



EDGE-185L GASOLINE WELDING GENERATOR

OPERATOR'S MANUAL



WARRANTY
EFFECTIVE JULY 1, 2015
LIMITED WARRANTY

This warranty applies to the original purchaser and is subject to the terms and conditions listed below. This Limited Warranty is for new equipment sold after the above date, providing coverage for defects in material and workmanship at the time it is shipped from the factory.

Limited to the warranty periods below, Crossfire Equipment or an approved Crossfire Repair Centre will repair or replace the item under warranty that fails due to defects in material and workmanship. Crossfire must be notified within 30 days of the failure, so as to provide instructions on how to proceed with the repair of your welder and warranty claim processing. Warranty period begins at the time the welder is purchased from Crossfire. **Keep your receipt as proof of purchase.**

Engine Warranty

The engine on this unit is warranted separately by the engine manufacturer. Please see the engine manual.

Warranty Periods

Limited Warranty is divided into four categories. No Warranty, 90 days, 1 year and 3 years.

No Warranty

Normal wear items, MIG gun parts (contact tips, nozzle, contact tip adapter, MIG gun liner), drive roll, electrode holder, ground clamps, Plasma torch parts (nozzle, electrode, diffuser, cover) are considered consumable items and are not covered under warranty.

90 days

Parts for Crossfire spool guns, welding carts and welding cabinets. This warranty covers the absence of or defective parts.

Parts and Labour on MIG gun parts (except those listed under normal wear items), cables, regulator, plasma torch (except those listed under normal wear items). Any shipping related to warranty repair is the responsibility of the customer.

Limited Warranty 1 year/Parts/Labour + 3 year Parts

This warranty covers parts and labour on items such as: transformer, reactor, rectifier, solenoid valve, PC Board, switches, controls, gas valve, drive motor, drive system other than drive roll and any other component that requires the removal of the sheet metal to access. Any shipping related to warranty repair is the responsibility of the customer.

Voiding Warranty

Warranty does not apply to: Shipping Damage, Misuse and abuse of the unit, alteration of the unit in any way.

Warranty Claim

This is a parts and labour warranty. **Do not return your unit.** Retain your receipt in case a warranty claim is needed. No warranty will be provided without the original receipt from retailer. To make a warranty claim, please contact crossfirewelders@gmail.com.

No Crossfire warranty service can begin without a service file number including – Model # - Serial Number – Purchase Date.

EDGE185L

Thank you very much for choosing a CROSSFIRE product! For future reference, please complete the owner's record below:

Model: _____ Purchase Date: _____

Save the receipt, warranty and these instructions. It is important that you read the entire manual to become familiar with this product before you begin using it.

This machine is designed for certain applications only. The distributor cannot be responsible for issues arising from modification. We strongly recommend this machine not be modified and/or used for any application other than that for which it was designed. If you have any questions relative to a particular application, DO NOT use the machine until you have first contacted the distributor to determine if it can or should be performed on the product.

INTENDED USE

The 185L Welder/Generator is a 6000 Watt (6600 Watt Peak) generator and DC only stick welder with an exceptionally smooth stick welding performance. It is intended for use for welding steel, stainless steel, cast iron and hard surfacing using electrodes from 1/16 inch to 5/32 inch.

Stick welding gives the operator the flexibility to use this welder for mobile applications, including outdoor applications. Stick electrodes contain a flux, making welding easy and does not require the use of a separate shielding gas which can be blown away by the wind in outdoor applications. Since this welder does not use shielding gas, the operator will not require to have or maintain shielding gas bottles, a regulator or gas hose. TIG welding does require the use of Argon shielding gas. The shielding gas replaces the flux that is used in stick welding, providing a more controlled and cosmetic weld. However, TIG welding is limited to areas inside or where wind can be controlled, preventing the shielding gas from blowing away.

Since the 185L Welder/Generator is an engine powered welder, it does NOT require a source of input power. The generator provides the required input electrical power needed to operate the welder. This generator also provides auxiliary power that may be needed to perform other tasks such as lighting, grinding or power tool operation. A total of 6000 watts of auxiliary power is available while not welding.

GENERAL SAFETY RULES



WARNING: Read and understand all instructions. Failure to follow all instructions listed below may result in serious injury.



CAUTION: Do not allow persons to operate or assemble this 7500K Welder/Generator until they have read this manual and have developed a thorough understanding of how the 7500K Welder/Generator works.



WARNING: The warnings, cautions, and instructions discussed in this instruction manual cannot cover all possible conditions or situations that could occur. It must be understood by the operator that common sense and caution are factors that cannot be built into this product, but must be supplied by the operator.

SAVE THESE INSTRUCTIONS

IMPORTANT SAFETY CONSIDERATIONS

1.1 Your Welding Environment

- Keep the environment you will be welding in free from flammable materials.
- Always keep a fire extinguisher accessible to your welding environment.
- Always have a qualified person install and operate this equipment.
- Make sure the area is clean, dry and ventilated. Do not operate the welder in humid, wet or poorly ventilated areas.
- Always have your welder maintained by a qualified technician in accordance with local, state and national codes.
- Always be aware of your work environment. Be sure to keep other people, especially children, away from you while welding.
- Keep harmful arc rays shielded from the view of others.
- Mount the welder on a secure bench or cart that will keep the welder secure and prevent it from tipping over or falling.

1.2 Your Welder's Condition

- Check ground cable, power cord and welding cable to be sure the insulation is not damaged. Always replace or repair damaged components before using the welder.
- Check all components to ensure they are clean and in good operating condition before use.

