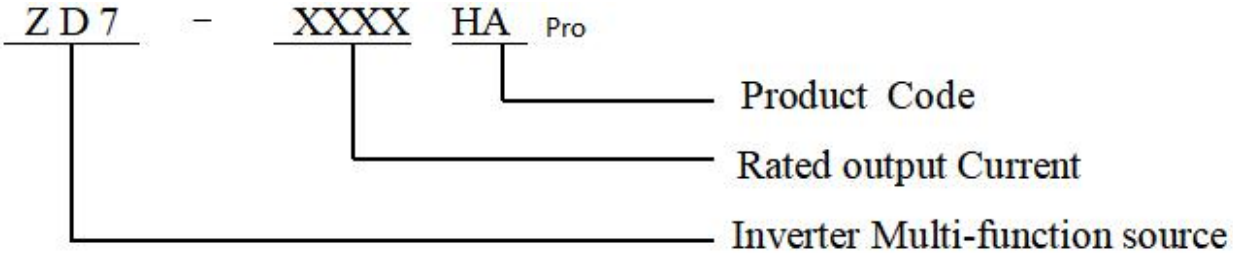
CONTENT

Warning

There are dangerous circuits and connectors with high voltage inside this machine, only specialized persons are permitted to open and repair, cut off the power when make the maintenances.

Product Introduction

1. Model Introduction



2. The main usage and application

ZD7 series inverter multi-function power source can be used for automatic submerged arc welding, electro-slag welding, sticking welding and arc air gouging, it also has good performance on DC single wire welding and strip surfacing. The main circuit of power source is IGBT inverter circuit with high reliability, fast response speed, good dynamic characteristic, and it can auto-compensate the fluctuation of grid voltage, ensure arc burning steadily, good-shaped welding seam.

3. Symbol Description

	Read manual carefully		Positive Pole
	Over heating		Negative Pole
	Voltage Abnormal	3～380V	Voltage Input
	Panel Control		Voltage Input
	Remote control		ON
	CV		OFF
	CC		On-Off Bottom ”Popup” Status
	Air breaker		On-Off Bottom ”Popdown” Status
A	Current		Ground connection
V	Voltage		Dangerous voltage
	Values Increase/Decrease		

Safety Notices

- Please read the operation manual carefully.
- Open and check the machine: only qualified personnel should perform to avoid danger or machine damage.
- Turn off input power before open the machine, do not touch the electrical conductors to avoid electric shock.
- Welding may produce fumes and gases hazardous to health. Use enough ventilation and exhaust at the arc to keep fumes and gases away from the breathing zone.
- Arc rays may cause eye injury, please do not watch the arc nor expose to the arc rays.
- Dirt and dust which may cause short circuit should be kept to a minimum.
- Remove fire hazards from welding area, welding sparks and hot materials from welding can easily go through small crack and cause fire.
- If the welding performance getting worse obviously, please stop the machine and check.
- The functions of potentiometer in the control circuits are different, which have been locked when delivery, please do not adjust that.

If the abnormal indicators on, please cut off the power, check the input voltage, cooling fan and the temperatures.

Working condition and environment

1. Environment condition
   - The elevation should be less than 1000m；
   - Ambient temperature range

     Welding：-10～+40℃；

     Transport and store -25～+55℃；
   - Relative humidity：40℃≤50%； 20℃≤90%
   - The dust, corrosive and acid air or material should be within normal range, except the air come from the welding process.
   - It should be stored in a dry and windy place to prevent the sunshine and rain;
   - Keep the welding power source away from wall and other power source at least 30cm;
2. Power supply
   - Input power：3～380V/50Hz；
   - Input voltage fluctuation range＜±10%；
   - The frequency fluctuation range＜±1%；
   - Three phrase power supply asymmetry rate＜±5%；
   - If use engine generator, the generator output power should be 2 times higher than the rated input power of the welding power source, and the compensating coils are required.

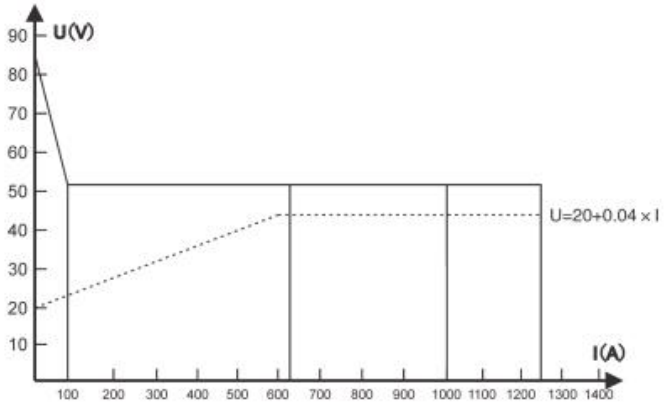
Specification & Parameters

1. Technical Parameters

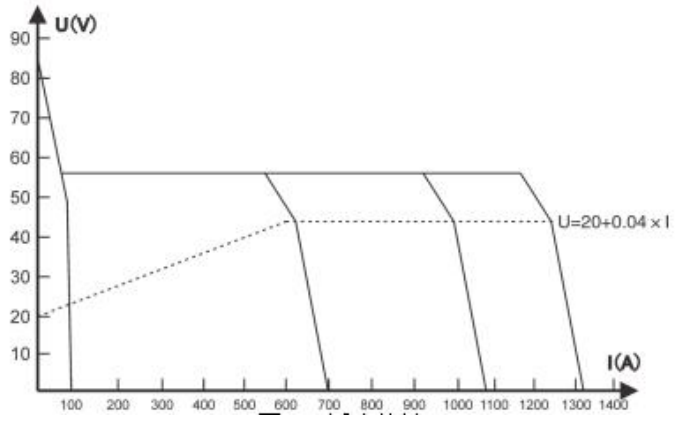
No.	Item	Unit	ZD7-630HA pro	ZD7-1000HA pro	ZD7-1250HA pro
1.	Input Power	V/Hz	3～380±10% 50/60		
2.	Rated input capacity（KVA）	kVA	35.3	54.5	70.5
3.	Rated input current（A）	A	53	77	100
4.	Efficiency（η）	%	90.6	91.7	91.4

5.	Power factor（cos ϕ ）	-	0.865	0.883	0.857
6.	Energy efficiency Index	-	3 级		
7.	Rated output current	A	630	1000	1250
8.	Rated output voltage	V	44		
9.	Rated duty cycle	-	100%（40℃）		
10.	Rated open circuit voltage	V	80	84	
11.	Current adj. range（A）	A	60-630	100-1000	100-1250
12.	Cooling mode	-	Air cooling		
13.	Insulation grade		F		
14.	Protection grade	-	IP23S		
15.	Dimension（L×W×H）	mm	640×290×590	705×315×885	
16.	Weight	kg	40	76	78

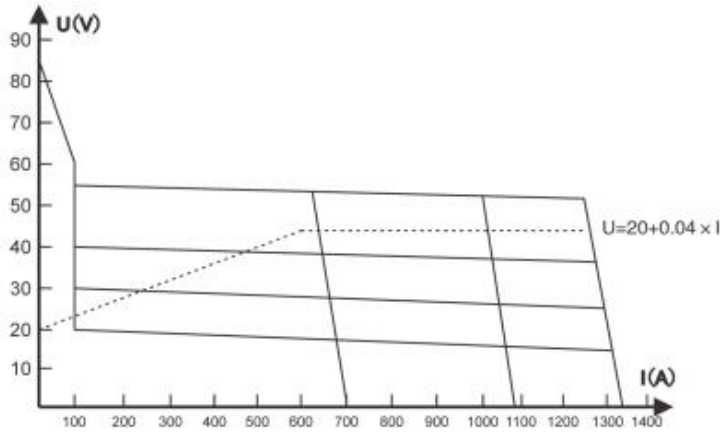
2. Static characteristic graph



Constant current for gouging and MMA



Constant current for SAW



Constant Voltage

Working Principal

ZD7 series inverter multi-function welding machine adopts the inverter main circuit. Three-phase AC power is converted to 20KHz high-frequency DC current after being rectified by three phase rectifier. Then under the function of IGBT inverter the DC current is inverted to AC high frequency current, which is inverted to DC current after experiencing voltage reduction in high frequency transformer, current rectifying in fast recovery diode. This DC current is filtered through reactor, and controlled by current negative feedback, and then the step-less adjustable current which can meet the welding requirement is obtained.

