

Mastercraft™



INSTRUCTION MANUAL

MIG/FLUX-CORE WIRE FEED WELDER KIT

058-8195-2

If any parts are missing or damaged, or if you have any questions, please call 1-800-689-9928.



Read and understand this instruction manual thoroughly before using the product. It contains important information for your safety as well as operating and maintenance advice.

Keep this instruction manual for future use. Should this product be passed on to a third party, then this instruction manual must be included.

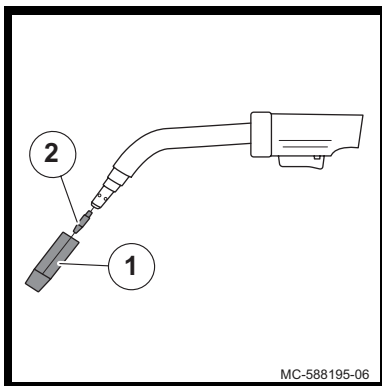
Quick Start Guide

STEP 1

Installing the wire

Remove the nozzle (1) and contact tip (2) from the end of the torch assembly. Identify the leading end of the wire secured on the edge of the wire spool. Place the spool on the hub with the wire passing from the bottom of spool into the drive mechanism.

➔ pages 16-17, steps 1-4

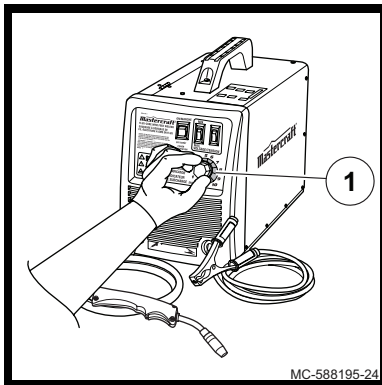


STEP 2

Setting the wire tension

Press the trigger on the gun. Turn the drive tension adjustment knob (1) clockwise, and increase the drive tension until the wire seems to feed smoothly without slipping.

➔ page 18, steps 1-2

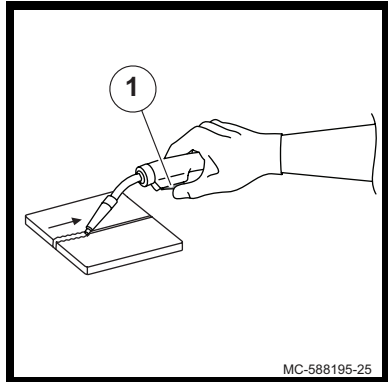


STEP 3

Operation

Hold the torch in one hand and turn the wire speed dial with the other hand to its maximum position. Pull the trigger (1) on the torch to start an arc. Drag the torch toward the user while simultaneously turning the wire speed dial counterclockwise. ➔ page 20, steps 4-5

(Please see page 21 for welding techniques if needed.)



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POWER SUPPLY	single-phase, 120 V, 60 Hz
NO-LOAD VOLTAGE	34V
OUTPUT CURRENT	35-80 A (Peak 130 A)
DUTY CYCLE	20% @ 80 A
WIRE USED	MIG and flux-core wire
WIRE DIAMETER	0.023", 0.030", 0.035"
DIMENSIONS (L x W x H)	17.6" x 9.4" x 14.5"
WEIGHT	62 lb 10 oz (28.42 kg)

Welding mode	Materials	For metal thickness	Use wire size
Flux core	Steel	20-gauge -5/32"	0.03" (1/32") 0.8 mm 0.035" (5/128") 0.9 mm
		5/128-5/32"	
		1.0-4.0 mm	
MIG	Steel, Stainless steel	20-gauge -1/8"	0.03" (1/32") 0.8 mm 0.023" (3/128") 0.6 mm
		5/128-1/8"	
		1.0-3.0 mm	

This manual contains information that relates to PROTECTING PERSONAL SAFETY and PREVENTING EQUIPMENT PROBLEMS. It is very important to read this manual carefully and understand it thoroughly before using the product. The symbols listed below are used to indicate this information.

**DANGER!**

Potential hazard that will result in serious injury or loss of life.

**WARNING!**

Potential hazard that could result in serious injury or loss of life.

**CAUTION!**

Potential hazard that may result in moderate injury or damage to equipment.

Note- The word “Note” is used to inform the reader of something he/she needs to know about the tool.

PERSONAL SAFETY

These precautions are intended for the personal safety of the user and others working with the user. Please take time to read and understand them.

**DANGER!**

Potential hazard that will result in serious injury or loss of life.

- **Keep children or other personnel away** from the work area while welding. Do not allow children to handle the welder.
- **Do not use the welder in the presence of flammable liquids or gases.** Sparks that are created during use may ignite gases.
- Do not operate the welder in humid, wet, or poorly ventilated areas.
- Use appropriate shield to prevent other personnel from being affected by harmful rays.
- Always ensure that a fire extinguisher is available in adequate distance within the welding environment.
- Do not repair or maintain the welder while the power is on.



- **Risk of electric shock:** Do not touch electrical live parts or metal components connected to the welding wire, as doing so may cause fatal shock and severe burns. Secure the ground lead before welding. Wear dry protective apparel like coat, shirt, gloves, and insulated footwear.



- **Risk for breathing:** Never directly inhale the emission of harmful fumes when welding on coated materials like galvanized, cadmium plated or contacting zinc, mercury, or barium.



- **Risk of fire:** Do not weld on containers or pipes that contain flammable, gaseous, or liquid combustibles. Remove all flammable materials within 35 feet of the welding arc or tightly cover the flammable materials with fireproof covers. To prevent any unintended arcs after welding, cut off the excess wire that extends past the end of the nozzle more than ¼".