1.3 Use of Your Welder

⚠ CAUTION

Do not operate the welder if the output cable, electrode, torch, wire or wire feed system is wet. Do not immerse them in water. These components and the welder must be completely dry before attempting to use them.

- Follow the instructions in this manual.
- Keep welder in the off position when not in use.
- Connect ground lead as close to the area being welded as possible to ensure a good ground.
- Do not allow any body part to come in contact with the welding wire if you are in contact with the material being welded, ground or electrode from another welder.
- Do not weld if you are in an awkward position. Always have a secure stance while welding to prevent accidents. Wear a safety harness if working above ground.
- Do not drape cables over or around your body.
- Wear a full coverage helmet with appropriate shade (see ANSI Z87.1 safety standard) and safety glasses while welding.
- Wear proper gloves and protective clothing to prevent your skin from being exposed to hot metals, UV and IR rays.
- Do not overuse or overheat your welder. Allow proper cooling time between duty cycles.
- Keep hands and fingers away from moving parts and stay away from the drive rolls.
- Do not point torch at any body part of yourself or anyone else.
- Always use this welder in the rated duty cycle to prevent excessive heat and failure.

1.4 Specific Areas of Danger, Caution or Warning



Electrical Shock

⚠ WARNING

Electric arc welders can produce a shock that can cause injury or death. Touching electrically live parts can cause fatal shocks and severe burns. While welding, all metal components connected to the wire are electrically hot. Poor ground connections are a hazard, so secure the ground lead before welding.

- Wear dry protective apparel: coat, shirt, gloves and insulated footwear.
- Insulate yourself from the work piece. Avoid contacting the work piece or ground.
- Do not attempt to repair or maintain the welder while the power is on.
- Inspect all cables and cords for any exposed wire and replace immediately if found.
- Use only recommended replacement cables and cords.
- Always attach ground clamp to the work piece or work table as close to the weld area as possible.
- Do not touch the welding wire and the ground or grounded work piece at the same time.
- Do not use a welder to thaw frozen pipes.



Fumes and Gases

⚠ WARNING

- Fumes emitted from the welding process displace clean air and can result in injury or death.
- Do not breathe in fumes emitted by the welding process. Make sure your breathing air is clean and safe.
- Work only in a well-ventilated area or use a ventilation device to remove welding fumes from the environment where you will be working.
- Do not weld on coated materials (galvanized, cadmium plated or containing zinc, mercury or barium). They will emit harmful fumes that are dangerous to breathe. If necessary use a ventilator, respirator with air supply or remove the coating from the material in the weld area.
- The fumes emitted from some metals when heated are extremely toxic. Refer to the material safety data sheet for the manufacturer's instructions.
- Do not weld near materials that will emit toxic fumes when heated. Vapors from cleaners, sprays and degreasers can be highly toxic when heated.



UV and IR Arc Rays

⚠ DANGER

- The welding arc produces ultraviolet (UV) and infrared (IR) rays that can cause injury to your eyes and skin. Do not look at the welding arc without proper eye protection.
- Always use a helmet that covers your full face from the neck to top of head and to the back of each ear.
 - Use a lens that meets ANSI standards and safety glasses. For welders under 160 Amps output, use a shade 10 lens; for above 160 Amps, use a shade 12. Refer to the ANSI standard Z87.1 for more information.
 - Cover all bare skin areas exposed to the arc with protective clothing and shoes. Flame-retardant cloth or leather shirts, coats, pants or coveralls are available for protection.
 - Use screens or other barriers to protect other people from the arc rays emitted from your welding.
 - Warn people in your welding area when you are going to strike an arc so they can protect themselves.



Fire Hazards

⚠ WARNING

- Do not weld on containers or pipes that contain or have had flammable, gaseous or liquid combustibles in them. Welding creates sparks and heat that can ignite flammable and explosive materials.
- Do not operate any electric arc welder in areas where flammable or explosive materials are present.
 - Remove all flammable materials within 35 feet of the welding arc. If removal is not possible, tightly cover them with fireproof covers.
 - Take precautions to ensure that flying sparks do not cause fires or explosions in hidden areas, cracks or areas you cannot see.
 - Keep a fire extinguisher close in the case of fire.
 - Wear garments that are oil-free with no pockets or cuffs that will collect sparks.
 - Do not have on your person any items that are combustible, such as lighters or matches.
 - Keep work lead connected as close to the weld area as possible to prevent any unknown, unintended paths of electrical current from causing electrical shock and fire hazards.
 - To prevent any unintended arcs, cut wire back to ¼" stick out after welding.

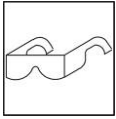


Hot Materials

⚠ CAUTION

Welded materials are hot and can cause severe burns if handled improperly.

- Do not touch welded materials with bare hands.
- Do not touch MIG gun nozzle after welding until it has had time to cool down.



Sparks/Flying Debris

⚠ CAUTION

Welding creates hot sparks that can cause injury. Chipping slag off welds creates flying debris.

- Wear protective apparel at all times: ANSI-approved safety glasses or shield, welder's hat and ear plugs to keep sparks out of ears and hair.



Electromagnetic Field

⚠ CAUTION

-Electromagnetic fields can interfere with various electrical and electronic devices such as pacemakers.