Control circuit controls the output current through adjusting the pulse width of driving signal. The current negative feedback signal is checked on output wire, then after enlarging it is input into inverting end of error amplifier by using pulse width adjusting integrated circuit, then it can control the conductive time of IGBT, hence inverter rectifier can get the required external characteristic.

Installation & Operation

1. The moving and lifting
- Power off before moving. If the lifting of machine frequent, you should use special lifting equipment. Since the thrust face is on the bottom of machine, so forklift is the right choice;
- Welding machines and operation place should be away from combustibles;
- Should be lifted vertically;
- Prevent machine from dropping and crash.

2. Installation and operation conditions
- The installation should be done by authorized person;

This machine requires 3 phase 380v/50Hz power input, so the related power cable and distribution box is needed, as well as the circuit breaker and ground lead. Reliably connect the protective ground and the yellow-green wire which on the back of the machine. The wire CSA should no less than the following table:

Model	CSA for input copper wire ($mm^{2)}$	CSA for ground lead cable($mm^{2)}$	Fuse protector (A)	Breaker capacity(A)
ZD7-630HA pro	≥6	≥6	80	80
ZD7-1000HA pro	≥16	≥16	125	160
ZD7-1250HA pro	≥25	≥16	125	160

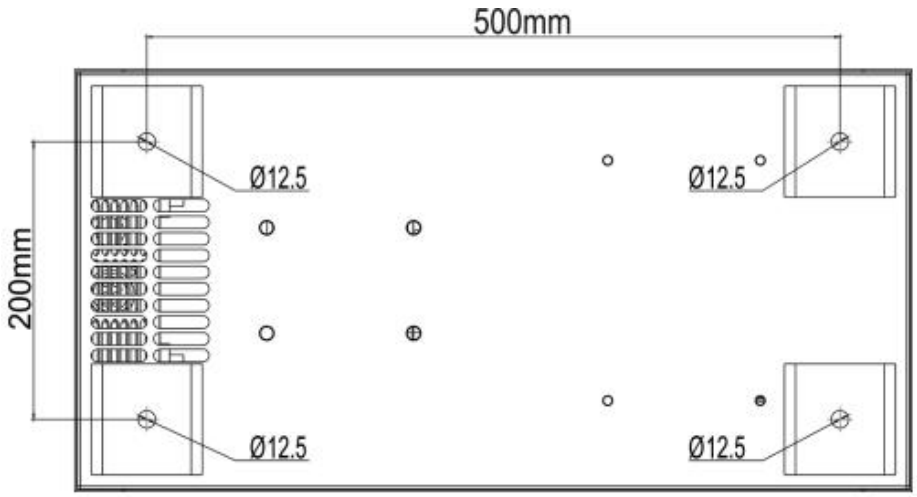
- Power lead connection

  Open the insulation cover of the terminal box on the rear, use the power lead as above requires, connect it well, and cover the box
- The connection of the ground cable

  The ground cable should be connected well.

3. The fixing of the welding power source

Please refer to the below size for fixing(ZD 7-1000/1250HA pro).



4. The connection of the output terminal

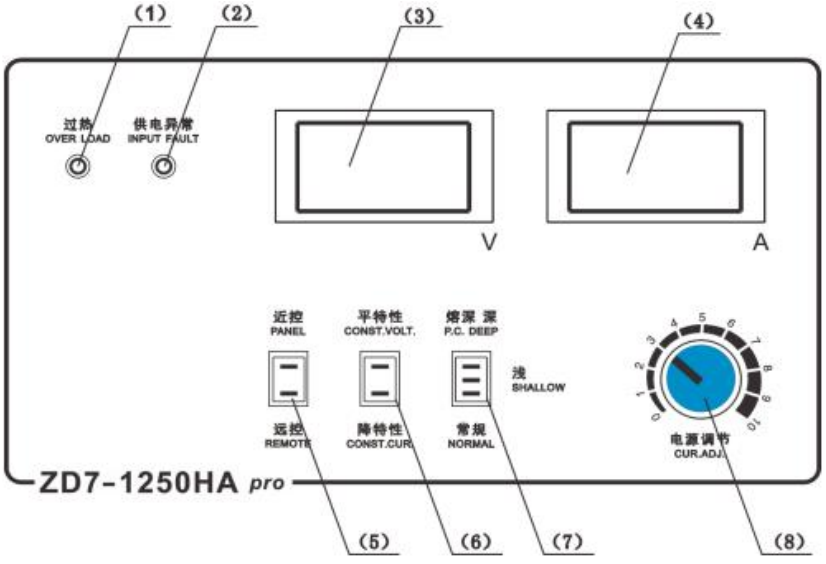
Connect the welding cables to the ZD7 power source output terminal. ZD7-1000 / 1250IGBT welding cable section ≥140mm^2 ; ZD7-630IGBT welding cable section ≥70mm^2 ,the welding cable is as shorter as better.

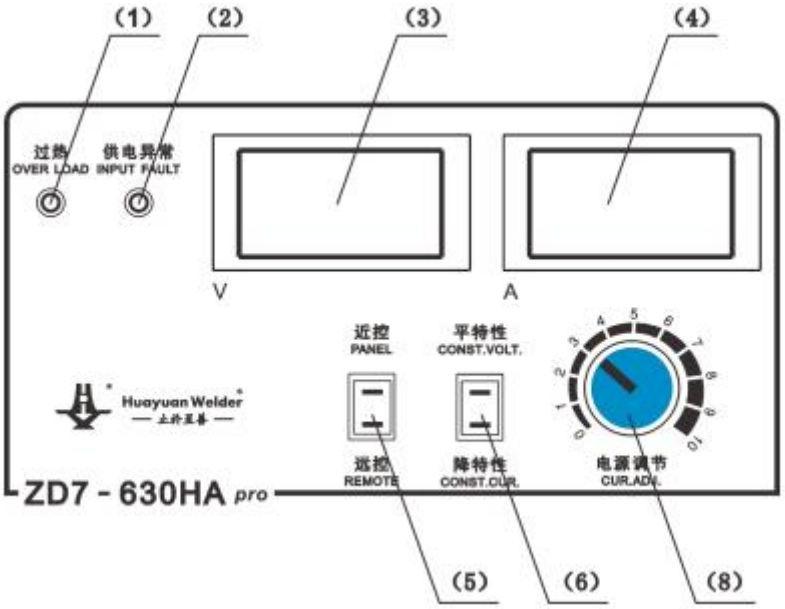
When the ZD7 welding power source work as trolley type submerged arc welding, connect the pins connector to the "control" socket on the left of output terminal, connect the welding cable on the positive terminal (Welding trolley), and connect the ground cable to the negative terminal (Work-piece).

5. Panel and functions

Front panel

1. OVERLOAD：If the machine is overheating, this yellow indicator on;
2. INPUTFAULT：if the input voltage is abnormal, this red indicator on;
3. Voltmeter(V)：Indicate the actual welding voltage;
4. Ammeter (A)：Indicate the actual welding current;
5. Function selection switch："PANEL"and"REMOTE"。Set to"PANEL"，all parameter adjust by the panel, set to"REMOTE"，the remote control box will adjust the output。Gouging and MMA set to"PANEL"，SAW and electro-slag set to"REMOTE".
6. Welding characteristic selection："CONST.VOLT."and"CONST.CUR."；"CONST.CUR."suitable for gouging, MMA and SAW；CONST.VOLT."suitable for SAW and electro-slag welding；Users can select features according to their own welding requirements.
7. Melting control knob: this adjustment knob only in the function selection switch selection far control "REMOTE" function and feature selection switch selection features "CONST.CUR" when effective adjustment, with shallow "SHALLOW", "NORMOL", "and" DEEP three melting gear "deep", under the same welding parameters, the melting size is: deep> conventional> shallow, specific use method see "four, welding power use melting control gear" installation and operation ".（Note:ZD7-630HA pro do't have this function)
8. Parameter adjustment knob: This adjustment knob is only effective when the function selection switch selects the close control "PANEL" function, when the feature selection switch is placed in the drop feature "CONST.CUR." position, and the output voltage is adjusted in the flat feature "CONST.VOLT."