- **Risk of burns:** Do not touch the welded materials with bare hands, as the welded materials are hot and can cause severe burns.



- **Risk of explosion:** Keep high pressure shielding gas cylinder away from welding or electrical circuits. Do not touch the cylinder with MIG gun and do not weld on the cylinder. Use proper regulators, gas hoses, and fittings for the specific application.



- Do not expose the welder to rain.



- **Risk of UV and IR arc rays:** Do not look at the welding arc without proper eye protection, as the welding arc produces ultraviolet (UV) and infrared (IR) rays. Use screens or other barriers to protect other personnel from the rays.



WARNING!

Potential hazard that could result in serious injury or loss of life.

- **Do not allow unskilled or untrained individuals to install and operate** this welder.
- **Before operating the welder, check the insulation of the ground cable, power cord, and welding cable for damage.** Replace or repair the damaged components before using the welder.
- Keep hands and fingers away from moving parts and stay away from the drive rolls while the welder is in use.
- Do not allow any body part of the user to come in contact with the welding wire while holding the welding gun.
- Do not allow the user to drape cables over or around the body.
- Do not point MIG gun toward the user or other personnel.
- Do not allow a person to use electronic devices such as pacemakers in the welding area.
- Consult a doctor before using any electric arc welder or cutting device.

**CAUTION!**

Potential hazard that may result in moderate injury or damage to equipment.

- Do not operate the welder if the output cable electrode, MIG gun, wire or wire feed system is wet. All the components and the welder must be completely dry before attempting to use the welder.
- **Keep the welder in the OFF position when it is not in use.**
- **Do not wear watches, rings, bracelets, or loose clothing** when using the welder.
- Maintain a correct position while using the welder. **Mount the welder on a secure bench or cart to prevent it from tipping over or falling.**
- Connect the ground lead as close to the area being welded to ensure proper ground connection.
- Wear a full covered helmet, proper gloves, and protective clothing such as leather shirt, coat, pant, and insulated footwear to prevent the skin from being exposed to hot metals while welding.
- Do not overload the welder to prevent it from being heated. Allow proper cooling time between duty cycles.



- **Use safety goggles and ear protection:**

Wear safety glasses with side shields when operating the tool and verify that others in the work area are also wearing safety glasses. Safety glasses must conform to American National Standards Institute (ANSI Z87.1) requirements and must provide protection from flying particles from the front and the sides.

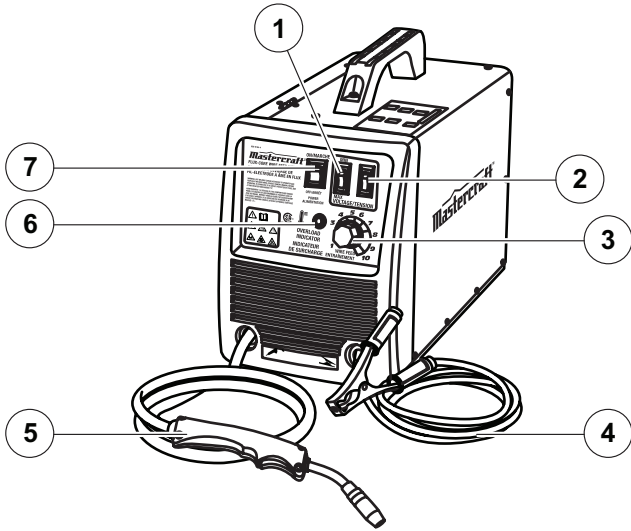
Always wear ear protection to help prevent hearing damage and loss. Failure to comply may result in moderate injury.



Note: Recycle the unwanted materials rather than disposing of it as waste. Sort the tools, hoses, and packaging in specific categories and take to the local recycling center or dispose of it in an environmentally safe way.

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KEY PARTS DIAGRAM



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No.	Description	No.	Description
1	MIN/MAX voltage setting	5	MIG torch
2	1/2 voltage setting	6	Thermal overload indicator
3	Wire feed setting	7	ON/OFF switch
4	Ground cable and clamp		

General usage description

The Mastercraft® portable and gasless MIG/Flux-Core Wire Feed Welder Kit uses AC single phase 120V, 60 Hz/20A with a time delayed fuse or circuit breaker. The kit provides two heat settings, infinite wire speed control, overload and thermal protection. The welder kit can be used for welding mild steel 20 gauge to 1/8" using flux core wire only in light industrial applications.

Guidelines for proper usage and description

REMOVING FROM CARTON

1. Remove cartons, bags, or styrofoam containing the welder and accessories.
2. Check the contents with the packaging list below.

After unpacking the welder unit, inspect for any damage that may have occurred during transit. Check for loose, missing, or damaged parts. A shipping damage claim must be filled with carrier.

ITEM	QTY.
Portable MIG welder	1 unit
Contact tip, 0.023" 0.030" 0.035"	1 pc
Sample spool flux core wire, 0.030"	1 LBS
Sample spool solid wire, 0.023"	1/2 LBS
Welding mask	1 pc
Chipping hammer/wire brush	1 pc
Instruction manual	1 manual
Handle	1 pc

ON/OFF switch

This switch is used to turn the power supply of the welder kit ON and OFF through the main transformer and control circuit.

MIN/MAX 1/2 voltage setting

Two adjustment switches are provided on the front panel of the welder kit, for setting the minimum and maximum values of voltage and tension. Refer to the set up chart for initial adjustment of the voltage setting.

Wire feed setting

This setting adjusts the wire feed speed.

