

Eastwood

DO THE JOB RIGHT.

Part #12011

MIG135 WELDER

ASSEMBLY & OPERATING INSTRUCTIONS



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 MIG 135 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 Sizes	Weight
25-135 A	28 V DC	20 Amp	120 VAC 60 Hz	20% @ 90 A	40-450 IPM	4-8 in	56 Lbs. (25kg)

	Solid	Stainless	Flux Cored
Wire Type & Diameter	0.023-0.030in (0.6-0.8mm)	0.023-0.030in (0.6-0.8mm)	0.030-0.035in (0.8-0.9mm)

SAFETY INFORMATION

⚠ WARNING

ARC WELDING CAN BE DANGEROUS.

THIS WELDING MACHINE MUST BE CONNECTED TO A POWER SOURCE IN ACCORDANCE WITH APPLIANCE ELECTRICAL CODES.

DISCONNECT FROM POWER SOURCE BEFORE ASSEMBLING, DISASSEMBLY OR MAINTENANCE OF THE TORCH OR CONTACT TIP OR CHANGING WIRE SPOOLS.

⚠ NOTICE

FOR SAFETY TURN OFF AND UNPLUG MACHINE WHEN INSTALLING NEW WIRE SPOOL, ADJUSTING WIRE TENSION ROLLER OR REPLACING CONTACT TIP.

⚠ WARNING

THE GAS NOZZLE MUST ALWAYS BE INSTALLED WHEN WELDING-DO NOT WELD WITHOUT THE GAS NOZZLE IN PLACE. THE CONTACT TIP IS ELECTRICALLY “HOT” AND IF IT CONTACTS THE GROUNDED WORK PIECE IT WILL CAUSE DAMAGE.

ALL INSTALLATION, MAINTENANCE, REPAIR OPERATION OF THIS EQUIPMENT SHOULD BE PREFORMED BY QUALIFIED INDIVIDUALS IN ACCORDANCE WITH NATIONAL, STATE AND LOCAL CODES.

⚠ DANGER

ELECTRIC SHOCK CAN KILL! Improper use of an electric welder can cause electric shock, injury and death! Read all precautions described in this manual to reduce the possibility of electric shock.

1. The MIG135 power switch is to be in the OFF (“0”) position when installing the work cable and gun and while plugging in the power cord.
2. Always wear dry, protective clothing and leather welding gloves and insulated footwear.
3. Always operate the welder in a clean, dry, well ventilated area. Do not operate the welder in humid, wet, rainy or poorly ventilated areas.
4. Be sure that the work piece is properly supported and grounded prior to beginning an electric welding operation.
5. The electrode and work (or ground) circuits are electrically “hot” when the welder is on. Do not touch these “hot” parts with your bare skin or wet clothing.

⚠ NOTICE

DISCONNECT FROM POWER SOURCE BEFORE ASSEMBLING, DISASSEMBLY OR MAINTENANCE OF THE TORCH OR CONTACT TIP OR CHANGING WIRE SPOOLS.

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

FUMES AND WELDING GASES CAN BE DANGEROUS.

Do not breathe fumes that are produced by the welding operation. These fumes are dangerous. Keep your head and face out of welding fumes. Shielding gases used for welding can displace air and cause injury or death. Always work in a properly ventilated area, we recommend wearing an OSHA-approved respirator when MIG welding!

SAFETY INFORMATION

WELDING SPARKS CAN CAUSE FIRE OR EXPLOSION.

Do not operate electric arc welder in areas where flammable or explosive vapors are present. Always keep a fire extinguisher nearby while welding. Use welding blankets to protect painted surfaces, dash boards, engines, etc.

ARC RAYS CAN BURN.

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. Use suitable clothing made from durable flame-resistant material to protect your skin. Protect nearby individuals with a non-flammable barrier.

HOT METAL WILL BURN.

Electric welding operations cause sparks and heats metal to temperatures that will cause severe burns! Use protective gloves and clothing when performing any welding operations. Always wear long pants, long-sleeved shirts and leather welding gloves. Make sure that all persons in the welding area are protected from heat, sparks and ultraviolet rays. Use additional face shields and flame resistant barriers as needed. Never touch work piece until it has completely cooled.

ELECTROMAGNETIC FIELDS MAY BE DANGEROUS.

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.

