



DO THE JOB RIGHT.®

Item #33970

MIG 140 WELDER

ASSEMBLY AND OPERATING INSTRUCTIONS



The **EASTWOOD MIG 140 WELDER** provides the ability to MIG weld from a compact, high-powered, self-contained, lightweight unit. Inverter Technology provides the capability of welding light to medium gauge steel with precision and ease. Designed for use with Flux Core wire or Solid Wire with MIG Shielding Gas (not included). For additional versatility and aluminum welding capability, add the optionally available Eastwood #20172 Spool Gun.

READ AND UNDERSTAND ALL INSTRUCTIONS AND PRECAUTIONS BEFORE PROCEEDING.

This unit emits a powerful high voltage and extreme heat which can cause severe burns, electrical shock and death.

STATEMENT OF LIMITED WARRANTY

The Eastwood Company (hereinafter "Eastwood") warrants to the end user (purchaser) of all new Eastwood-branded tools and chemicals (collectively called the "products") that each 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 product delivery 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 | • Eastwood MIG 140 Welder | • Eastwood TIG 200 DC | • Eastwood MIG 175 Welder |
| • Eastwood TIG 200 AC/DC | • Eastwood MIG 250 Welder | • Eastwood MP140i Welder | • Eastwood TIG 200 Digital |
| • Eastwood MP200i Welder | • Eastwood Versa-Cut 20 | • Eastwood Elite MP250i Welder | • Eastwood Versa-Cut 40 |
| • Eastwood 90A Flux Core Welder | • Eastwood Versa-Cut 60 | • Eastwood ARC 80 Stick Welder | • Eastwood Rotisserie |
| • Eastwood Contour SCT® | • Concours Pro HVLP Paint Gun | | |

Items not covered under this warranty: Consumables, unless deemed defective, are not covered by the 3-year warranty. Abuse, neglect, and lack of maintenance is not covered under this warranty. All other components are covered by the warranty and will be repaired or replaced at the discretion of Eastwood.

2-Year Warranty on Material, Workmanship and Defects:

- | | | | |
|--|--------------------------------------|--------------------------------------|--------------------------------------|
| • Eastwood Air QST-30/60 Scroll Compressor | • Eastwood 80 Gal. 7.5 HP Compressor | • Eastwood 80 Gal. 5 HP Compressor | • Eastwood 60 Gal. 4.7 HP Compressor |
| • Eastwood 60 Gal. 3.7 HP Compressor | • Eastwood Panoramic Welding Helmet | • Eastwood 30 Gal. 1.9 HP Compressor | • Eastwood XL View Welding Helmet |
| • Eastwood Lg View Welding Helmet | • Eastwood Auto Darkening Helmet | • Concours 2 HVLP Paint Gun | |

Items not covered under this warranty: Consumables, unless deemed defective, are not covered by the 2-year warranty. Abuse, neglect, and lack of maintenance is not covered under this warranty.

1-Year Warranty on Material, Workmanship and Defects:

- | | |
|-------------------------------------|-------------------|
| • Eastwood Tools Not Included Above | • Fairmount Tools |
|-------------------------------------|-------------------|

Items not covered under this warranty: Consumables, unless deemed defective, are not covered by the 1-year warranty. Abuse, neglect, and lack of maintenance is not covered under this warranty.

90-Day Warranty on Material, Workmanship and Defects:

- | | |
|-------------------------------|------------------|
| • Eastwood Paints & Chemicals | • Rockwood Tools |
|-------------------------------|------------------|

Items not covered under this warranty: Consumables, unless deemed defective, are not covered by the 90-day warranty. Abuse, neglect, and lack of maintenance is not covered under this warranty.

Lifetime Warranty on Material, Workmanship and Defects:

- Selected Eastwood Hand Tools carry a Limited Lifetime Warranty

Items not covered under this warranty: Abuse, neglect, and lack of maintenance is not covered under this warranty.

CONDITIONS TO OBTAIN WARRANTY COVERAGE:

- Proof of purchase must be provided for all warranty claims
- Purchaser must first contact Eastwood at 1-800-343-9353 for an RMA Number before Eastwood will accept any warranty 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.

CONTENTS

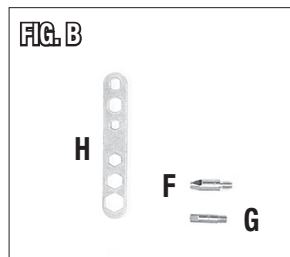
COMPONENTS; FIG. A

- (1) MIG 140 Welder [A]
- (1) MIG Gun/8 ft. Cable Assembly with 0.023" Tip Installed [B]
- (1) 8.5 ft. Ground Cable/Clamp Assembly [C]
- (1) Shielding Gas Regulator [D]
- (1) 5 ft. Shielding Gas Hose [E]



ACCESSORIES; FIG. B

- (1) 0.030" Contact Tip [F]
- (1) 0.035" Contact Tip [G]
- (1) Contact Tip Wrench [H]



SPECIFICATIONS

Power Voltage (V)	1 phase 120VAC		
Frequency (Hz)	60		
Rated Input Current (Amps)	24		
Output Current Range	30 to 140 Amps		
Duty Cycle (%)	30% @ 90 Amps	60% @ 65 Amps	100% @ 50 Amps
Wire Feed Speed (inch/minute)	80 - 314 IPM		
Maximum Material Thickness	3/16"		
Weight	24.15 lbs. [11.6 kg]		
Dimensions	18" x 8.5" x 13.25" [457mm x 215mm x 337mm]		

MIG WELDING WIRE CAPACITY

	Solid	Stainless	Flux Core
Wire Type and Diameter	0.023" - 0.030" [0.6mm - 0.8mm]	0.023" - 0.030" [0.6mm - 0.8mm]	0.030" - 0.035" [0.8mm - 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 90 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 built-in Breaker is tripped, allow the unit to cool for a minimum of 15 minutes. When a safe temperature has been reached, the Welder can be switched back on. To increase the duty cycle, turn down the Voltage Output control. Going above 90 Amps will yield a lower Duty Cycle.