- Consult your doctor before using any electric arc welder or cutting device
- Keep people with pacemakers away from your welding area when welding.
- Do not wrap cable around your body while welding.
- Wrap MIG gun and ground cable together whenever possible.
- Keep MIG gun and ground cables on the same side of your body.



Shielding Gas Cylinders Can Explode

⚠ WARNING

High-pressure cylinders can explode if damaged, so treat them carefully.

- Never expose cylinders to high heat, sparks, open flames, mechanical shocks or arcs.
- Do not touch cylinder with MIG gun.
- Do not weld on the cylinder
- Always secure cylinder upright to a cart or stationary object.
- Keep cylinders away from welding or electrical circuits.
- Use the proper regulators, gas hose and fittings for the specific application.
- Do not look into the valve when opening it.
- Use protective cylinder cap whenever possible

1.5 Proper Care, Maintenance and Repair

⚠ DANGER

- Always have power disconnected when working on internal components.
- Do not touch or handle PC board without being properly grounded with a wrist strap. Put PC board in static proof bag to move or ship.
- Do not put hands or fingers near moving parts such as drive rolls of fan

185L WELDER/GENERATOR USE AND CARE

- **Do not modify the 185L Welder/Generator in any way.** Unauthorized modification may impair the function and/or safety and could affect the life of the equipment. There are specific applications for which the 185L Welder/Generator was designed.
- **Always check of damaged or worn out parts before using the 185L Welder/Generator.** Broken parts will affect 185L Welder/Generator operation. Replace or repair damaged or worn parts immediately.
- **Store idle 185L Welder/Generator.** When the 185L Welder/Generator is not in use, store it in a secure place out of the reach of children. Inspect it for good working condition prior to storage and before re-use.

TECHNICAL SPECIFICATIONS

	Item	Description
Generator Specifications	Output Frequency	60 HZ
	Output Voltage	120V AC / 240V AC
	Output Range	25A / 40A
	Peak Output	6600 Watts
	Rated Output	6000 Watts
	Output Phase	Single Phase
	Operational Time	8 hours
Welder Specifications	No Load Voltage	75V DC
	Output Range	60 to 185 Amp DC
	Duty Cycle	30% @ 150 Amp DC
	Electrode Diameters	1/16 inch to 5/32 inch
Engine Specifications	Engine Model	Kohler CH440
	Cooling Method	Air Cooled
	Type	4 stroke
	CC	429
	Horse Power	14 HP
	RPM	3600
	Fuel Type	Gasoline
	Start Type	Re-Coil
	Fuel Capacity	5 gallon
Entire Unit	Dimensions	31.5" x 23.5" x 28.5"
	Weight	230 lbs

KNOW YOUR WELDER

Description

The CROSSFIRE 185L Welder/Generator is a 6000 Watt (6600 Watt Peak) generator and DC only stick welder with an exceptionally smooth stick welding performance. It is intended for use for welding steel, stainless steel, cast iron and hard surfacing using electrodes from 1/16 inch to 5/32 inch.

It is powered by one of the best engines in the business. The Kohler CH440 provides 14 HP of power to supply the 185 Amp DC welding output and auxiliary power up to 6000 watts through the 120V Duplex Receptacles and the 240V Twist Lock Receptacle. This unit is supplied with a 12 ft. ground cable with clamp and an 18 ft. electrode holder with cable for stick welding operations. Its built-in wheel barrel style cart and rugged wheels makes this unit easy to move around.



Current Adjustment

Current adjustment is on the front panel of the machine. It has infinite current output adjustment from 60 to 185 Amps DC. To provide auxiliary power WHILE NOT WELDING, this control must be turned all the way to maximum.

Kohler CH440 Engine

The Kohler CH440 is a 14 HP, 429cc, 4-stroke gasoline engine with 3600 RPM.

Negative Output Connector

This is the connector for the ground cable and clamp, most often, when STICK welding.

Positive Output Connector

This is the connector for the electrode holder and cable, most often, when STICK welding.

240V Twist-Lock Receptacle

The generator provides 240V, 30A auxiliary power through this connection.

120V Duplex Receptacle

The generator provides 120V, 20A auxiliary power through this connection.

Auxiliary Power Circuit Breaker

Turn on the Auxiliary power and reset circuit breaker protection for the 120V and 240V auxiliary power.

Fuel Tank

5-gallon fuel tank provides up to 8 hours of operation.

ASSEMBLY

1. Install Axle To Frame

- 1.1 Carefully lift main welder frame approximately 12 inches off the ground. Be careful to secure the unit to prevent it from falling.
- 1.2 Note the mounting holes on the axle flange and match it up with the mounting holes in the main unit frame. The axle gets mounted on the end of the welder controls. Use the supplied bolts, washers, lock washers and nuts to secure axle bracket to the welder frame.

2. Install Wheels

- 2.1 Slide wheel onto axle
- 2.2 Slide large supplied washer onto axle.
- 2.3 Hold wheel and washer on the axle by installing large cotter pin into the hold at the end of the axle.
- 2.4 Repeat for other wheel.

3. Install Handles

- 3.1 Identify which handle goes on each side.
- 3.2 Use supplied hardware to fasten the large flange with 4 mounting holes to the side of the frame.
- 3.3 Use the supplied hardware to mount the tube leg to the bottom of the welder frame.
- 3.4 Repeat for each side.

INSTALLATION

1. ENGINE FUELING - Fill the fuel and oil needed for the engine. See Engine Operator's manual for details.

2. WELD CABLE CONNECTION - Refer to your welding electrode manufacturer packaging for suggestions of weld polarity.

▲ CAUTION

Be aware that the Electrode Holder and Cable will be electrically HOT when the engine is started and the weld cables are connected to the weld output connections.