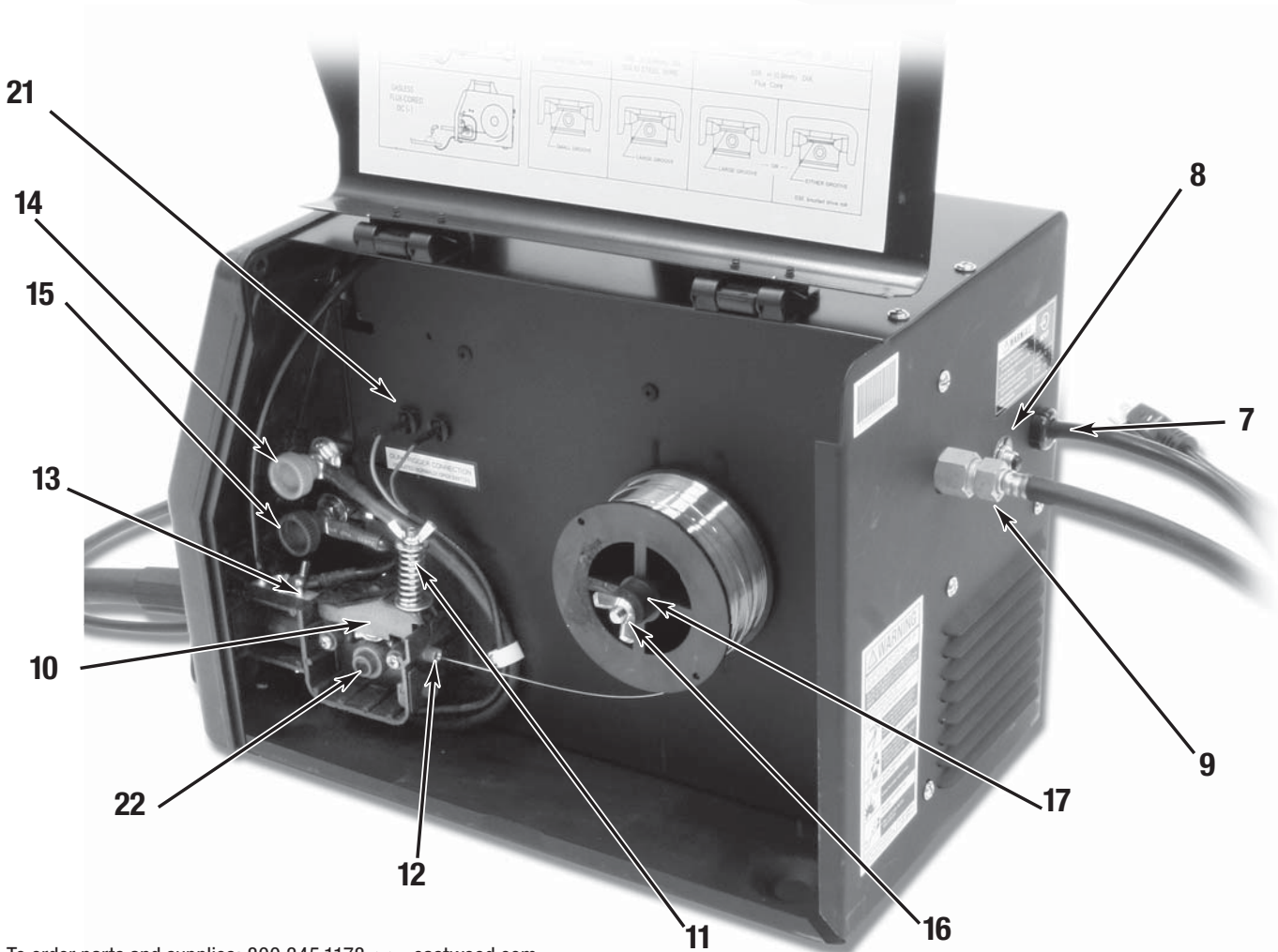
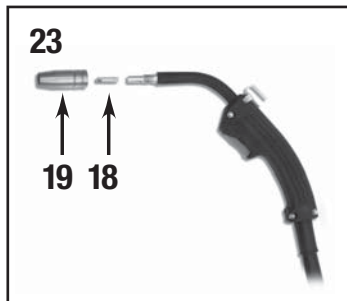
UNPACKING

When unpacking your Eastwood MIG135, check to make sure all of the parts listed below are included:

- MIG135 Welder
- MIG Gun Cable Assembly (8ft)
- Ground Cable Assembly (8ft)
- Gas Flow Regulator
- Gas Hose
- Hand Held Shield
- Wire Brush
- 2lb Spool of 0.023in (0.6mm) Solid Wire
- 2 Contact Tips
- Contact Tip Wrench
- Instructions
- DVD

COMPONENTS AND CONTROLS

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



INSTALLATION

INSTALLING THE WELDING GUN

1. Open the side door of the welder and loosen the MIG Gun Thumb Screw (13) 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. 1A). Be sure to insert until it bottoms against the drive assembly.
3. Tighten the Torch Thumb Screw finger tight. **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.
4. The two wire leads will route through the hole below the power connection for the gun (Fig. 2A).
5. Route the leads from Step through the plastic wire loom (Fig. 1B) and up to the 2 connectors above the drive motor (Fig. 2B). The 2 leads can be connected to either of the two connections as the polarity does not matter.