SAFETY INFORMATION

IMPORTANT NOTE: These instructions are intended only to provide the user with some familiarity of the Eastwood MIG 140. Electric Welding is a highly complex procedure with many variables. If you have no prior experience with Electric Welding, it is extremely important to seek the advice of someone experienced in Electric Welding for instruction, enroll in a local technical school welding course or study a comprehensive how-to DVD and obtain a good quality reference book on Electric Welding as there is a moderate learning curve necessary before achieving proficiency in Welding different metals such as steel, stainless steel and aluminum. It is also strongly recommended that the user adhere to the American Welding Society guidelines, codes and applications prior to producing welds where safety is affected.

Welding can be dangerous to you and other persons in the work area. Read and understand this instruction manual before using this Eastwood welding machine. Injury or death can occur if safe welding practices are not followed. Safety information is set forth below and throughout this manual. Save these instructions for future reference.

To learn more about welding safety, read OSHA Title 29 CFR 1910, available at www.osha.gov; ANSI Z49.1, "Safety in Welding, Cutting and Allied Processes", available at www.aws.org; and the consumable manufacturer's Safety Data Sheets.

The following explanations are displayed in this manual, on the labeling, and 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

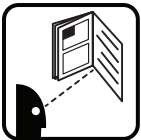
WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.

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 assembly, disassembly, or maintenance of the MIG Gun, 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.
- Stay separated 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 from the work area where welding sparks can reach (minimum of 35 feet).**
- 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.

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 INJURE EYES AND 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 for skin protection.
- 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.
- Prolonged inhalation of welding fumes above safety exposure limits can injure the lungs and other organs.
- Use enough ventilation and/or exhaust at the arc to keep fumes and gases from your breathing area.
- Use an OSHA approved respirator when welding in confined spaces or where there is inadequate ventilation.
- Never weld coated materials including but not limited to: cadmium plated, galvanized, lead based paints.



⚠ WARNING BUILDUP OF GAS CAN INJURE OR KILL!

- Shut off gas supply when not in use.
- Ensure adequate ventilation
- Do not weld in confined areas.
- 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 arcs. Keep away from any welding or other electrical circuits.
- 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.

SAFETY INFORMATION



⚠ 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, MIG Gun 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.



⚠ NOTICE FIRST AID



- If exposed to excessive fumes move to an area with fresh air. Follow safety information on wire manufacturer's Safety Data Sheet.
- For other injuries follow basic first aid techniques and call a physician or emergency medical personnel.

CONNECTING THE WELDER TO A POWER SOURCE

The Eastwood MIG 140 Welder requires a dedicated 120 VAC, 20 AMP, 60HZ grounded outlet protected by a circuit breaker. The plug installed on the Welder is a NEMA 5-15P and should be used with a NEMA 5-15R receptacle. If using an extension cord, use a minimum 12 AWG cord for up to 50 feet.

CONTROL PANEL AND FEATURES

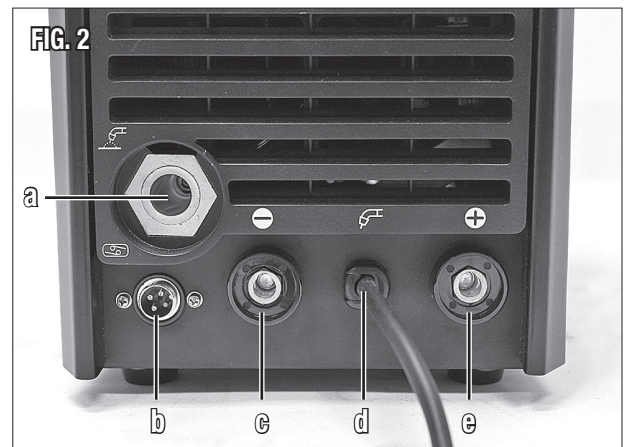
FRONT UPPER PANEL (FIG 1)

- 1 **Wire Speed Control** (In./Min) 80 to 314.
- 2 **Voltage Control** (14 to 21).
- 3 **Overload Indicator**: Illuminates RED when the Duty Cycle has been exceeded, the Welder is overloaded or if other abnormalities exist.
- 4 **Power ON Indicator**: Illuminates GREEN when the ON/OFF Switch is ON.
- 5 **MIG Gun/Spool Gun Selector**: (Press  Button to Select)
 - Upper = MIG Gun (included)
 - Lower = Spool Gun (optional – not included)
- 6 **2T / 4T / Tack Selector**: (Press  Button to Select)
 - **2T**: Basic, 2-step operation of short welding.
Depress trigger and hold it in. Arc begins and shielding gas flows.
Release trigger, arc and shielding gas flow stops.
 - **4T**: 4-step operation of long welding. (like “cruise control” for welding).
Depress trigger and release. Arc starts and shielding gas flows.
Depress trigger once again to stop arc and shielding gas flow.
 - **TACK**: This Mode automatically produces a brief 1/2 second timed, ON/OFF “Tack Weld” operation every time the Trigger is depressed.



