

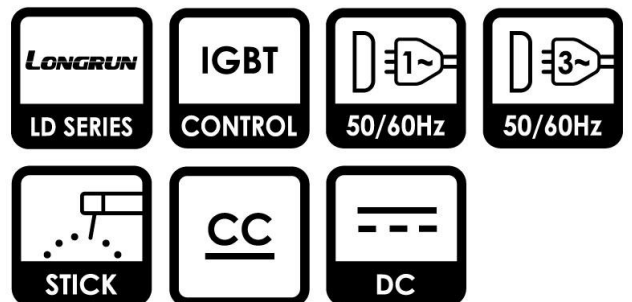
INVERTER DC STICK WELDING MACHINE

LONGRUN[®] LD SERIES

OPERATION MANUAL

LD SERIES

Processes



DO NOT INSTALL, OPERATE OR MAINTAIN THIS MACHINE WITHOUT READING THIS MANUAL AND PLEASE ALWAYS THINK BEFORE YOU ACT.



To be the Premier Global Leader, WE MAKE THE BEST



■ TECHNICAL SPECIFICATIONS

ITEM	UNIT	200LD	200LD2	230LD	250LD3	300LD3	400LD2	500LD2	
Input voltage	V	Single phase, 220, 50/60Hz			Single phase, 220, 50/60Hz(Standard) or Single phase(220/440V – Optional) or Three phase(380V - Optional)		Single/Three Phase, 220/380/440V, 50/60Hz		
Input capacity	KVA	6.5	7.5	8	9	11.5	17.5	23.5	
Open circuit voltage	V	74.5	73	79	74.5	81.5	92V @380V Input		
Output current	A	20~185	20~200	20~215	20~250	20~300	40~400	40~500	
Output voltage	V	24	26	23	27	29	35	38	
Duty cycle	%	60							
Weight	kg	8.6	9.4	10	15	16.5	40	53	
Dimension (W×D×H)	mm	180 x 400 x 280			210x460x300	210x460x300	345x730x530	400x770x630	

General Safe Practices

- Wear approved safety glasses with side shields under your welding helmet or face shield and at all times in the work area.
- When working above floor level, use a safety belt to protect yourself from a fall should you get a shock.
- Do not install or place machine on or over combustible surfaces.
- Be sure that all installation, operation, maintenance and repair procedures are performed only by qualified persons.

Electric shock can kill.

- Wear Dry, hole-free insulating gloves and body protection. Do not touch electrode with bare hand. Do not wear wet or damaged gloves.
- Do not touch live electrical parts.
- Never dip the electrode in water for cooling.
- Properly install and ground all equipment.
- Protect yourself from electric shock by insulating yourself from work and ground. Use non-flammable, dry insulating material if possible, or use dry rubber mats, dry wood or plywood, or other dry insulating material big enough to cover your full area of contact with the work or ground, and watch for fire.
- Turn off input power using the disconnect switch at the fuse box before working on the equipment.
- Frequently inspect input power cord for damage or bare wiring and repair or replace cord immediately if damaged.

Fumes and gases can be dangerous.

- Welding may produce fumes and gases hazardous to health. Avoid breathing these fumes and gases. When welding, keep your head out of the fume. Use enough ventilation and/or exhaust at the arc to keep fumes and gases away from the breathing zone.
- Use enough forced ventilation or local exhaust (forced suction) at the arc to remove the fumes from your breathing area.
- Use a ventilating fan to remove the fumes from the breathing zone and welding area.

Arc rays can burn eyes and skin.

- Use welding helmet with correct shade of filter to protect your eyes from sparks and the rays of the arc.
- Wear welders cap and safety glasses with side shields. Use ear protection when welding out of position or in confined spaces. Button shirt collar.
- Wear complete body protection. Wear oil-free protective clothing such as leather gloves, heavy shirt, cuffless pants and high boots.

Welding sparks can cause fire or explosion.

- Remove fire hazards from the welding area. If this is not possible, cover them to prevent the welding sparks from starting a fire. Remember that welding sparks and hot materials from welding can easily go through small cracks and opening to adjacent areas. Avoid welding near hydraulic lines.
- When not welding, make certain no part of the electrode circuit is touching the work or ground. Accidental contact can cause overheating and create a fire hazard.

- Do not weld on drums, tanks, or any closed containers unless a qualified person has tested it and declared it or prepared it to be safe.
- Connect the work cable to the work as close to the welding area as practical. Work cables connected to the building framework or other locations away from the welding area increase the possibility of the welding current passing through lifting chains, crane cables or other alternate circuits. This can create fire hazards or overheat lifting chains or cables until they fail.

■ INSTALLATION

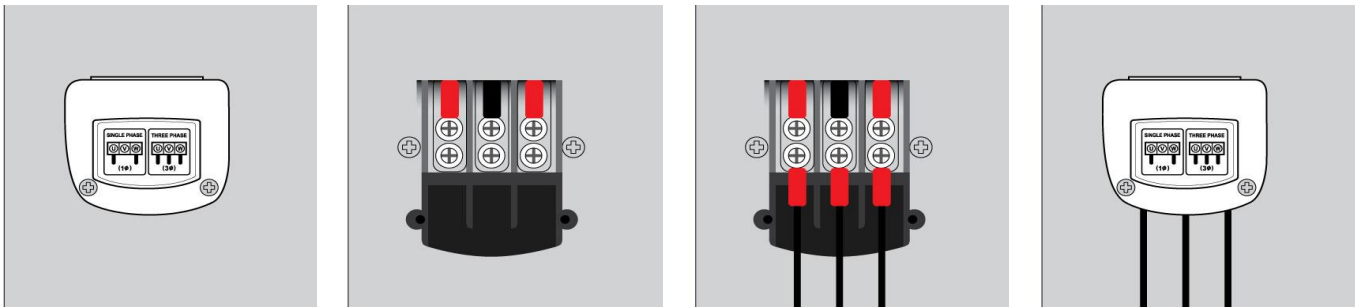
● The welding machine shall be installed at a place ;

- . free from the inflammables
- . less humidity, dirt and dust
- . protecting from influence of direct sunlight, wind and rain
- . not generated oil vapor and corrosive gas
- . operating temperature range is from -10°C to 40°C
- . least 30cm away from wall and other welding machine

● Input Connection (Rear of the machine)

Be sure the voltage, phase and frequency of the input power is as specified on the name plate located on the rear panel of the machine.

- . To connect the power cables, turn the power switch OFF
- . Verify the voltage to be supplied from main power.

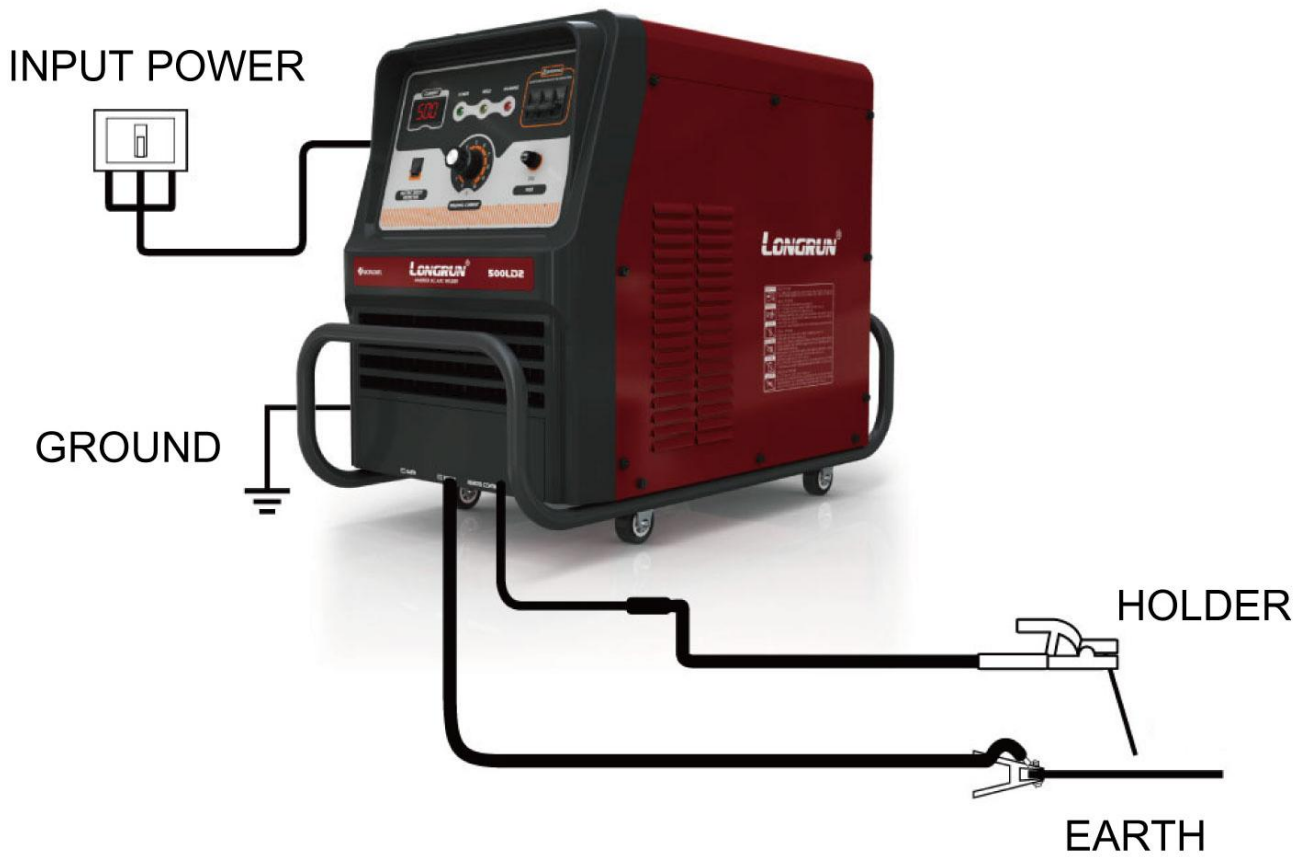
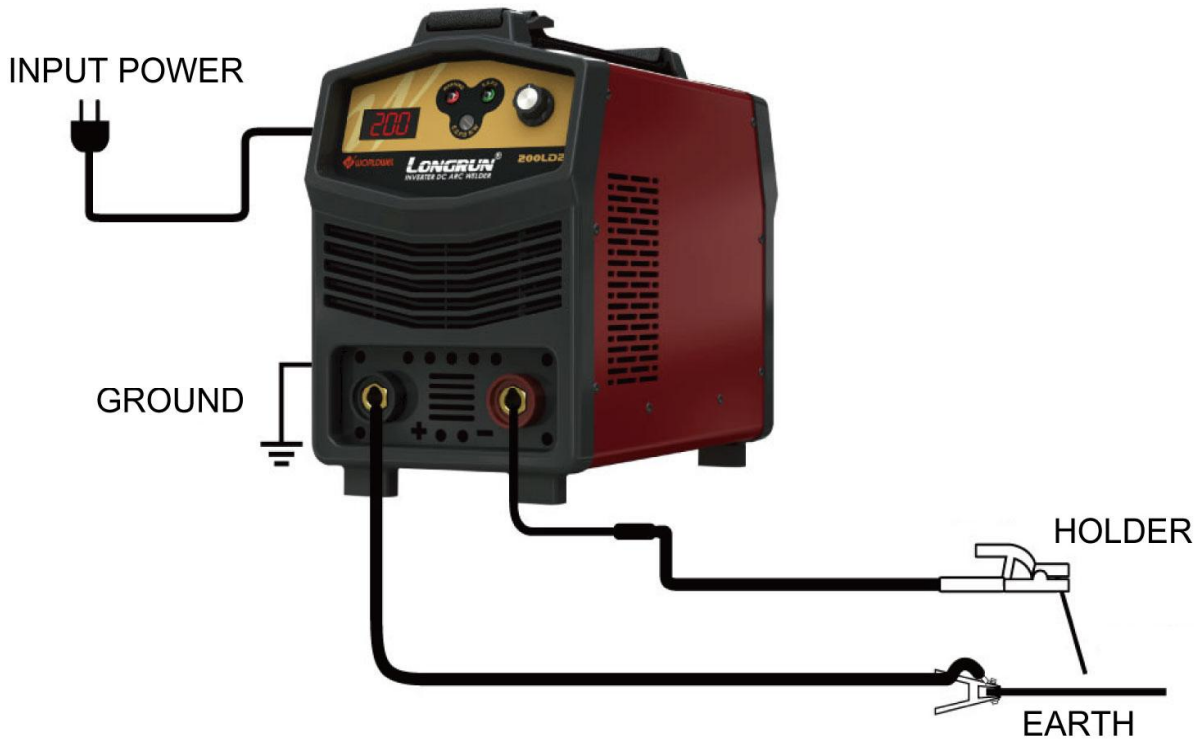


