

Eastwood®

DO THE JOB RIGHT.®

Item #12012

# MIG175 WELDER

## SERVICE MANUAL



## STATEMENT OF LIMITED WARRANTY

The Eastwood Company (hereinafter "Eastwood") warrants to the end user (purchaser) of all new welding and cutting equipment (collectively called the "products") that it will be free of defects in workmanship and material. This warranty is void if the equipment has been subjected to improper installation, improper care or abnormal operations.

### WARRANTY PERIOD:

All warranty periods begin on the date of purchase from Eastwood. Warranty Periods are listed below, along with the products covered during those warranty periods:

### 3 Year Warranty on Material, Workmanship, and Defects:

- Eastwood MIG175 Welder

Items not covered under this warranty: Contact tips, nozzles, wire, and ground clamp and cable.

All other components are covered by the warranty and will be repaired or replaced at the discretion of Eastwood.

### 2 Years:

- All Welding Helmets.

### CONDITIONS OF WARRANTY TO OBTAIN WARRANTY COVERAGE:

Purchaser must first contact Eastwood at 1-800-345-1178 for an RMA# before Eastwood will accept any welder returns.

Final determination of warranty on welding and cutting equipment will be made by Eastwood.

### WARRANTY REPAIR:

If Eastwood confirms the existence of a defect covered under this warranty plan, Eastwood will determine whether repair or replacement is the most suitable option to rectify the defect. At Eastwood's request, the purchaser must return, to Eastwood, any products claimed defective under Eastwood's warranty.

### FREIGHT COSTS:

The purchaser is responsible for shipment to and from Eastwood.

### WARRANTY LIMITATIONS:

EASTWOOD WILL NOT ACCEPT RESPONSIBILITY OR LIABILITY FOR REPAIRS UNLESS MADE BY EASTWOOD. EASTWOOD'S LIABILITY UNDER THIS WARRANTY SHALL NOT EXCEED THE COST OF CORRECTING THE DEFECT OF THE EASTWOOD PRODUCT. EASTWOOD WILL NOT BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES (SUCH AS LOSS OF BUSINESS, ETC.) CAUSED BY THE DEFECT OR THE TIME INVOLVED TO CORRECT THE DEFECT. THIS WRITTEN WARRANTY IS THE ONLY EXPRESS WARRANTY PROVIDED BY EASTWOOD WITH RESPECT TO ITS PRODUCTS. WARRANTIES IMPLIED BY LAW SUCH AS THE WARRANTY OF MERCHANTABILITY ARE LIMITED TO THE DURATION OF THIS LIMITED WARRANTY FOR THE EQUIPMENT INVOLVED. THIS WARRANTY GIVES THE PURCHASER SPECIFIC LEGAL RIGHTS. THE PURCHASER MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE.

## SPECIFICATIONS

Output Amperage Range	Maximum Output No-Load Voltage	Maximum Input Amperage	Input Voltage	Rated Duty Cycle	Wire Feed Rate	Welding Wire Spool Size	Weight	Overall Dimensions
30-175 Amps	33 V DC	22 Amp	240 VAC 60 Hz	30% @ 130 Amps	40-450 IPM	4"-8"	67 lbs. [25kg]	24.4" [620mm] x 12.6" [320mm] x 17" [430mm]

	Solid	Stainless	Flux Cored
Wire Type & Diameter	0.023-0.030" [0.6-0.8mm]	0.023-0.030" [0.6-0.8mm]	0.030-0.035" [0.8-0.9mm]

	Wire Sizes
Spool Gun Wire Type & Diameter	0.030-0.035" [0.8-0.9mm]

## DUTY CYCLE

The rated Duty cycle refers to the amount of welding that can be done within an amount of time. It is easiest to look at your welding time in blocks of 10 Minutes and the Duty Cycle being a percentage of that 10 Minutes. If welding at 130 Amps with a 30% Duty Cycle, within a 10 Minute block of time you can weld for 3 Minutes with 7 Minutes of cooling for the welder. If the duty cycle is exceeded and the breaker is tripped, allow the unit to cool for a minimum of 15 Minutes. To increase the duty cycle you can turn down the Voltage Output control. Going above 130 Amps will yield a lower duty cycle.

# SAFETY INFORMATION

The following explanations are displayed in this manual, on the labeling, and on all other information provided with this product:

## **⚠ DANGER**

DANGER indicates a hazardous situation which, if not avoided, will result in death or serious injury.

## **⚠ WARNING**

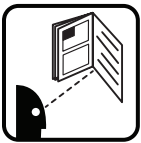
WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.

## **⚠ CAUTION**

CAUTION indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

## **⚠ NOTICE**

NOTICE is used to address practices not related to personal injury.



### **⚠ READ INSTRUCTIONS**

Thoroughly read and understand this manual before using. Save for future reference.



### **⚠ DANGER ELECTRIC SHOCK CAN CAUSE INJURY OR DEATH!**

- Improper use of an electric Welder can cause electric shock, injury and death!  
Read all precautions described in the Welder Manual to reduce the possibility of electric shock.
- Disconnect Welder from power supply before removing the Welder Cover to expose internal circuitry. Dangerous voltages can be present even after the Welder is disconnected from the power supply.
- Disconnect Welder from power supply before assembly, disassembly or maintenance of the torch, contact tip and when installing or removing nozzles.
- Always wear dry, protective clothing and leather welding gloves and insulated footwear. Use suitable clothing made from durable flame-resistant material to protect your skin.
- If other persons or pets are in the area of welding, use welding screens to protect bystanders from sparks.
- Always operate the Welder in a clean, dry, well ventilated area. Do not operate the Welder in humid, wet, rainy or poorly ventilated areas.
- The electrode and work (or ground) circuits are electrically “hot” when the Welder is on. Do not allow these “hot” parts to come in contact with your bare skin or wet clothing.
- Separate yourself from the welding circuit by using insulating mats to prevent contact from the work surface.
- Be sure that the work piece is properly supported and grounded prior to beginning an electric welding operation.
- Always attach the ground clamp to the piece to be welded and as close to the weld area as possible. This will give the least resistance and best weld.



### **⚠ DANGER WELDING SPARKS CAN CAUSE FIRE OR EXPLOSION!**

- Electric welding produces sparks which can be discharged considerable distances at high velocity igniting flammable or exploding vapors and materials.
- Do not operate electric arc Welder in areas where flammable or explosive vapors are present.
- Do not use near combustible surfaces. Remove all flammable items within 35 feet of the welding area.
- Always keep a fire extinguisher nearby while welding.
- Use welding blankets to protect painted and or flammable surfaces; rubber weather-stripping, dash boards, engines, etc.
- Ensure power supply has properly rated wiring to handle power usage.

# SAFETY INFORMATION



## **⚠ WARNING ELECTROMAGNETIC FIELDS CAN BE A HEALTH HAZARD!**

- The electromagnetic field that is generated during arc welding may interfere with various electrical and electronic devices such as cardiac pacemakers. Anyone using such devices should consult with their physician prior to performing any electric welding operations.
- Exposure to electromagnetic fields while welding may have other health effects which are not known.



## **⚠ WARNING ARC RAYS CAN BURN!**

- Arc rays produce intense ultraviolet radiation which can burn exposed skin and cause eye damage. Use a shield with the proper filter (a minimum of #11) to protect your eyes from sparks and the rays of the arc when welding or when observing open arc welding (see ANSI Z49.1 and Z87.1 for safety standards).
- Use suitable clothing made from durable flame-resistant material to protect your skin.
- If other persons or pets are in the area of welding, use welding screens to protect bystanders from sparks and arc rays.



## **⚠ WARNING FUMES AND WELDING GASES CAN BE A HEALTH HAZARD!**

- Fumes and gasses released during welding are hazardous. Do not breathe fumes that are produced by the welding operation. Wear an OSHA-approved respirator when welding.
- Always work in a properly ventilated area.
- Never weld coated materials including but not limited to: cadmium plated, galvanized, lead based paints.



## **⚠ CAUTION HOT METAL AND TOOLS WILL BURN!**

- Electric welding heats metal and tools to temperatures that will cause severe burns!
- Use protective, heat resistant gloves and clothing when using Eastwood or any other welding equipment. Never touch welded work surface, torch tip or nozzle until they have completely cooled.



## **⚠ CAUTION FLYING METAL CHIPS CAN CAUSE INJURY!**

- Grinding and sanding will eject metal chips, dust, debris and sparks at high velocity. To prevent eye injury wear approved safety glasses.
- Wear an OSHA-approved respirator when grinding or sanding.
- Read all manuals included with specific grinders, sanders or other power tools used before and after the welding process. Be aware of all power tool safety warnings.