FRONT LOWER PANEL (FIG 2)

- a. MIG Gun Hose/Wire Feed Socket
- b. MIG Gun Trigger Wire Connection
- c. Negative Connection
- d. Polarity Jumper Lead
- e. Positive Connection



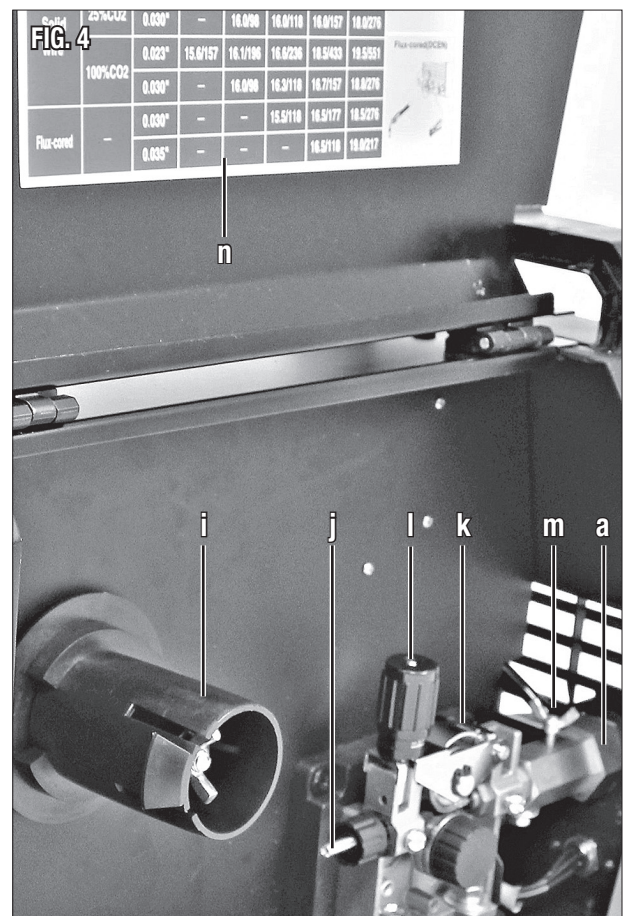
REAR PANEL (FIG 3)

- f. Power Cord
- g. Shielding Gas Connection
- h. ON/OFF Switch



SIDE INTERIOR PANEL (FIG 4)

- a. MIG Gun Cable/Gas Connection Socket
- i. Wire Spool Spindle
- j. Wire Feed Tube
- k. Wire Drive Roller
- l. Wire Tensioner
- m. MIG Gun Cable Retaining Thumbscrew
- n. Wire Speed Chart



MIG 140 WELDER SET-UP

The Eastwood MIG 140 is factory set-up for MIG Welding use with Solid Wire (0.023" not included) and Shielding Gas (not included).

This set-up includes the proper polarity (DCEP) and the Drive Roller set for 0.023" (0.6 mm).

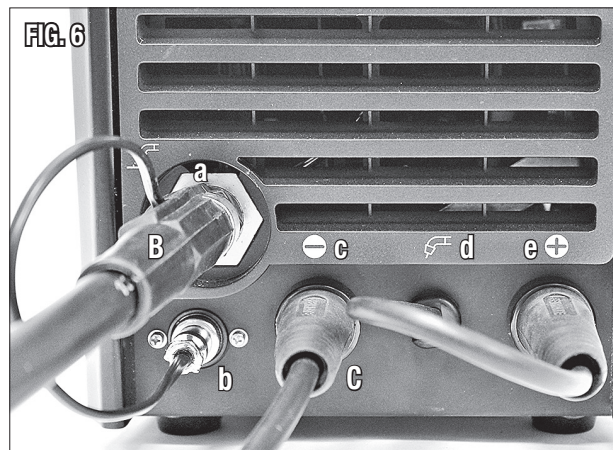
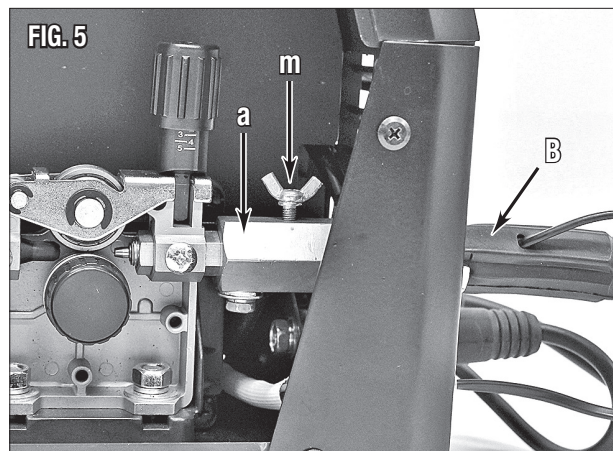
The procedure for configuring to Flux Core use is covered further on in this Manual.