- . Open the cover of terminal plate and connect the power cable to the power input terminal on the rear of the machine and close the cover of terminal plate.

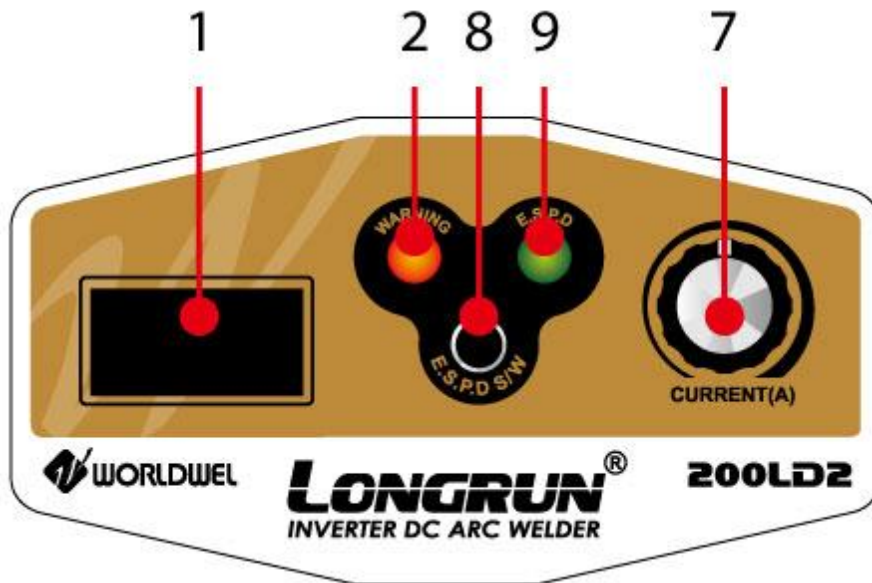
. Recommended cable specification

Item	Unit	200LD	200LD2	230LD	250LD3	300LD3	400LD2	500LD2	
Input cable	mm ²	5.5						8	
Holder cable		25					38	50	
Earth cable		25					38	50	