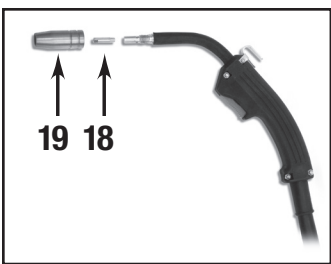
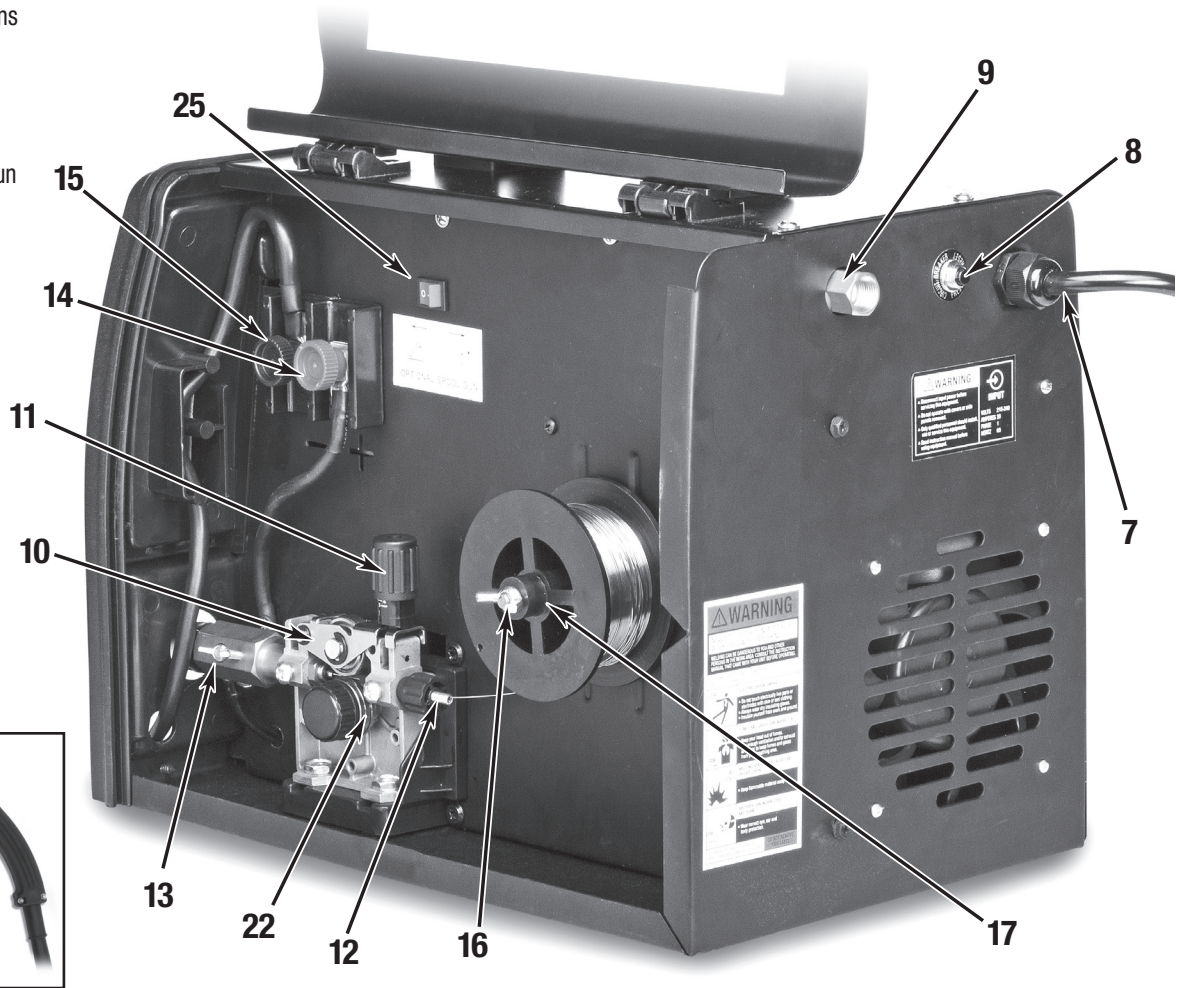
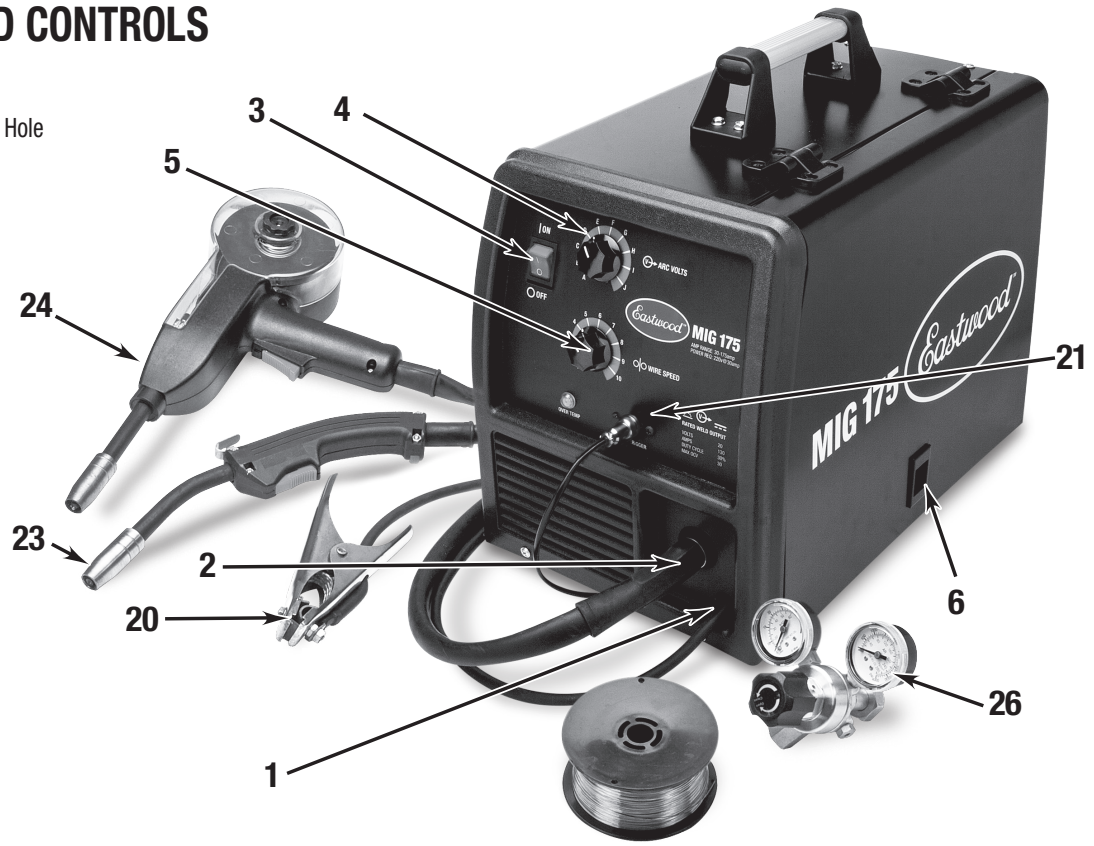
# UNPACKING

When unpacking your Eastwood MIG175, check to make sure all of the parts listed below are included:

- |                                |  |
|--------------------------------|--|
| (1) MIG175 Welder              | (1) Wire Brush                                       |
| (1) Torch / Gun Cable Assembly | (1) 2lb Spool of 0.030" [0.8mm] Solid Steel MIG Wire |
| (1) Spool Gun Assembly         | (1) 1lb Spool of 0.030" [0.8mm] 4043 Aluminum Wire   |
| (1) Ground Cable Assembly      | (2) Contact Tips                                     |
| (1) Gas Flow Regulator         | (1) Contact Tip Wrench                               |
| (1) Gas Hose                   | (1) Instructions                                     |
| (1) Hand Held Shield           |  |