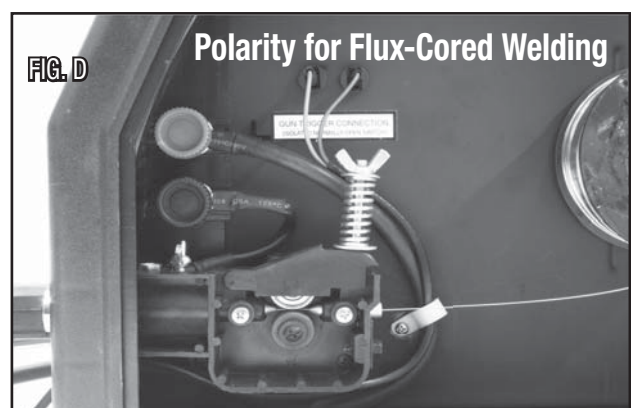
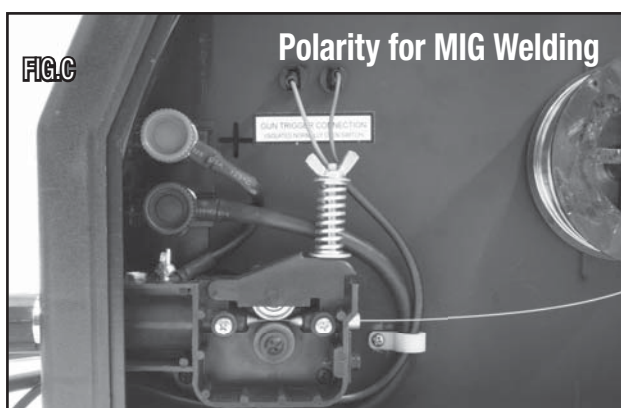
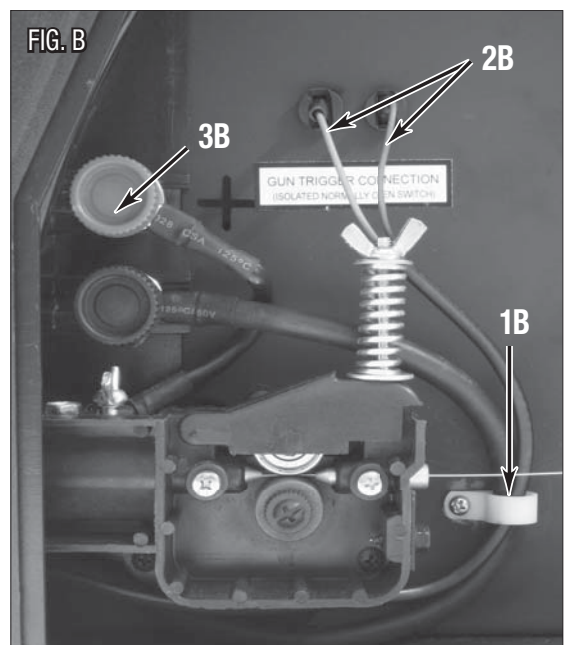
INSTALLING THE GROUND CLAMP

1. Insert the terminal connection of the Ground Clamp through the designated hole in the front of the unit. (Fig. 2A)
2. Pull the cable through and route it through the wire loom located next to the Drive Motor. (Fig. 1B)
3. Remove the Black Negative Terminal Knob (Fig. 3B) and install the wire terminal on the stud.
4. Reinstall the Black Negative Terminal Knob (Fig. 3B) and finger tighten.

CHANGING POLARITY

The Eastwood MIG135 comes set up to weld with Solid MIG Wire, to use a Flux-Cored Wire the Polarity must be changed.

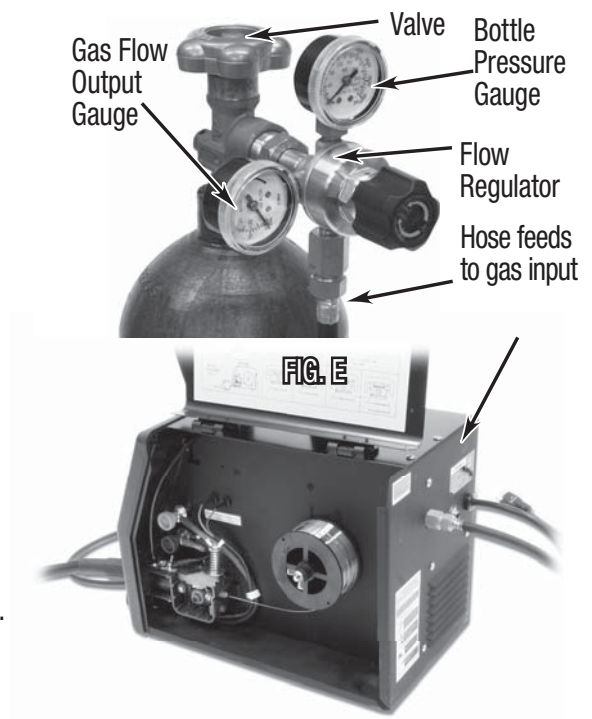
1. Disconnect the Ground Clamp Lead by removing the Black Negative Knob.
2. Remove the lead from the stud.
3. Remove the Red Positive Knob and its associated lead.
4. Install the Ground Clamp Lead onto the Positive (+) Stud and replace the Red Positive Knob.
5. Install the lead from the MIG Torch onto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