Ground cable and clamp

The ground cable and the clamp are attached to the workpiece to form a closed circuit which allows the flow of current needed to weld.

Welding Cable and MIG gun/torch

The welding wire is driven through the welding cable and the MIG gun/torch to the workpiece. It is attached to the drive system and the gun trigger activates the drive motor.

Thermal Indicator

If the duty cycle of the welder kit exceeds the maximum level, the internal temperature of the welder kit will exceed the allowable operating range, which in turn makes the thermal overload light glow and the welder kit to be shut down automatically. Allow the welder kit to cool down for 20 minutes until the thermal overload light turns OFF automatically. The temperature of the welder kit is then within the allowable operating range.

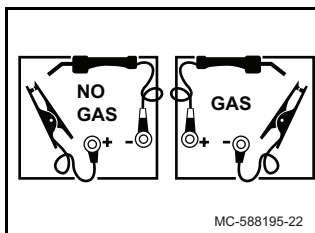
Power cord

The power cord connects the welder to the 120 V power supply. Connect the 15 A plug into a 120 V/20 A receptacle to supply power to the welder.

Polarity changing

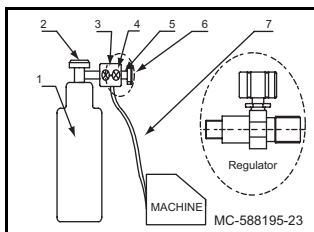
Factory polarity setting (electrode negative) is for flux core welding (no shielding gas is required). In this process the RED gun lead is connected to negative ("–") polarity terminal and the ground cable is connected to the positive ("+") terminal.

For MIG welding (solid wire) using shielding gas, the RED gun lead is connected to positive ("+") and the ground cable is connected to negative ("–").



Gas hoses, regulator and gas cylinder connections

- Connect the gas hose to the gas solenoid valve on the back panel of the welder.
- Connect the other end to the regulator connected to the shielding gas cylinder.



No.	Description	No.	Description
1	Gas cylinder	5	Regulator
2	Cylinder valve	6	Adjustment knob
3	Cylinder pressure gauge	7	Gas hose
4	Gas flow gauge		

- Slowly open the cylinder valve by turning it counterclockwise until the cylinder pressure gauge fixes the cylinder pressure.
- Slowly turn the adjustment knob clockwise to increase gas flow to 20 cfm. Turn it counterclockwise to reduce the gas flow.
- Gas flow can be heard at the end of the gun when the trigger is activated.

Note: If there is no gas flow, harsh arc with excessive spatter will be found and a smooth weld bead will not be obtained.

Gas selection

Different materials require different shielding gas when MIG welding. Refer to the set up chart inside the wire drive compartment.

Mild steel: Use 75% Argon and 25% for reduced spatter and reduced penetration for thinner materials. Use CO² for deeper penetration and increased spatter.

Note: Do not use argon gas concentrations higher than 75% on steel. The result will be extremely poor penetration, porosity, and brittleness of weld.

Stainless steel: Use a mixed gas consisting of Helium, Argon, and CO².

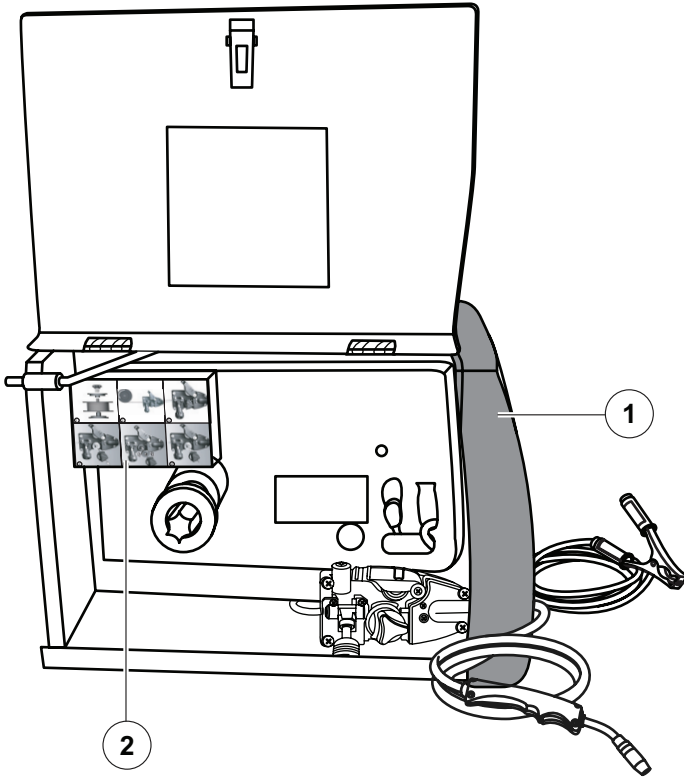
Aluminum or bronze: Use 100% Argon feed compartment.

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IMPORTANT INFORMATION

Wire drive compartment

The wire drive compartment has wire feed components (1) such as wire feeder and spool hub, and a set up chart (2).

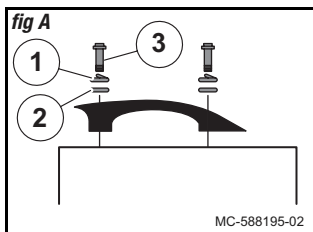


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Assembly Instructions

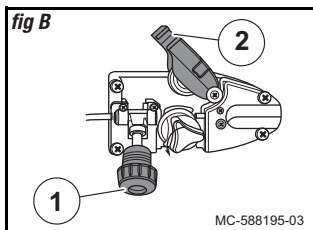
Installing the handle:

1. Line up the holes in the handle with the holes on the top of the welder.
2. Place a lock washer (1) and a washer (2) onto the welder handle screws.
3. Insert a screw with the washers through the holes on the handle and into the top of the welder, and tighten the screw (*fig A*).