# COMPONENTS AND CONTROLS

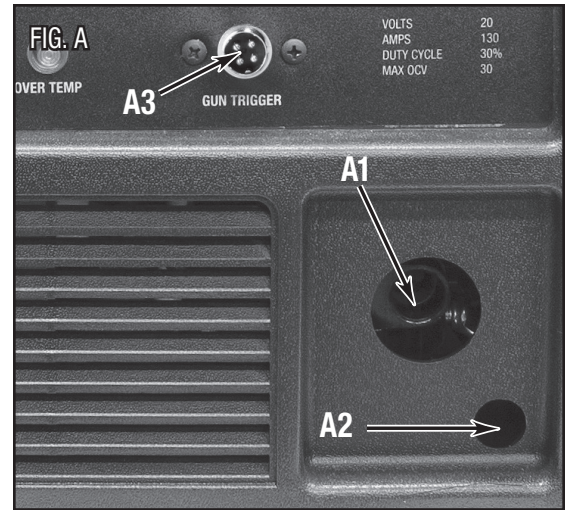
1. Ground Cable Access Hole
2. MIG Gun/Spool Gun Access Hole
3. Power Switch
4. Voltage Control
5. Wire Speed Control
6. Latch
7. Power Cord
8. Breaker Reset Switch
9. Shielding Gas Inlet
10. Rocker Arm
11. Pressure Adjuster
12. Guide Pipe
13. Torch Tensioner
14. Positive Terminal
15. Negative Terminal
16. Wire Tension Thumb Screw
17. Wire Spindle
18. Contact Tip
19. Nozzle
20. Ground Clamp
21. Trigger Connections
22. Drive Roller
23. MIG Torch
24. Spool Gun
25. MIG Gun/Spool Gun Selector Switch
26. Regulator



# INSTALLATION

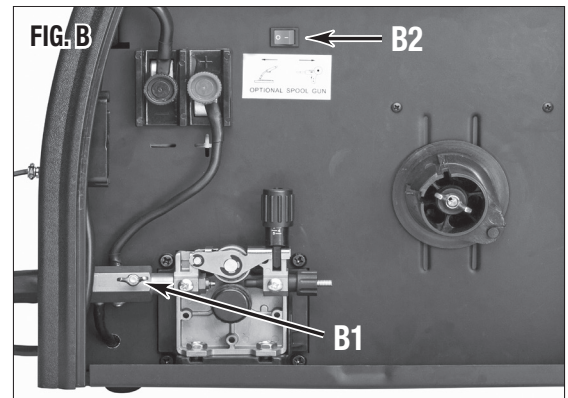
## INSTALLING THE WELDING GUN

1. Open the side door of the welder and loosen the Torch Tensioner (**FIG. B1**) located on the Drive Motor.
2. Slide the brass body of the Welding Gun in through the front of the unit in the designated hole (**FIG. A1**). Be sure to insert until it bottoms against the drive assembly or a gas leak may occur.
3. Connect the metal gun plug to the gun trigger plug connection on the front of the welder (**FIG. A3**).
4. Tighten the Torch Tensioner (**FIG. B1**) finger tight.
5. Switch the selector switch to the Welding Gun position (**FIG. B2**).  
**NOTE:** Make sure that the gun end is tight against the drive assembly or gas may either leak or not be able to pass through the connections to the end of the Welding Gun.



## INSTALLING THE GROUND CLAMP

1. Insert the terminal connection of the Ground Clamp through the designated hole in the front of the unit. (Fig. A2)
2. Pull the cable through and route it through the wire loom located on the back side of the front panel. (See Fig. C for routing)
3. Remove the Black Ground Knob and install the wire terminal on the stud.
4. Reinstall the Black Ground Knob and finger tighten.

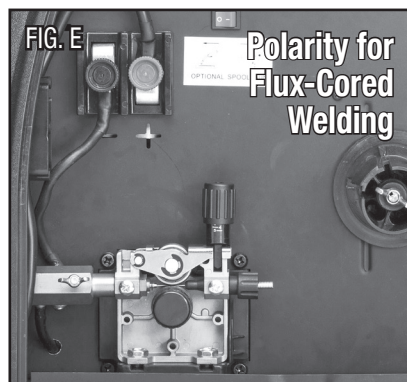
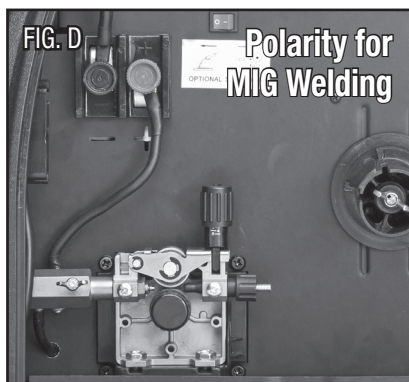
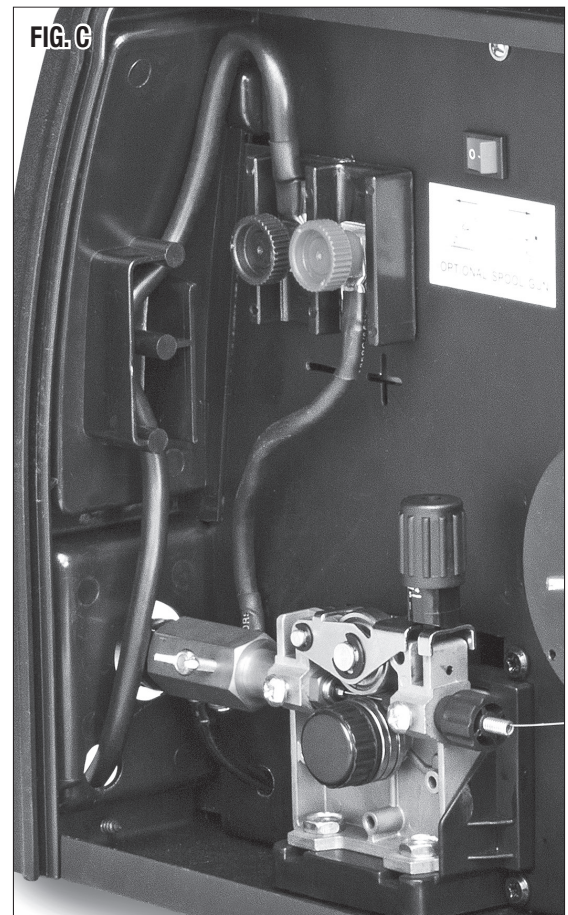


## CHANGING POLARITY

The Eastwood MIG175 comes set up to weld with Solid Wire, to use a Flux Cored wire the Polarity must be changed.

**⚠ DANGER** ELECTRIC SHOCK CAN CAUSE INJURY OR DEATH!  
 Disconnect welder from power supply before beginning.

1. Disconnect the wire lead coming from the Drive Motor by removing the Red Positive Knob.
2. Remove the lead from the stud.
3. Remove the Black Ground Knob and its associated lead.
4. Install the lead from the Drive Motor onto the Negative (-) Stud and replace the Black Ground Knob.
5. Install the lead from the Ground Clamp onto the Positive (+) Stud and replace the Red Positive Knob.



# INSTALLING SHIELDING GAS SUPPLY

## **⚠ WARNING** BUILDUP OF GAS CAN INJURE OR KILL!

- Shut off shielding gas supply when not in use.
- Always ventilate confined spaces or use approved air-supplied respirator.
- Always turn your face away from valve outlet when opening cylinder valve.

## **⚠ WARNING** CYLINDERS CAN EXPLODE IF DAMAGED!

Shielding gas cylinders contain gas under high pressure. If damaged, a cylinder can explode. As gas cylinders are a normal component of the welding process, use extra care to handle them carefully.

- Protect compressed gas cylinders from excessive heat, mechanical shocks, physical damage, slag, open flames, sparks and
- Install cylinders in an upright position by securing to a specifically designed rack, cart or stationary support to prevent falling or tipping over.
- Never weld on a pressurized cylinder or explosion will occur.
- Use only correct shielding gas cylinders, regulators, hoses and fittings designed for the specific application; maintain them and all related components in good condition.
- Keep protective cap in place over valve except when cylinder is in use.
- Use proper equipment, procedures and have adequate help when moving or lifting cylinders.

A Shielding Gas Bottle is not included with your Eastwood MIG175 but is necessary to welding using Solid Wire. This can be bought at most local Welding Supply Stores. Eastwood recommends the use of 75% Argon/25% CO<sub>2</sub> for shielding gas when MIG welding Steel, 100% Argon for Aluminum, and Tri-Mix (90% He/7.5% Ar / 2.5% CO<sub>2</sub>) for Stainless Steel.

1. Place the Eastwood MIG175 in its dedicated area or on a welding cart.
2. Secure your Shielding Gas Bottle to a stationary object or mount to your welding cart if it is equipped to hold one so that the cylinder cannot fall over.
3. Remove the cap from the Shielding Gas Bottle.
4. Insert the large brass male fitting on the Shielding Gas Regulator into the female fitting on the Shielding Gas Bottle.

**NOTE:** Do not use White Teflon Tape on this connection as it is a compression fitting and does not require it, if you have a leak check for burrs or dirt in the threads. If the leak persists, use gas type sealing tape.