2.1 DC Electrode Positive

- 2.1.1 Connect the quick connector on the end of the electrode holder and cable to the positive (+) weld output connection on the front of the welder.
- 2.1.2 Connect the quick connector on the end of the ground clamp and cable to the negative (-) weld output connection on the front of the welder.

2.2 DC Electrode Negative

- 2.2.1 Connect the quick connector on the end of the electrode holder and cable to the negative (-) weld output connection on the front of the welder.
- 2.2.2 Connect the quick connector on the end of the ground clamp and cable to the positive (+)

weld output connection on the front of the welder.

⚠ WARNING

EXPOSURE TO A WELDING ARC IS EXTREMELY HARMFUL TO THE EYES AND SKIN! Prolonged exposure to the welding arc can cause blindness and burns. Never strike an arc or begin welding until you are adequately protected. Wear flame-proof welding gloves, a heavy long sleeved shirt, trousers without cuffs, high topped shoes, and an ANSI approved welding helmet.

OPERATION

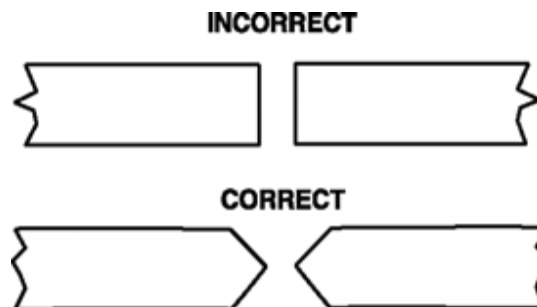
1. SETTING UP THE WORK PIECE

1.1 Welding positions

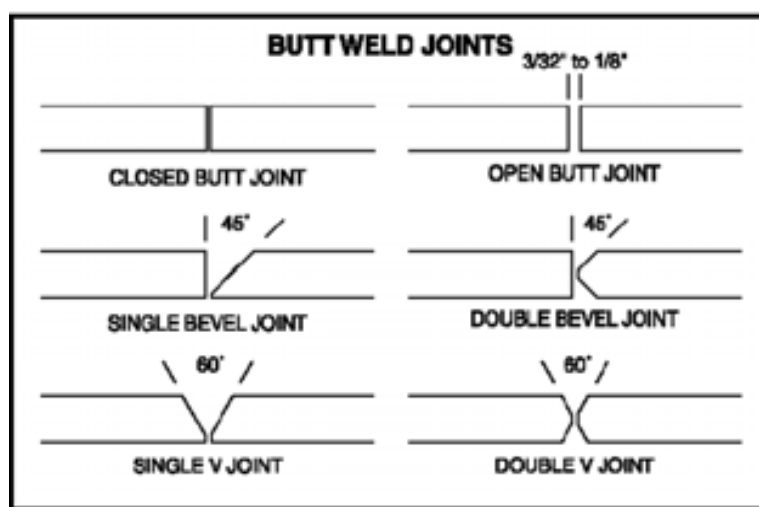
There are two basic positions, for welding: Flat and Horizontal. Flat welding is generally easier, faster, and allows for better penetration. If possible, the work piece should be positioned so that the bead will run on a flat surface.

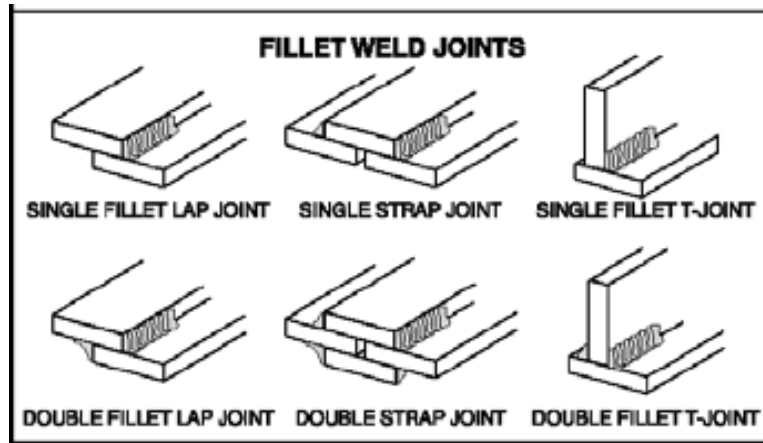
1.2 Preparing the Joint

Before welding, the surface of work piece needs to be free of dirt, rust, scale, oil or paint or it will create brittle and porous welds. If the base metal pieces to be joined are thick or heavy, it may be necessary to bevel the edges with a metal grinder; the correct bevel should be around 60degrees. See following picture:



Based on different welding position, there are different welding joint, see following images for more information.





2. GROUND CLAMP CONNECTION

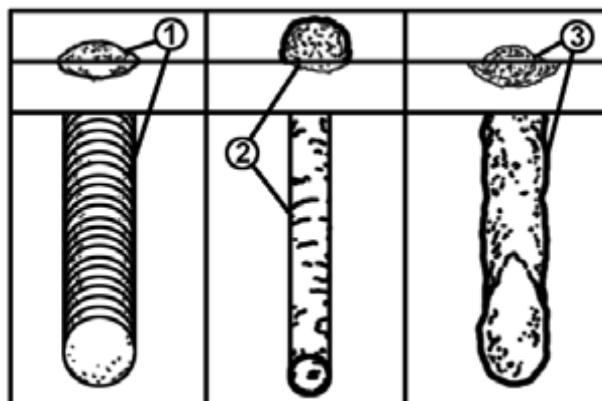
Clear any dirt, rust, scale, oil or paint on the ground clamp. Make certain you have a good solid ground connection. A poor connection at the ground clamp will waste power and heat. Make sure the ground clamp touches the metal.