INSTALLING THE MIG WELDING GUN

- Open the side door of the Welder and loosen the MIG Gun Retaining Wing Screw **[m]** located on the top of the brass, hex shaped MIG Gun Cable/Gas Connection Socket **[a]** of the Drive Motor Assembly (**FIG 5**).
- Plug the Brass Body End of the MIG Gun Cable Assembly **[B]**, into the designated MIG Gun Cable/Gas Connection Socket **[a]**, (**FIG 6**) seating it fully and firmly.
IMPORTANT NOTE: The Brass Body End of the MIG Gun Hose/Wire Cable **[B]** MUST BE fully seated against the base of the MIG Gun Cable/Gas Connection Socket **[a]** or gas may either leak or not be able to pass through the connections to the end of the Welding Gun.
- Tighten the MIG Gun Retaining Wing Screw **[m]** finger tight (**FIG 5**).
- Connect the MIG Gun Trigger Male Wire Connection to the Female Cannon Plug connection **[b]** on the front of the Welder (**FIG 6**).

INSTALLING THE GROUND CABLE AND CLAMP

- Locate the 8.5 ft. Ground Cable/Clamp Assembly **[C]** and connect the plug on the brass end to the (–) Negative Connection on the Welder **[c]**. Align the key of the brass ferrule with the notch of the receptacle at the 12:00 position, insert the plug and twist Clockwise 1/2 turn until it is tight (**FIG 6**).



INSTALLING THE SHIELDING GAS SUPPLY

NOTE: The following steps cover the installation of the Shielding Gas Valves, Hose and Tank (not included). See “Shielding Gas Flow Adjustment” under: “OPERATING THE MIG 140 WELDER”.

⚠ 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!

- Protect compressed gas cylinders from excessive heat, mechanical shocks, physical damage, slag, open flames, sparks and arcs. Keep away from any welding or other electrical circuits.
- 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 the Eastwood MIG 140 but is necessary to weld using Solid Wire. It can be bought at most local Welding Supply Stores. Eastwood recommends the use of 75% Argon / 25% CO₂ for shielding gas when MIG welding Steel, 100% Argon for Aluminum, and Tri-Mix (90% He / 7.5% Ar / 2.5% CO₂) for Stainless Steel.

- Place the Eastwood MIG 140 in a secure dedicated area or on a welding cart (not included).
- Secure the Shielding Gas Bottle to a stationary object or mount to a specifically designed welding cart, equipped to hold one so that the cylinder cannot fall over.
- Remove the cap from the Shielding Gas Bottle.
- Insert the large brass male fitting on the Shielding Gas Regulator **[D]** into the female fitting on the Shielding Gas Bottle (not included).

⚠ NOTICE

Do not use White Thread Sealing Tape on this connection as it is an inert spherical gas fitting and does not require it, if you have a leak check for burrs or dirt in the threads or on the spherical joint.

- Tighten the fitting with a wrench until snug, do not over tighten.
- Connect either end of the Shielding Gas Line **[E]** included with the Eastwood MIG 140 to the fitting on the Regulator and wrench tighten until snug.
- Connect the other end of the gas line to the fitting on the rear of the Eastwood MIG 140 and wrench tighten until snug (**FIG 3**).
- 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 fully open. Close it when done welding to avoid loss of gas.

INSTALLING THE WIRE SPOOL

The Eastwood MIG 140 can be used with either a 4" or an 8" wire spool. A 4" Spool fits directly on the Spool Shaft and the included, pre-installed 8" Spool Adapter must be removed and placed in a safe location for future use.

To use the larger 8" spool, the included, pre-installed 8" Spool Adaptor must be used.

TO INSTALL A 4" WIRE SPOOL

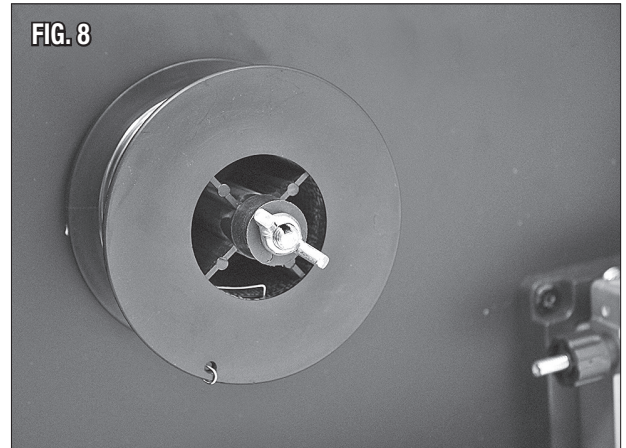
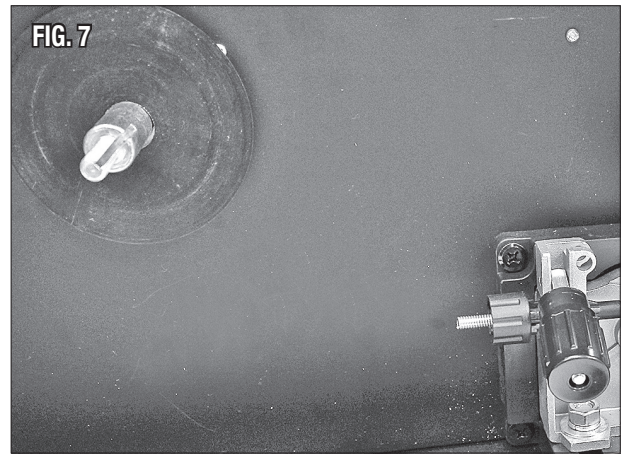
- Open the door of the Welder and remove the Spool Retaining Wingnut, Spacer, and 8" Spool Adaptor from the Wire Spool Spindle (**FIG 7**).
- Pull out the welding wire from the wire spool carefully.
IMPORTANT NOTE: DO NOT let go of the wire or the entire spool could unravel.
- With the wire feed **oriented forward and from the underside of the spool**, slide the 4" Wire Spool onto the Spindle and reinstall the Spacer and the Spool Retaining Wingnut then place the 8" Spool Adaptor in a safe place if it is needed in the future (**FIG 8**). **DO NOT** unravel wire at this point.