INSTALLING SHIELDING GAS SUPPLY

A Shielding Gas Bottle is not included with your Eastwood MIG135 but is necessary to use when welding using Solid MIG Wire. A Shielding Gas Bottle can be rented at most local Welding Supply Stores. Eastwood recommends the use of 75% Argon / 25% CO₂ for shielding gas when MIG welding Steel, and Tri-Mix (90% He / 7.5% Ar / 2.5% CO₂) for Stainless Steel.

1. Place the Eastwood MIG135 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 tapered thread 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 MIG135 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 MIG135 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.



CONNECTING THE WELDER TO A POWER SOURCE

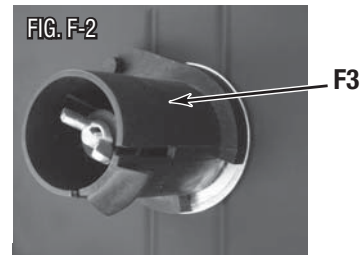
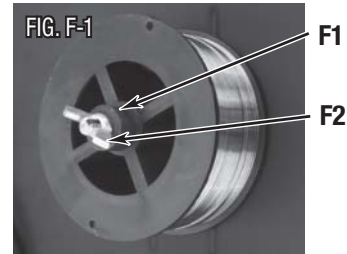
The Eastwood MIG135 welder requires a dedicated 120 VAC 20 Amp grounded outlet protected by a time delay breaker. If using an extension cord, use a 14 AWG cord for up to 50 Feet and a 12 AWG cord for up to 100 Feet.

INSTALLING WIRE SPOOL

The Eastwood MIG135 can be used with either a 4in or an 8in Wire Spool. To use the larger 8in spool an included adaptor is necessary.

To install a 4in Wire Spool:

1. Open the door of the welder and remove the wing nut (Fig. F2), spacer (Fig. F1), and 8in Spool Adaptor (Fig. F3) from the Wire Spool Spindle.
2. Slide the 4in Wire Spool onto the spindle and reinstall the spacer and the wing nut and place the 8in Spool Adaptor 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.

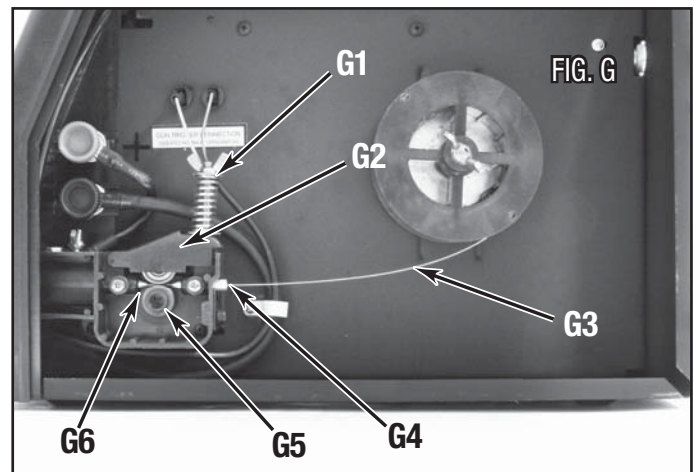


To install an 8" Wire Spool:

1. Open the door of the welder and remove the wing nut, spacer, and 8in Spool Adaptor from the Wire Spool Spindle.
2. Slide the 8in Wire Spool Adaptor into the center of the wire spool.
3. Slide the 8in 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.

THREADING WELDING WIRE THROUGH THE DRIVE TO THE WELDING GUN

1. Unlock the Pressure Adjuster (Fig. G1) and lift up the rocker arm (Fig. G2). Ensure that the wire drive roller is appropriate to the welding wire size, see following page describing the installation of the Drive Roller. The Drive Roller comes installed with 0.6mm/0.023" wire.
2. Pull out the welding wire (Fig. G3) from the wire spool carefully;
NOTE: Do not let go of the wire prior to step 5 or the entire 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. G4) and over the wire Drive Roller (Fig. G5) and into the torch hole (Fig. G6).