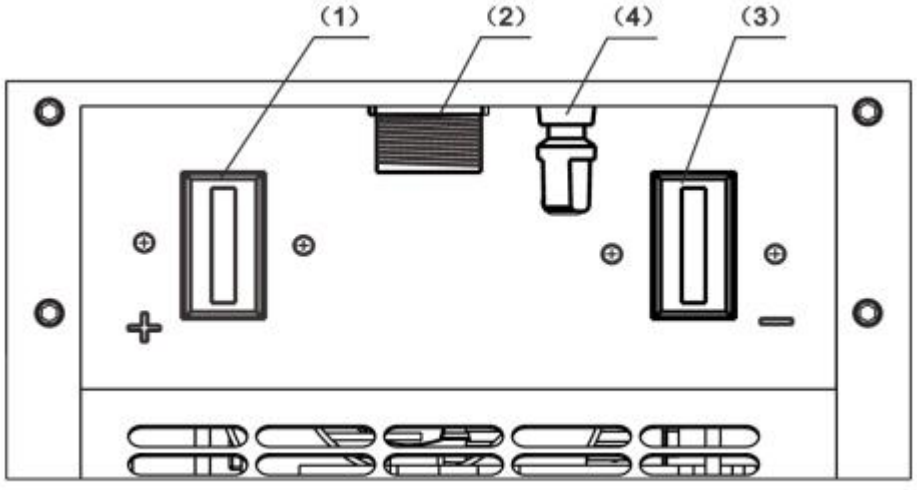
Output terminal

（1）Remote control socket: remote control control socket of welding power supply;

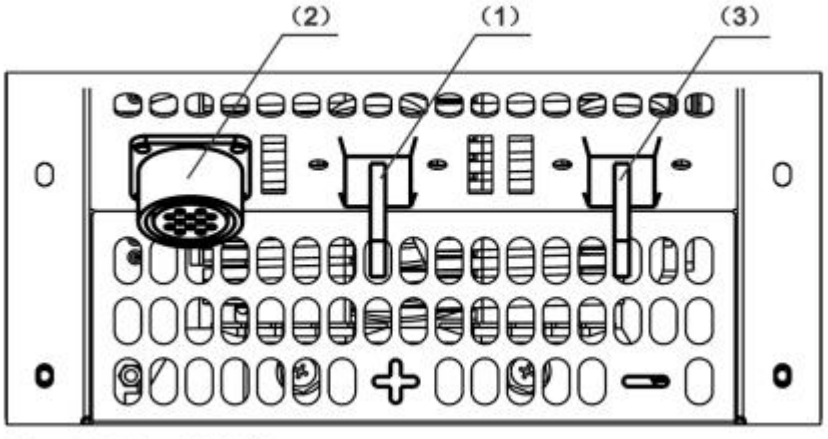
（2）Positive electrode output end: weld the positive electrode of the power supply output end“┼”；

（3）Negative electrode output terminal: weld the negative electrode of the output terminal of the power supply“▬”；

（4）Arc voltage inspection signal connector:connect with workpiece, when the welding cable is more than 15m, the voltage will deduct, so recommend to use this connection (ZD7-630HA pro) don;t have



ZD7–1000/1250HA pro输出端



ZD7–630HA pro输出端

Back of the machine

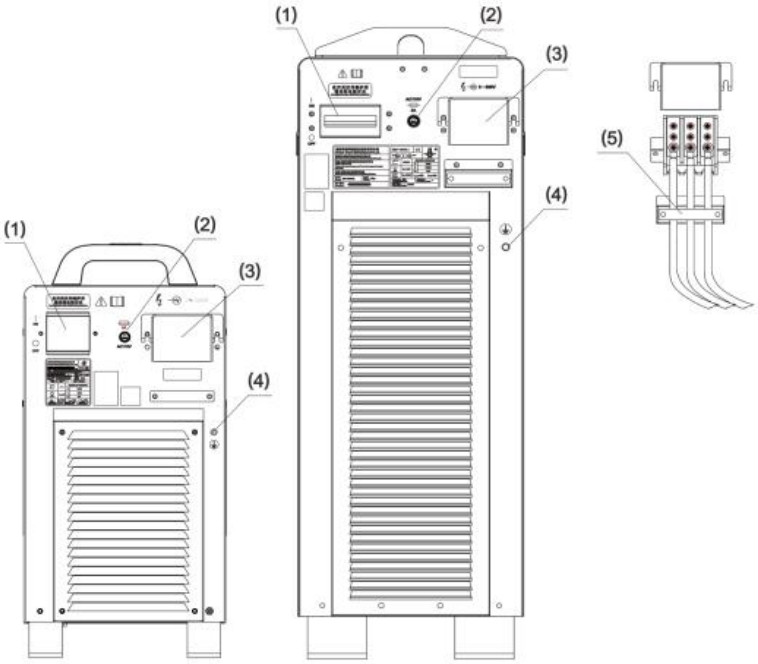
（1）Power switch: control the power supply.Turn on / ON and turn off when OFF / OFF. This switch is a circuit breaker switch, which will automatically power off during overload or failure to protect the welding machine. In general, turn up to the connected position, and use the power supply of the power switch on the user's distribution board (cabinet).

（2）Fuse: inner control power fuse

（3）Junction box: used for connecting the welding machine power supply power supply;

（4）Safety grounding stud: used to connect safety grounding wire; to ensure personal safety and normal use of equipment, please use the wires specified in Table 3 to connect the safety protection grounding wire of the power supply system.

（5）Cable pressing block: used to secure the power cord to prevent loosening

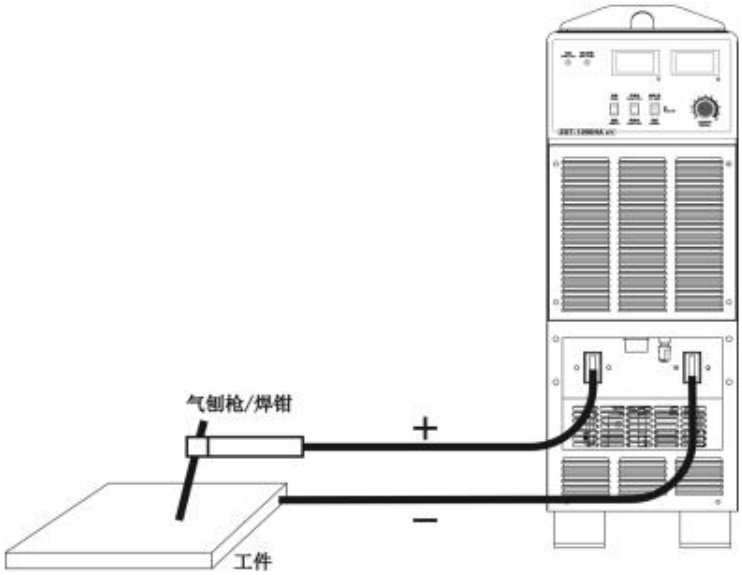


Operation

Inverter multifunctional arc welding power supply has a variety of characteristics, which can be used as wire submerged arc welding, wire slag welding, electrode submerged arc slag welding, carbon gouging, simple manual welding and other power sources.

Used as a carbon gouging and manual welding power supply:：

① shut off the input power switch of the welding power supply first and then connect as shown in Figure below:



As shown in Figure, the gouging torch or electrode holder is connected to the positive output through the welding cable, and the workpiece is connected to the negative output through the welding cable.

The positive and negative output terminals are respectively composed of a single output terminal. The maximum output current of a single output terminal is 1250A. It is suggested that the output end of the positive and negative should be connected to two welded cables respectively. As shown in Figure , the two cable joints should be connected to the left and right sides of a single output terminal, and be reliably fixed with screws;

In order to prevent excessive energy loss on the cable during welding, the sectional area of the welded cable should be guaranteed, and the welded cable should be as short as possible on the premise of ensuring normal use.

Note: The bare terminals shall be insulated with high temperature resistant insulation tape.