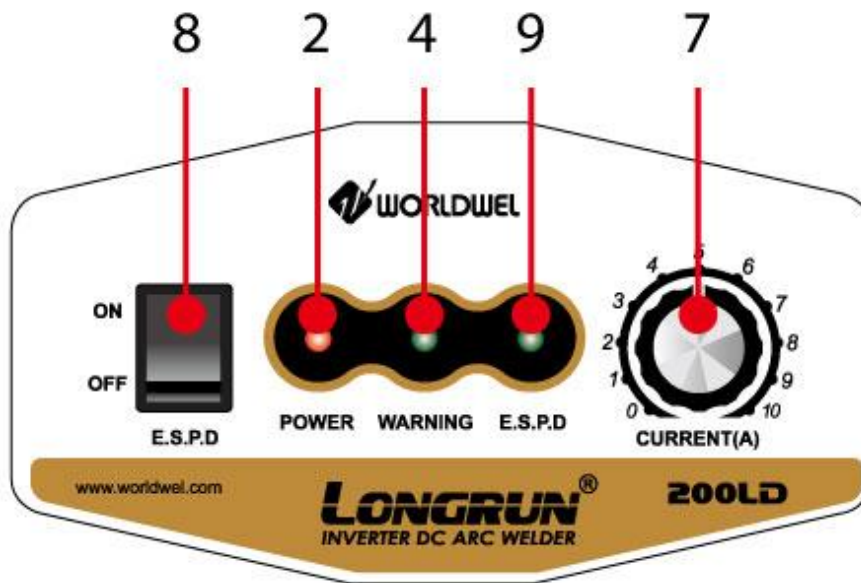
● OUTPUT CONNECTION



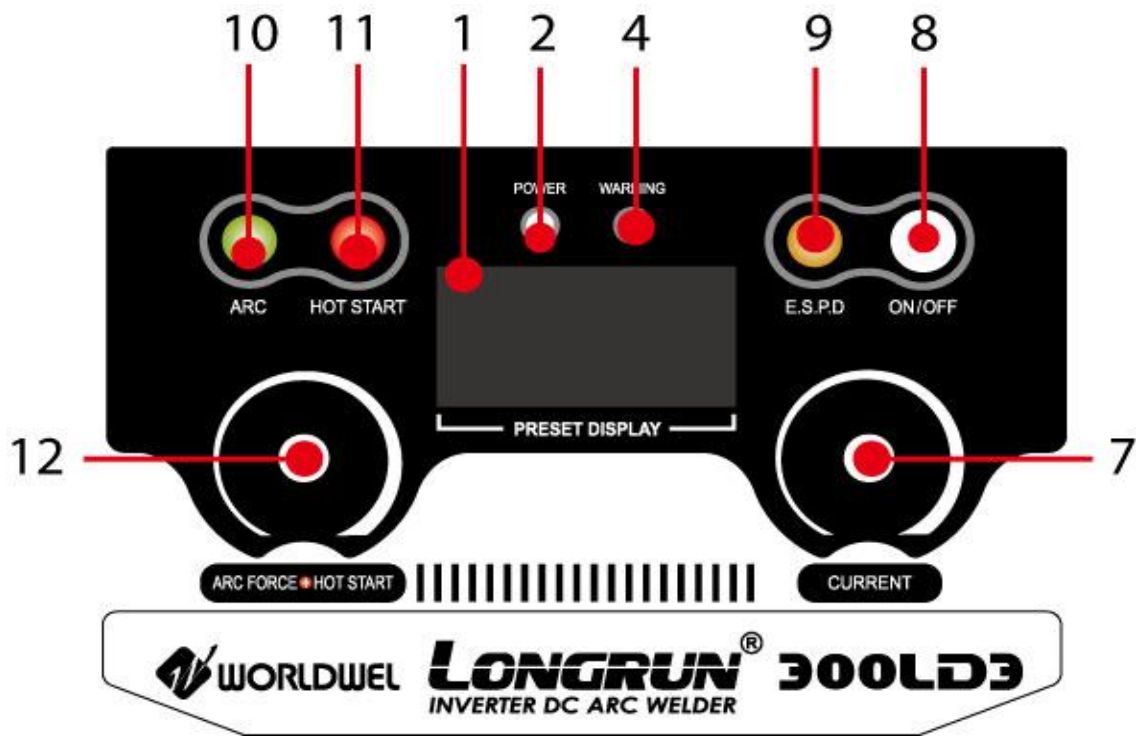
● FRONT PANEL



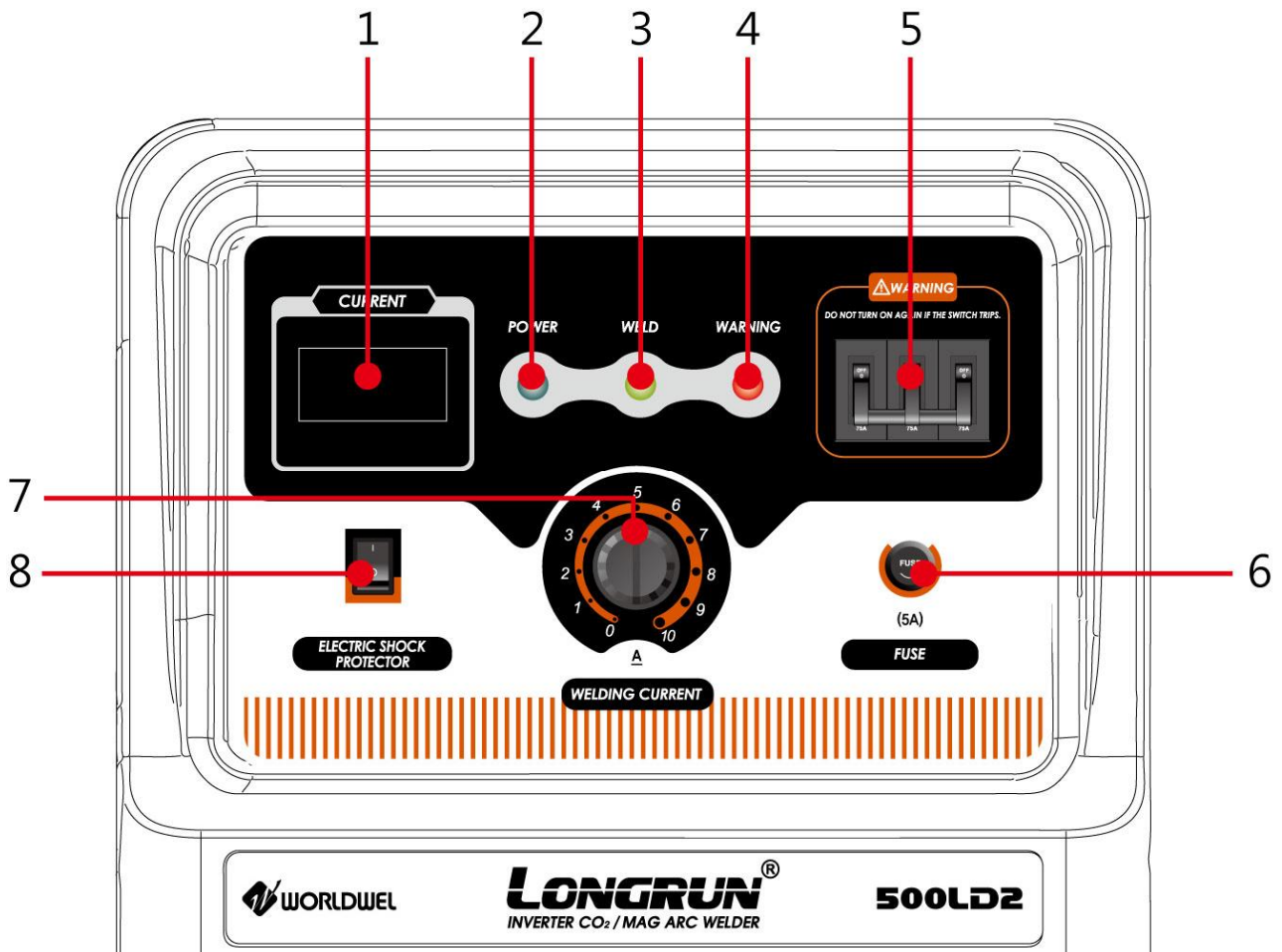
[200LD2]



[200LD, 230LD]



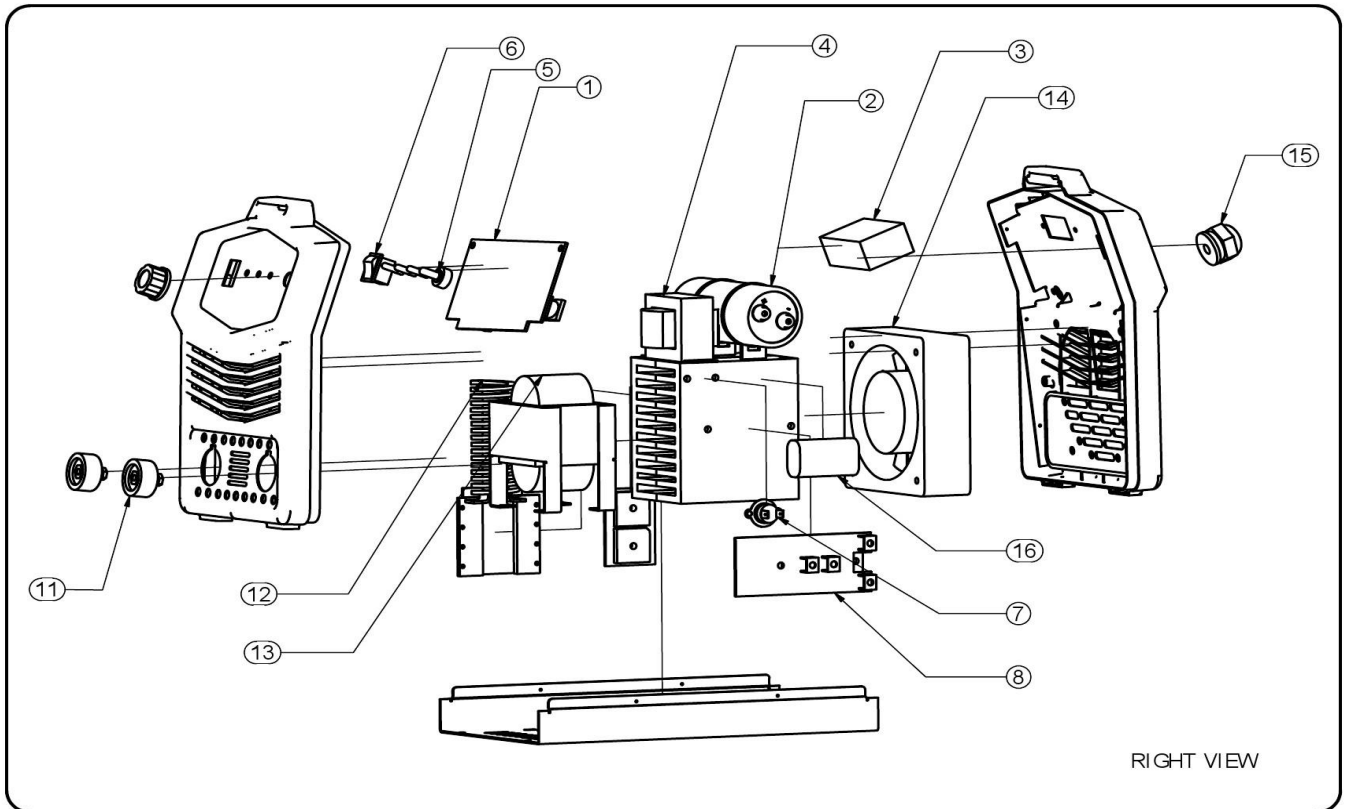
[250LD3, 300LD3]



[400LD2, 500LD2]

1	Ammeter	Indicates the welding current.
2	Power Lamp	It indicates that the machine is on and input voltage is within acceptable range.
3	Weld Lamp	It indicates the machine is ready to weld.
4	Warning Lamp	It indicates the thermal over load or output disabled by any electrical problems or the failure of program. When it is on, the machine will not supply power at the output.
5	Power Switch	When it is turn on, the cooling fan and all of electrical circuit inside the machine will be operated.
6	Control Fuse (5A)	It will be broken by any electrical problems
7	Current Volume	Adjust the welding current
8	Electric shock prevention device	ESPD (electric shock prevention function) is to prevent user's electric shock by cutting off short-circuit voltage is after welding is finished.
9	ESPD Lamp	It indicates ESPD function is on
10	Arc Force Lamp	It indicates Arc force function is on
11	Hot start Lamp	It indicates Hot start function is on
12	Arc force / Hot start Volume	You can change Arc force / Hot start function by pressing knob. And also, you can adjust arc force range / Hot start current by knob.

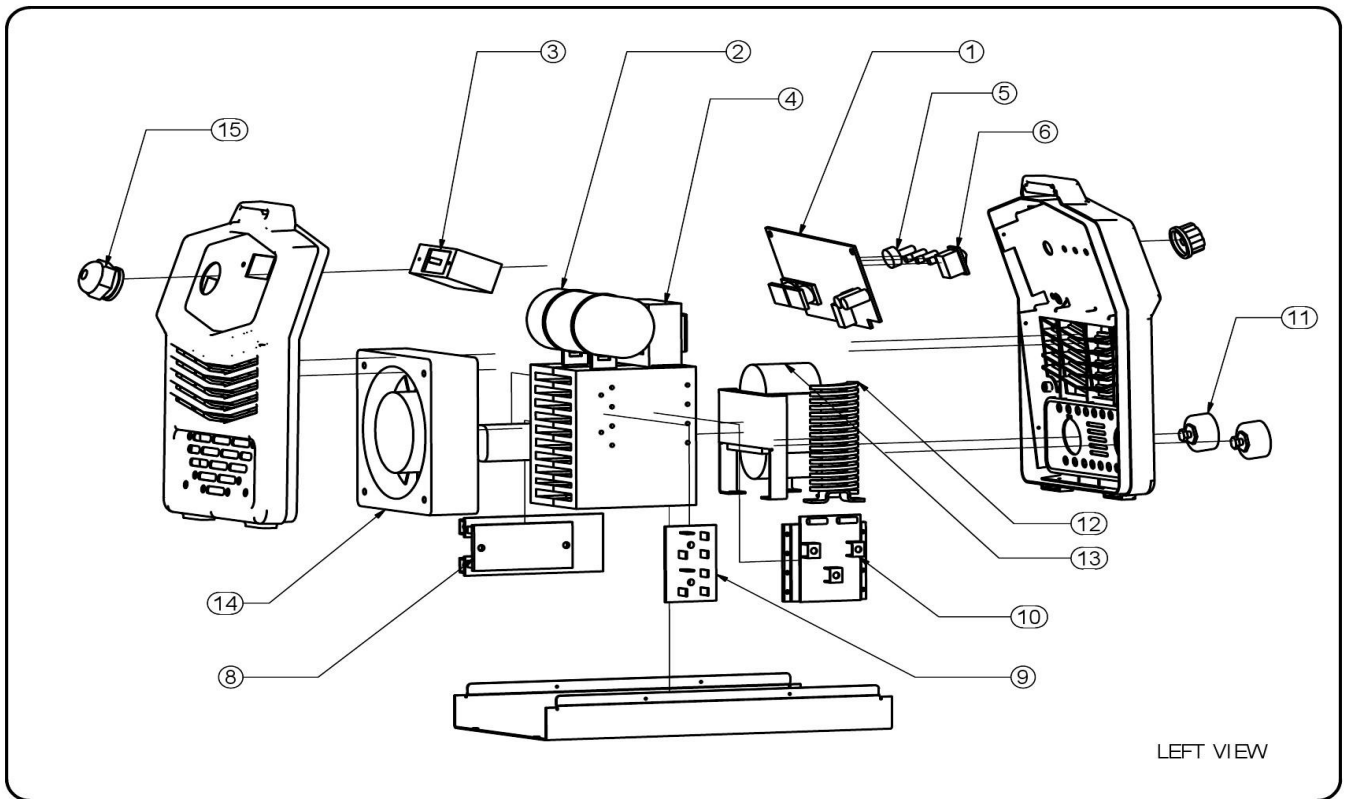
INVERTER DC ARC 200LD



200LD PART LIST

No	Part	Q'ty	No	Part	Q'ty
1	Main PCB	1	9	Input bridge diode / PCB	1
2	Capacitor	1	10	FRD / PCB	1
3	Circuit Breaker	1	11	Output terminal	2
4	Auxiliary transformer	1	12	Choke transformer	1
5	Volume knob	1	13	Main transformer	1
6	Switch	1	14	FAN	1
7	Temp sensor	1	15	Cable lock	1
8	IGBT / PCB	1	16	MF Capacitor	1