Installing the wire roller:

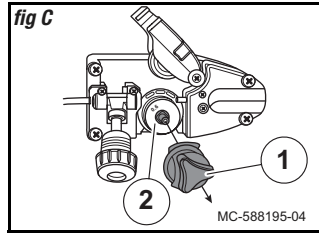
1. Open the wire drive compartment.
2. Remove the drive tension by loosening the drive tension adjusting knob (1) and lifting the drive tension adjustor and drive tension arm (2) away from the drive roller (*fig B*).



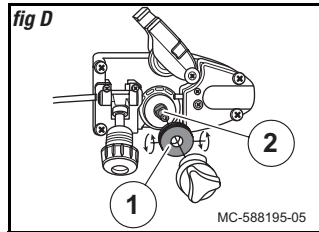
3. Put an end of the wire into the hole on outside edges of the wire spool and bend it over to hold the wire in place. Remove the wire spool from the wire drive compartment.

Note: If the wire is already installed in the welder, roll the wire back onto the wire spool by manually rotating the wire spool clockwise. Do not allow the wire to come out of rear end of the inlet guide tube.

- Rotate the drive roller cap (1) counterclockwise and remove it from the drive roller (2) (*fig C*).



- Pull the drive roller (1) from the drive roller shaft (2) (*fig D*).



Based on the wire diameter, select the correct groove using the following table:

Wire Diameter	Roller Groove
0.023"	0.023"
0.030"	0.030"
0.035"	0.035"

Note: When installing the drive roller, the number stamped on the drive roller should face the user. Push the drive roller onto the drive roller shaft.

- Reinstall the drive roller cap and lock in place by turning it clockwise. Close the wire drive compartment.

Installing the wire:



WARNING!

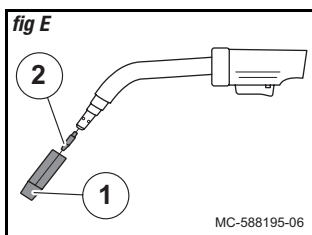
Potential hazard that could result in serious injury or loss of life.

- Always switch off the power and unplug the power cord from the AC power source before installing the wire.
- Remove any wire or wire spool that is rusty.
- Do not weld metal thinner than 18 gauge, as doing so may burn the metal.
- Before installing, remove any old wire from the MIG gun assembly to prevent the wire from being jammed inside the gun liner.
- Use extreme caution when removing the welding nozzle, as the contact tip on the welder is live whenever the torch trigger is pulled.

Select the type of wire using the following table:

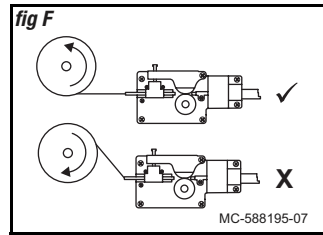
Wire Type	Availability
0.23" MIG wire	Yes
0.30" MIG wire	Yes
Flux Core wire 0.030"	Yes
Flux Core wire 0.035"	Yes

1. Remove the nozzle (1) and contact tip (2) from the end of the torch assembly (*fig E*).
2. Ensure proper groove on the drive roller is in place for the wire to be installed.
3. Remove the packaging from the wire spool and identify the leading end of the wire secured on the edge of the spool. Do not unhook it at this time.



4. Place the spool on the hub with the wire passing from the bottom of spool into the drive mechanism (*fig F*).

Note: The welder can use either 4" or 8" spool. The 8" spool requires an adaptor. The wing nut controls the tension on the spool.



5. Setting the wire spool tension:
 - a. Turn the wire spool with one hand.
 - b. Increase the spool tension by tightening the wing nut while turning the spool. Turn the spool until it slows down.
 - c. Stop tightening the wing nut. Repeat these steps until proper spool tension is achieved.

Note: If high tension is applied to the wire spool, the wire slips on the drive roller or will not be able to feed. If less tension is applied, the wire spool unspools itself when the trigger is released. Readjust the spool tension using the wing nut if the tension is high or low.

6. Disconnect the welder from the power source, and remove the leading end of the wire from the spool.
7. Cut off any bent portion of the wire using a wire cutter.
8. Loosen the tension adjusting knob holding the drive tension arm in place and lift the tension arm up off the drive roller.
9. Insert the wire into the inlet guide tube, and feed it of about six inches across the drive roller and into the torch assembly.
10. Line up the wire with the correct groove in the drive roller.
11. Place the drive tension arm back above the drive roller.
12. Tighten the drive tension adjusting knob until the tension roller is applying enough force on the wire to prevent it from slipping in the drive roller.
13. Plug in and turn the welder ON. Set the voltage switch to the voltage setting recommended for the gauge of metal that is to be welded. Refer to the set up chart on the back side of the wire drive compartment.
14. Set the wire speed control. Straighten the MIG gun cable and pull the trigger in the gun handle to feed the wire through the torch assembly.

15. Turn the power switch to the OFF position. Select a contact tip having the diameter same as the wire being used.

Note: Due to inherent variances in flux cored welding wire, it is necessary to use a contact tip of size larger than the wire.

16. Slide the contact tip over the wire, thread the contact tip into the end of the gun and tighten securely.
17. Install the nozzle on the gun assembly, and cut off excess wire that extends past the end of the nozzle.

