



OWNERS OPERATING MANUAL
INVERTER DC ARC WELDERS
MMA/ZX7/GS SERIES

CONGRATULATIONS ON YOUR PURCHASE OF A
QUALITY INVERTER DC ARC WELDER, IT WILL
PROVIDE YEARS OF RELIABLE SERVICE.

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SAFETY INSTRUCTONS

When using power equipment, basic safety precautions should always be followed to reduce the risk of fire, electric shock and personal injury, including the following.

If used correctly welding pose little risk to the operator however, care should always be taken to ensure safe and proper performance. Read all owner operating instructions before attempting to operate any product.

FOR SAFE OPERATION:

- **Keep the work area clean.**

Cluttered work areas invite injuries (indoor and outdoor).

- **Consider the work environment.**

Don't expose power equipment to rain or any other liquid. Don't use welding equipment in damp or wet locations. Keep your work area well lit. Don't use welding equipment in the presence of flammable liquids or gases.

- **Guard against electric shock.**

Avoid body contact with grounded surfaces (e.g. Pipes, radiators and electrical appliances).

- **Keep children and visitors away.**

Keep children and visitors away from the area of operation. Do not let children or visitors touch equipment or extension cables.

- **Store idle machinery.**

When power equipment is not in use, keep them in a dry, high or locked up area away from children.

- **Wear safety glasse**

Always wear safety glasses or other suitable eye protection when using welding equipment.

- **Secure Work.**

Use clamps or a vice whenever possible to secure your work piece

- **Don't over reach.**

Keep proper footing and balance at all times.

- **Dress properly.**

DO NOT wear loose clothing or jewellery; they can be caught in moving parts. Wear protective hair covering to cover long hair, using gloves and non-slip footwear is recommended when working outdoors.

- **Take care of cables.**

Never carry welding equipment by the cable and never pull the cable to disconnect it from the socket. Keep cables away from heat, oil and sharp edges. Replace damaged cables.

- **Disconnect Tools.**

Disconnect welding equipment when not in use, before servicing, and when changing accessories on other tools such as blades, bits and cutters.

- **Avoid unintentional operation.**

Don't carry plugged in welding equipment with a finger on the switch. Be sure that the switch is off when plugging in the machine.

- **Outdoor use; extension cables.**

When electric power equipment is used outdoors, only use extension cables market as suitable for outdoor use.

- **Stay Alert.**

Watch what you are doing. Use common sense. Do not operate welders when you are tired or under the influence of alcohol or drugs.

- **Check damaged parts.**

Before using welding equipment, parts that are damaged should be carefully checked to determine that they will operate properly and perform their intended function. Any part that is damaged should be properly repaired or replaced by an authorized service agent. Do not operate power equipment if it cannot be turned OFF and ON by the switch.

- **Repair of power equipment by experts.**

Power equipment is built in accordance with relevant safety authority requirements. The repair of power equipment must only be carried out by experts; non-expert repairs may cause considerable danger for the user and void warranty.

DESCRIPTION OF MACHINES

These models are portable inverter DC ARC Welders. The robust format makes them versatile and effective for a variety of uses. The welder compliance to current regulations and the optimum quality of materials used will ensure a long working life with complete safety.

SPECIFICATION – IEC Certified

	ZX7-200	ZX7-225	ZX7-250	ZX7-300	ZX7-350	ZX7-380
Main Voltage (V)	1PH 220V-240V 50/60HZ					
Rated Input Capacity(KVA)	6.8	8.1	10.1	12.2	15	16.9
Welding Current (A)	20~200	20~225	20~250	20~300	20~350	20~380
Duty Cycle % (25°C)	60	60	60	60	60	60
Rated Load Voltage(V)	28	29	30	32	34	35.2
No Load Voltage	65	65	65	65	65	65
Efficiency %	85	85	85	85	85	85
Power Factor cos	0.93	0.93	0.93	0.93	0.93	0.93
Electrode (mm)	1.6~4.0	1.6~4.0	1.6~5.0	1.6~5.0	1.6~6.0	1.6~6.0
Protection Degree	IP21S	IP21S	IP21S	IP21S	IP21S	IP21S
Insulation Class	F	F	F	F	F	F