5. Tighten the fitting with a wrench till snug, do not over tighten.
6. Connect either end of the Gas Line included with your Eastwood MIG175 to the fitting on the regulator and wrench tighten till snug.
7. Connect the other end of the gas line to the fitting on the rear of the Eastwood MIG175 and wrench tighten till snug.
8. Check the gas line for leaks by slowly opening the valve on the gas bottle. When welding the valve on the bottle should always be all the way open.

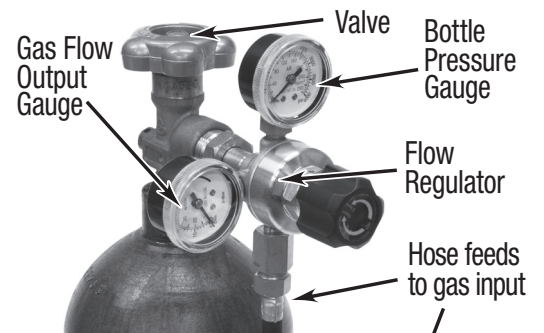
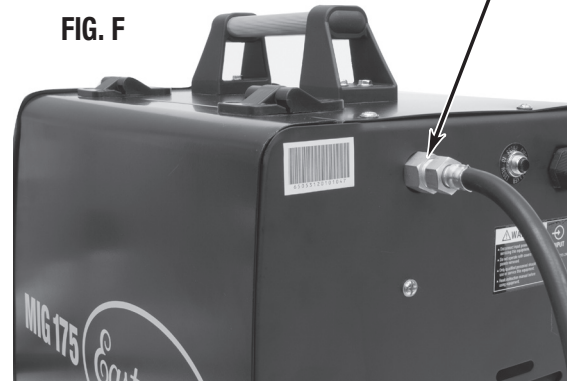


FIG. F



## INSTALLING WIRE SPOOL

The Eastwood MIG175 can be used with either a 4" or an 8" Wire Spool. To use the larger 8" spool an included adaptor is necessary.

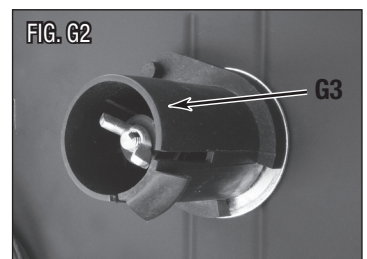
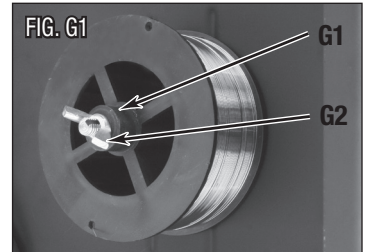
### To install a 4" Wire Spool:

1. Open the door of the welder and remove the wing nut (**FIG. G2**), spacer (**FIG. G1**), and 8" Spool Adaptor (**FIG. G3**) from the Wire Spool Spindle.
2. Slide the 4" Wire Spool onto the spindle and reinstall the spacer and the wing nut and place the 8" Spool Adaptor (**FIG. G3**) in a safe place if it is needed in the future.
3. To set the tension on the wire, tighten the wing nut till there is a slight resistance to spinning the wire spool on the spindle. If the tension is set too loose the wire spool will spin on the shaft and unspool all of the wire. If the tension is too tight, the drive roller will have issues pulling the wire off the spool and some slipping may occur.

**NOTE:** Hold exposed wire end to keep the spool from unraveling.

### To install an 8" Wire Spool:

1. Open the door of the welder and remove the wing nut, spacer, and 8" Spool Adaptor from the Wire Spool Spindle.
2. Slide the 8" Wire Spool Adaptor into the center of the wire spool.
3. Slide the 8" Wire Spool Adaptor with the wire spool installed onto the spindle and reinstall the spacer and the wing nut.
4. To set the tension on the wire, tighten the wing nut till there is a slight resistance to spinning the wire spool on the spindle. If the tension is set too loose the wire spool will spin on the shaft and unspool all of the wire. If the tension is too tight, the drive roller will have issues pulling the wire off the spool and some slipping may occur.



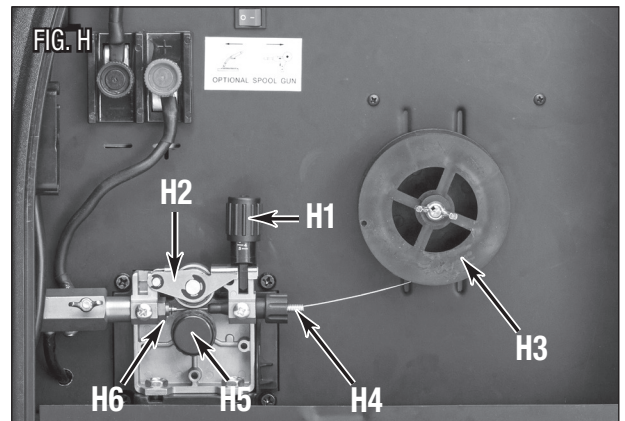
## CONNECTING THE WELDER TO A POWER SOURCE

The Eastwood MIG175 welder requires a dedicated 240 VAC 30 Amp grounded outlet protected by a time delay breaker. The MIG175 is equipped with a NEMA 6-50P Plug which requires a NEMA 6-50R outlet to be connected.

## THREADING WELDING WIRE THROUGH THE DRIVE MOTOR TO THE WELDING GUN

**⚠ DANGER** ELECTRIC SHOCK CAN CAUSE INJURY OR DEATH!  
Disconnect welder from power supply before beginning.

1. Unlock the Pressure Adjuster (**FIG. H1**) on the wire tensioner and lift up the rocker arm (**FIG. H2**). Insure that the wire drive wheel is appropriate to the welding wire size, see above describing the installation to wire feed roller installation.
2. Pull out the welding wire (**FIG. H3**) from the welding wire spool carefully.  
**NOTE:** Do not let go of the wire prior to step 5 or the spool will unravel and be useless.
3. Cut off the small piece of the curved segment at the front of welding wire and straighten the welding wire approximately 3.0" long.
4. Thread the welding wire through the guide pipe (**FIG. H4**) and over the wire feed roller (**FIG. H5**) and into the torch hole (**FIG. 6H**).
5. Reattach the rocker arm (**FIG. H2**) and reset the Pressure Adjuster (**FIG. H1**) on the wire feeder (now the welding wire will feed smoothly).



6. Remove the contact tip and nozzle from the MIG Gun.
7. Turn on the machine and set the wire speed about 1/2 on the scale.
8. With the gun pointed away from you and others, depress the trigger to begin feeding wire.  
**NOTE:** Watch the drive roller to see if any slipping is occurring between the roller and the wire – if so turn the machine off and tighten the Pressure Adjuster 1/4 turn and test again.
9. You do not want too much tension on the tension roller as it will tend to deform the wire. Just enough to feed the wire without slipping
10. Once the wire has emerged from the tip of the gun, turn the machine OFF and replace the tip and nozzle.



# SHIELDING GAS FLOW ADJUSTMENT

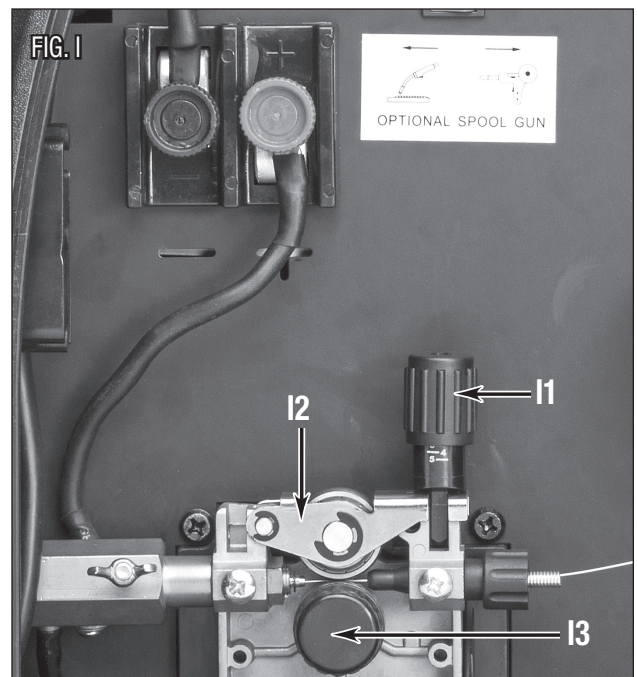
After connecting your Shielding Gas Regulator, the gas flow rate needs to be adjusted so that the proper amount of Shielding Gas is flowing over your weld. If there is too little gas flow there will be porosity in your welds as well as excessive spatter, if there is too much gas flow you will be wasting gas and may affect the weld quality. The included regulator has 2 gauges on it; the gauge on the left is your flow rate while the gauge on your right is your tank pressure.