Setting the wire tension:

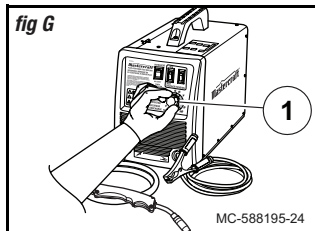


WARNING!

Potential hazard that could result in serious injury or loss of life.

- Ensure that wire passing out of the end of the torch does not contact with the workpiece, ground clamp or any grounded material during the drive tension setting process, as doing so may reduce the risk of arc flash.

1. Press the trigger on the gun.
2. Turn the drive tension adjustment knob (1) clockwise, and increase the drive tension until the wire seems to feed smoothly without slipping (*fig G*).



Operation

Holding the torch (MIG gun):

- While using the welder, experiment holding the torch in different positions until finding a suitable position.

Distance from the workpiece:

- If the nozzle is held off the workpiece, the distance between the nozzle and the workpiece should be kept constant and should not exceed $\frac{1}{4}$ ".

Tuning in the wire speed:

This is one of the most important parts of the MIG welder operation and must be done before starting each welding job or whenever any of the following variables are changed: heat setting, wire diameter, or wire type.

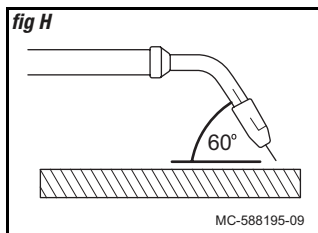


WARNING!

Potential hazard that could result in serious injury or loss of life.

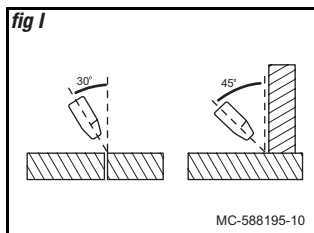
- Prolonged exposure to the welding arc can cause blindness and burns.
 - Never strike the arc or start welding until the user is adequately protected.
 - Wear flameproof welding gloves, heavy long sleeved shirt, trousers with out cuffs, high topped shoes, and welding helmet.
1. Connect the ground clamp to a scrap piece of the same type of the material to be welded.
- Note:** The thickness of the scrap piece should be equal to or greater than the thickness of the actual workpiece, and free of oil, paint, and rust.
2. Select the heat setting.
 3. Hold the torch in one hand, and allow the nozzle to rest on the edge of the workpiece farther from the user and at an angle similar to that which will be used when welding.
There are two angles of the torch nozzle in relation to the workpiece that must be considered when welding.

Angle A



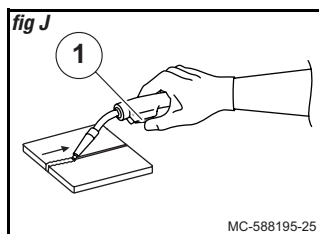
- Angle A can be varied, but in most cases the optimum angle will be 60 degrees (the point at which the torch handle is parallel to the workpiece). If angle A is increased, penetration will increase, and if it is decreased penetration will decrease (*fig H*).

Angle B



- Angle B can be varied to improve the visibility of the arc in relation to the weld puddle and to direct the force of the arc (*fig I*).

4. Turn the wire speed dial with the other hand to its maximum position and continue to hold onto the knob.
5. Pull the trigger (1) on the torch to start an arc. Drag the torch toward the user while simultaneously turning the wire speed dial counterclockwise (*fig J*).



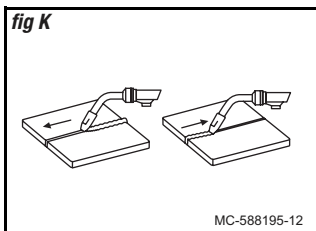
6. When the wire speed decreases, the sound that the arc makes will change from a sputtering sound to a high-pitched buzzing sound. The correct setting is the point where the high-pitched buzzing sound is achieved.

Use the wire feed control to slightly increase or decrease the heat and penetration by selecting higher or lower wire feed settings. Repeat this tune-in procedure if a new heat setting, a different diameter wire, or a different type of welding wire is selected.

Welding techniques:**WARNING!**

Potential hazard that could result in serious injury or loss of life.

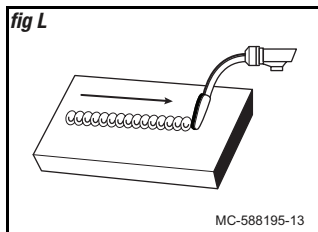
- Prolonged exposure to the welding arc can cause blindness and burns.
- Do not perform any welding while standing, kneeling, or lying on the grounded area. Failure to comply could result in serious injury or loss of life.
- **Torch travel:** The movement of the torch along the weld joint. For a solid weld bead, the welding torch should be moved steadily and at the right speed along the weld joint. Moving the torch too fast, too slow, or erratically prevents proper fusion or creates a lumpy, uneven bead.
- **Travel direction:** The direction of the torch moving along the weld joint in relation to the weld puddle. The torch is either pushed into the weld puddle or pulled away from the weld puddle. For most welding jobs, pull the torch along the weld joint for greater weld puddle visibility (*fig K*).



- **Travel speed:** The rate at which the torch is being pushed or pulled along the weld joint. For a fixed heat setting, if the travel speed is faster, the penetration will be low and the finished weld bead will be low and narrow. Likewise, if the travel speed is slow, the penetration will be deep and the finished weld bead will be high and wide.

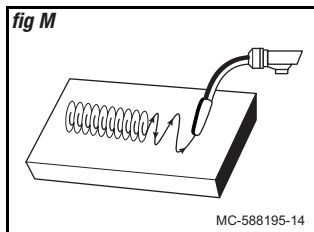
Types of welding beads:

Stringer bead



- The stringer bead is formed by travelling with the torch in a straight line while keeping the wire and nozzle centered over the weld joint (*fig L*).