5. Reattach the Rocker Arm (Fig. G2) and reset the Pressure Adjuster (Fig. G1).
6. Remove the Contact Tip and Nozzle from the MIG Gun.
7. Turn on the machine and set the wire speed to about "5".
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.

1. You do not want to set too much tension on the Pressure Adjuster as it will tend to deform the wire. Just enough to feed the wire without slipping.
2. Once the wire has emerged from the tip of the MIG Gun, turn the machine OFF and replace the Contact 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.

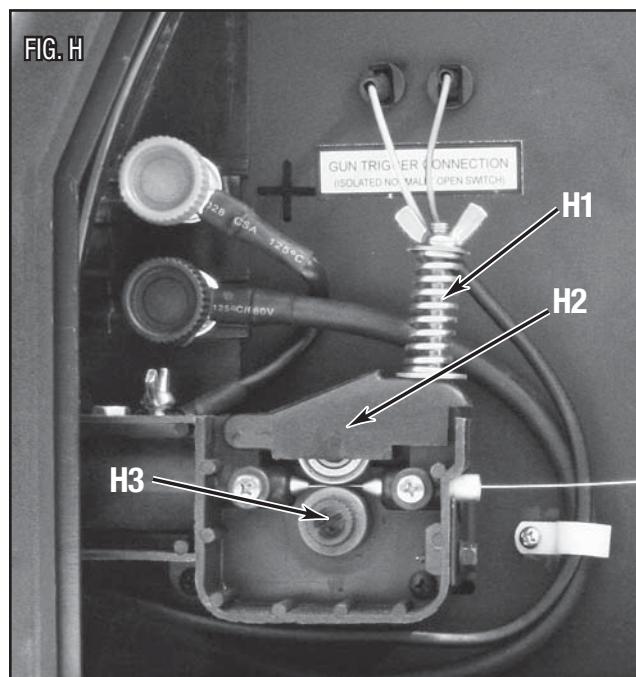
1. Open your Shielding Gas tank valve all the way.
2. Adjust the knob on the regulator to ~30 CFH.
3. Turn on the welder and trigger the MIG Gun switch which will start the gas flow.
4. As you trigger the MIG Gun switch you will notice that as the gas flow starts the needle on the gauge drops to a steady reading. The reading while flowing is the value you want to read.
5. The gas flow should be set to ~20 CFH while flowing. The CFH (Cubic Feet per Hour) scale is the inside scale in red on your flow gauge. 20 CFH 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 MIG135 comes with the drive roller installed for using 0.023" (0.6mm) wire. In the event that 0.030" or 0.035" welding wire is to be used, the Drive Roller needs to be changed.

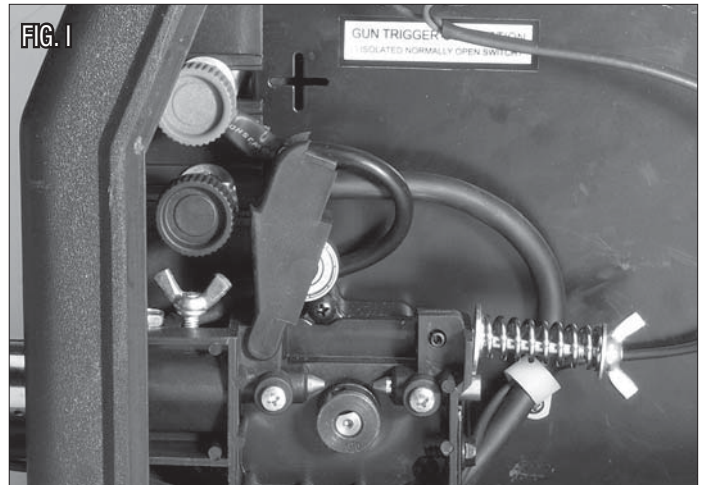
FOR EASTWOOD MIG135 WELDERS WITH KEY WAY STYLE DRIVER ROLLER (FIG. H)

1. Turn off the welder and unplug the welder from power.
2. Unlock the Pressure Adjuster (Fig. H1) by pulling it towards the rear of the welder.
3. Lift the Rocker Arm (Fig. H2) up and out of the way.
4. Remove large center thumb screw holding the Drive Roller in place (Fig. H3).
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 0.035" (0.6mm) wire, the '0.6" stamping should be facing the user when installing it.
7. Tighten the set screw on the Drive Roller and lower the Rocker Arm (Fig. H1) back into place.
8. Lift up on the Pressure Adjuster (Fig. H1) to put back in place and adjust as necessary.