3. ELECTRODE

The welding electrode is a rod coated with a layer of flux. When welding, electrical current flows between the electrode (rod) and the grounded metal work piece. The intense heat of the arc between the rod and the grounded metal melts the electrode and the flux. For best performance on this unit, we suggest the use of 6013 electrodes.

4. SELECTING THE PROPER ELECTRODE

There is no golden rule that determines the exact rod or heat setting required for every situation. The type and thickness of metal and the position of the work piece determine the electrode type and the amount of heat needed in the welding process. Heavier and thicker metals required more amperage. It is best to practice your welds on scrap metal which matches the metal you intend to work with to determine correct heat setting and electrode choice. See the following helpful trouble shooting tips to determine if you are using a correct electrode.



5.1. When proper rod is used:

5.1.a. The bead will lay smoothly over the work without ragged edges

- 5.1. b. The base metal puddle will be as deep as the bead that rises above it
- 5.1. c. The welding operation will make a crackling sound similar to the sound of eggs frying
- 5.2. When a rod that is too small is used;
 - 5.2. a. The bead will be high and irregular
 - 5.2. b. The arc will be difficult to maintain
- 5.3. When the rod is too large
 - 5.3. a. The arc will burn through light metals
 - 5.3. b. The bead will undercut the work
 - 5.3. c. The bead will be flat and porous
 - 5.3. d. Rod may be freeze or stick to work piece

Note: Rate of travel over the work also affects the weld. To ensure proper penetration and enough deposit of rod, the arc must be moved slowly and evenly along the weld seam.

6. SETTING THE AMPERAGE CONTROL

The welder has an infinite current control. It is capable of welding with electrodes up to 5/32" diameter. There is no golden rule that determines the exact ampere gerequired for every situation. It is best to practice your welds on scrap metal that matches the metals you intend to work with to determine correct setting for your job. The electrode type and the thickness of the work piece metal determine the amount of heat needed in the welding process. Heavier and thicker metals require more voltage (amperage), where a slighter and thinner metals require less voltage (amperage). Consult the welding electrode packaging for recommended welding amperage range.

7. WELDING TECHNIQUES

The best way to teach yourself how to weld is with short periods of practice eat regular intervals. All practice welds should be done on scrap metal that can be discarded. Do not attempt to make any repairs on valuable equipment until you have satisfied yourself that your practice welds are of good appearance and free of slag or gas inclusions.

7.1Holding the electrode

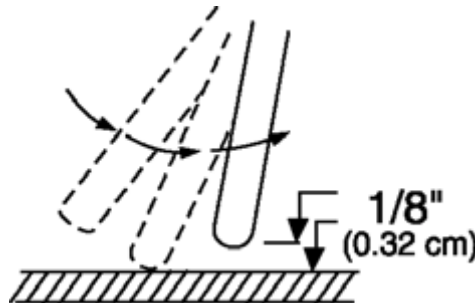
The best way to grip the electrode holder is the way that feels most comfortable to you. Position the Electrode to the work piece when striking the initial arc it may be necessary to hold the electrode perpendicular to the work piece. Once the arc is started the angle of the electrode in relation to the work piece should be between 10 and 30degrees. This will allow for good penetration, with minimal spatter.

7.2 Striking the arc

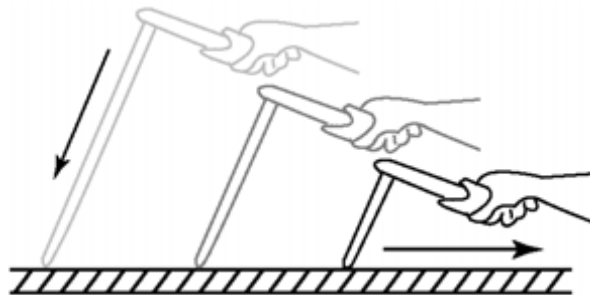
⚠ WARNING

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Scratch the work piece with the end of electrode to start arc and then raise it quickly about 1/8 inch gap between the rod and the work piece, see following picture



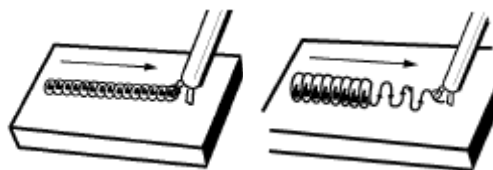
It is important that the gap be maintained during the welding process and it should be neither too wide nor too narrow. If too narrow, the rod will stick to the work piece. If too wide, the arc will be extinguished. It needs much practice to maintain the gap. The beginners may usually get sticker or arc extinguishing. When the rod is stuck to the work piece, gently rock it back and forth to make them separate. If not, a short circuit will occur and it will break the welder. A good arc is accompanied by a crisp, crackling sound. The sound is similar to that made by eggs frying. To lay a weld bead, only 2 movements are required; downward (as the electrode is consumed) and in the direction the weld is to be laid, as in following figure:



7.3 Types of weld bead

The following paragraphs discuss the most commonly used arc welding beads.