SETTING THE WIRE TENSION ADJUSTER

- To set the tension on the wire, incrementally tighten the Spool Retaining Wingnut at the center of the Spindle until there is a slight resistance to spinning the wire spool on the Spindle. If the tension is set too loose the wire spool will freely spin on the shaft and unspool all the wire. If the tension is too tight, the Drive Roller will have difficulty pulling the wire off the spool and some slipping may occur.

TO INSTALL AN 8" WIRE SPOOL

- Open the door of the Welder and remove the Spool Retaining Wingnut and Spacer from the Wire Spool Spindle.
- Slide the included 8" Wire Spool Adaptor into the center of the Wire Spool.
- With the wire **feeding forward from the underside of the spool**, slide the 8" Wire Spool Adaptor with the wire spool installed onto the spindle and reinstall the Spacer and the Spool Retaining Wingnut.
- Set tension on the wire as noted in above steps.



THREADING WELDING WIRE THROUGH THE DRIVE MOTOR TO THE WELDING GUN

This Welder uses wire sizes ranging from 0.023" to 0.035" (0.6mm to 0.9mm). To safely and correctly install the welding wire; follow the procedure in the sequence outlined below:

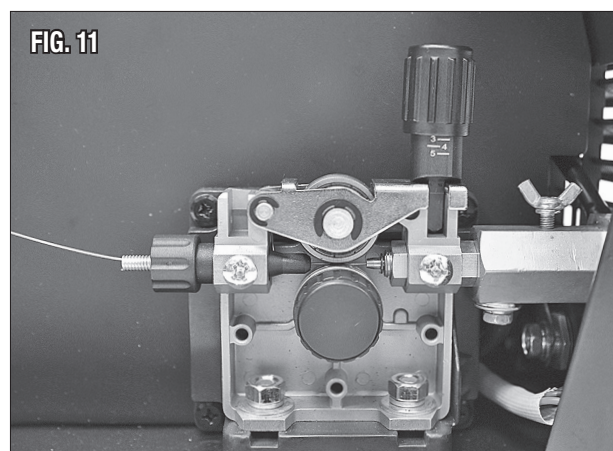
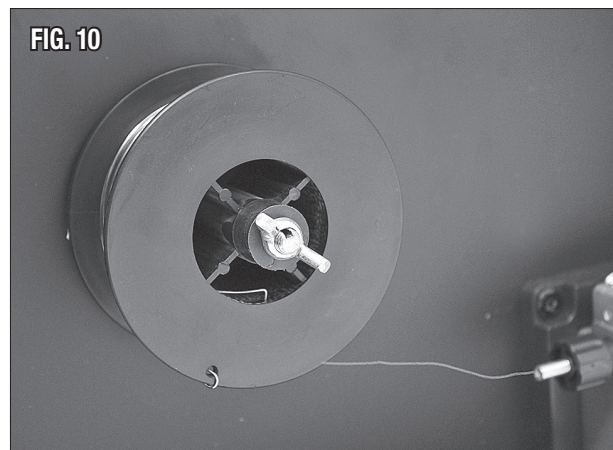
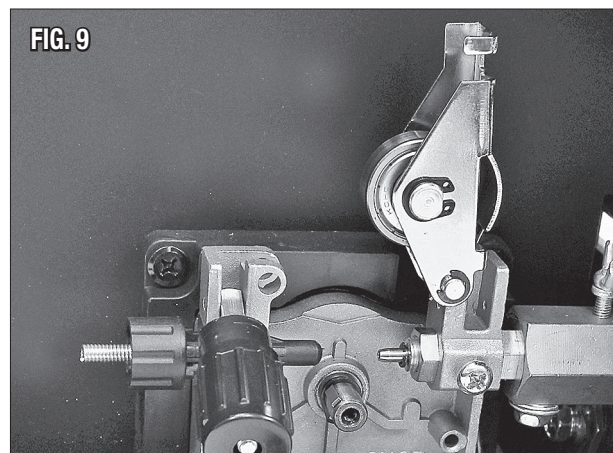
⚠ DANGER **ELECTRIC SHOCK CAN CAUSE INJURY OR DEATH!**
This procedure requires that the Welder power be switched ON.
DO NOT make contact with the wire when the MIG Gun Trigger is depressed.