1. Open your Shielding Gas tank valve all the way.
2. Adjust the knob on the regulator to ~30 CFH.
3. Turn on the welder and trigger the torch switch which will start the gas flow.
4. As you trigger the torch switch you will notice that as the gas flow starts the needle on the gauge drops to a steady reading. The reading while flowing is the value you want to read.
5. The gas flow should be set to ~20CFH while flowing. The CFH (Cubic Feet per Hour) scale is the inside scale in red on your flow gauge. 20CFH is the most typical flow rate but it may need to be adjusted in some cases depending if there is a slight breeze or some other instance where additional shielding gas is required to prevent porosity in the weld.
6. When finished welding remember to close the gas valve on the bottle.

# CHANGING THE DRIVER ROLLER

The wire feed drive roller on the drive motor has 2 grooves, one for 0.023" (0.6mm) welding wire and another for 0.030" (0.8mm) or 0.035" (0.9mm) welding wire. Your MIG175 comes with the drive roller pre installed for using 0.030" (0.8mm) wire. In the event that 0.023" welding wire is to be used, the wire feed roller needs to be changed.

1. Turn off the welder and unplug the welder from power.
2. Unlock the Tensioner (**FIG. I1**) by pulling it towards you.
3. Lift the Rocker Arm (**FIG. I2**) up and rotate out of the way.
4. Remove the star knob (**FIG. I3**) by loosening it by hand.
5. Slide the drive roller off the shaft.
6. Determine which size wire is going to be used and slide the drive roller back onto the shaft by aligning the key on the shaft with the keyway on the roller.  
**NOTE:** The stamped marking on the side of the drive roller indicates the size of the groove on the opposite side of the roller. The groove closest to the drive motor is the groove that will be used. If setting up to use 0.023" (0.6mm) wire, the '0.6' stamping should be facing the user when installing it.
7. Tighten the star knob finger tight.
8. Push the rocker arm back down into place.
9. Lift up on the Tensioner to put back in place and adjust as necessary.



## INSTALLING THE SPOOL GUN

1. Turn off welder and unplug from power source.
2. Switch the selector switch to the Spool Gun position.
3. Open the side door of the welder and loosen the Torch Tensioner located on the side of the drive roller. If the standard welding gun is installed remove it and its associated connector.
4. Slide the brass body of the Spool Gun in through the front of the unit in the designated hole as shown in **(FIG. J)**. Be sure to insert until it bottoms against the drive assembly or a gas leak may occur.
5. Connect the metal plug to the gun trigger connection on the front of the welder.
6. Tighten the Torch Tensioner finger tight.
7. Set the Selector Switch to "Spool Gun" **(FIG. J1)**.

## THREADING WELDING WIRE THROUGH THE SPOOL GUN

1. Turn off welder and unplug from power source.
2. Set the switch above the drive motor to the spool gun setting **(FIG. J1)**.
3. Remove the thumb screw and clear plastic wire spool cover.
4. Remove the thumb screw and spring tensioner that holds the wire spool on **(FIG. K1)**.
5. Place wire spool on spindle and replace the thumb screw with spring tensioner and tighten till the point that the spool has some tension on it.
6. Loosen the Brass Tensioner Thumb Screw **(FIG. K2)** until it is possible to feed the welding wire through the drive roller grooves.
7. Feed the wire by hand from the spool into the inlet guide, **(FIG. K3)** past the drive rollers and into the wire inlet **(FIG. K4)**.
8. Tighten the Brass Tensioner Thumb Screw **(FIG. K2)** until it applies light pressure onto the welding wire. If this is too tight it will deform the wire and cause feeding issues, if it is too loose the drive roller will slip on the wire.
9. Remove the nozzle and contact tip.
10. Replace the wire spool cover.
11. Plug in welder to your power source and turn on the welder.
12. Trigger the Spool Gun to feed the wire and adjust the Brass Tensioner Thumb Screw **(FIG. K2)** so that the wire does not slip.
13. Replace Contact Tip and Nozzle.

FIG. J

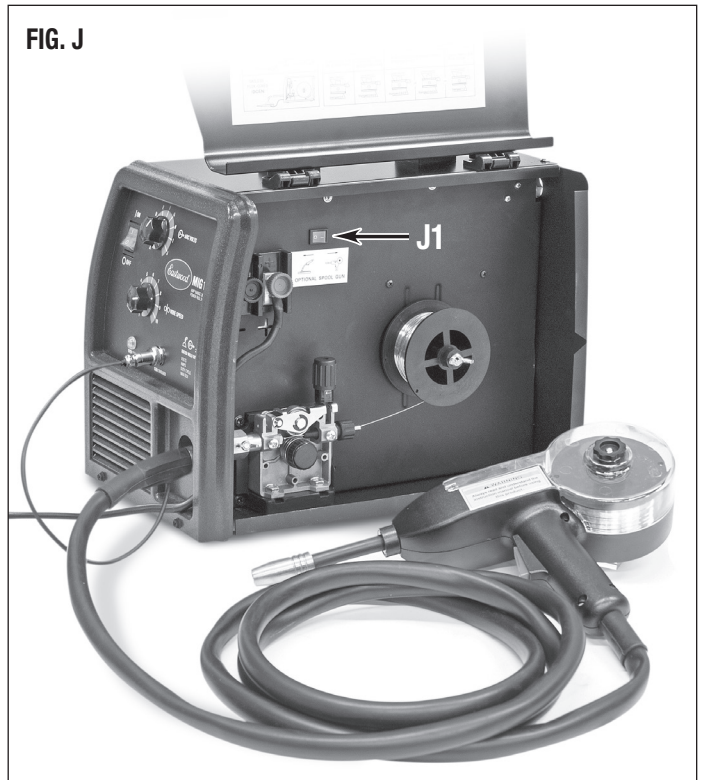
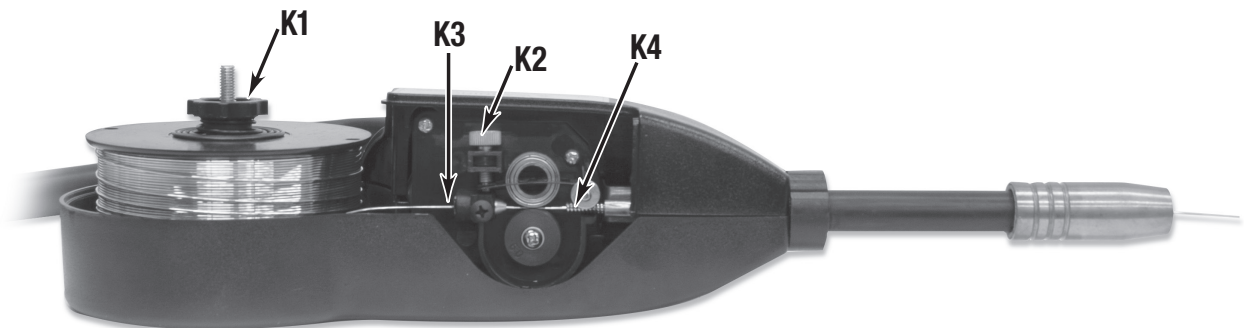


FIG. K



# OPERATION

## **⚠ DANGER** ELECTRIC SHOCK CAN CAUSE INJURY OR DEATH!

- Improper use of an electric Welder can cause electric shock, injury and death! Read all precautions described in the Welder Manual to reduce the possibility of electric shock.
- Disconnect Welder from power supply before removing the Welder Cover to expose internal circuitry. Dangerous voltages can be present even after the Welder is disconnected from the power supply.
- Disconnect Welder from power supply before assembly, disassembly or maintenance of the torch, contact tip and when installing or removing nozzles.
- Always wear dry, protective clothing and leather welding gloves and insulated footwear. Use suitable clothing made from durable flame-resistant material to protect your skin.
- If other persons or pets are in the area of welding, use welding screens to protect bystanders from sparks.
- Always operate the Welder in a clean, dry, well ventilated area. Do not operate the Welder in humid, wet, rainy or poorly ventilated areas.
- The electrode and work (or ground) circuits are electrically “hot” when the Welder is on. Do not allow these “hot” parts to come in contact with your bare skin or wet clothing.
- Separate yourself from the welding circuit by using insulating mats to prevent contact from the work surface.
- Be sure that the work piece is properly supported and grounded prior to beginning an electric welding operation.
- Always attach the ground clamp to the piece to be welded and as close to the weld area as possible. This will give the least resistance and best weld.