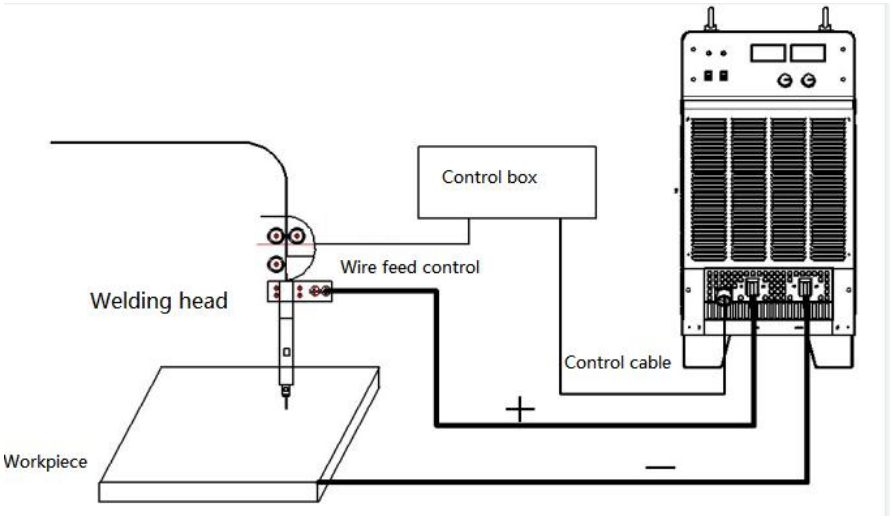
② Power on, place the function switch on the welded power panel in "PANEL" and "CONST.CUR." position; adjust the parameter adjustment knob of the panel, refer to following table to adjust the corresponding

Gouging parameter

Round rod（mm）	Φ6	Φ8	Φ10	Φ12	Φ13	/	/
Current （A）	180～300	240～400	300～500	750～850	800～900	/	/
Square rod（mm）	4×12	5×12	5×15	5×18	5×20	5×25	6×20
Current（A）	200～250	300～350	350～400	380～430	430～480	480～550	550～600

Used as a welding power supply for SAW and electric slag welding:

After turning off the input power switch, the connection can be made according to the connection mode of welding power supply in following Figure ;



Connect the output terminal wiring of welding power supply according to the output terminal wiring diagram shown in Figure ;

①Reliably connect the control cable plug to the remote control socket "↗" at the power output end and the other end to the remote control control box.

②Power on, place the welding mode function in "REMOTE" on the welding power panel; place feature selection on "CONST.VOLT." or "CONST.CUR." (select according to specific use requirements); and set corresponding welding parameters on the control box

SAW welding parameter

Wire dia.（mm）	Φ3.0	Φ4.0	Φ5.0
Welding current（A）	350～600	500～800	700～1000
Welding voltage（V）	28～35	30～37	31～40

Note: The welding voltage / clad welding voltage represents the arc voltage between the conductive nozzle and the workpiece during welding.

③**The melting depth control knob is valid when select "CONST.CUR.".**

Melting depth controls the use of the adjustment knob

When the customer selects the function control switch "REMOTE" and the feature selection switch "CONST.CUR", the melting depth control adjustment knob can adjust the melting depth knob according to their own needs. However, the following two points should be paid attention to when using following function:

（1）Difference between the melting-depth adjustment gears

The adjustment range of the melting depth control adjustment knob is fixed and divided into three gears, from shallow to deep：“SHALLOW”、“NORMOL”、“DEEP”。

Based on the "SHALLOW" gear, under the welding parameters: 600A / 32V, walking speed: 40cm / min, the melting depth value under the conventional "NORMOL" gear increased by 16.5% compared to the shallow "SHALLOW" gear, while the deep "DEEP" gear increased by 22% compared to the shallow "SHALLOW" gear. The customer can choose the appropriate melting depth value to adjust the gear according to their own welding process needs.

（2）Minimum specification for the welding current

In practice, customers also recommend to note the data in following table. That is, in the case of the corresponding melting depth adjustment gear and the welding wire diameter, the actual value of the welding current and voltage is recommended to be greater than the standard value in the table.

For example, when the gear is in"SHALLOW" and the wire diameter is Φ 3.0mm, the actual welding current is recommended to be more than 300A, and the voltage is more than 25V.

Min welding current and voltage table

Gear	Φ3.0mm	Φ4.0mm	Φ5.0mm
SHALLOW	300A/25V	350A/27V	400A/25V
NORMOL	300A/25V	350A/26V	400A/26V
DEEP	300A/30V	500A/28V	530A/30V

Note: When welding short circuit, the welding current will change. In addition, the data in the table are all from Huayuan Laboratory. Only use the data in the actual construction environment.

Maintenance

Specially note: Please turn off the power before any of maintenance and repairing of this welding power source, and because of the capacitor discharge, any of operation should be done at least 5 minutes after turning off the power.

1. The welding power should be opened and checked regularly (Once a year at least), clear the dust inside the machine with impressed air to avoid any of fault or short circuit.
2. The welding cables (Input and output) should be checked regularly (Once a week at least) to protect the reliable connection.

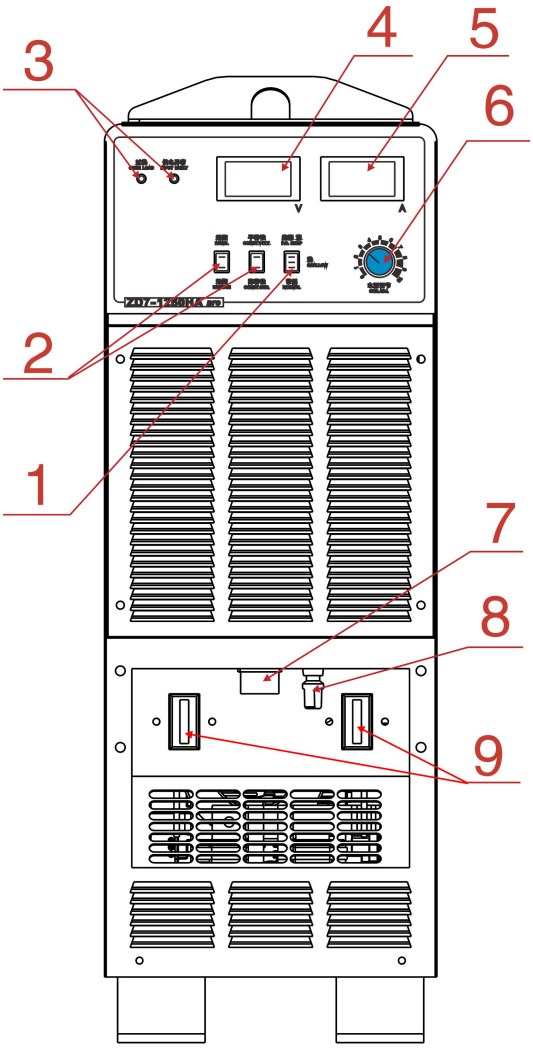
Troubleshooting

1. Only qualified technicians should perform troubleshooting work on the machine;
2. If for any reason you do not understand the test procedures or are unable to perform the tests/repairs safely, please contact us for technical assistance;
3. Troubleshooting