1. Turn the Power Switch on the Upper rear Panel to the "OFF" position and unplug the Welder from the power supply.
 2. Using the included Contact Tip Wrench [H] Remove the Contact tip and Nozzle from the end of the MIG Gun.
 3. Make sure that the drive roller is installed in the proper position in accordance with the wire size being used. As Described in "POSITIONING DRIVE ROLLER for WIRE SIZE" section of these instructions.
 4. Flip the Wire Tensioner outward, pivot it down and out of the way then pivot the Tension Arm up away from the Drive Roller (FIG 9).
 5. Pull out the welding wire from the wire spool carefully.
- IMPORTANT NOTE: DO NOT** let go of the wire or the entire spool could unravel.
6. Cut off the small piece of the curved segment at the front of welding wire and straighten the welding wire approximately 3.0" long.
 7. Thread the welding wire feeding from the underside of the spool and forward through the Guide Tube then over the wire Drive Roller and into the Wire Feed Hole (FIG 10).
 8. Replace the Tension Arm and re-latch the Wire Tensioner back into place (FIG 11).
 9. Connect the Welder to a power supply and Turn the ON/OFF Switch at the upper rear panel to the "ON" position. Set the Wire Speed Control to about 197 IPM.
 10. With the gun pointed away from yourself and others, depress the trigger to begin feeding wire.

NOTE: The Wire Tensioner may need to be set. To do so:

- Watch the drive roller to see if any slipping is occurring between the roller and the wire. If so; turn the machine off, unplug it and tighten the Wire Tensioner 1/4 turn and test again.
- Repeat the above step until wire is feeding smoothly with no binding or slippage.

Once the wire exits the end of the MIG Gun, reinstall the contact tip and nozzle. Cut the wire about 1/4" from the end of the contact tip.



SET-UP FOR FLUX CORE WELDING

The Eastwood MIG 140 comes factory set-up to weld with Solid Wire and Shielding Gas. Flux Core does not require shielding gas.

Three changes to the Set-Up need to be made to MIG Weld with Flux Core wire:

- Reverse polarity from DCEP to DCEN.
- Install Flux Core wire.
- Position Drive Roller to accept Flux Core wire.

CHANGING THE POLARITY TO DCEN FOR WELDING WITH FLUX CORE WIRE

To use a Flux Cored wire, the position of the Polarity Jumper Lead **[d]** attached to the Front Panel must be swapped (**FIG 12**).

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

- Disconnect the Polarity Jumper Lead **[d]** from the (+) Positive Connection **[e]** by rotating the Rubber Insulator 1/2 turn Counter-Clockwise and pulling outward.
- Align the key of the brass ferrule with the notch of the receptacle at the 12:00 position, then insert the Lead **[d]** into the (–) Negative Connection **[c]**, seat fully and rotate 1/2 turn Clockwise to lock (**FIG 12**).
- Insert and lock the Ground Clamp Cable into the (+) Positive Connection **[e]** (**FIG 12**).

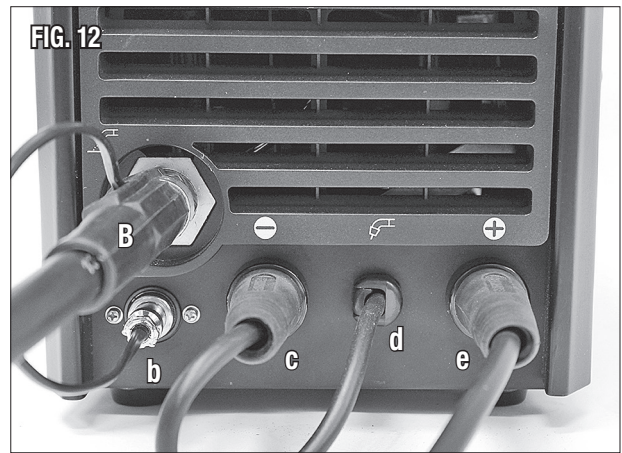
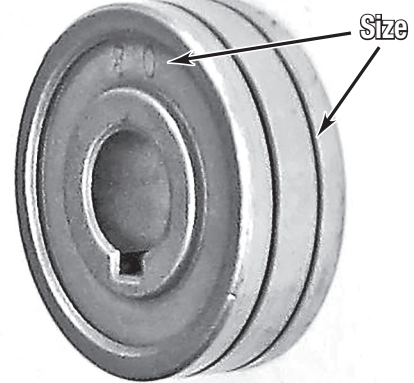


FIG. 13



POSITIONING DRIVE ROLLER FOR WIRE SIZE

The Eastwood MIG 140 Wire Drive Roller has twin grooves to accommodate both 0.023" [6mm] and 0.030"/0.035" [0.8mm/0.9mm] wire.

The MIG 140 Drive Roller is factory set and up ready to use 0.023" (0.6mm) solid wire.

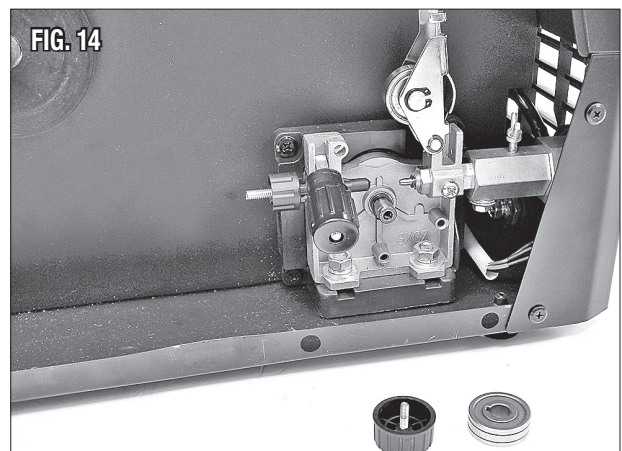
IMPORTANT NOTE: In this position, the narrower, 0.023" [0.6mm] groove is inboard, under the wire while the 0.6 marking for the narrower 0.023" [0.6mm] wire is visible on the outward face of the Drive Roller.