## **⚠ DANGER** WELDING SPARKS CAN CAUSE FIRE OR EXPLOSION!

- Electric welding produces sparks which can be discharged considerable distances at high velocity igniting flammable or exploding vapors and materials.
- Do not operate electric arc Welder in areas where flammable or explosive vapors are present.
- Do not use near combustible surfaces. Remove all flammable items within 35 feet of the welding area.
- Always keep a fire extinguisher nearby while welding.
- Use welding blankets to protect painted and or flammable surfaces; rubber weather-stripping, dash boards, engines, etc.
- Ensure power supply has properly rated wiring to handle power usage.

## **⚠ WARNING** ELECTROMAGNETIC FIELDS CAN BE A HEALTH HAZARD!

- The electromagnetic field that is generated during arc welding may interfere with various electrical and electronic devices such as cardiac pacemakers. Anyone using such devices should consult with their physician prior to performing any electric welding operations.
- Exposure to electromagnetic fields while welding may have other health effects which are not known.

## **⚠ WARNING** ARC RAYS CAN BURN!

- Arc rays produce intense ultraviolet radiation which can burn exposed skin and cause eye damage. Use a shield with the proper filter (a minimum of #11) to protect your eyes from sparks and the rays of the arc when welding or when observing open arc welding (see ANSI Z49.1 and Z87.1 for safety standards).
- Use suitable clothing made from durable flame-resistant material to protect your skin.
- If other persons or pets are in the area of welding, use welding screens to protect bystanders from sparks and arc rays.

## **⚠ WARNING** FUMES AND WELDING GASES CAN BE A HEALTH HAZARD!

- Fumes and gasses released during welding are hazardous. Do not breathe fumes that are produced by the welding operation. Wear an OSHA-approved respirator when welding.
- Always work in a properly ventilated area.
- Never weld coated materials including but not limited to: cadmium plated, galvanized, lead based paints.

## **⚠ CAUTION** HOT METAL AND TOOLS WILL BURN!

- Electric welding heats metal and tools to temperatures that will cause severe burns!
- Use protective, heat resistant gloves and clothing when using Eastwood or any other welding equipment. Never touch welded work surface, torch tip or nozzle until they have completely cooled

## WELDING PROCESS

Your Eastwood MIG175 can be used to form a large number of different joints and welds all of which will require practice and testing before using on an actual project piece. This following welding process is just a baseline to get you started.

1. Refer to the 'Suggested Settings' chart which is located inside the side door of your Eastwood MIG175 as well as below in the instruction manual. From the chart select your baseline starting point for the recommended settings described in the chart.
2. Change the output polarity if necessary according to the welding wire's specifications. This welder comes set up to use Solid MIG wire, if using Flux Cored wire, the polarity will need to be changed.
3. Connect your ground clamp to the work pieces that are to be welded. Make sure the ground clamp contacts are placed on a clean piece of metal free of paint, grease, rust, oils, etc. It is recommended to place your ground clamp as close to the weld area as possible.
4. Assess your weld area and make sure the welding area is also cleaned of any paint, grease, rust, oils, etc.
5. Plug in the welder and switch to the ON position.
6. Open your gas valve on the bottle and adjust the flow rate if necessary.
7. Depress the torch trigger pointing the welding gun away from your body and then let go of the trigger and cut the wire back to ~1/4" stick out length.
8. Wearing your welding helmet, gloves, and long sleeve shirt and pants, put the end of the wire sticking out of the gun into the joint to be welded.
9. Position the welding gun so that it is perpendicular to the base metal with ~20° tilt back.
10. Depress the trigger to start the wire feed which starts the arc.  
**NOTE:** A push, perpendicular, or drag technique can be used to weld the pieces together; the type used depends on the type of joint as well as other influential conditions.
11. Once you depress the trigger and the arc has started, you will notice a molten puddle will form; this puddle is the weld bead and will follow the motion of the welding torch. Watching the size of the puddle dictates how fast you should be moving with the torch. If you burn through the material you are either moving too slow or you need to make some setting adjustments to the welder settings. If you're not penetrating the base metal you're either moving too fast or you need to make adjustments to the welder settings.
12. Release the trigger on the welding gun to stop the weld.
13. After finished welding, close the valve completely on the Shielding Gas Bottle.

## OVERLOAD PROTECTION

Your Eastwood MIG175 is equipped with a temperature controller as well as an overload breaker. These two protection devices will protect your welder if the duty cycle is exceeded. If the output is exceeded, the internal breaker will trip and stop power supply to the drive motor although the fan will still run to cool the unit.

If the breaker tripped resulting from an overload, the circuit breaker button on the rear of the welder will extend out. This circuit breaker must be reset manually. Before resetting the circuit breaker button allow the welder to cool for a minimum of 15 minutes.

If there is no voltage output and the circuit breaker was not tripped, the internal thermal protector may have shut off the welder until it cools to normal operating temperature. This is an automatic function and does not require the user to manually reset anything.

# TROUBLESHOOTING TABLE – GENERATION 1

- Plastic Drive Motor
- Through-Hole Soldered Components on Control Board



Read safety warnings beginning on page 3 before performing the troubleshooting outlined in the table below.

See page 17 for test points and values. See page 18 for parts location.

SYMPTOM	POTENTIAL PROBLEM	DIAGNOSTIC TEST	SOLUTION
Power Switch in ON Position - Power light on Control Board OFF - Fan not running	No or low A/C Voltage Source	Check A/C Voltage at Wall Outlet	Circuit breaker or wall circuit
	Loose or open connections at Power Switch	Visual and continuity test at switch connection	Repair loose/open connection
	Faulty Power Switch	Verify power switch function	Replace faulty power switch
	Faulty Overload Switch	Reset Overload Switch, faulty if trips again immediately	Replace faulty Overload Switch
	Faulty Control Board	240V AC across pin 1 on X1 and pin 2 on X 3	Replace Control Board
Power Switch in ON Position - Power light on - Fan not running	Open or Loose connection in Fan Circuit	Visual/Continuity Check of Fan Connections	Repair loose/open in Fan circuit
	Faulty Fan	Check for 240V AC across pins 1 and 3 on X2 on Control Board	If 240V AC, replace Fan
	Faulty Control Board	0V at across pins 1 and 3 on X2	Replace Control Board
Unit Powers up - Torch Trigger Pulled - Gas Flowing - No Wire Feed - Drive Roller not Turning	Wire feed mode not selected	Check position of spool gun transfer switch	Move switch to wire feed mode
	Loose or Open Connection in Gun Trigger Circuit	Visual and continuity check of trigger wiring and connections	Repair loose/open connection
	Faulty Gun Trigger	Measure resistance across trigger terminals when trigger pulled (should = 0 ohms)	Replace Torch if switch faulty
	Faulty Control Board	With torch switch on, check voltage across pins 1 and 2 on X9	If no voltage, replace control board.
	Faulty Drive Motor	With torch switch on, check voltage across pins 1 and 2 on X9	If voltage (24V DC), replace Drive Motor
Unit Powers up - Torch Trigger Pulled - Gas Flowing - Drive Roller Turning - No or Erratic Wire Feed	Wire Feed set too low	Check wire feed setting on front panel	Adjust wire speed if needed
	Gun Cable damaged or bent	Visual check of Cable	Straighten or replace Cable
	Contact Tip blocked	Visual Check of Tip	Clear blockage or replace Contact Tip
	Incorrect Inlet Guide or Contact Tip	Confirm correct consumables for wire size	Replace with correct size consumables if needed
	Hub tension too high	Check wire Hub tension	Adjust tension as needed
	Drive Roller pressure too low	Check Drive Roller pressure	Adjust Drive Roller pressure as needed
	Incorrect Drive Roller	Confirm correct drive roller for wire size	Replace with correct drive roller if needed

# TROUBLESHOOTING TABLE – GENERATION 1

- Plastic Drive Motor
- Through-Hole Soldered Components on Control Board



Read safety warnings beginning on page 3 before performing the troubleshooting outlined in the table below.

See page 17 for test points and values. See page 18 for parts location.