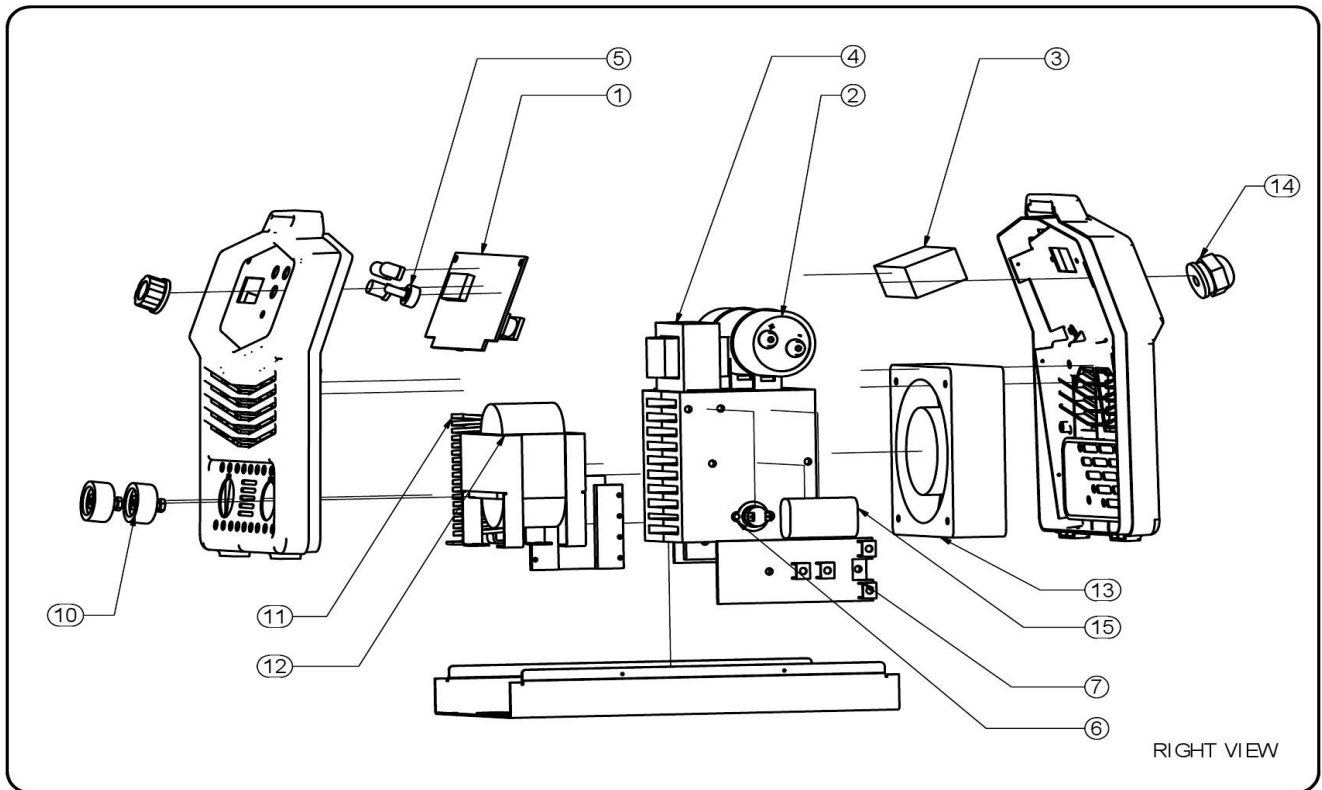
INVERTER DC ARC 200LD



200LD PART LIST

No	Part	Q'ty	No	Part	Q'ty
1	Main PCB	1	9	Input bridge diode / PCB	1
2	Capacitor	1	10	FRD / PCB	1
3	Circuit Breaker	1	11	Output terminal	2
4	Auxiliary transformer	1	12	Choke transformer	1
5	Volume knob	1	13	Main transformer	1
6	Switch	1	14	FAN	1
7	Temp sensor	1	15	Cable lock	1
8	IGBT / PCB	1	16	MF Capacitor	1

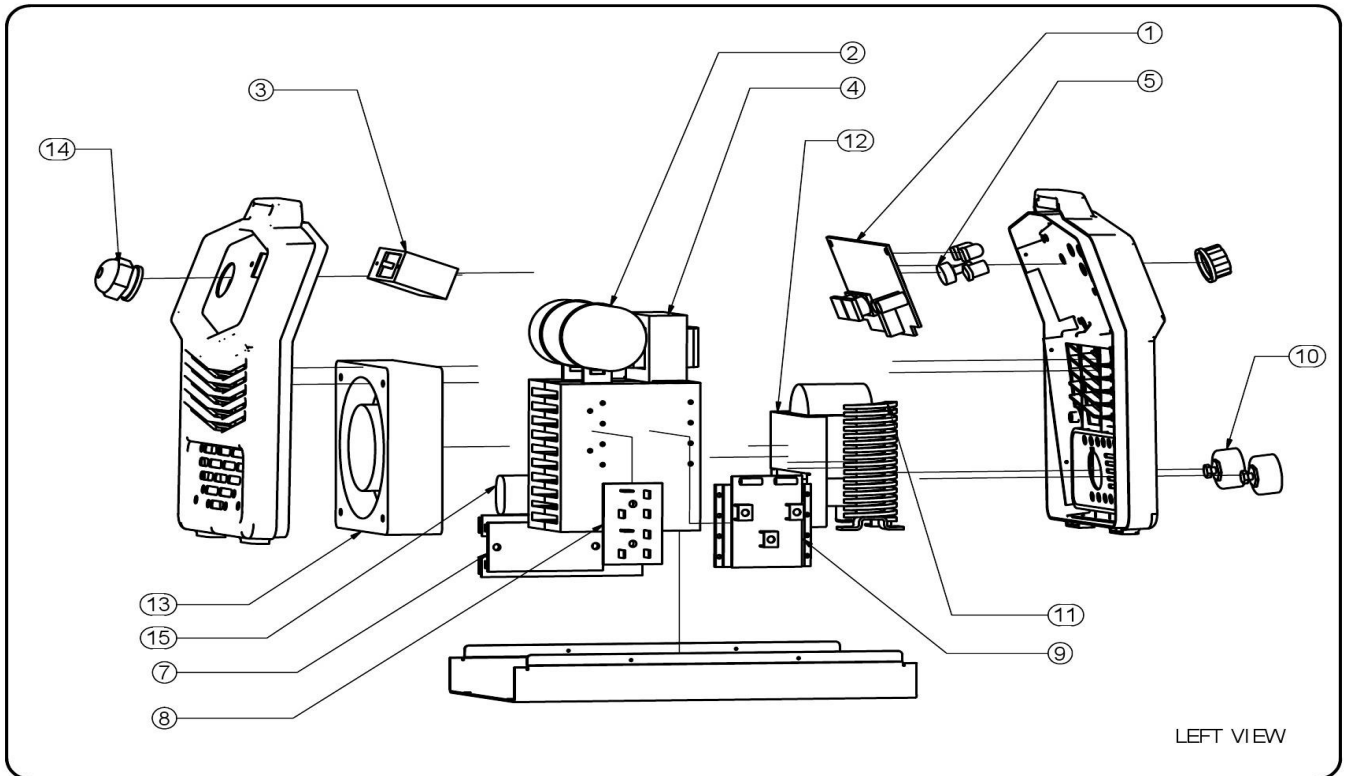
INVERTER DC ARC 200LD2



200LD2 PART LIST

No	Part	Q'ty	No	Part	Q'ty
1	Main PCB	1	9	FRD / PCB	1
2	Capacitor	1	10	Output terminal	2
3	Circuit Breaker	1	11	Choke transformer	1
4	Auxiliary transformer	1	12	Main transformer	1
5	Volume knob	1	13	FAN	1
6	Temp sensor	1	14	Cable lock	1
7	IGBT / PCB	1	15	MF Capacitor	1
8	Input bridge diode / PCB	1			