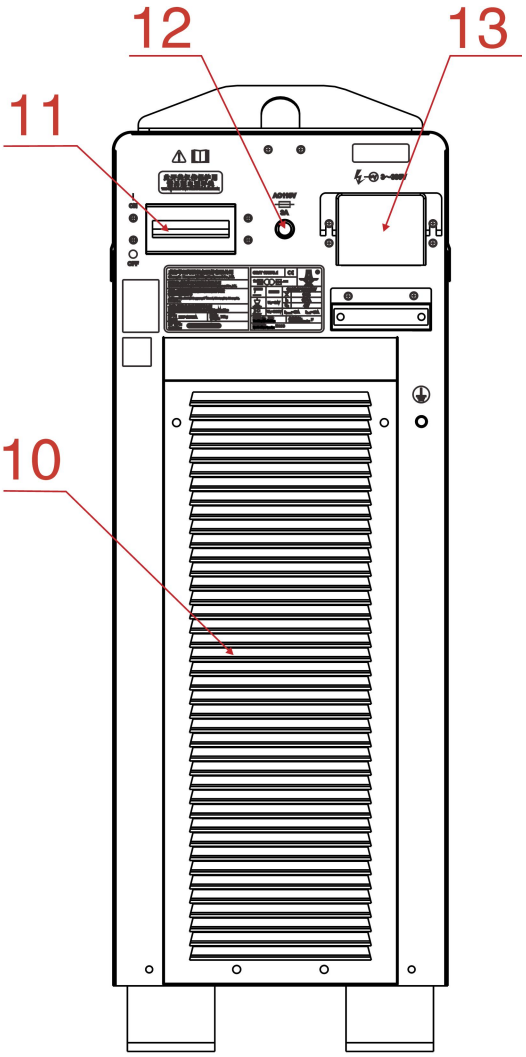
Fault	Cause	Troubleshooting
Turn on the power source, the cooling fan doesn`t work	1. The input wire of three phase power source is under trouble. 2. The fuses on the front panel is broken； 3.The cooling fan is damaged.	1. Check the three phase power source. 2. Replace the fuse（3A）; 3.Repair or replace the cooling fan.
Turn on the power source, only one of the cooling fan work, or work very slow, there is no output	1.The input wire of three phase power source is under trouble. 2.The cooling fan is damaged.。	1. Check the three phase power source. 2. Repair or replace the cooling fan.
Turn on the power source, the digital meter does not illuminate	1. The input wire of three phase power source is under trouble. 2. The fuses on the control transformer is broken； 3. Air breaker is broken； 4. The digital meter is damaged； 5.Control circuit is under trouble.	1. Check the three phase power source. 2. Replace the fuse（3A）; 3. Check the air breaker； 4. Replace the power supply digital meter lamp； 5. Check the control circuit.
Welding current is out of control.	1. The connection of hall sensor for current checking installed inside machine output terminal is loosen. 2. The main control board is damaged； 3.The connection of remote control cable is loosen.	1. Check the Hall sensor, and ensure it is connected firmly； 2. Repair or replace the main control board； 3.Well connect the remote control cable.
Power source is no-load, there is abnormal voice or power switch tripping when set in panel control	1. Three phase rectifier bridge is damaged； 2.IGBT is damaged.	1. Check the three phase rectifier bridge； 2. Check IGBT.
During welding, the arc extinguishes suddenly and no arc striking immediately, after a moment the machine work normally again.	1. The machine is over load, which cause over heat protection of temperature relay. 2.The temperature relay is damaged.	1. Pay attention to ambient temperature and rated duty cycle. 2.Replace the temperature relay with same model.
Input abnormal indicator on	1.The input wire of three phase power source is lack phase or lack phase	1. Check the three phase power source.
Turn on the power source, and set on “Panel”, there is no arc striking	1. Over-heating or voltage abnormal; 2. The main control board is broken;	1. Check if the machine is under protection mode; 2. Check and repaid the main control board;
External control box without power	1.Control cable damage,7# and 8# short circuit 2.Control box damage	1. Check control cable and fuse FU2 damage or not 2. Replace or repair control box

Attention: If the troubles cannot be resolved, please inform our local agent of the specific problems or contact us directly.

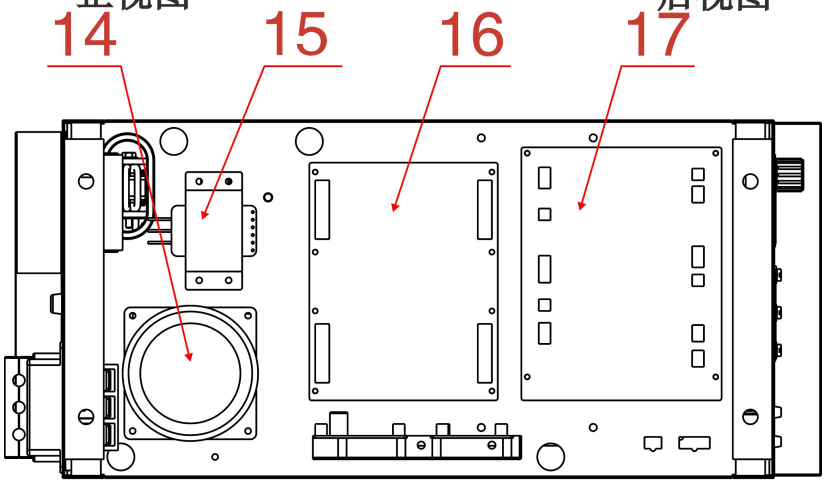
Main Parts List(ZD7-1000/1250HA pro)