FOR EASTWOOD MIG135 WELDERS WITH SET SCREW STYLE DRIVE ROLLER

1. Turn off the welder and unplug the welder from power.
2. Unlock the Pressure Adjuster (Fig. H1) by pulling the top wing nut towards the rear of the welder.
3. Lift the Rocker Arm (Fig. H2) and rotate the drive roller by hand until you have access to the set screw in the center of the roller.
4. Loosen the set screw.
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 lining up the set screw with the flat area on the shaft. **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 0.035" (0.6mm) wire, the '0.6' stamping should be facing the user when installing it.
7. Tighten the set screw on the Drive Roller and lower the Rocker Arm (Fig. H2) back into place.
8. Lift up on the Pressure Adjuster (Fig. H) to put back in place and adjust as necessary.



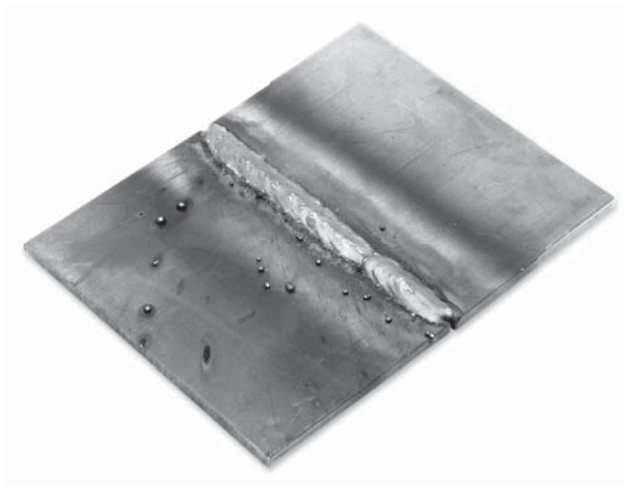
OPERATION

WELDING PROCESS

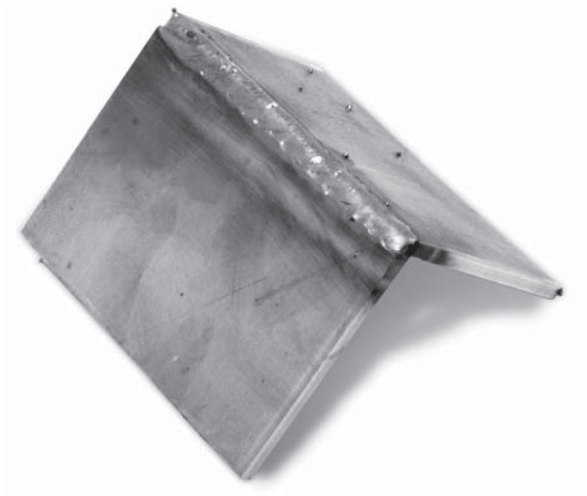
Your Eastwood MIG135 can be used to form a large number of different joints and welds all of which will require practice and testing before using on an actual project piece. This following welding process is just a baseline to get you started.

1. Refer to the 'Suggested Settings' chart which is located inside the side door of your Eastwood MIG135 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 MIG Gun 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 MIG 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 MIG Gun. 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 MIG Gun to stop the weld.
13. After finished welding, close the valve completely on the Shielding Gas Bottle.

TYPES OF WELD JOINTS



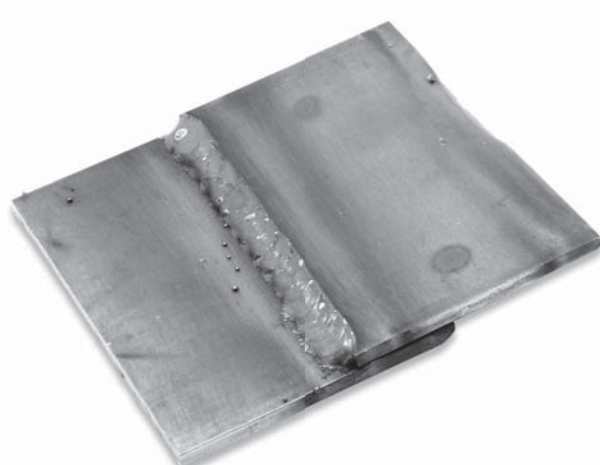
1. **Butt Weld** is a joint between two pieces that are laying in the same direction.



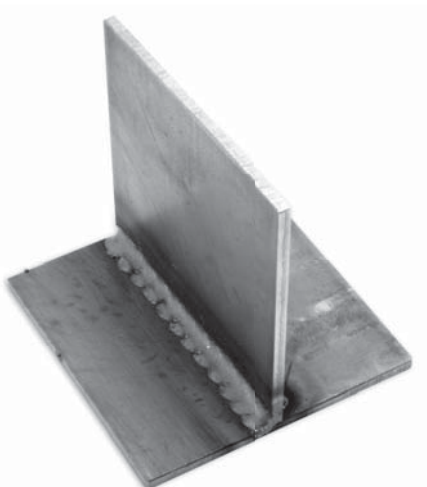
2. **Corner Weld** is a joint between two pieces that meet at or near perpendicular at their edges.