The stringer bead Formed by traveling with the electrode in a straight line while keeping the electrode centered over the weld joint.



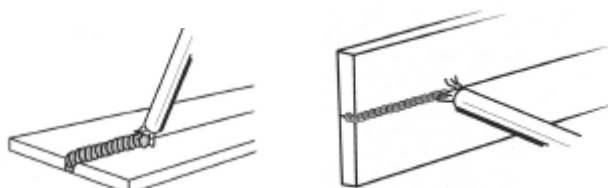
Stringer Bead

Weave Bead

The weave bead Used when you want to deposit metal over a wider space than would be possible with a stringer bead. It is made by weaving from side to side while moving with the electrode. It is best to hesitate momentarily at each side before weaving back the other way.

7.4 Welding position

Flat position It is easiest of the welding positions and is most commonly used. It is best if you can weld in the flat position if at all possible as good results are easier to achieve.



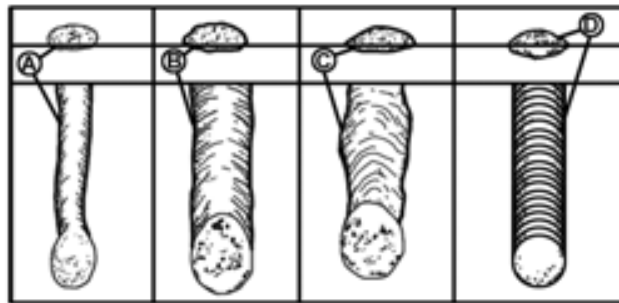
Flat Position

Horizontal Position

The horizontal position it is performed very much the same as the flat weld except that the angle is different such that the electrode, and therefore the arc force, is directed more toward the metal above the weld joint. This more direct angle helps prevent the weld puddle from running downward while still allowing slow enough travel speed to achieve good penetration. A good starting point for your electrode angle is about 30 degrees DOWN from being perpendicular to the work piece.

7.5 Judge the good weld bead

When the trick of establishing and holding an arc has been learned, the next step is learning how to run a good bead. The first attempts in practice will probably fall short of acceptable weld beads. Too long of an arc will be held or the travel speed will vary from slow to fast (see following)



- A. Weld speed is too fast.
- B. Weld speed is too slow.
- C. Arc is too long.
- D. Ideal weld.

A solid weld bead requires that the electrode be moved slowly and steadily along the weld seam. Moving the electrode rapidly or erratically will prevent proper fusion or create a lumpy, uneven bead.

⚠ WARNING

ELECTRIC SHOCK CAN KILL! To prevent ELECTRIC SHOCK, do not perform any welding while standing, kneeling, or lying directly on the grounded work piece.

7.6 Finish the bead

As the coating on the outside of the electrode burns off, it forms an envelope of protective gases around the weld. This prevents air from reaching the molten metal and creating an undesirable chemical reaction. The burning coating, however, forms slag. The slag formation appears as an accumulation of dirty metal scale on the finished weld. Slag should be removed by using a chipping hammer.

⚠ WARNING

PEENING THE SLAG FROM A WELD JOINT CAUSES SMALL CHIPS OF METAL TO FLY THROUGH THE AIR! Metallic chips flying through the air can cause eye injury or injury to other parts of the head, hands or exposed portions of the body. Wear goggles or safety glasses with side shields and protect the hands and other exposed parts of the body with protective garments, or if possible, work with a shield between the body and the work piece.

The intense heat produced at the arc sets up strains in the metal joined by welding. Peening the weld not only removes the scale left behind in the welding but also relieves the internal strains developed by the heating and cooling process.

MAINTENANCE

- **Maintain your CROSSFIRE 185L Welder/Generator.** It is recommended that the general condition of **CROSSFIRE 185L Welder/Generator** be examined before it is used. Keep **CROSSFIRE 185L Welder/Generator** in good repair by adopting a program of conscientious repair and maintenance. Have necessary repairs made by qualified service personnel.
- Refer to the engine operator's manual for maintenance on the engine.
- Periodically clean dust, dirt, grease, etc. from your welder.
- Every six months, or as necessary, remove the cover panel from the welder and air-blow any dust and dirt that may have accumulated inside the welder.
- Replace ground cable, ground clamp, or electrode assembly when damaged or worn.

TROUBLESHOOTING

SYMPTOM	POSSIBLE CAUSE	CORRECTIVE ACTION
Engine Does Not Work	See engine manual.	See Engine Manual.
Auxiliary Power Does Not Work	Auxiliary Power switch or circuit breakers are open.	Check the auxiliary power switch and circuit breakers on the front panel of the unit.
	Engine speed is too low.	Increase engine throttle.
	Amperage control is not at MAX setting	Turn the amperage control to the maximum setting for auxiliary power output.
Can Not Create An Arc	Work Piece is Painted Or Rusty	Remove All Paint And Rust
	Ground Clamp Is Connected Where There Is Paint Or Rust	Remove All Paint And Rust So Ground Clamp Is Connected To Bare Metal
	Ground Clamp Is Not Electrically Connected To The Work Piece	Make Certain The Ground Clamp Is Connected To The Work Piece
	Amperage Too Low for Electrode	Consult the electrode packaging for correct amperage settings.
Electrode Holder or ground cable getting hot. Output Connections Getting Hot.	Weld Cable Connections Loose	Check to make certain weld cables are tight.
	Weld Cable Connections have corroded.	Clean weld connections and reinstall.
Poor Welding Performance, excessive spatter	Damp Electrode	Use fresh and dry electrodes.
Electrode Sticks	The electrode is kept in contact with the work piece for too long while striking an arc.	This will take practice. Keep trying.
Welding Bead Is Too Thin	The welding travel speed is too fast	Reduce the welding travel speed. Maybe incorporate a slight weave over the joint.
Welding Bead Is Too Thick	The welding travel speed is too slow	Increase the welding travel speed.