	MMA-200	MMA-250	MMA-300	MMA-400
Main Voltage (V)	1PH 220V-240V 50/60HZ			
Rated Input Capacity(KVA)	6.8	10.1	12.2	18.2
Welding Current (A)	20~200	20~250	20~300	20~400
Duty Cycle % (25°C)	60	60	60	60
Rated Load Voltage(V)	28	30	32	36
No Load Voltage	65	65	65	65
Efficiency %	85	85	85	85
Power Factor cos	0.93	0.93	0.93	0.93
Electrode (mm)	1.6~4.0	1.6~5.0	1.6~5.0	1.6~6.0
Protection Degree	IP21S	IP21S	IP21S	IP21S
Insulation Class	F	F	F	F

	GS-200	GS-250	GS-300	GS-400
Main Voltage (V)	1PH 220V-240V 50/60HZ			
Rated Input Capacity(KVA)	6.8	10.1	12.2	18.2
Welding Current (A)	20~200	20~250	20~300	20~400
Duty Cycle % (25°C)	60	60	60	60
Rated Load Voltage(V)	28	30	32	36
No Load Voltage	65	65	65	65
Efficiency %	85	85	85	85
Power Factor cos	0.93	0.93	0.93	0.93
Electrode (mm)	1.6~4.0	1.6~5.0	1.6~5.0	1.6~6.0
Protection Degree	IP21S	IP21S	IP21S	IP21S
Insulation Class	F	F	F	F

	ZX7-315	ZX7-400	ZX7-500	ZX7-630
Main Voltage (V)	3PH380V-440V 50/60HZ			
Rated Input Capacity(KVA)	12.7	16.5	26.7	31.7
Welding Current (A)	20~315	20~400	20~500	20~500
Duty Cycle % (25°C)	60	60	60	60
Rated Load Voltage(V)	32.6	34.4	40	50
No Load Voltage	65	65	65	65
Efficiency %	85	85	85	85
Power Factor cos	0.93	0.93	0.93	0.93
Electrode (mm)	1.6~6.0	1.6~7.0	1.6~8.0	1.6~8.0
Protection Degree	IP21S	IP21S	IP21S	IP21S
Insulation Class	F	F	F	F

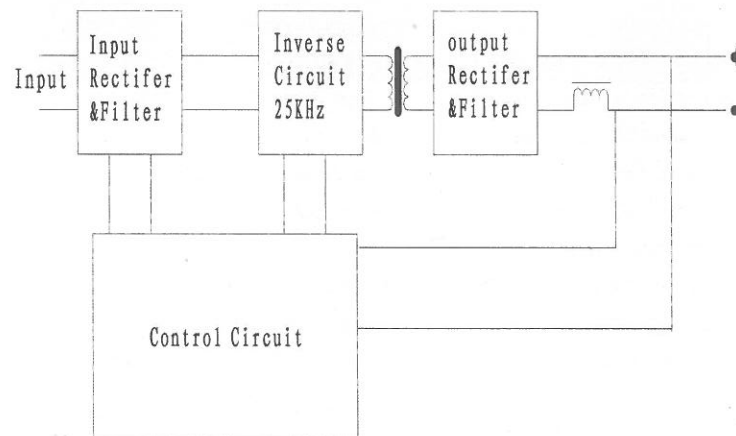
ACCESSORIES

- Electrode Holder
- Earth Clamp
- Hand Held Face Mask
- Wire Brush

FEATURES AND BENEFITS

- ANTI-SHOCK CLAMP
- ACCESSORIES INCLUDED
- 20 AMP SINGLE PHASE CABLE
- PORTABLE
- DOUBLE COOLING FAN
- EUROPEAN CONFORMITY

CURCUIT DIAGRAM



OPERATION

- Step 1: Plug in the Earth and Positive cable.
- Step 2: Select desired AMP you wish to use.
- Step 3: Switch on the inverter.
- Step 4: Select the correct diameter electrode according to the thickness of the work piece you intend to weld. Press the side lever to open the clamp, insert the electrode into the V-groove and release side lever. Ensure that the electrode is correctly inserted inside the electrode holder.
- Step 5: To ensure earth has good contact, clean the work piece with a wire brush. Attached the earth clamp to the cleaned area to ensure good contact.