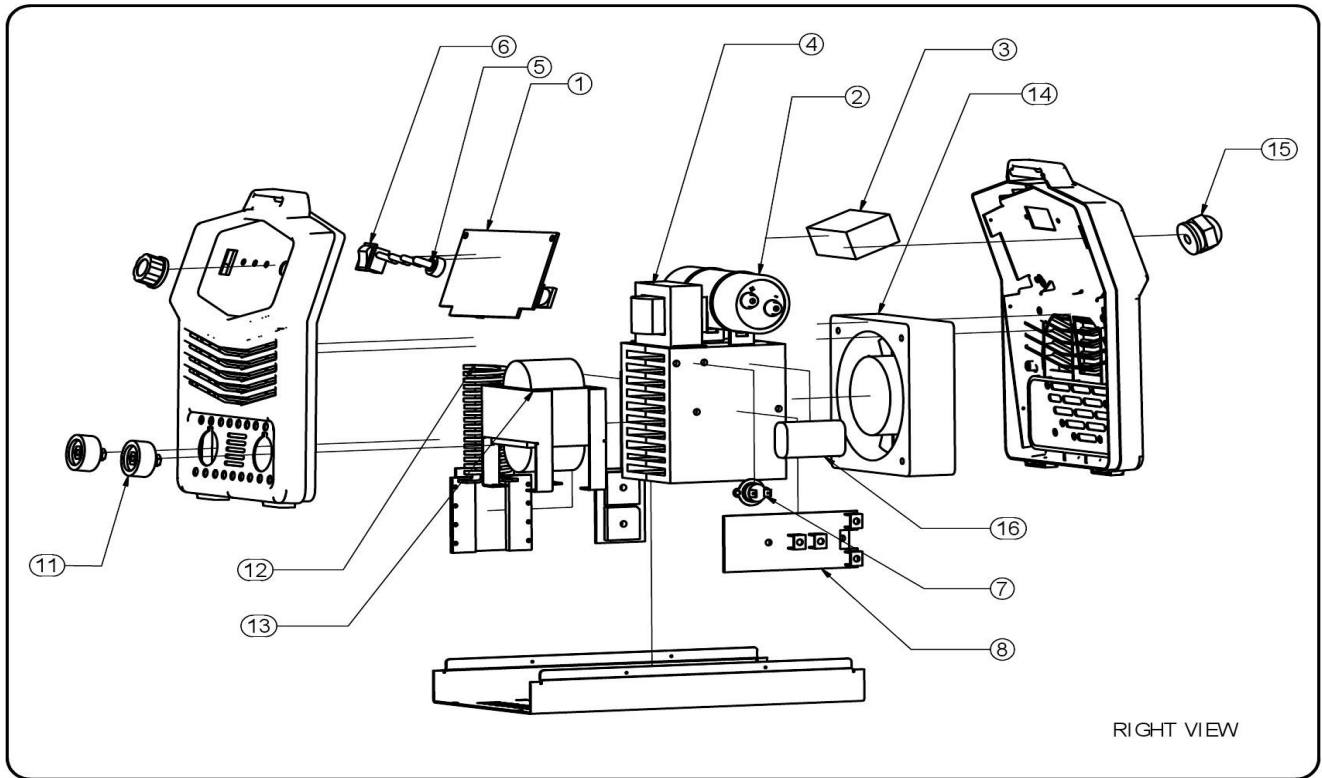
INVERTER DC ARC 200LD2



200LD2 PART LIST

No	Part	Q'ty	No	Part	Q'ty
1	Main PCB	1	9	FRD / PCB	1
2	Capacitor	1	10	Output terminal	2
3	Circuit Breaker	1	11	Choke transformer	1
4	Auxiliary transformer	1	12	Main transformer	1
5	Volume knob	1	13	FAN	1
6	Temp sensor	1	14	Cable lock	1
7	IGBT / PCB	1	15	MF Capacitor	1
8	Input bridge diode / PCB	1			

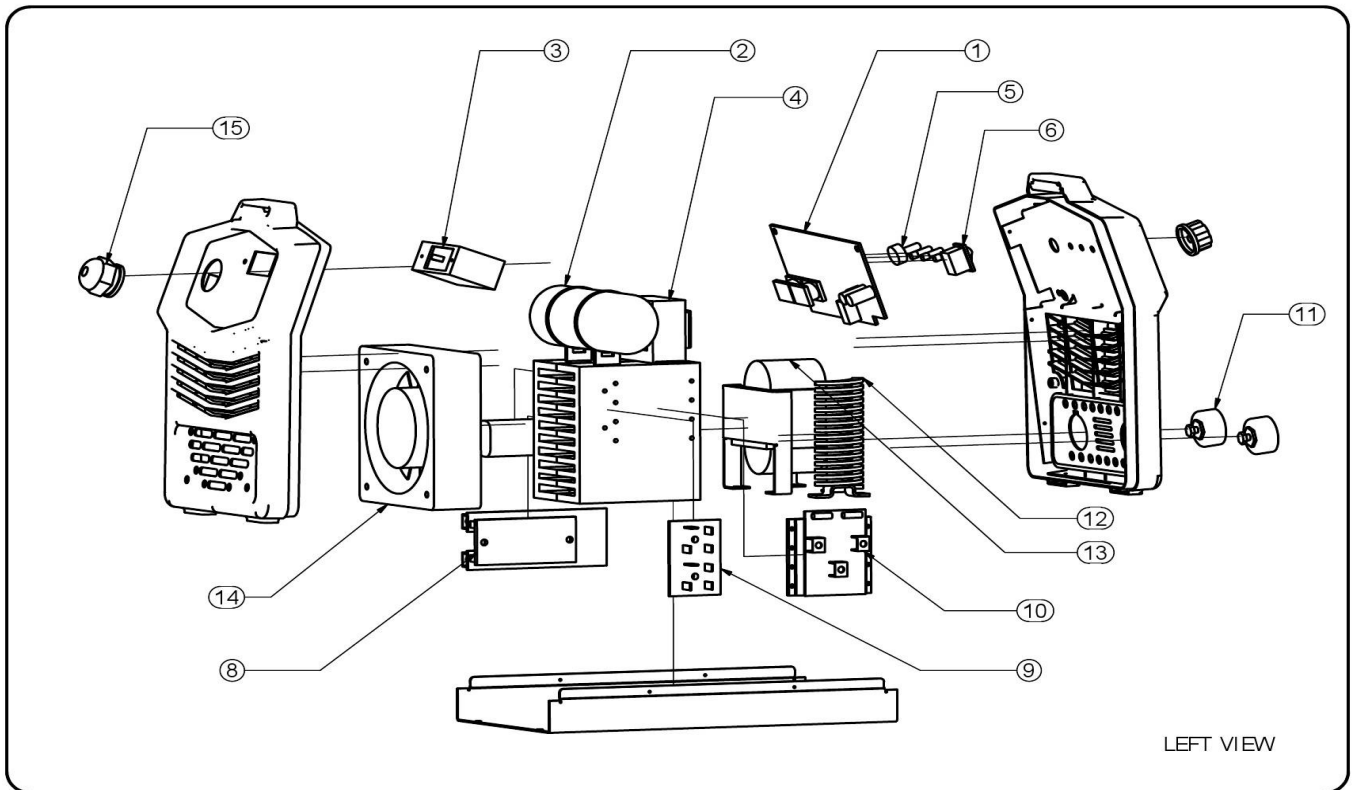
INVERTER DC ARC 230LD



230LD PART LIST

No	Part	Q'ty	No	Part	Q'ty
1	Main PCB	1	9	Input bridge diode / PCB	1
2	Capacitor	1	10	FRD / PCB	1
3	Circuit Breaker	1	11	Output terminal	2
4	Auxiliary transformer	1	12	Choke transformer	1
5	Volume knob	1	13	Main transformer	1
6	Switch	1	14	FAN	1
7	Temp sensor	1	15	Cable lock	1
8	IGBT / PCB	1	16	MF Capacitor	1

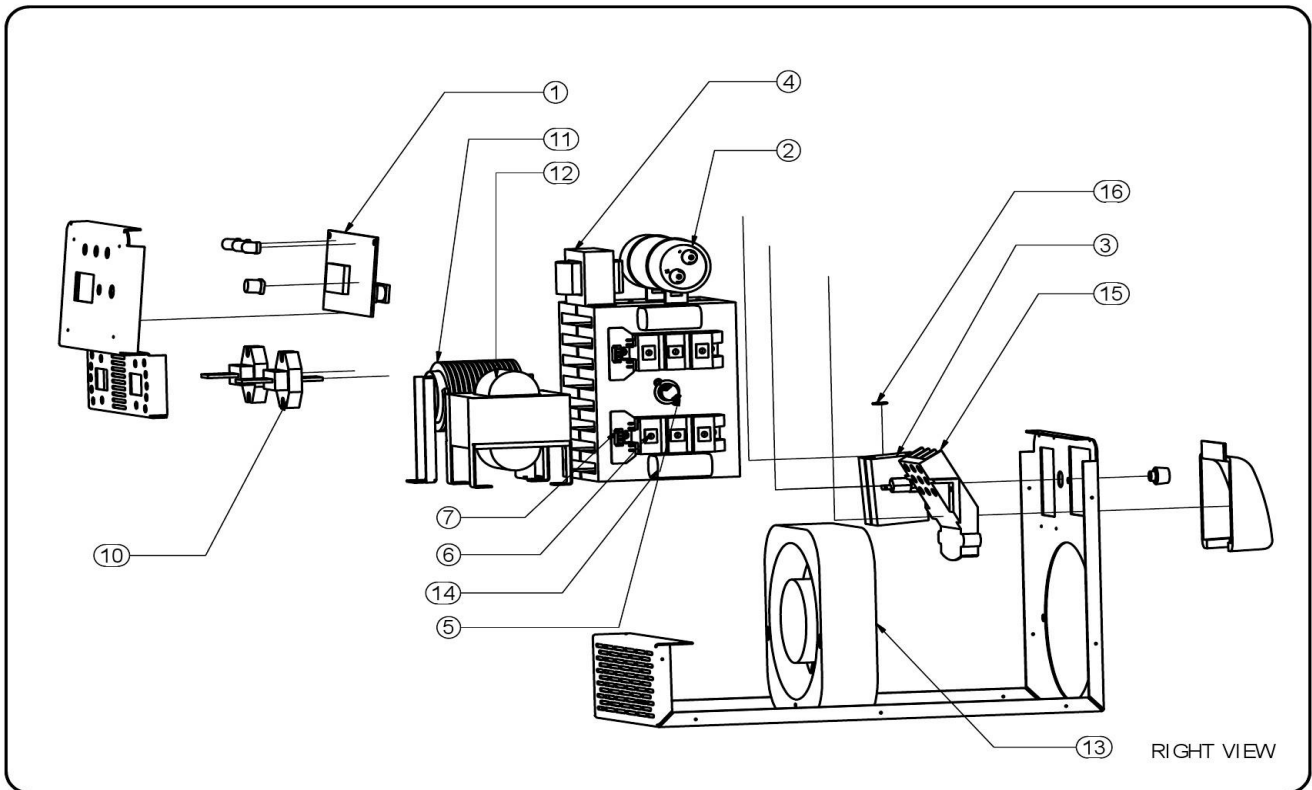
INVERTER DC ARC 230LD



230LD PART LIST

No	Part	Q'ty	No	Part	Q'ty
1	Main PCB	1	9	Input bridge diode / PCB	1
2	Capacitor	1	10	FRD / PCB	1
3	Circuit Breaker	1	11	Output terminal	2
4	Auxiliary transformer	1	12	Choke transformer	1
5	Volume knob	1	13	Main transformer	1
6	Switch	1	14	FAN	1
7	Temp sensor	1	15	Cable lock	1
8	IGBT / PCB	1	16	MF Capacitor	1