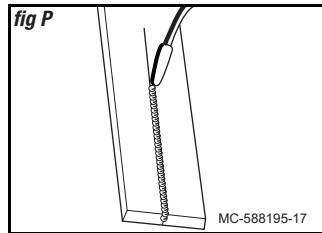
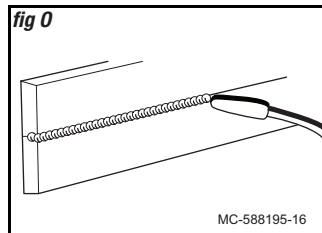
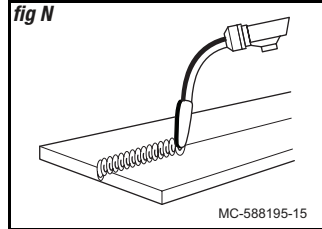
Weave bead



- The weave bead is made by weaving the wire from side to side while moving with the torch (*fig M*).

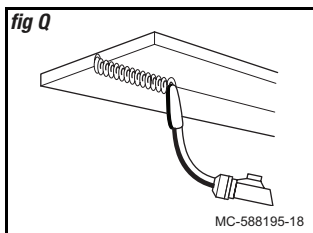
Welding position:

1. **Flat position:** This position is easiest and most commonly used. It is best to weld in the flat position to achieve good results (*fig N*).
2. **Horizontal position:** This position prevents the weld puddle from running downward while allowing slow and enough travel speed. For this position, angle B should be about 30 degrees downward from being perpendicular to the workpiece (*fig O*).
3. **Vertical position:** The torch can be easily pulled from top to bottom in this position, though it is difficult to prevent the puddle from running downward. Pushing the torch from bottom to top provides better puddle control and allows slower rates of travel speed to achieve deeper penetration. For this position, angle B should be zero and angle A will vary from 45 to 60 degrees to provide better puddle control (*fig P*).



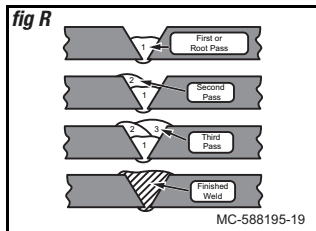
4. **Overhead position:** This is the most difficult welding position. For this position, angle A should be maintained at 60 degrees. Maintaining this angle will reduce falling of molten metal into the nozzle (*fig Q*).

Angle B should be zero degrees so that the wire is aiming directly into the weld joint. If excessive dripping of the weld puddle occurs, select a lower heat setting.



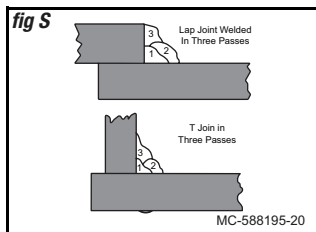
Multiple pass welding:

- **Butt weld joint:** When butt welding thicker materials, prepare the edges of the material to be joined by grinding a bevel on the edges of the metal pieces being joined. When it is done, a "V" is created between the two metal pieces. In most cases, more than one pass or bead will need to be laid into the joint to close the "V" (*fig R*).



Note: When using self-shielding flux core wire, it is necessary to thoroughly chip and brush the slag off each completed weld bead before making another pass.

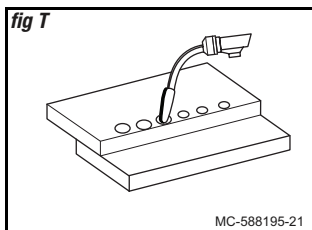
- **Fillet weld joint:** Most fillet weld joints on metals of moderate to heavy thickness will require multiple pass welds to produce strong joint. The sequence of laying multiple pass beads into a T fillet joint and a lap fillet joint is shown (*fig S*).



Spot welding:

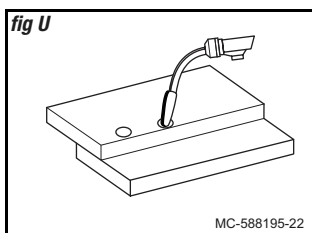
There are three methods of spot welding:

1. **Burn-through method:** In this method, two overlapped metal pieces are welded together by burning through the top piece and into the bottom piece. The wire suitable for this method is 0.035 inch self-shielding, flux core wire. Always select the high heat setting for this method and tune in the wire speed prior to making a spot weld (*fig T*).

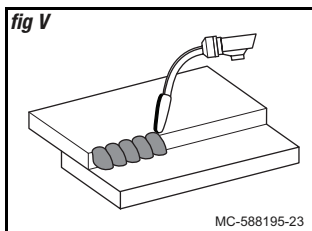


Note: Do not use 0.030 inch self-shielding flux core wires when using this method unless the metal is very thin or excessive filler metal and minimal penetration is acceptable.

2. **Punch and fill method:** This method produces a weld with the most finished appearance. In this method, a hole is punched or drilled into the top piece of metal and the arc is directed through the hole to penetrate into the bottom piece. The puddle is allowed to fill up the hole leaving a spot weld that is smooth and flush with the surface of the top piece (*fig U*).



3. **Lap spot method:** The welding arc is directed to penetrate the bottom and top pieces at the same time, and along each side of the lap joint seam. Select the wire diameter, heat setting, and tune in the wire speed in such a way suitable for welding the material with a continuous bead (*fig V*).