Main Circuit chart

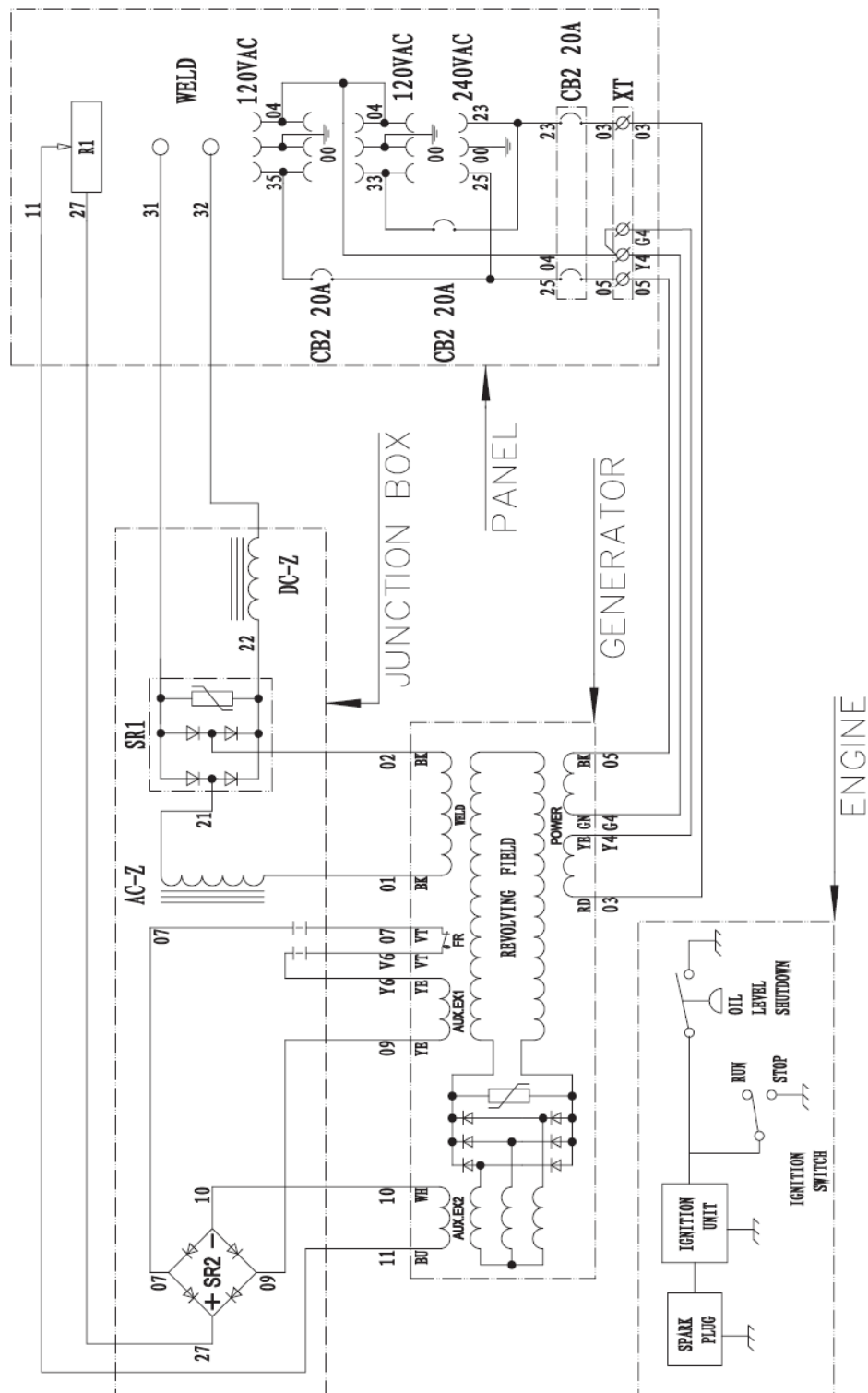
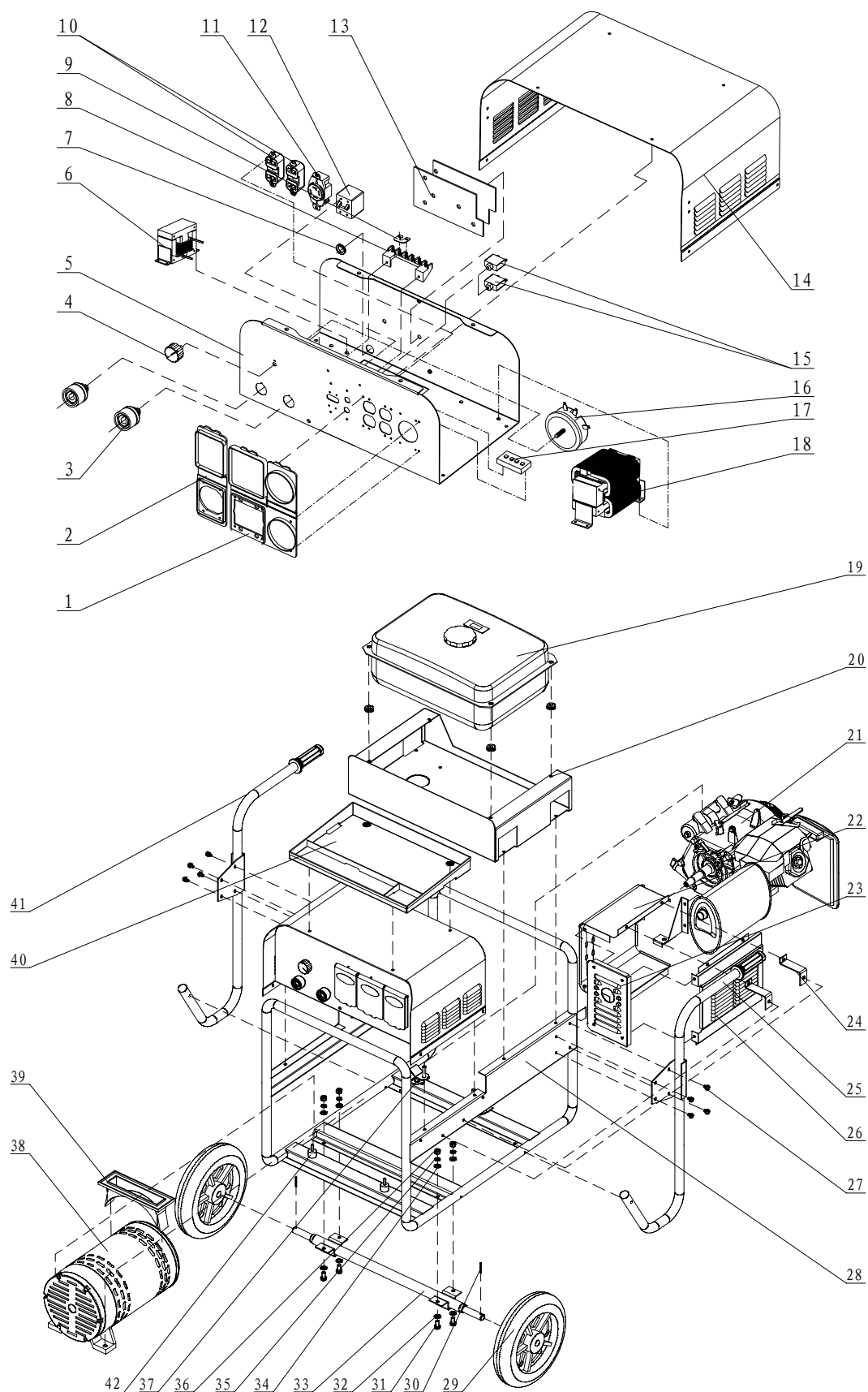