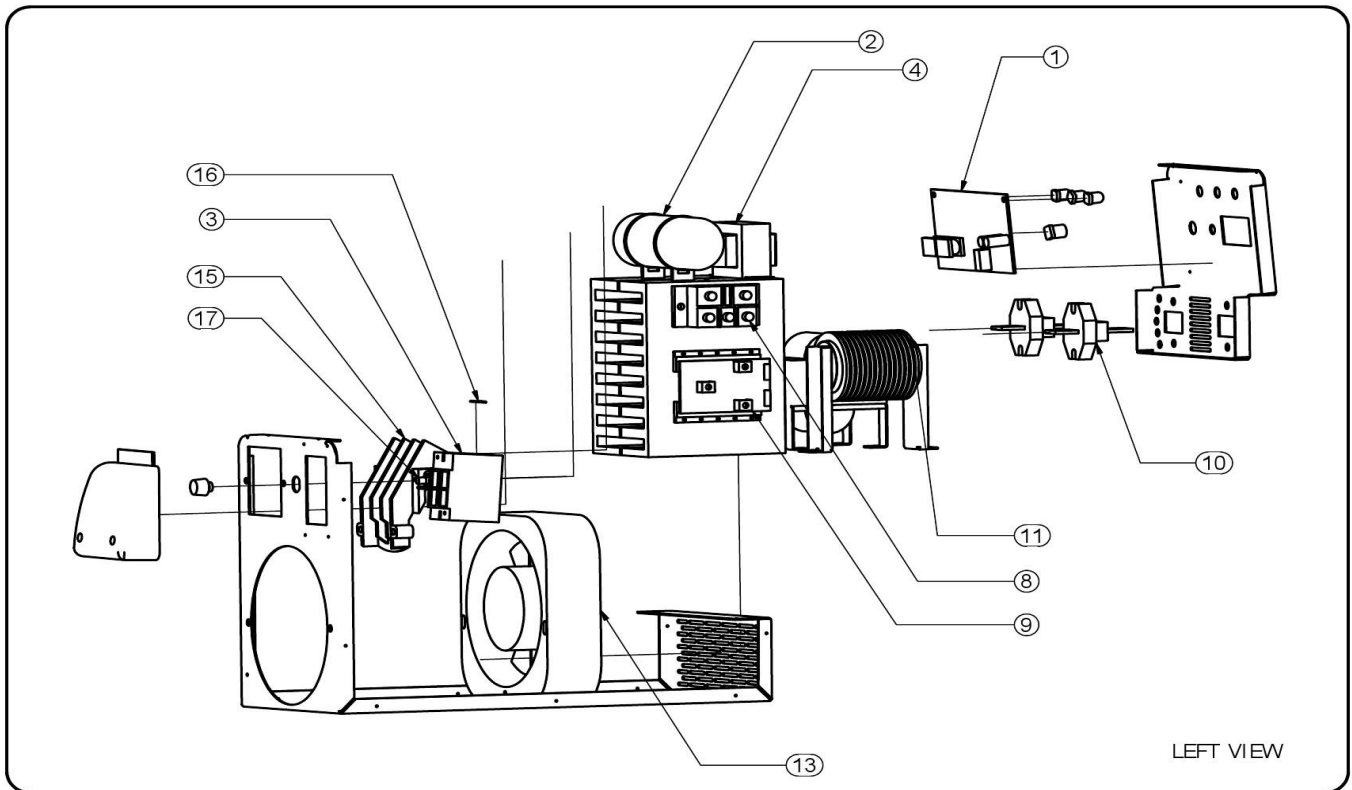
INVERTER DC ARC 250LD2



250LD3 PART LIST

No	Part	Q'ty	No	Part	Q'ty
1	Main PCB	1	10	Output terminal	2
2	Capacitor	1	11	Choke transformer	1
3	Circuit Breaker	1	12	Main transformer	1
4	Auxiliary transformer	1	13	FAN	1
5	Temp sensor	1	14	MF Capacitor	2
6	IGBT	2	15	Input terminal	1
7	IGBT Drive PCB	2	16	TNR	1
8	Input bridge diode / PCB	1	17	Fuse	1
9	FRD / PCB	1			

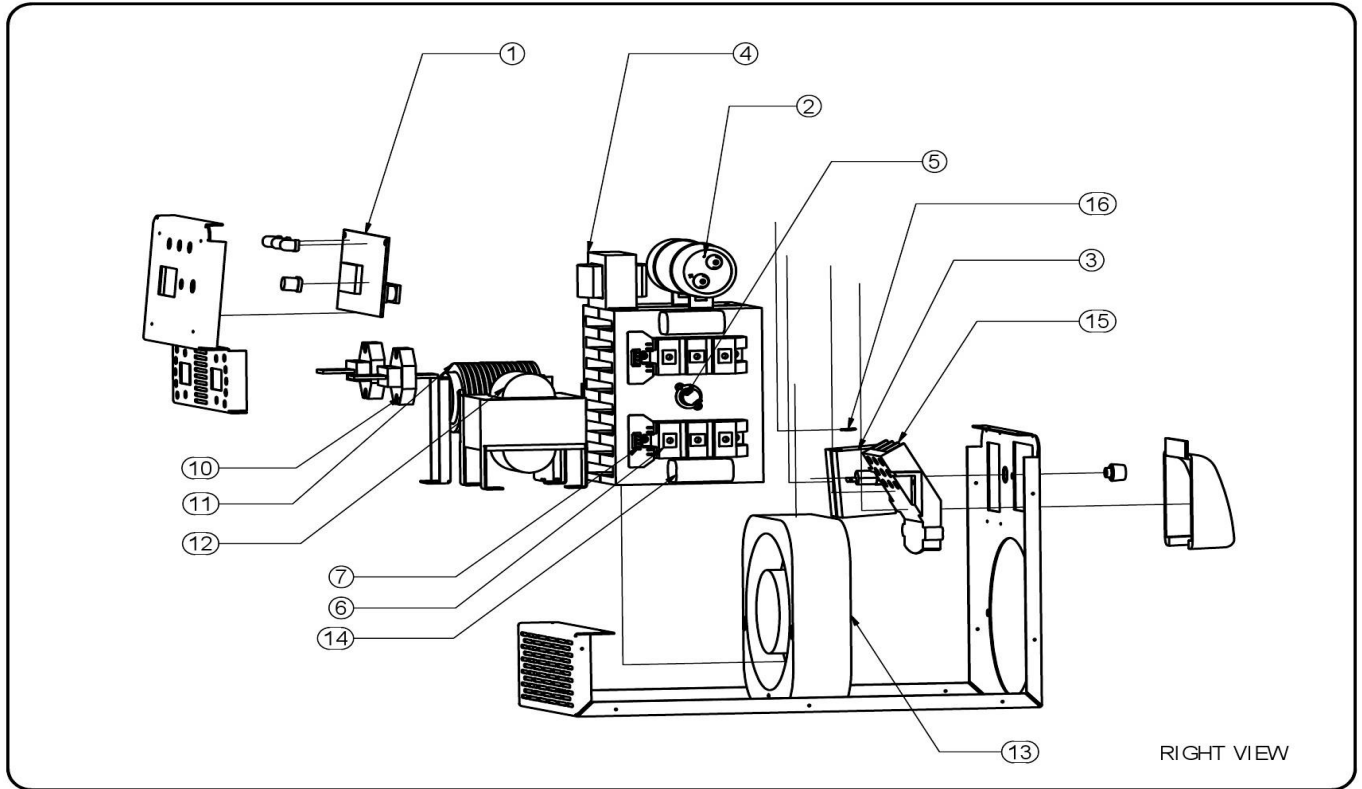
INVERTER DC ARC 250LD2



250LD3 PART LIST

No	Part	Q'ty	No	Part	Q'ty
1	Main PCB	1	10	Output terminal	2
2	Capacitor	1	11	Choke transformer	1
3	Circuit Breaker	1	12	Main transformer	1
4	Auxiliary transformer	1	13	FAN	1
5	Temp sensor	1	14	MF Capacitor	2
6	IGBT	2	15	Input terminal	1
7	IGBT Drive PCB	2	16	TNR	1
8	Input bridge diode / PCB	1	17	Fuse	1
9	FRD / PCB	1			