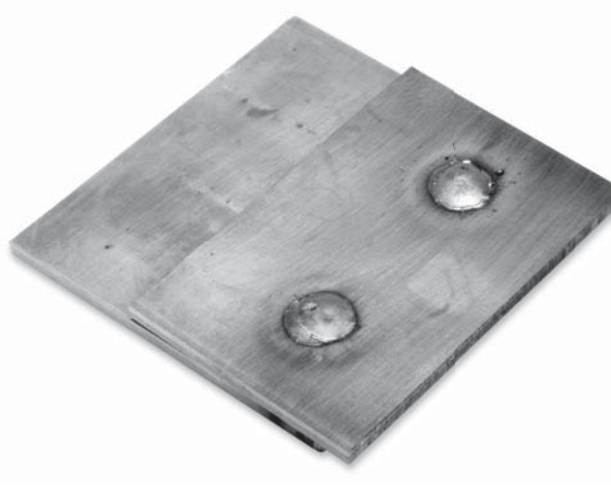
3. **Edge Weld** is a joint between two pieces where the edges are being joined.



4. **Lap Weld** is a joint between two overlapping pieces.



5. **Tee Weld** is a joint between two pieces where one is perpendicular to the other.



6. **Plug Weld** is a joint which joins two overlapping pieces by filling in a hole punched in the top piece.

SHEET METAL WELDING TECHNIQUES

When welding sheet metal a different approach is usually taken to account for how thin the metal is and it's susceptible to warping it is. The technique most often used is called Stitch Welding and this process is described below:

1. Clean the metal to be welded of any paint, rust, oil, grease, dirt or any other contaminants that may be on the surface of the piece.
2. Secure the pieces to be welded in place using clamps. Be sure to leave a small gap between the two pieces of sheet metal for the weld to flow into, this will result in a lower bead height which will require minimal finishing.
3. Consult the Suggested Settings Chart and set the Voltage and Wire Speed knobs appropriately.
4. Get some pieces of scrap metal of the same thickness and verify that the settings will work for the specific weld you will be making.
5. Once the settings have been fine tuned tack weld your final pieces in places and remove the clamps if they are in the way of the weld.
6. The Stitch Welding technique can now be utilized which is basically a series of tacks connecting together. To perform the technique, trigger the gun to form a tack weld and then continue to trigger on and off the gun making a series of connected tack welds following along the path of the weld joint. Continue the series of tacks for an inch or so and then move to a different section of the weld and perform the process there. It is essential to keep moving around to spread out the heat making sure not to get one section too hot and warp the metal.
7. Once the entire weld has been completed allow the metal to cool. If necessary follow up with a flap disc to grind the weld bead flush.

HEAVY GAUGE METAL WELDING TECHNIQUES

When welding sheet metal, a different approach is usually taken to account for how thin the metal is and it's susceptible to warping it is. The technique most often used is called Stitch Welding and this process is described below:

1. Clean the metal to be welded of any paint, rust, oil, grease, dirt or any other contaminants that may be on the surface of the piece.
2. Secure the pieces to be welded in place using clamps. Be sure to leave a small gap between the two pieces of metal for the weld to flow into, this will result in a lower bead height which will require minimal finishing.
3. Consult the Suggested Settings Chart and set the Voltage and Wire Speed knobs appropriately.
4. Get some pieces of scrap metal of the same thickness and verify that the settings will work for the specific weld you will be making.
5. Once the settings have been fine-tuned tack weld your final pieces in places and remove the clamps if they are in the way of the weld.
6. When welding heavy gauge metal there are two basic approaches to creating the weld. The first is a continuous bead with steady gun movement along the length of the joint. The second type of weld is a Stringer or Weave bead. This is accomplished by moving the torch in a circular or zig zag pattern. Either of these techniques will create strong welds but in some cases the Stringer or Weave type will create a more aesthetically appealing weld bead.
7. Once the entire weld has been completed, allow the metal to cool. If necessary, follow up with a flap disc to grind the weld bead flush.

OVERLOAD PROTECTION

Your Eastwood MIG135 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.

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 90 Amps with a 20% Duty Cycle, within a 10 Minute block of time you can weld for 2 Minutes with 8 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 90 Amps will yield a lower duty cycle.