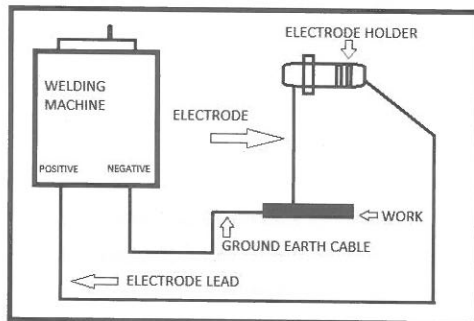
WHAT IS AN INVERTER WELDER

Inverter welders are welders that transform high voltage, low amperage into low voltage, high amperage power which is required for welding. This is done by using a transformer.

The difference between inverters and other types of welders is that inverters welders increase the frequency of the primary power supply, which in turn reduced the size of the transformer. This is done through an ON/OFF action of high powered solid state switches that creates the DC power.

By controlling the power on the primary side of the transformers and boosting the frequency, the inverter welders are able to create light weight solutions compared to ARC and MIG welder types.

SET UP OF THE INVERTER WELDER



WELDING INFORMATION

TABLE FOR SELECTION OF THE WELDING CURRENT ACCORDING TO THE ELECTRODE AND METAL THICKNESS

Weldable Metal Thickness	Diameter Electrodes E6013 / E7018	Minimum Current [A]	Maximum Current [A]
1.20 - 1.50 mm	1.6 mm	30	50
1.50 - 2.00 mm	2.0 mm	40	80
2.00 - 4.00 mm	2.5 mm	60	100
4.00 - 6.00 mm	3.2 mm	100	130
6.00 - 7.00 mm	4.0 mm	120	170
7.00 - 8.00 mm	4.0 mm	140	180

NOTE: Weld able metal thickness can be increased by multiple welds.

DC TIG WELDING WITH DC INVERTER WELDER

REQUIREMENTS

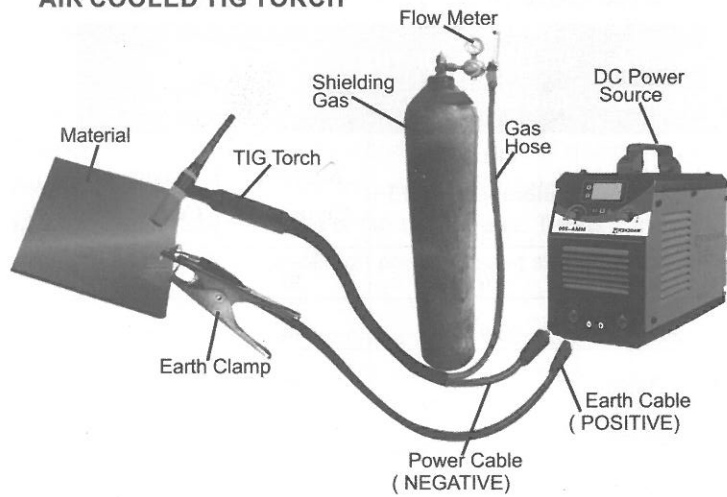
1. TIG Torch (complete with gas hose)
2. Argon Gas (Shielding Gas)
3. Argon Flow Meter

PROCESS

1. Connect earth cable to inverters positive outlet
2. Connect power cable (TIG torch) to inverters earth outlet
3. Secure gas hose on TIG torch to Argon flow meter
4. Secure gas flow meter to Argon gas bottle