To Clarify; The stamped marking on the side of the drive roller indicates the size of the groove on the opposite side of the roller (**FIG 13**).

The groove closest to the drive motor is the groove that will be used. If setting up to use larger 0.030"/0.035" [0.8mm/0.9mm] wire, the "0.8/0.9" stamping should be facing the user when installing it.

Reverse the drive roller position according to the following procedure:

- Open the side door of the Welder to access the drive motor compartment.
- Push the Pressure Adjuster rearward, pivot it down and out of the way then pivot the Tension Arm up away from the Drive Roller (**FIG 14**).
- Loosen and remove the Drive Roller Retaining Knob (**FIG 14**).
- Remove the Drive Roller and view the wire sizes stamped on each side of the Roller.
- Install the Drive Roller in the orientation so that the chosen wire size stamping is facing outward making sure shaft key aligns with the Drive Roller keyway (**FIG 13**).
- Reinstall the Drive Roller Retaining Knob on the shaft.
- Replace the Tension Arm and re-latch the Pressure Adjuster.



OPERATING THE MIG 140 WELDER

OVERLOAD PROTECTION

The Eastwood MIG 140 Welder is equipped with an overload protection. This device will protect the Welder if the duty cycle is exceeded. If the output is exceeded, the breaker will trip, the RED Overtemp Indicator will illuminate and cut off the power supply to the drive motor and MIG Gun although the fan will still run to cool the unit. This protection circuit must be reset manually by switching the unit back ON. Before restarting the unit allow the Welder to cool for a minimum of 15 minutes or until the RED Overtemp Indicator goes out.

⚠ 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 assembly, disassembly or maintenance of the MIG Gun, 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.
- Always operate the Welder in a clean, dry, and 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.
- If other persons or pets are in the area of welding, use welding screens to protect bystanders from sparks.

⚠ 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, MIG Gun 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.


SHIELDING GAS FLOW ADJUSTMENT

After connecting the Shielding Gas Regulator, the gas flow rate needs to be adjusted so that the proper amount of Shielding Gas is flowing over the weld. If there is too little gas flow there will be porosity in the resulting welds as well as excessive spatter.

If there is too much gas flow, this will be wasting gas and may affect the weld quality. The included Regulator has 2 gauges on it; the gauge on the left is Flow Rate while the gauge on the right is Tank Pressure.

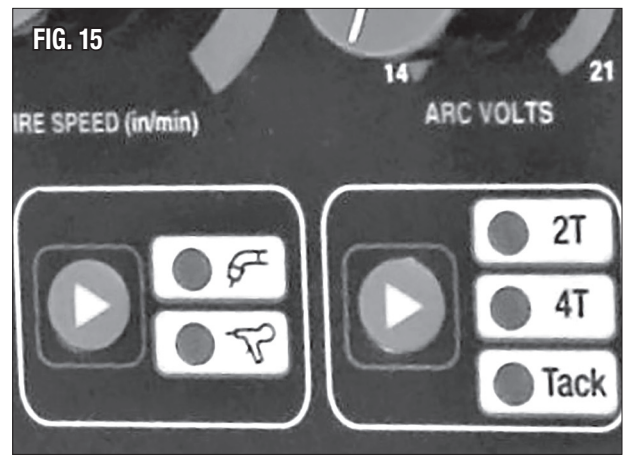
- Open the Shielding Gas tank valve all the way.
- Adjust the knob on the Pressure Regulator to ~30 CFH.
- After the Welder is turned on (Described in following section), the Trigger of the MIG Gun (or Spool Gun) will control the internal gas flow.
- As the MIG Gun is triggered, the Gas Flow needle will drop to a steady reading. This is the value to be used for measuring Gas Flow.
- The Gas Flow should ideally be set to ~20 CFH while flowing. The CFH (Cubic Feet per Hour) scale is the inside scale in red on the 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.
- When finished welding, the Valve on the Gas Bottle must be closed.

The Eastwood MIG 140 can be used to form many 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 started. Welding, as with any skill, requires a learning curve to achieve proficiency. An extended period of “Trial and Error” performed on scrap material is required before welding on an actual project can begin.

- Refer to the ‘Suggested Settings’ chart which is located inside the side door of the Eastwood Welder. From the chart select the baseline starting point for the recommended settings described in the chart.
- Connect the 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.
- Assess the general work area and make sure the welding area is also cleaned of any paint, grease, rust, oils, etc.
- Plug in the Welder and move the Power Switch at the Upper Rear Panel to the “ON” position.
- Set the MIG Gun/Spool Gun Selector located on the Front Panel by pressing the  Button to select to the MIG Gun Mode (**FIG 15**).
- Depress the Welding Gun trigger pointing the welding gun away from your body or anyone else then let go of the trigger and cut the wire back to ~1/4” stick out length.
- Wearing a welding helmet, gloves with long sleeve shirt and pants, put the end of the wire sticking out of the gun into the joint to be welded.
- Position the MIG Gun so that it is perpendicular to the base metal with ~20° tilt back.
- 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.