Instructions to be followed for the spot welding methods:

1. Select the wire diameter and heat setting recommended above for the intended method of spot welding.
2. Tune in the wire speed as if a continuous weld is to be performed.
3. Hold the nozzle piece completely perpendicular to and about ¼ inch off the workpiece.
4. Pull the trigger on the torch and release it when the desired penetration is achieved.
5. Make practice spot welds on scrap metal and vary the duration of time of holding the trigger until a desired spot weld is made.
6. Make spot welds on the actual workpiece at desired locations.

Maintenance



WARNING!

Potential hazard that could result in serious injury or loss of life.

- Unplug the welder before performing any maintenance or service.
- Only use the welder after replacing or repairing any damaged parts or accessories.
- Use only recommended and properly rated replacement parts. Failure to comply could lead to serious injury or loss of life.

MAINTENANCE REQUIRED	DESCRIPTION	TOOLS OR MATERIALS REQUIRED	MAXIMUM SERVICE INTERVAL		
			Each Use or every 2 Hrs	Monthly	As Needed
In-depth inspection	Worn or broken parts			X	X
Replace worn or broken parts					X

The welder needs regular maintenance as following:

- Clean the dust, dirt, and grease periodically from the welder.
- Every six months, remove the front panel from the welder to clear the accumulated dust and dirt.
- Replace power cord, ground cable, ground clamp, or electrode assembly when damaged or worn.
- Repairs must be performed by a qualified service technician only.

Storage

- Store the welder in a clean and dry location away from corrosive gas and excess dust at a temperature of 10°F-120°F and relative humidity of less than 90%.
- It is recommended to repack the welder when transporting or storing the welder after use.
- Cleaning is required before storage.

Troubleshooting

The following chart lists common issues and solutions. Please read it carefully and follow all instructions closely.



WARNING!

Potential hazard that could result in serious injury or loss of life.

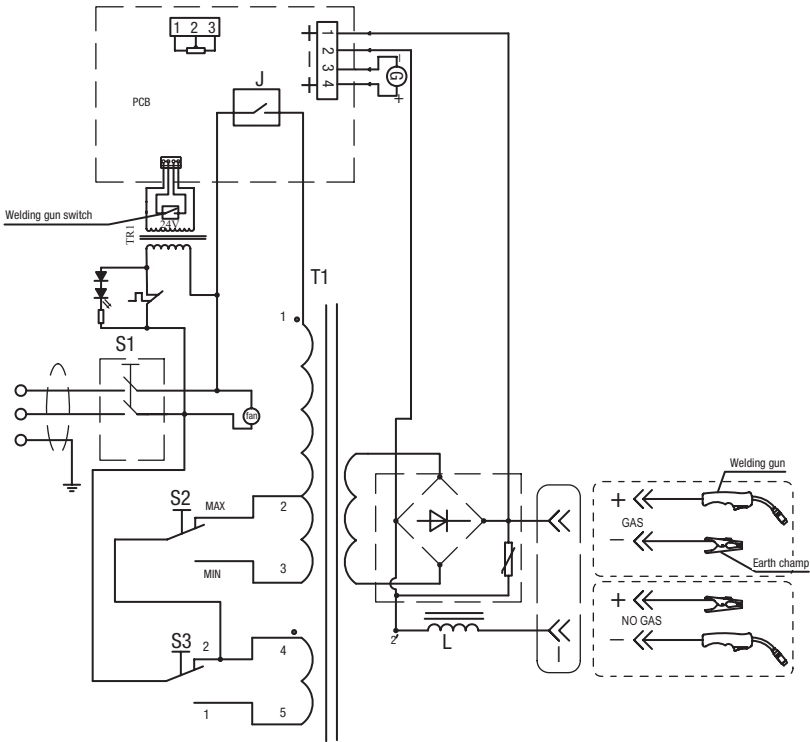
- If any of the following symptoms appears while the welder is in use, turn it off and disconnect it from the power supply immediately. Failure to heed this warning will result in serious personal injury or loss of life.
- Repairs must be performed by a qualified service technician only.

PROBLEM	POSSIBLE CAUSES	SOLUTIONS
The welder does not work when the main switch is turned on.	<ol style="list-style-type: none"> 1. No power input. 2. Power cord or power plug is broken. 3. Main switch is broken. 4. Transformer is broken. 	<ol style="list-style-type: none"> 1. Check the circuit or fuse of the power supply. 2. Replace the power cord. 3. Replace the main switch. 4. Replace the transformer.
The welder does not weld.	<ol style="list-style-type: none"> 1. Incorrect power input. 2. Inadequate current at the output. 3. Poor connection of output cable. 4. Dirty surfaces. 5. Wrong welding wire. 	<ol style="list-style-type: none"> 1. Check the power source. 2. Check for proper grounding to the workpiece. 3. Check the output connection. 4. Clean the surfaces. 5. Use the correct wire. <p>If the problem persists, send it for servicing or return back to the store.</p>
Blown fuse or tripped circuit breaker.	Inadequate fuse or circuit breaker.	<p>Check whether the fuse in power supply is 20 A.</p> <p>If the problem persists, send it for servicing or return back to the store.</p>
Arc is hard to start.	<ol style="list-style-type: none"> 1. Wrong welding wire. 2. Base metal not grounded properly. 	<ol style="list-style-type: none"> 1. Use the correct wire. 2. Make sure the connection is good. <p>If the problem persists, send it for servicing or return back to the store.</p>