Secure earth clamp to work piece

AIR COOLED TIG TORCH



KEY POINTS

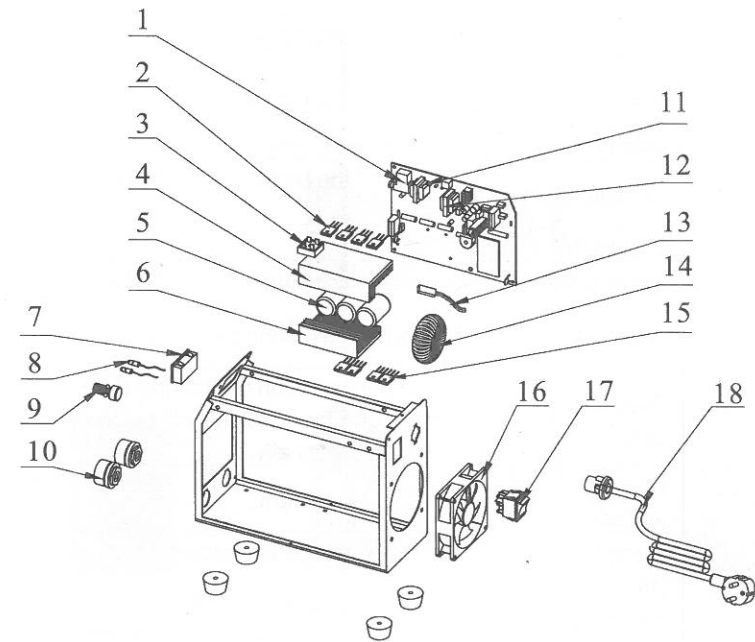
- Get the amperage right from the chart provided.
- Check that you have the correct electrode.
- Use the correct angle, 30 – 40 degrees to the work piece.
- Arch weld from LEFT to RIGHT
- Please remember the safety aspects, preparation for welding and the correct equipment.

THERMAL OVERLOAD

This welder is fitted with a thermal overload cut out which operates automatically to stop the transformer overheating.

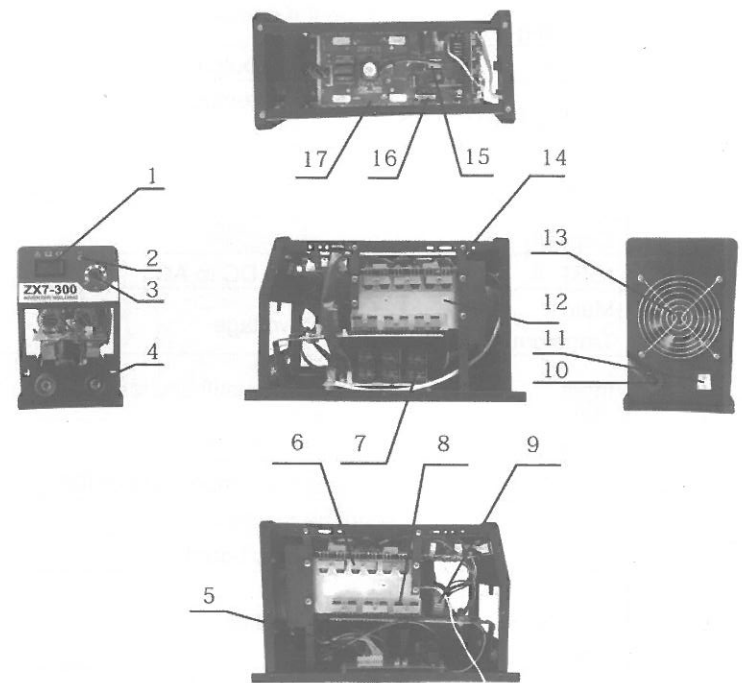
The machine will become operational again automatically once the temperature has reduced itself to an acceptable working temperature.