SYMPTOM	POTENTIAL PROBLEM	DIAGNOSTIC TEST	SOLUTION
Unit Powers up - Torch Trigger Pulled - Drive Roller Turning - Audible Click of Solenoid when Trigger Pulled <b>- No Gas Flow</b>	Gas bottle closed or empty	Check bottle fill and make sure valve is open	Fill gas bottle or open valve
	Gas Flow restriction	Check gas lines and connections for blockage for loose connections (including torch)	Re-attached, repair, or replace gas lines as needed
Unit Powers up - Torch Trigger Pulled - Drive Roller Turning <b>- No Audible Click of Solenoid when Trigger Pulled</b> <b>- No Gas Flow</b>	Open or loose wiring in Gas Solenoid Circuit	Visual and continuity check of gas solenoid wiring	Repair loose/open in Gas Solenoid Circuit
	Faulty Gas solenoid	Check voltage at X4 with Gun Trigger Pulled. Should be 240V AC	If voltage = 240V AC, replace Gas Solenoid.
	Faulty Control Board	Check voltage at X4 with Gun Trigger Pulled. Should be 240V AC.	If no voltage, replace Control Board
Unit Powers up - Torch Trigger Pulled - Drive Roller Turning - Gas flowing <b>- Low or no weld output</b>	Low Input Line Voltage	Check A/C Voltage at Wall Outlet (240V AC)	Repair cause of low line voltage
	Poor Ground Connection	Check quality of Ground Connection	Ensure good metal to metal ground contact
	Loose or Open Connection in Ground Circuit	Ground Cable for Loose Connections	Repair or replace ground cable
	Poor Weld Surface Condition	Check condition of welding surface for dirt, oil, paint, rust etc.	Clean surface with appropriate cleaner and/or wire brush
	Worn Contact Tip	Check condition of Contact Tip	Replace Contact Tip
	Damaged Torch	Check condition of torch weld cable for damage	Replace Torch
	Faulty Control Board	With torch trigger pulled, check voltage across pin 2 on Con 1 and pin 1 on X3	If no voltage, replace Control Board
	Faulty Transformer or Rectifier	With torch trigger pulled, check voltage across pin 2 on Con 1 and pin 1 on X3	If voltage present, Replace Welder

# TROUBLESHOOTING TABLE – GENERATION 2

- Metal Drive Motor
- Surface-Mounted Components on Control Board



Read safety warnings beginning on page 3 before performing the troubleshooting outlined in the table below.

See page 17 for test points and values. See page 18 for parts location.

SYMPTOM	POTENTIAL PROBLEM	DIAGNOSTIC TEST	SOLUTION
Power Switch in ON Position - Power light on Control Board OFF - Fan not running	No or low A/C Voltage Source	Check A/C Voltage at Wall Outlet	Circuit breaker or wall circuit
	Loose or open connections at Power Switch	Visual and continuity test at switch connection	Repair loose/open connection
	Faulty Power Switch	Verify power switch function	Replace faulty power switch
	Faulty Overload Switch	Reset Overload Switch, faulty if trips again immediately	Replace faulty Overload Switch
	Faulty Control Board	240V AC across pin 1 on CON 1 and pin 2 on CON 3	Replace Control Board
Power Switch in ON Position - Power light on - Fan not running	Open or Loose connection in Fan Circuit	Visual/Continuity Check of Fan Connections	Repair loose/open in Fan circuit
	Faulty Fan	Check for 240V AC across pins 1 and 3 on CON 9 on Control Board	If 240V AC, replace Fan
	Faulty Control Board	0V AC across pin 1 and 3 on CON 9	Replace Control Board
Unit Powers up - Torch Trigger Pulled - Gas Flowing - No Wire Feed - Drive Roller not Turning	Wire feed mode not selected	Check position of spool gun transfer switch	Move switch to wire feed mode
	Loose or Open Connection in Gun Trigger Circuit	Visual and continuity check of trigger wiring and connections	Repair loose/open connection
	Faulty Gun Trigger	Measure resistance across trigger terminals when trigger pulled (should = 0 ohms)	Replace Torch if switch faulty
	Faulty Control Board	With torch switch on, check voltage across pins 1 and 2 on CON 6	If no voltage, replace control board.
	Faulty Drive Motor	With torch switch on, check voltage across pins 1 and 2 on CON 6	If voltage (24V DC), replace Drive Motor
Unit Powers up - Torch Trigger Pulled - Gas Flowing - Drive Roller Turning - No or Erratic Wire Feed	Wire Feed set too low	Check wire feed setting on front panel	Adjust wire speed if needed
	Gun Cable damaged or bent	Visual check of Cable	Straighten or replace Cable
	Contact Tip blocked	Visual Check of Tip	Clear blockage or replace Contact Tip
	Incorrect Inlet Guide or Contact Tip	Confirm correct consumables for wire size	Replace with correct size consumables if needed
	Hub tension too high	Check wire Hub tension	Adjust tension as needed
	Drive Roller pressure too low	Check Drive Roller pressure	Adjust Drive Roller pressure as needed
	Incorrect Drive Roller	Confirm correct drive roller for wire size	Replace with correct drive roller if needed

## TROUBLESHOOTING TABLE – GENERATION 2

- Metal Drive Motor
- Surface-Mounted Components on Control Board



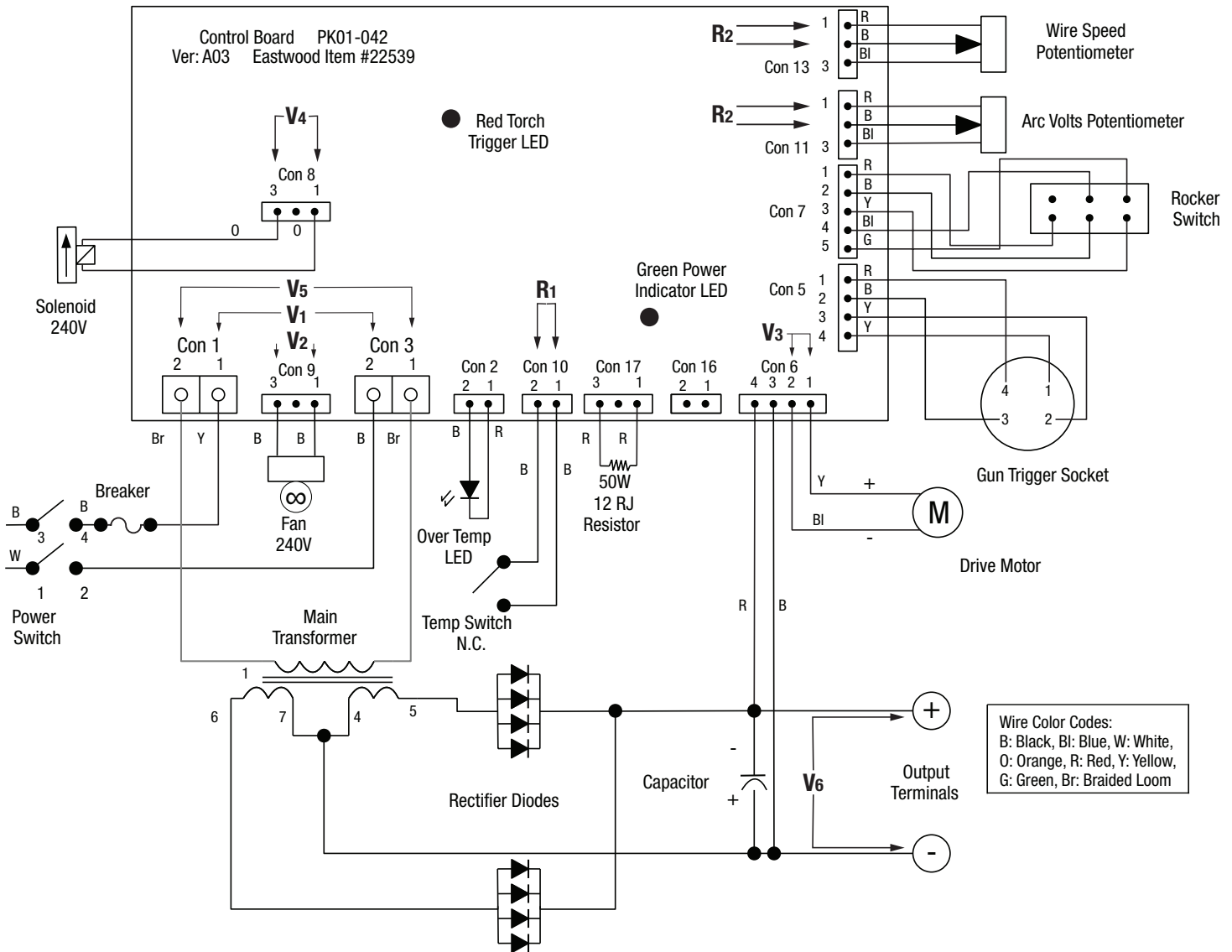
Read safety warnings beginning on page 3 before performing the troubleshooting outlined in the table below.

See page 17 for test points and values. See page 18 for parts location.