DIAGRAM & PARTS LIST



Reference #	Part#	Description	Qty.
1	2.05.05.601	PROTECTIVE COVER	1
2	2.05.05.602	DOUBLE JOINT PROTECTIVE COVER	1
3	2.07.57.127	QUICK CONNECTOR	2
4	2.07.11.047	CURRENT KNOB	1
5	1.1.01.01.0317	WELDING BOTTOM-BOARD	1
6	1.1.04.03.1211	AC REACTOR	1
7	2.04.31.019	THICK LOOP	1
8	2.05.05.909	SIX-FOOT POST HEAD	1
9	1.1.02.01.7862	CONNECTING SHEET	1
10	2.07.57.923	120V RECEPTACLE	2
11	2.07.73.1021	240V TWIST LOCK RECEPTACLE	1
12	2.07.80.314	CIRCUIT BREAKER	1
13	2.07.37.408	RECTIFIER BRIDGE	1
14	1.1.01.01.0317	ENCLOSURE	1
15	2.07.80.302	CIRCUIT BREAKER	2
16	2.07.04.804	RESISTOR	1
17	2.07.37.603	RECTIFIER	1
18	1.1.04.01.1227	REGULATOR	1
19	2.07.40.618	FUEL TANK	1
20	1.1.02.01.7975	FUEL TANK BOTTOM	1
21	2.07.62.1213	ENGINE	1
22	2.16.03.685	MUFFLER LEFT HOUSING PLATE	1
23	2.16.03.687	MUFFLER FRONT HOUSING PLATE	1
24	2.16.03.683	L TYPE SUPPORTER	2
25-L	1.2.01.01.3243	LEFT SIDE HANDLE	1
25-R	1.2.01.01.3244	RIGHT SIDE HANDLE	1
26	2.16.03.686	MUFFLER RIGHT HOUSING PLATE	1
27	2.06.01.056	HEXAGON FLANGE SCREW	8
28	1.1.01.04.0354	RACK FORM	1
29	2.05.07.2116	WHEEL	2
30	2.06.17.008	PIN	2
31	2.06.01.064	HEXAGON SCREW	4
32	2.06.17.010	FLAP WASHER	4
33	1.2.02.04.0118	AXLE	1
34	2.06.17.005	FLAP WASHER	4
35	2.06.18.005	SPRING WASHER	4
36	2.06.14.005	HEXAGON NUT	4
37	2.05.05.126	DAMPING FEET	2
38	2.07.40.617	GENERATOR	1
39	2.05.05.907	CROSS-FLOW PIPE	1
40	1.2.01.01.3241	WELDING CABINET COMPONENT	1
41	1.1.01.04.0353	TRAY	1
42	2.05.05.188	ROUND DAMPING FEET	2