EXPLODED VIEW AND SPARE PART LISTING



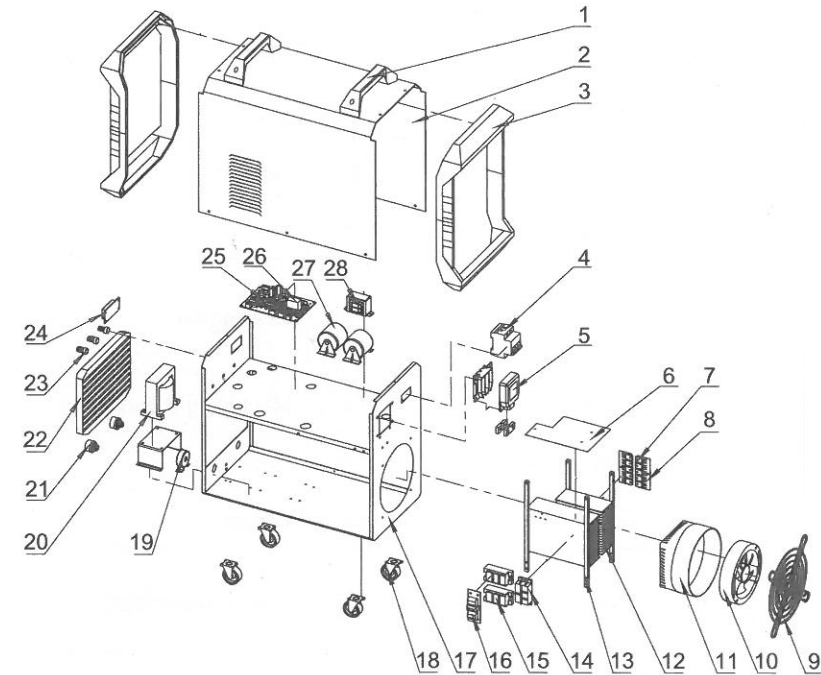
NO.	Components	Note
1	Electric relay	Avoid the charging current for capacitor too big
2	IGBT	Inverter ,switch DC to AC
3	Silicon bridge	Transferring AC into DC
4	Cooling fin(A)	Decreasing the temperature of silicon bridge
5	Capacitor	Filtering
6	Cooling fin(B)	Decreasing the temperature of IGBT,
7	Digital Display	Showing current during welding
8	Over-heat pilot lamp	The lamp is on when the temperature is too high, and the machine will be back to work automatically.
9	Current adjusting	Adjusting the current.
10	Output	Connecting the output cables.
11	Drive transformer	Provide the voltage for IGBT
12	Control transformer	Provide the voltage for control board
13	Heat protector	Protect the machine from overheat
14	Main Transformer	Transfer the voltage
15	Diode	Switch AC to DC
16	fan	Cooling the machine
17	Power switch	On or off the machine
18	Input	Connecting the electricity(fuse 20-40A)

EXPLODED VIEW AND SPARE PART LISTING



NO.	Components	Note
1	LED	Showing current during welding
2	Over-heat pilot lamp	The lamp is on when the temperature is too high, and the machine will be back to work automatically.
3	Current adjusting	Adjusting the current.
4	Output	Connecting the output cables.
5	Cooling fin(A)	Decreasing the temperature of silicon bridge
6	Diode	Switch AC to DC
7	Capacity	Filtering
8	IGBT	Inverter ,switch DC to AC
9	Main Transformer	Transfer the voltage
10	Input	Connecting the electricity(fuse 20-40A)
11	Power switch	On or off the machine
12	Cooling fin(B)	Decreasing the temperature of IGBT
13	fan	Cooling the machine
14	Bracket	Hold the electric board
15	Control electronic board	Controlling welding
16	Control transformer	Provide the voltage for control board
17	Drive transformer	Provide the voltage for IGBT

EXPLODED VIEW AND SPARE PART LISTING



NO.	Components	NO.	Components
1	Handle	2	Steel Cover
3	Steel Cover	4	Plastic cover
5	Output	6	Insulate paper
7	Diode	8	Rectifying board
9	Cover of fan	10	Fan
11	Protector of fan	12	Cooling fin
13	Support	14	Rectifying mouldle
15	IGBT mouldle	16	Absorption
17	Housing	18	Wheel
19	Sensor	20	Main transformer
21	Quick connector	22	Plastic cover
23	Knob	24	Led
25	Main board	26	Driving transformer
27	Capacitor	28	Controlling transformer