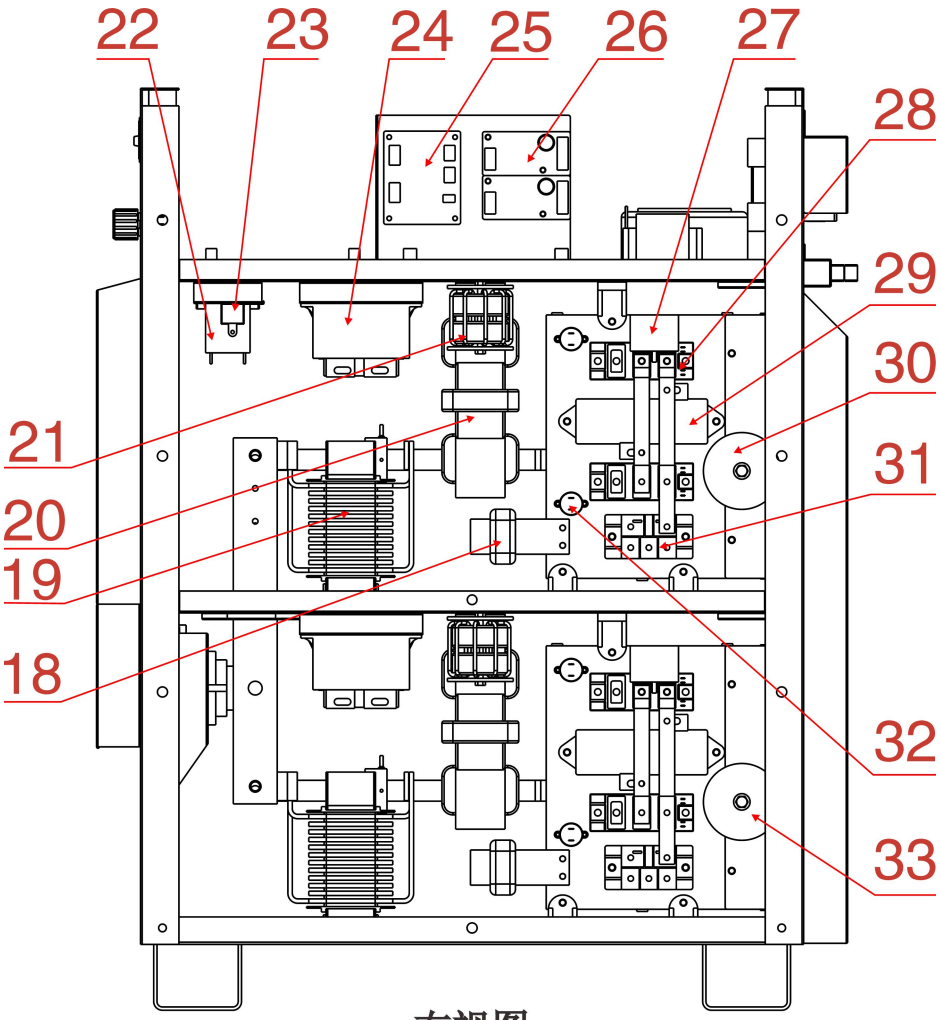
正视图



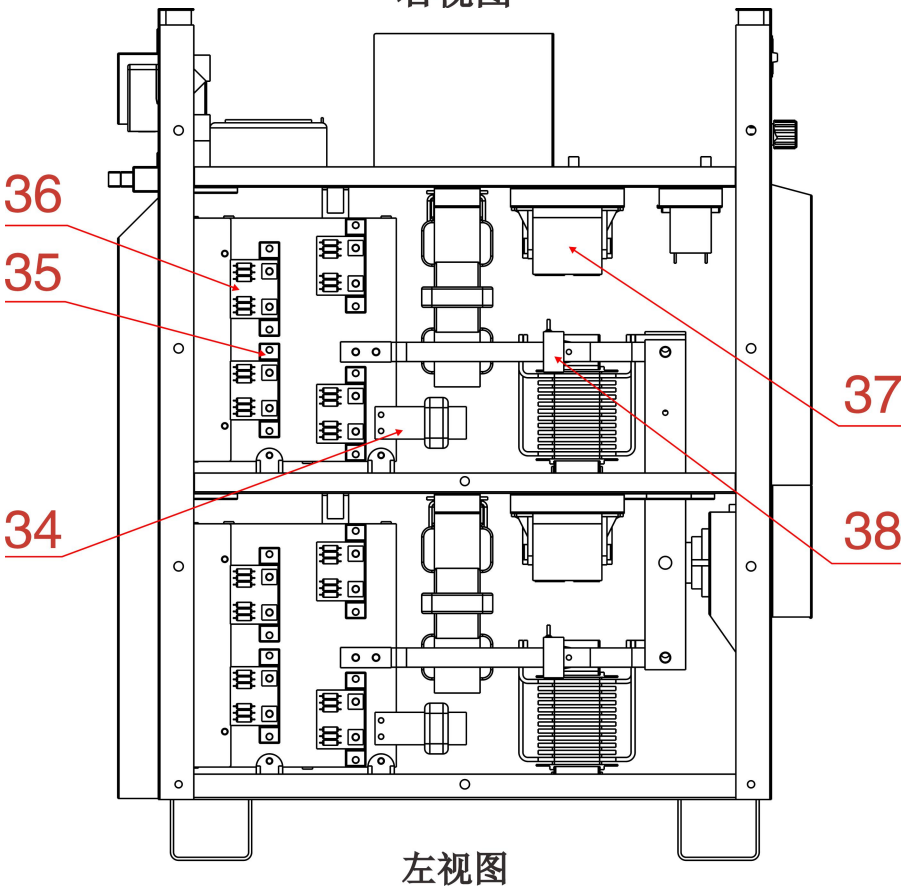
后视图



俯视图



右视图

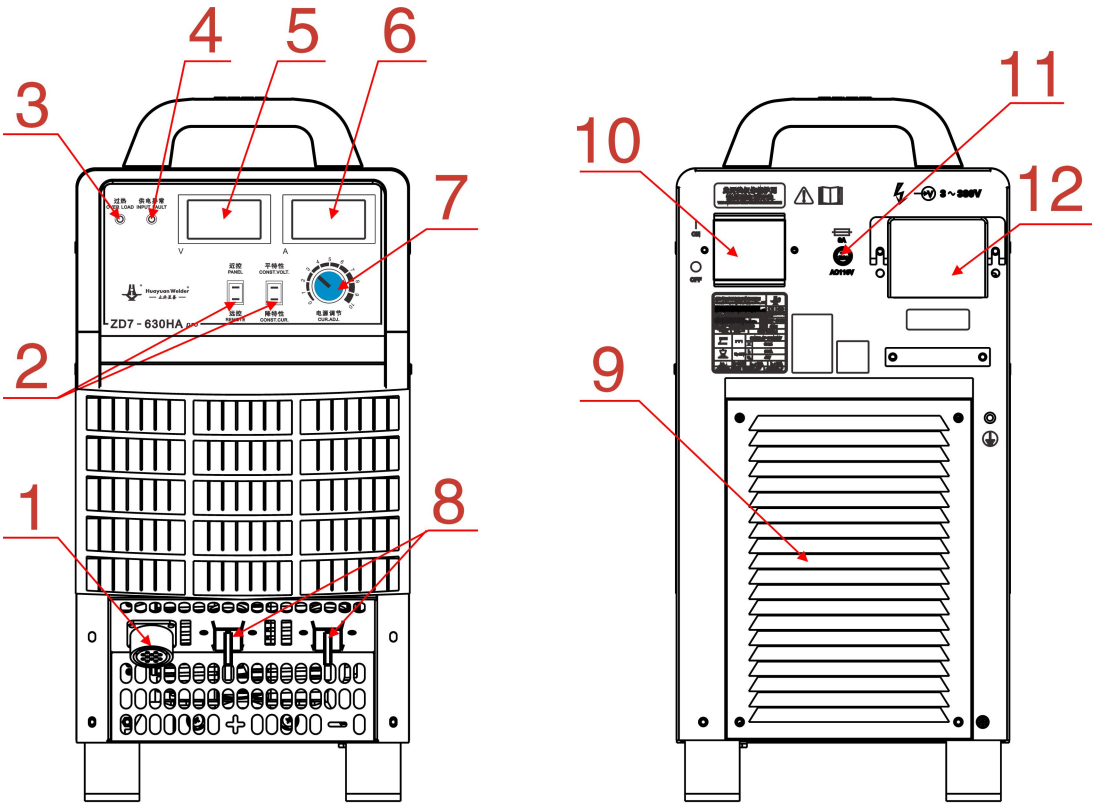


左视图

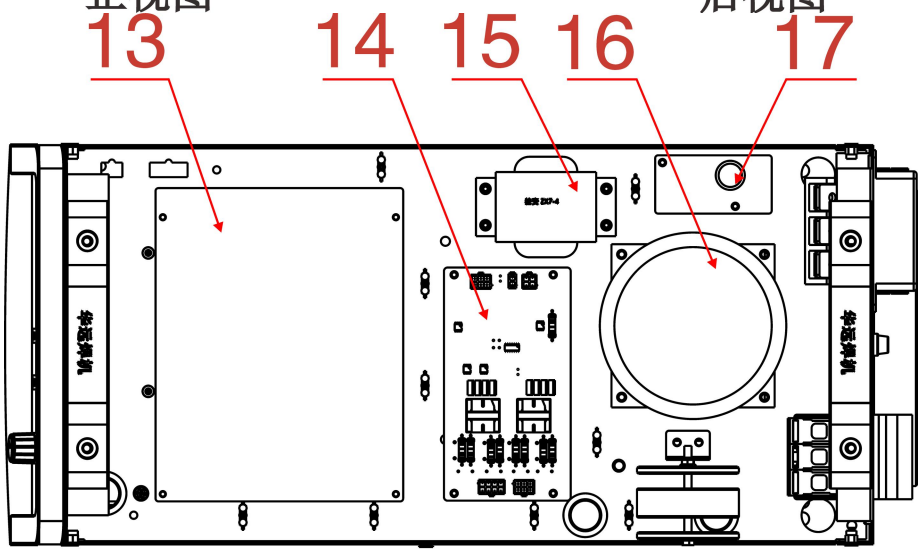
No.	Code	Item	Model	Series No.	QTY
1	SA3	Switch	RK2-1631	102010500006	1
2	SA1、SA2	Switch	RK2-0122	102010500003	2
3	HL1、HL2	Diode	H-501	102010700012 102010700011	2
4	PV1	Digital meter	GP3-5135A 20V	102060100032	
5	PA1	Digital meter	GP3-5135A 2V	102060100028	1
6	RP1	potentiometer	RV28M-B472-20-03-0505	102030600318	1
7	X5	Plug	XH-M6JXZ	104010000104	1
8	X1	Control connector	P32K12A	104020000055	1
9	X6、X7	Strip connector	2000A（black）	104010000119	2
10	EV1～EV4	Cooling fan	RD1238B24H-S	103020000078	4
11	QF1	Air breaker	DZ158-3P/125A	102010200002	1
12	FU2	Fuse	R3-12(RF1-20-T3A)	102010300112	1
13	X4	Junction box	BH3-3 100A	104010000020	1
14	TC1	Control transformer	TD07-A1	105010000351	1
15	TC2	Control transformer	TD05-A1	105010000316	1
16	AP2	PCB	PT34	202980040	1
17	AP1	PCB	PD06	202810021	1
18	L7、L8	Chock inductance	HYZD71250HA pro-00-019	201121405	2
19	L9、L10	Filter reactor	HYZD71250HA pro-04-001	201121404	2
20	TM1、TM2	Inverter transformer	HYZD71250HA pro-00-016 (HYZD71000HA pro-00-016)	201121401 (20112131)	2
21	L5、L6	Saturation inductance	HYZD71250HA pro-00-018	201121403	2
22	C21	Capacitor	HYC1004	102020501004	1
23	R3	Resistor	RXG7-50W-2KΩ	102030300568	1
24	C17、C18	Capacitor	HYC3012	102020503012	2
25	AP4	PCB	PD07	202120011	1
26	AP8、AP9	PCB	PW14	202840005	2
27	C11、C12	Capacitor	HYC2012	102020502012	2
28	V3～V6	IGBT	GD150HFF120C1SD	102070100196	4
29	C13、C14	Capacitor	HYC4001	102020504001	2
30	L1	Three phase inductance 1	HYZD71250HA pro-00-023	201121407	1
31	V1、V2	Bridge rectifier	MDS100-12	102070300161	2
32	KT1～KT4	Temperature relay	KSD305A shut 75℃	102010400031	4