SYMPTOM	POTENTIAL PROBLEM	DIAGNOSTIC TEST	SOLUTION
Unit Powers up - Torch Trigger Pulled - Drive Roller Turning - Audible Click of Solenoid when Trigger Pulled - <b>No Gas Flow</b>	Gas bottle closed or empty	Check bottle fill and make sure valve is open	Fill gas bottle or open valve
	Gas Flow restriction	Check gas lines and connections for blockage for loose connections (including torch)	Re-attached, repair, or replace gas lines as needed
Unit Powers up - Torch Trigger Pulled - Drive Roller Turning - <b>No Audible Click of Solenoid when Trigger Pulled</b> - <b>No Gas Flow</b>	Open or loose wiring in Gas Solenoid Circuit	Visual and continuity check of gas solenoid wiring	Repair loose/open in Gas Solenoid Circuit
	Faulty Gas solenoid	Check voltage at CON 8 with Gun Trigger Pulled. Should be 240V AC.	If voltage = 240V AC, replace Gas Solenoid.
	Faulty Control Board	Check voltage at CON 8 with Gun Trigger pulled. Should be 240V AC.	If no voltage, replace Control Board
Unit Powers up - Torch Trigger Pulled - Drive Roller Turning - Gas flowing - <b>Low or no weld output</b>	Low Input Line Voltage	Check A/C Voltage at Wall Outlet (240V AC)	Repair cause of low line voltage
	Poor Ground Connection	Check quality of Ground Connection	Ensure good metal to metal ground contact
	Loose or Open Connection in Ground Circuit	Ground Cable for Loose Connections	Repair or replace ground cable
	Poor Weld Surface Condition	Check condition of welding surface for dirt, oil, paint, rust etc.	Clean surface with appropriate cleaner and/or wire brush
	Worn Contact Tip	Check condition of Contact Tip	Replace Contact Tip
	Damaged Torch	Check condition of torch weld cable for damage	Replace Torch
	Faulty Control Board	With torch trigger pulled, check voltage across pin 2 on CON 1 and pin 1 on CON 3.	If no voltage, replace Control Board
	Faulty Transformer or Rectifier	With torch trigger pulled, check voltage across pin 2 on CON 1 and pin 1 on CON 3.	If voltage present, Replace Welder

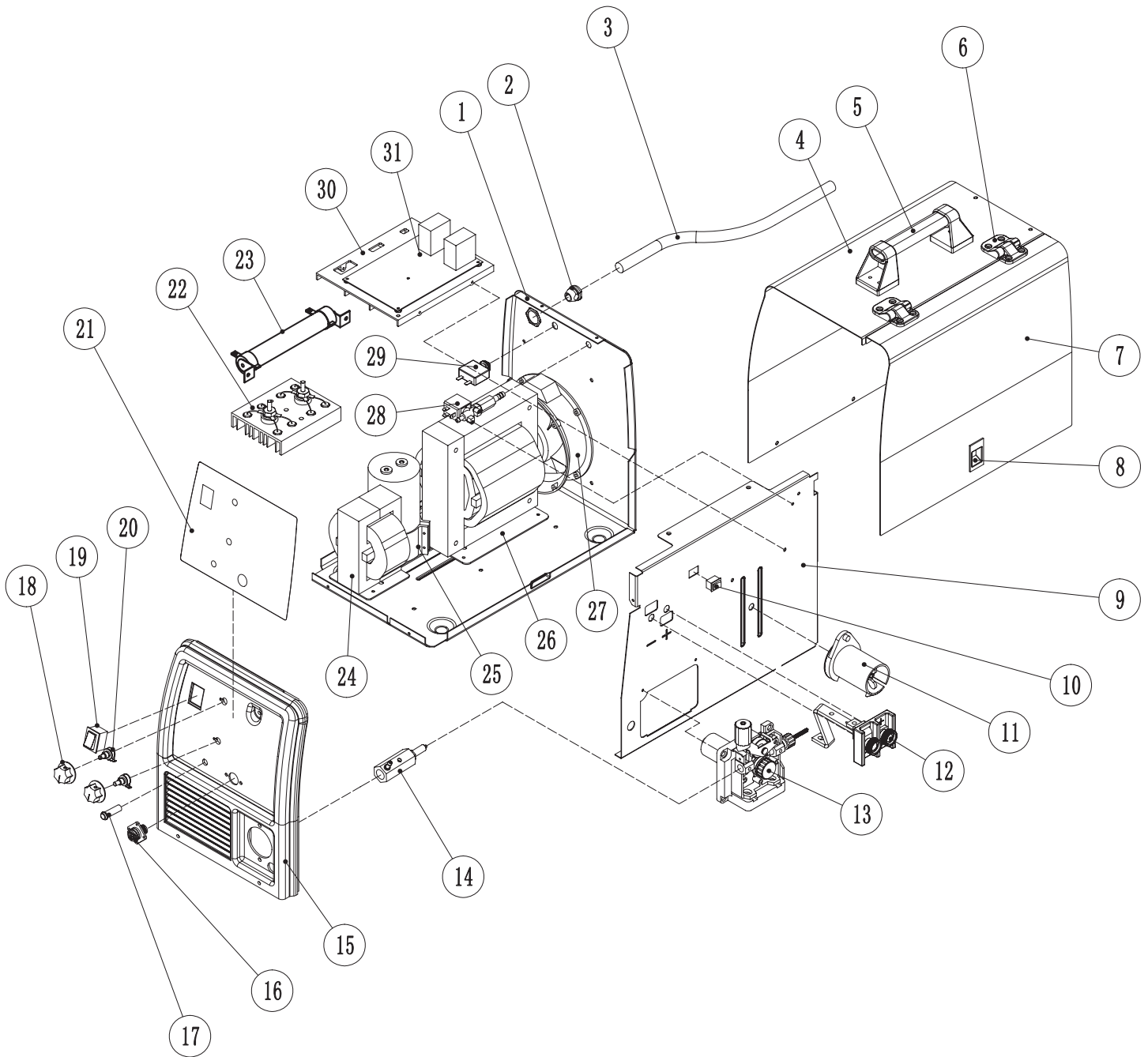


# CIRCUIT DIAGRAMS WITH TEST VALUES



VOLTAGE READINGS	
V1	Input Voltage – 240V AC with Power Switch ON
V2	Fan Voltage – 240V AC with Power Switch ON
V3	Drive Motor Voltage – 2 to 24 DC across Wire Speed Potentiometer Range
V4	Gas Solenoid Voltage – 240V AC with Gun Trigger Pulled
V5	Transformer Input Voltage (60 – 120V AC across Voltage Potentiometer Range)
V6	Output Voltage (24 – 30V DC across Voltage Potentiometer Range)
R1	Disconnect plug Con 10 and check for continuity through temp switch (R = 0 Ohms)
R2	Resistance of potentiometers – 0 to 10 kOhms

# EXPLODED VIEW WITH PARTS LIST



REF #	ITEM #	DESCRIPTION
Not Shown	14297	MIG Torch (Plastic Connector)
Not Shown	20170	MIG Torch (Metal Connector)
Not Shown	12238	Gas/Air Regulator
Not Shown	21264	Ground Cable
1	Not Available	Bottom Housing
2	Not Available	Power Cable Strain Relief
3	Not Available	Power Cable
4	Not Available	Left Housing Panel
5	Not Available	Handle
6	22534	Hinge Set
7	Not Available	Right Panel Door
8	Not Available	Latch
9	Not Available	Inner Partition
10	Not Available	Gun Mode Switch
11	Not Available	Wire Spool Reel
Not Shown	22533	Wire Spool Round Plastic Plate
12	Not Available	Torch Terminal
13	14429	Drive Motor (Plastic)
13	33094	Drive Motor (Metal)
14	Not Available	MIG Torch Connector
15	Not Available	Front Panel
16	Not Available	MIG Gun Trigger Connector
17	Not Available	Power Indicator Light
18	Not Available	Front Panel Knob
19	22513	Power Switch
20	22538	Potentiometer
21	Not Available	Front Panel Graphics
22	Not Available	Rectifier Module
23	Not Available	Resistor
24	Not Available	Reactor
25	22537	Capacitor
26	Not Available	Main Transformer
27	22536	Fan
28	14494	Gas/Air Solenoid
Not Shown	22543	Gas/Air Hose
29	33099	Overload Switch
30	Not Available	Main Control Board Support
31	Not Available	Main Control Board (Old Style – Model with Plastic MIG Gun Connector)
31	22535	Main Control Board (Discrete Board Components)
31	33108	Main Control Board (Surface Mount Board Components)

See our complete line of consumables and parts at [www.eastwood.com](http://www.eastwood.com)

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**If you have any questions about the use of this product, please contact**

The Eastwood Technical Assistance Service Department: 800.343.9353 >> email: [tech@eastwood.com](mailto:tech@eastwood.com)

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