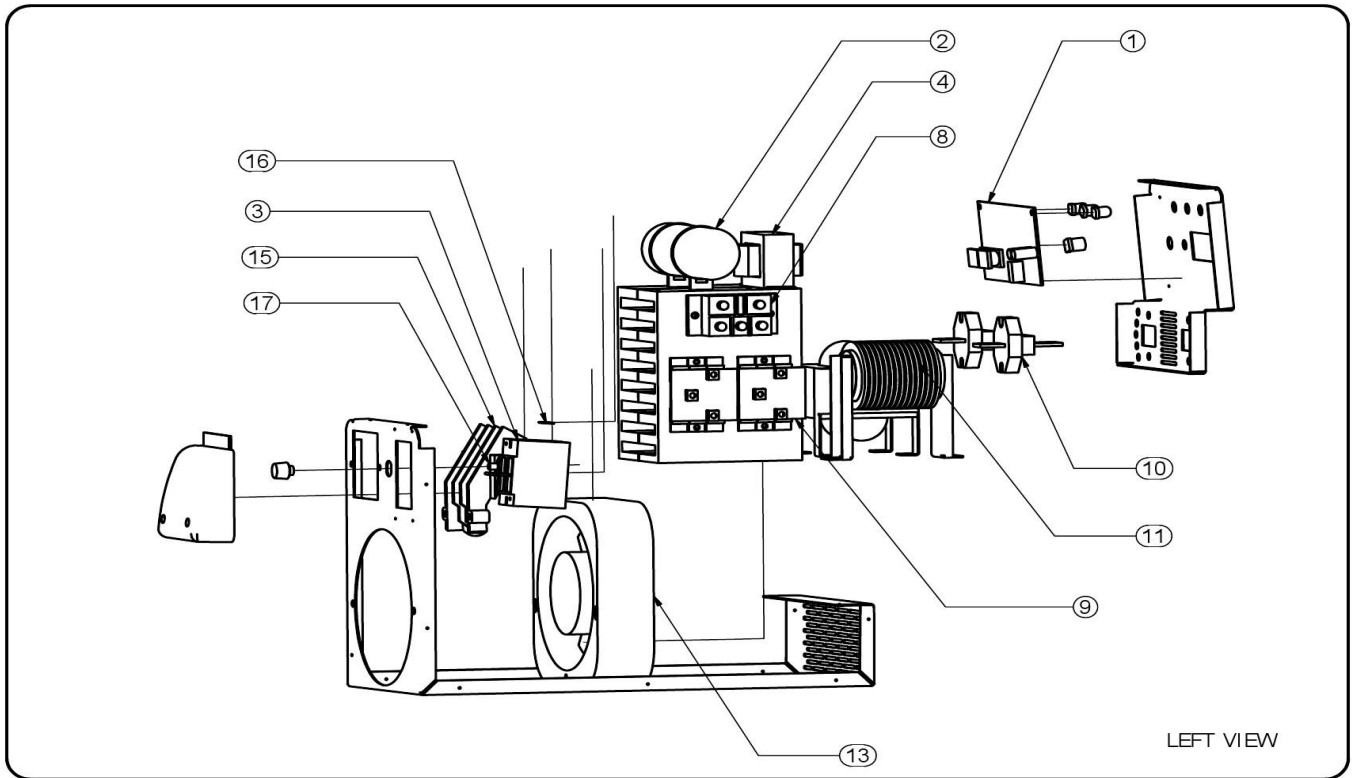
INVERTER DC ARC 300LD2



300LD3 PART LIST

No	Part	Q'ty	No	Part	Q'ty
1	Main PCB	1	10	Output terminal	2
2	Capacitor	1	11	Choke transformer	1
3	Circuit Breaker	1	12	Main transformer	1
4	Auxiliary transformer	1	13	FAN	1
5	Temp sensor	1	14	MF Capacitor	2
6	IGBT	2	15	Input terminal	1
7	IGBT Drive PCB	2	16	TNR	1
8	Input bridge diode / PCB	1	17	Fuse	1
9	FRD / PCB	1			

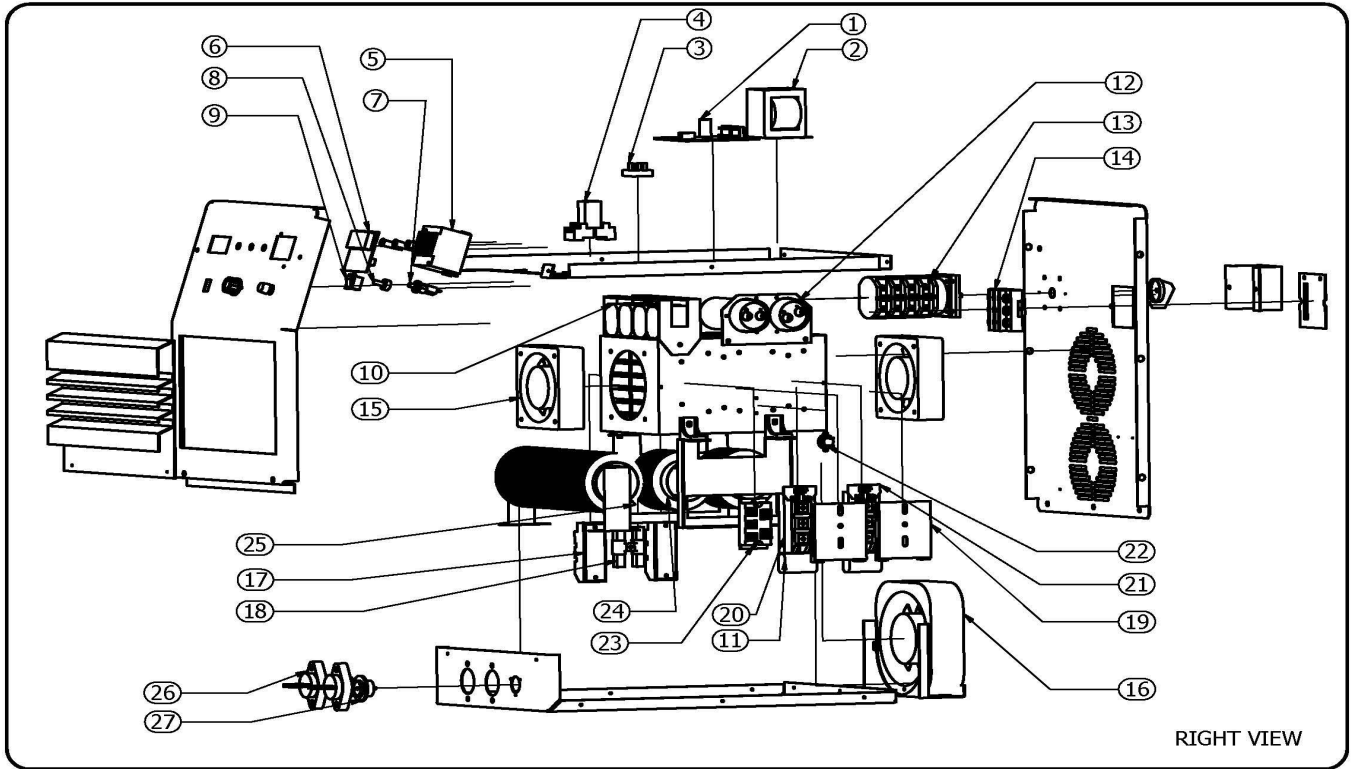
INVERTER DC ARC 300LD2



300LD3 PART LIST

No	Part	Q'ty	No	Part	Q'ty
1	Main PCB	1	10	Output terminal	2
2	Capacitor	1	11	Choke transformer	1
3	Circuit Breaker	1	12	Main transformer	1
4	Auxiliary transformer	1	13	FAN	1
5	Temp sensor	1	14	MF Capacitor	2
6	IGBT	2	15	Input terminal	1
7	IGBT Drive PCB	2	16	TNR	1
8	Input bridge diode / PCB	1	17	Fuse	1
9	FRD / PCB	1			

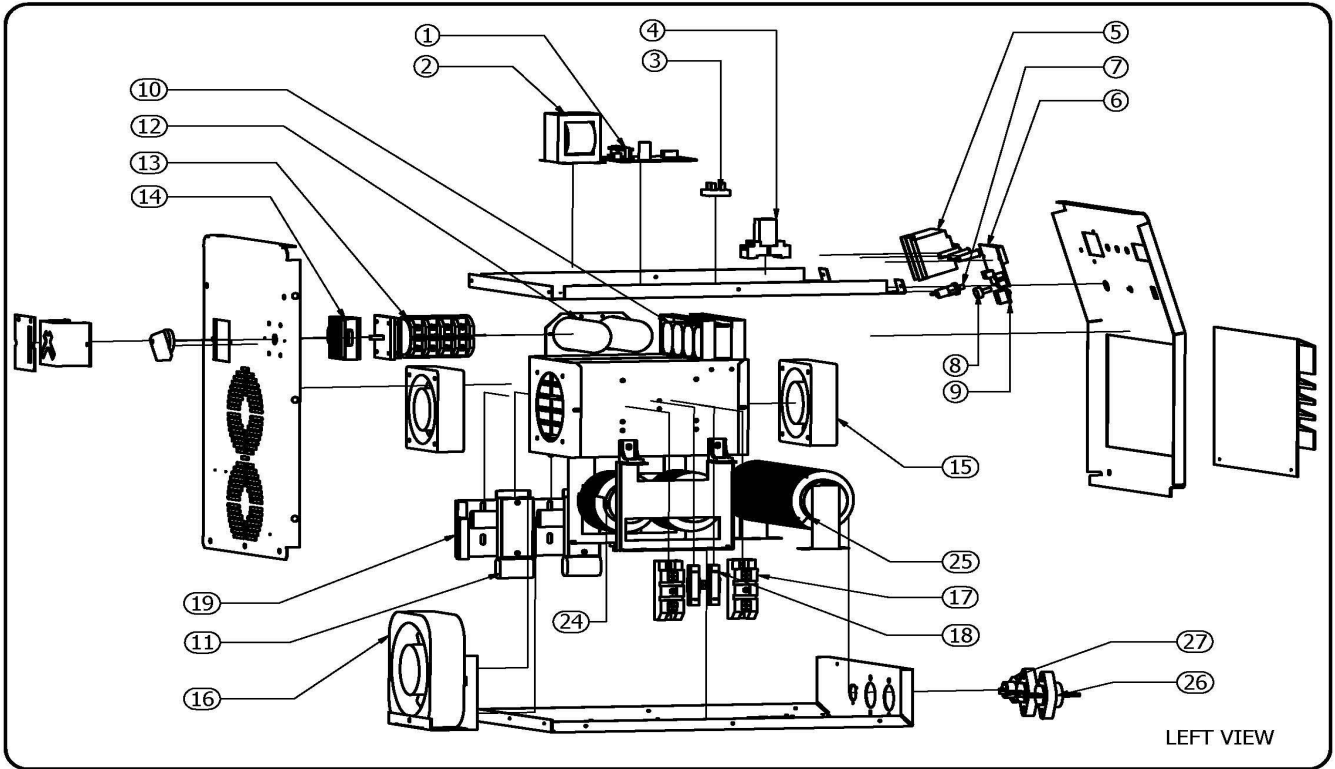
INVERTER DC ARC 400LD2



400LD2 PART LIST

No	Part	Q'ty	No	Part	Q'ty
1	Main PCB	1	15	FAN	2
2	Auxiliary transformer	1	16	FAN	1
3	Input bridge diode	1	17	FRD	2
4	Relay	1	18	Resistance	2
5	Circuit Breaker	1	19	IGBT Snubber PCB	2
6	Meter PCB	1	20	IGBT	2
7	Fuse	1	21	IGBT Drive PCB	2
8	Volume knob	1	22	Temp sensor	1
9	Switch	1	23	Bridge diode	1
10	MF Capacitor	4	24	Main transformer	1
11	MF Capacitor	2	25	Choke transformer	1
12	Capacitor	2	26	Output terminal	2
14	Input selection terminal	1	27	Connector	1