33	L2	Three phase inductance 2	HYZD71250HA pro-00-024	201121408	1
34	L7、L8	Linear inductance	HYZD71250HA pro-00-017	201121402	2
35	V7～V14	Diode	S2F100N40SNI	102070200211	8
36		PCB	RC AP1	202980002	8
37	C3～C8	Capacitor	100μF-500VAC	102020500004	6
38	TA3、TA4	Hall sensor	TKC500BR	102060300106	2

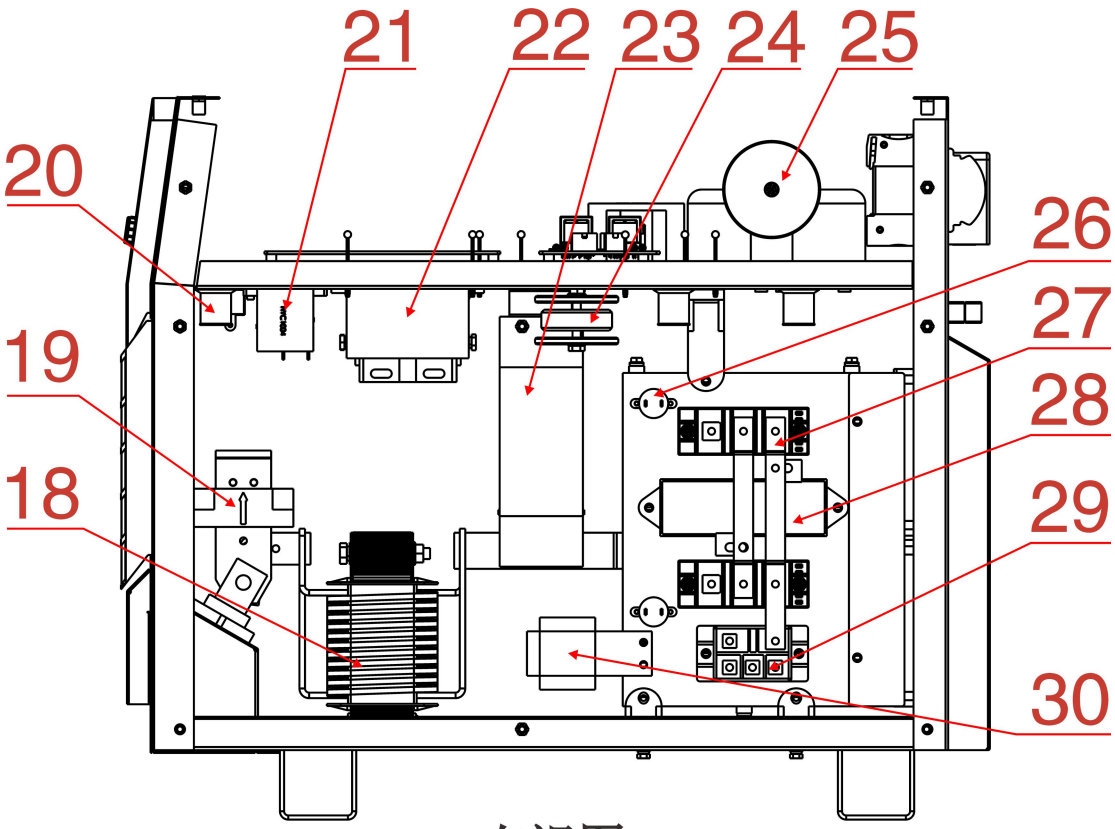
ZD7-630HA pro



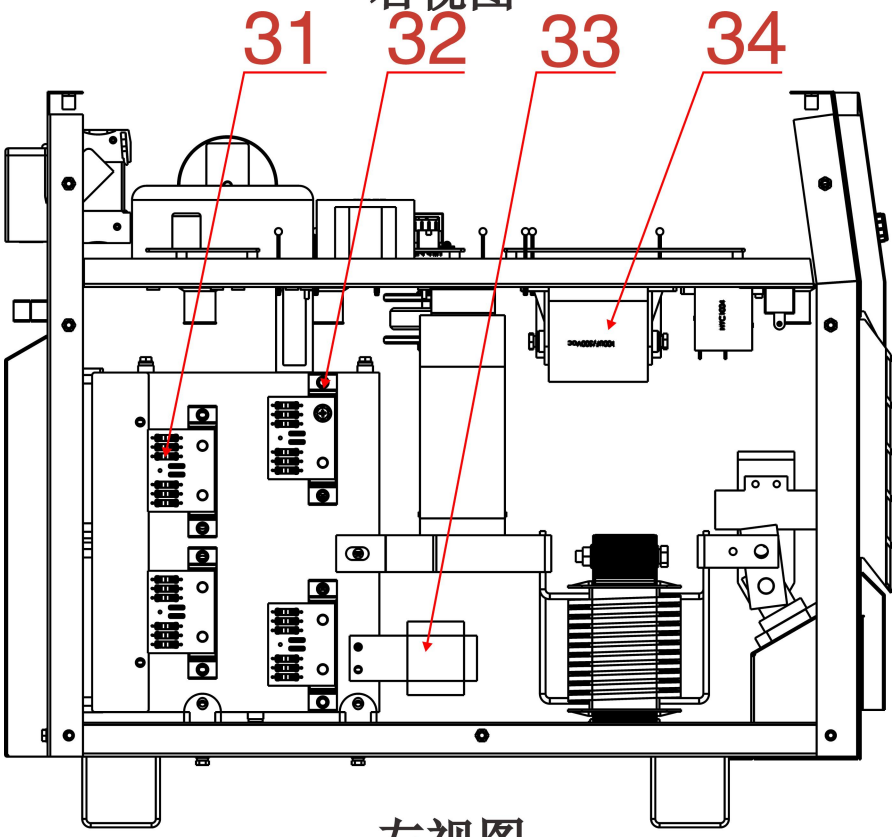
正视图　　后视图



俯视图



右视图



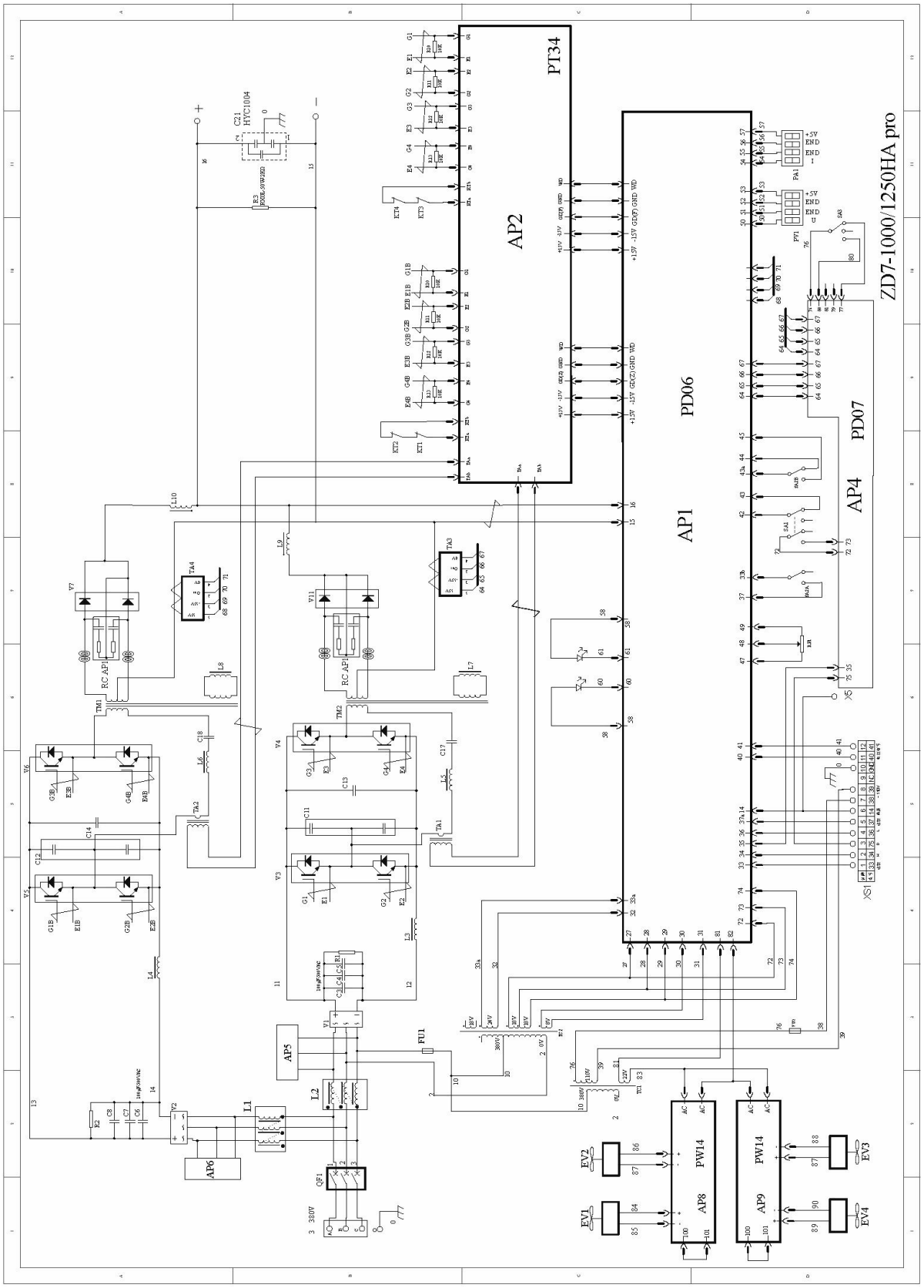
左视图

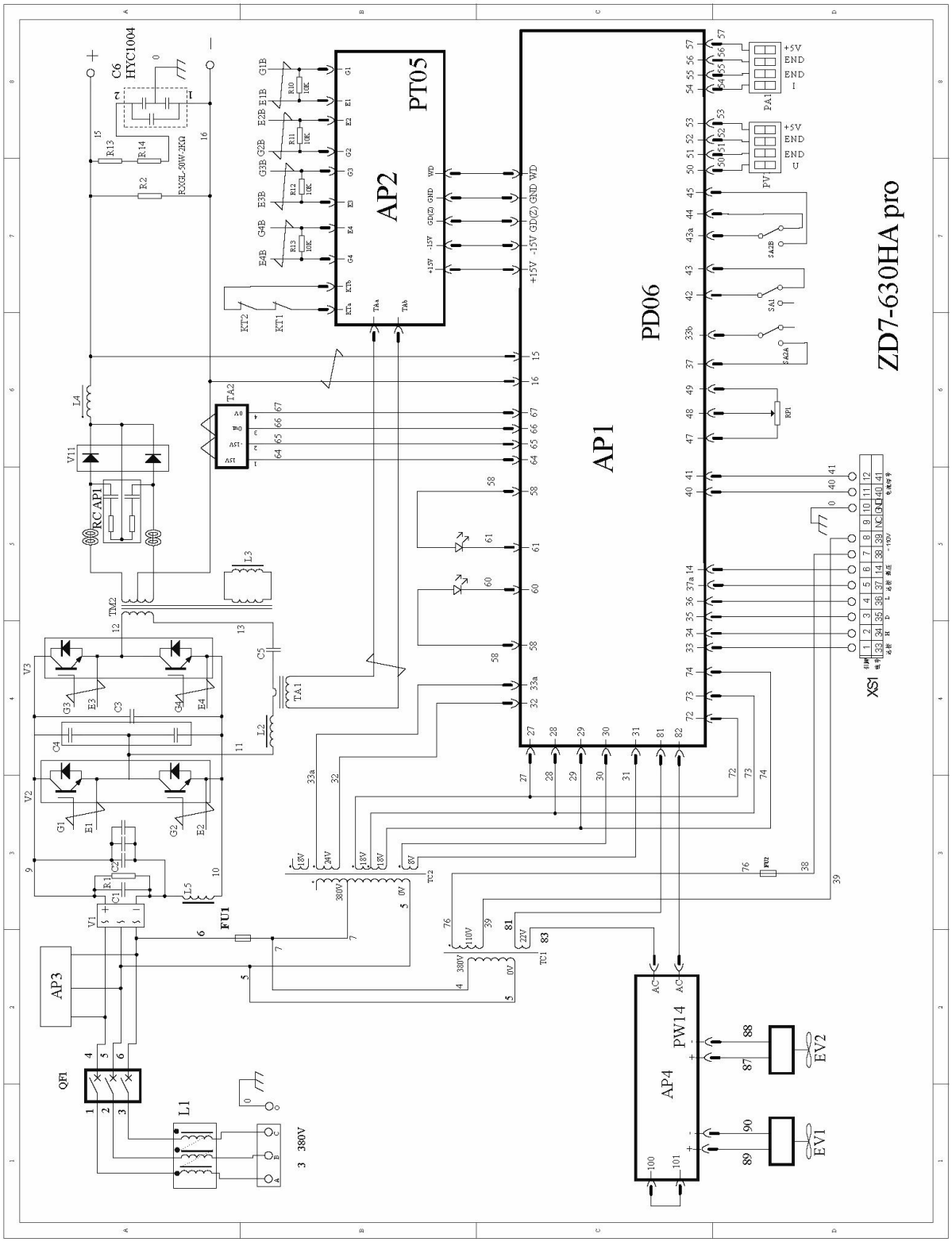
No.	Code	Item	Model	Series No.	QTY
1	X2	Control connector	P32K12A	104020000055	1
2	SA1、SA2	Switch	RK2-0122	102010500003	2
3	HL1	Diode	H-501（yellow）	102010700012	1
4	HL2	Diode	H-501（red）	102010700011	1
5	PV1	Digital meter	GP3-5135A 20V	102060100032	1
6	PA1	Digital meter	GP3-5135A 2V	102060100028	1
7	RP1	Potentiometer	RV28M-B472-20-03-0505	102030600318	1
8	X3、X4	Strip connector	BJ-630A	104010000120	2
9	EV1、EV2	Cooling fan	RD1238B24H-S	103020000078	2
10	QF1	Air breaker	DZ47-63/3P D63	102010400031	1
11	FU2	Fuse	R3-12(RF1-20-T3A)	102010300112	1
12	X1	Junction box	BH3-3 100A	104010000020	1
13	AP1	PCB	PD06	202810021	1
14	AP2	PCB	PT05	202120020	1
15	TC2	Control transformer	TD05-A1	105010000316	1
16	TC1	Control transformer	TD07-A1	105010000351	1
17	AP4	PCB	PW14	202840005	1
18	L4	Filter reactor	HYNB630HKpro-02-000	201090308	1
19	TA2	Hall sensor	TKC500BR	102060300106	1