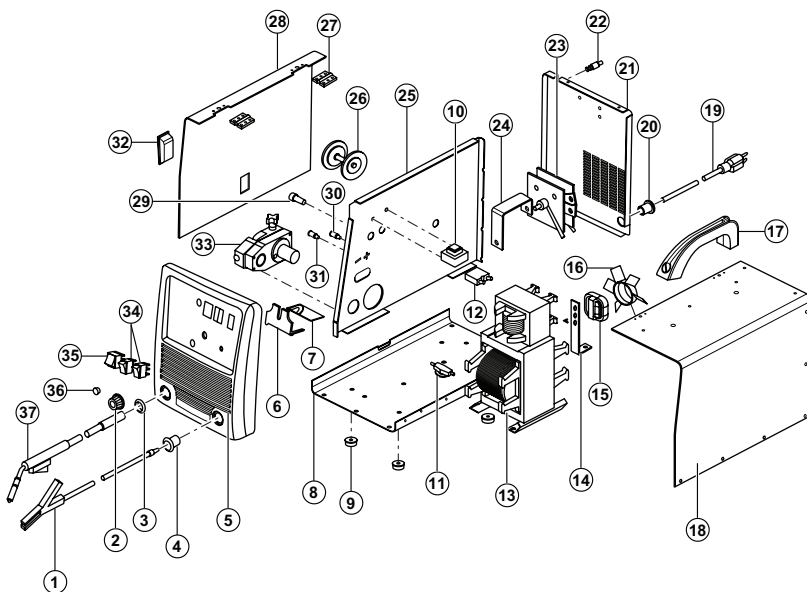
PROBLEM	POSSIBLE CAUSES	SOLUTIONS
Inconsistent arc or wire feed.	<ol style="list-style-type: none">1. Not enough drive roller pressure.2. Spool hub tension too tight or loose.3. Contact tip worn or wrong size.4. Rusty or corroded wire.	<ol style="list-style-type: none">1. Tighten the drive tension adjustor on wire feeder.2. Adjust the wing nut on the spool holder.3. Replace the contact tip.4. Replace the wire.

Note: For further repair information, please call 1-800-689-9928.

MAIN CIRCUIT CHART



MC-588195-24



MC-588195-25

No.	Description	Qty.	No.	Description	Qty.
1	Ground cable and clamp	1	20	Cable holder	1
2	Wire feed setting knob	1	21	Back panel	1
3	Torch cable holder	1	22	Gas hose connector	1
4	Cable holder	1	23	Rectifier	1
5	Front panel	1	24	Rectifier bracket	1
6	PCB support	1	25	Vertical middle panel	1
7	PCB	1	26	Spool holder	1
8	Bottom	1	27	Plastic hinge	2
9	Feet	1	28	Left panel	1
10	Control transformer	4	29	Fuse	1
11	Thermal relay	1	30	Red terminal	1
12	Circuit breaker	1	31	Black terminal	1
13	Main transformer	1	32	Door bolt	1
14	Fan bracket	1	33	Wire feeder	1
15	Fan	2	34	MIN/MAX 1/2 voltage switch	2
16	Fan blade	1	35	ON/OFF switch	1
17	Handle	1	36	Overload indicator	1
18	Right panel	1	37	MIG torch	1
19	Power cord	1			

If any parts are missing or damaged, or if you have any questions, please call 1-800-689-9928.

Mastercraft® limited warranty



This Mastercraft® product is guaranteed for a period of **three (3) years** from the date of original retail purchase against defects in workmanship and materials.

Subject to the conditions and limitations described below, this product, if returned to us with **proof of purchase** within the stated warranty period and if covered under this warranty, will be repaired or replaced (with the same model, or one of equal value or specification), at our option. We will bear the cost of any repair or replacement and any costs of labor relating thereto.

This warranty is subject to the following conditions and limitations:

- a. A bill of sale verifying the purchase and purchase date must be provided.
- b. This warranty will not apply to any product or part thereof which is worn or broken or which has become inoperative due to abuse, misuse, accidental damage, neglect, or lack of proper installation, operation, or maintenance (as outlined in the applicable instruction manual or operating instructions), or which is being used for industrial, professional, commercial, or rental purposes.
- c. This warranty will not apply to normal wear and tear or to expendable parts or accessories that may be supplied with the product which are expected to become inoperative or unusable after a reasonable period of use.
- d. This warranty will not apply to routine maintenance and consumable items such as, but not limited to, fuel, lubricants, vacuum bags, blades, belts, sandpaper, bits, fluids, tune-ups, or adjustments.
- e. This warranty will not apply where damage is caused by repairs made or attempted by others (i.e., persons not authorized by the manufacturer).
- f. This warranty will not apply to any product that was sold to the original purchaser as a reconditioned or refurbished product (unless otherwise specified in writing).
- g. This warranty will not apply to any product or part thereof if any part from another manufacturer is installed therein or any repairs or alterations have been made or attempted by unauthorized persons.

- h. This warranty will not apply to normal deterioration of the exterior finish, such as, but not limited to, scratches, dents, paint chips, or to any corrosion or discoloring by heat, or abrasive and chemical cleaners.
- i. This warranty will not apply to component parts sold by and identified as the product of another company, which shall be covered under the product manufacturer's warranty, if any.

Additional limitations

This warranty applies only to the original purchaser and may not be transferred. Neither the retailer nor the manufacturer shall be liable for any other expense, loss, or damage, including, without limitation, any indirect, incidental, consequential, or exemplary damages arising in connection with the sale, use, or inability to use this product.

Notice to consumer

This warranty gives you specific legal rights, and you may have other rights, which may vary from province to province. The provisions contained in this warranty are not intended to limit, modify, take away from, disclaim, or exclude any statutory warranties set forth in any applicable provincial or federal legislation.