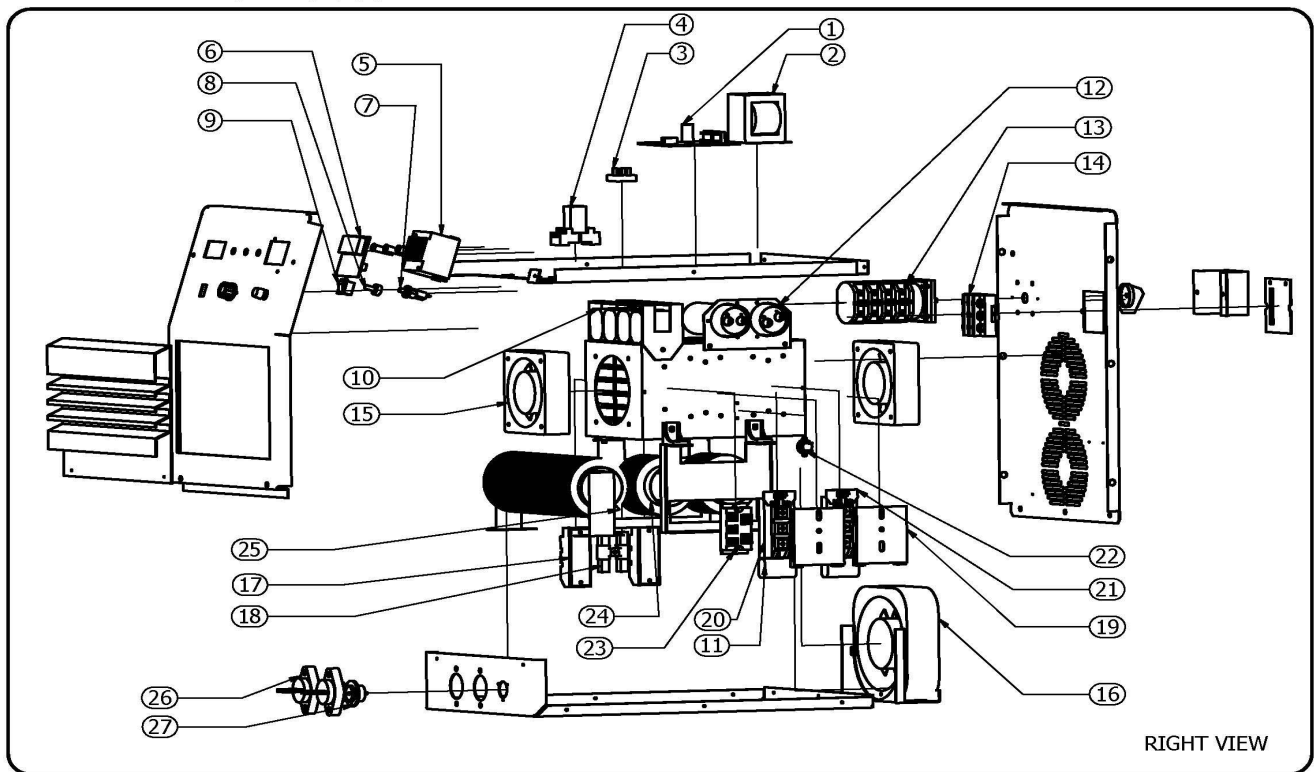
INVERTER DC ARC 400LD2



400LD2 PART LIST

No	Part	Q'ty	No	Part	Q'ty
1	Main PCB	1	15	FAN	2
2	Auxiliary transformer	1	16	FAN	1
3	Input bridge diode	1	17	FRD	2
4	Relay	1	18	Resistance	2
5	Circuit Breaker	1	19	IGBT Snubber PCB	2
6	Meter PCB	1	20	IGBT	2
7	Fuse	1	21	IGBT Drive PCB	2
8	Volume knob	1	22	Temp sensor	1
9	Switch	1	23	Bridge diode	1
10	MF Capacitor	4	24	Main transformer	1
11	MF Capacitor	2	25	Choke transformer	1
12	Capacitor	2	26	Output terminal	2
14	Input selection terminal	1	27	Connector	1

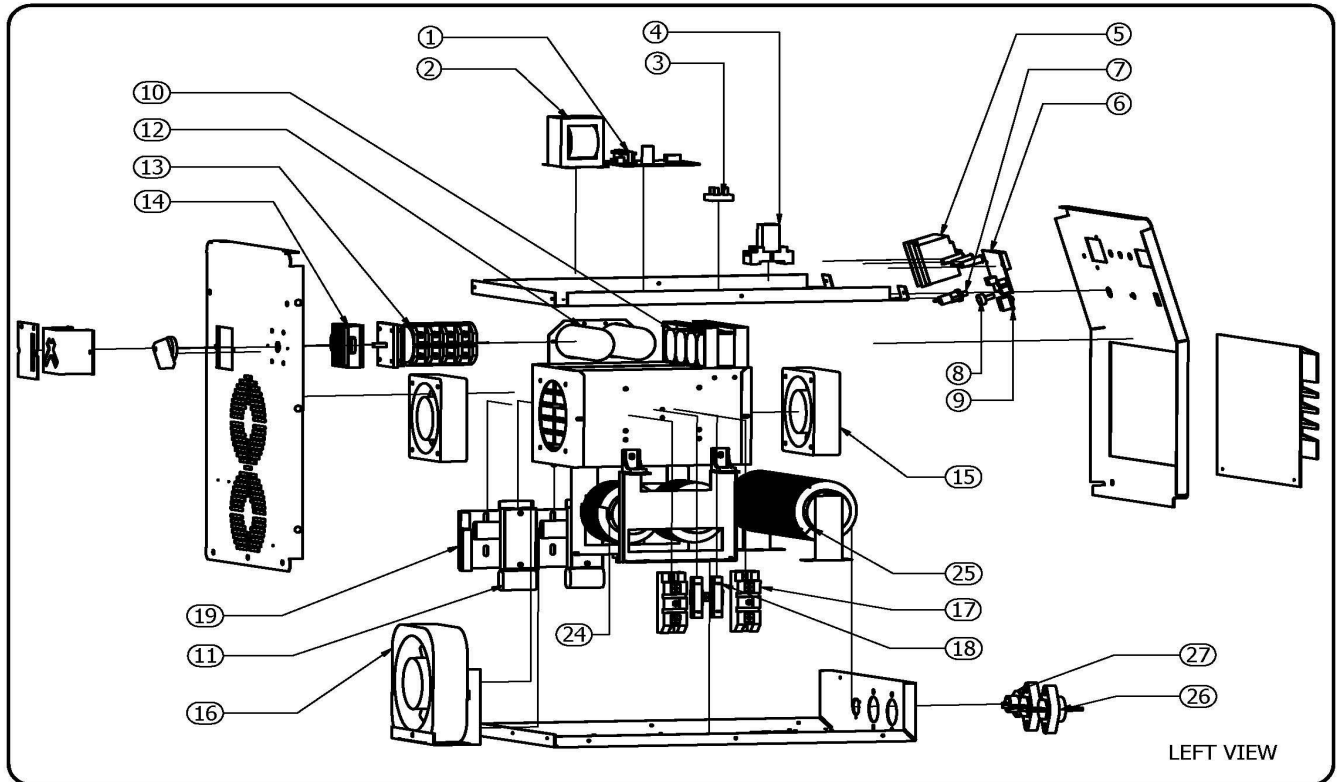
INVERTER DC ARC 500LD2



500LD2 PART LIST

No	Part	Q'ty	No	Part	Q'ty
1	Main PCB	1	15	FAN	2
2	Auxiliary transformer	1	16	FAN	1
3	Input bridge diode	1	17	FRD	2
4	Relay	1	18	Resistance	2
5	Circuit Breaker	1	19	IGBT Snubber PCB	2
6	Meter PCB	1	20	IGBT	2
7	Fuse	1	21	IGBT Drive PCB	2
8	Volume knob	1	22	Temp sensor	1
9	Switch	1	23	Bridge diode	1
10	MF Capacitor	4	24	Main transformer	1
11	MF Capacitor	2	25	Choke transformer	1
12	Capacitor	2	26	Output terminal	2
14	Input selection terminal	1	27	Connector	1

INVERTER DC ARC 500LD2



500LD2 PART LIST

No	Part	Q'ty	No	Part	Q'ty
1	Main PCB	1	15	FAN	2
2	Auxiliary transformer	1	16	FAN	1
3	Input bridge diode	1	17	FRD	2
4	Relay	1	18	Resistance	2
5	Circuit Breaker	1	19	IGBT Snubber PCB	2
6	Meter PCB	1	20	IGBT	2
7	Fuse	1	21	IGBT Drive PCB	2
8	Volume knob	1	22	Temp sensor	1
9	Switch	1	23	Bridge diode	1
10	MF Capacitor	4	24	Main transformer	1
11	MF Capacitor	2	25	Choke transformer	1
12	Capacitor	2	26	Output terminal	2
14	Input selection terminal	1	27	Connector	1

Thank you very much for choosing our machine

Please record your machine identification information below for future reference. This information can be found on the nameplate of your machine.

Product Name	INVERTER DC STICK WELDER
Model Number	
Date Manufactured	
Serial Number	
Date Purchased	
Where Purchased	
Where you use	

Whenever you request replacement parts or information on this machine, always supply the information you have recorded above. The date number is especially important when identifying the correct replacement parts.

Complete this form, please fax it to our selling agency in your country or us for warranty statement.



WORLDWEL CO., LTD.

11-101, Songlim-dong, Dong-gu, Incheon-city, Korea

TEL : +82-32-876-2114 FAX : +82-32-876-2117

E-mail : sales@worldwel.com

www.worldwel.com