TROUBLESHOOTING

Problem	Cause	Corrective Action
Burn Through	High Voltage	Adjust voltage output to lower setting
	Fast Wire Speed	Adjust wire speed to slower setting
	Slow Gun Travel	Increase your travel speed with the welding gun

Lack of Penetration	Low Voltage	Adjust voltage output to higher setting
	Slow Wire Speed	Adjust wire speed to faster setting
	Fast Gun Travel	Slow your travel speed of the welding gun making sure to pull or drag the molten metal puddle.
	Excessive Wire Stick Out	Move the contact tip on the welding gun closer to the work piece to shorten the length of exposed welding wire.
	Material Too Thick	The MIG135 is rated for a maximum thickness of 1/4", exceeding this will result in poor penetration.
	Poor Material Preparation	If welding heavy gauge metals it may be necessary to increase the welding gap between the two pieces and also bevel the edges on the weld side of the pieces.

Excessive Penetration	High Voltage	Adjust voltage output to lower setting
	Fast Wire Speed	Adjust wire speed to slower setting
	Slow Gun Travel	Increase your travel speed with the welding gun

Warping	Lack of Tack Welds	Tack weld the pieces in multiple areas to keep the pieces from pulling apart.
	No Clamping	Use welding clamps to secure the pieces in their proper shape.
	Poor Technique	To prevent warping allow the piece to cool after welding small sections at a time. Move your welding areas around by not completing all the welding in one section all at once rather welding a small amount in one area and then move to another to spread out the heat in the piece.

TROUBLESHOOTING

Poor Fusion	Low Voltage	Adjust voltage output to higher setting
	Slow Wire Speed	Adjust wire speed to faster setting
	Dirty Base Metal	Remove all paint, rust, oil, grease, dirt or any other contaminants that may be on the surface of the piece.
	Excessive Wire Stick Out	Move the contact tip on the welding gun closer to the work piece to shorten the length of exposed welding wire.
	Cold Base Metal	If welding on a large piece, particularly cast pieces, which will absorb a lot of heat, it may be necessary to pre heat your part with a torch.

Porosity	Poor Shielding Gas	Increase the flow rate of the shielding gas. If the bottle is getting low and porosity is starting to form in the welds, it means that the bottle needs to be refilled. Take note of any cross winds that may be blowing the shielding gas away from the welding zone.
	Wrong Shielding Gas	Make sure that you are using a 75% Argon / 25% CO ² Shield Gas.
	Dirty Base Metal	Remove all paint, rust, oil, grease, dirt or any other contaminants that may be on the surface of the piece.
	Excessive Wire Stick Out	Move the contact tip on the welding gun closer to the work piece to shorten the length of exposed welding wire.

Excessive Spatter	Fast Wire Speed	Adjust wire speed to slower setting
	Dirty Base Metal	Remove all paint, rust, oil, grease, dirt or any other contaminants that may be on the surface of the piece.
	Poor Shielding Gas	Increase the flow rate of the shielding gas. If the bottle is getting low and porosity is starting to form in the welds, it means that the bottle needs to be refilled. Take note of any cross winds that may be blowing the shielding gas away from the welding zone.
	Wrong Shielding Gas	Make sure that you are using a 75% Argon / 25% CO ² Shielding Gas.
	Wrong Welding Wire	Check wire for type and make sure it is appropriate for the material and process being used.
	Excessive Wire Stick Out	Move the contact tip on the welding gun closer to the work piece to shorten the length of exposed welding wire.

NOTES

ACCESSORIES

CONSUMABLE PARTS

- **12211** – 0.023" / 0.6mm Contact Tips (5 Pack)
- **12224** – 0.030" / 0.8mm Contact Tips (5 Pack)
- **12210** – Nozzle
- **12226** – 0.023" Solid MIG Wire, 2lbs, 4in Spool
- **12227** – 0.030" Solid MIG Wire, 2lbs, 4in Spool
- **12225** – 0.030" Flux Cored Wire, 2lbs, 4in Spool

OPTIONAL PARTS

- **13790** – Knurled Drive Roller (Set Screw Style)
- **14113** – Knurled Drive Roller (Keyway Style)
- **12236** – Welding Cart
- **11616** – Deluxe MIG / TIG / Plasma Welding Cart

APPAREL

- **13203** – Auto Darken Welding Helmet
- **13212** – Large View Auto Darken Welding Helmet
- **12957** – Welding Helmet Bag
- **12589 / 12590** – Top Grain Cowskin 4" Cuff Welding Gloves (M/L)
- **12762** – L/XL/XXL Welding Jacket

REPLACEMENT PARTS

Call Eastwood Customer Service at 1-800-343-9353 for assistance with replacement parts.

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

The Eastwood Technical Assistance Service Department: 800.544.5118 >> email: techelp@eastwood.com

The Eastwood Company 263 Shoemaker Road, Pottstown, PA 19464, USA

US and Canada: 800.345.1178 Outside US: 610.718.8335

Fax: 610.323.6268 eastwood.com