20	R13、R14	Resistor	RXG7-50W-7Ω	102030300562	2
21	C6	Capacitor	HYC1004	102020501004	1
22	C5	Capacitor	HYC3007	102020503007	1
23	TM1	Inverter transformer	HYNB630HKpro-00-010	201092305	1
24	L2	Saturation inductance	HYNB630HKpro-00-013	201092307	1
25	L1	Three phase inductance	ONL64×40×20	105020000003	1
26	KT1、KT2	Temperature relay	KSD305A 常闭 75℃	102010400031	2
27	V2、V3	IGBT	GD150HFF120C1SD	102070100196	4
28	C3	Capacitor	HYC4001	102020504001	1
29	V1	Bridge rectifier	MDS100-12	102070300161	1
30	L5	Chock inductance	HYZD71250HA pro-00-019	201121405	1
31		PCB	RC AP1	202980002	4
32	V4～V7	Diode	MMF200ZB040DK1	102070200171	4
33	L3	linear inductance	HYNB630HKpro-00-006	201092306	1
34	C2	Capacitor	100μF-500VAC	102020500004	3

Packing List

Model / Item	QTY
Welding power source	1
Qualified certificate	1
Maintenance card	1
Operator`s manual	1

Attachment: Main electrical schematic diagram




ZD7-630HA pro
AP1
PD06
AP2
PT05
AP3
AP4
PW14
HYC1004
RXGL-50W-2KΩ
RC AP1
TM2
TA1
TA2
FU1
QF1
L1
L2
L3
L4
L5
V1
V2
V3
V11
C1
C2
C3
C4
C5
C6
R1
R2
R10
R11
R12
R13
R14
R15
KT1
KT2
SA1
SA2A
SA2B
RP1
PA1
PV1
XS1
EV1
EV2
+5V
END
I
U
+15V -15V GD(Z) GND WD
380V
220V
110V
24V
18V
6V
0V

The final explanation right is reserved to Huayuan Company!

If there is any change in the manual, please forgive not to inform separately!

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