 - Once the trigger is depressed and the arc has started, 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 the Gun should be moving.
 - If the material burns through, the Gun is either moving too slow or some Wire Speed & Arc Volts setting adjustments must be made.
 - If the base metal is not being penetrated, the Gun is either moving too slow or some Wire Speed & Arc Volts setting adjustments must be made.
- Release the trigger on the MIG Gun to stop the weld.
- After welding is complete, turn off the Welder and disconnect from power source.



WELDING TECHNIQUES

SHEET METAL WELDING TECHNIQUES

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

- 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.
- 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.
- Consult the Suggested Settings Chart and set the Voltage and Wire Speed knobs appropriately.
- 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.
- Once the settings have been fine-tuned tack weld your final pieces in place and remove the clamps if they are in the way of the weld.
- The Stitch Welding technique can now be utilized which is basically a series of connected “Tacks” To perform the technique, set the 2T/4T/Tack Selection Button  to select to the Tack Mode (**FIG 15**). Triggering the gun produces an arc for approximately 1/2 second to form a tack weld. Continue to trigger the gun on and off 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 warping the metal.
- 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.

HEAVIER GAUGE METAL WELDING TECHNIQUES

NOTICE

DO NOT attempt to weld material thicker than 3/16”.

When welding heavier gauge metal, a continuous bead is formed using a ‘push’ method. This process is described below:

- 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.
- 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.
- Consult the Suggested Settings Chart inside the Side Panel and set the Voltage and Wire Speed knobs appropriately.
- 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.
- Once the settings have been fine-tuned, tack weld the final pieces in place and remove the clamps if they are in the way of the weld.
- 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 MIG Gun 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 pleasing weld bead.
- 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.

SPOOL GUN SET-UP AND WELDING

(Spool Gun Available Separately, not included)

SET-UP FOR SPOOL GUN WELDING

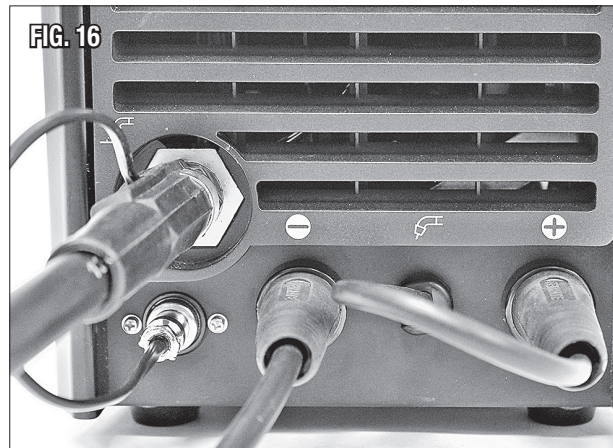
The Eastwood MIG 140 is designed to accept an Eastwood #20172 Spool Gun (available separately, not included) which allows for easy feeding of aluminum wire to expand the MIG 140 welding capabilities. This is an optional accessory and can be purchased separately from Eastwood.

A cylinder of 100% Argon Gas (not included) from a local welding supplier is also required.

⚠ DANGER SHOCK HAZARD!

Turn Off Welder and unplug from power source before installing or removing the MIG or Spool Gun.

- Open the side door of the welder and cut the MIG Wire from the Spool.
NOTE: DO NOT allow the Spool of wire to unravel.
- Pull the remainder of the cut MIG wire from the MIG Gun Nozzle.
- Remove the MIG Gun & Cable Assembly from the Cable/Gas Connection Socket.
- Plug the Brass Body End of the Spool Gun Cable Assembly into the designated MIG Gun Cable/Gas Connection Socket (**FIG 16**), seating it fully and firmly.
IMPORTANT NOTE: The Brass Body End of the Spool Gun Hose/Wire Cable **MUST BE** fully seated against the base of the drive assembly socket or gas may either leak or not be able to pass through the connections to the end of the Spool Gun (**FIG 16**).
- Tighten the MIG Gun Tensioner Wing Screw finger tight.
- Connect the Male Metal Plug to the Female Cannon Plug connection on the front of the Welder (**FIG 16**).

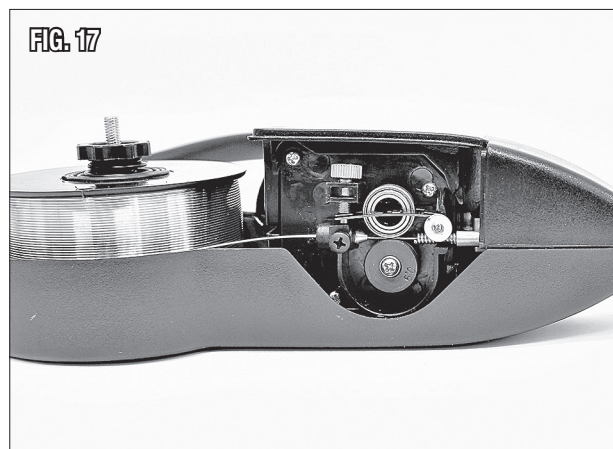


INSTALLING THE GROUND CABLE AND CLAMP


- The Ground Cable Clamp installation is the same as for the MIG Gun.

THREADING WELDING WIRE THROUGH THE SPOOL GUN (FIG 17).

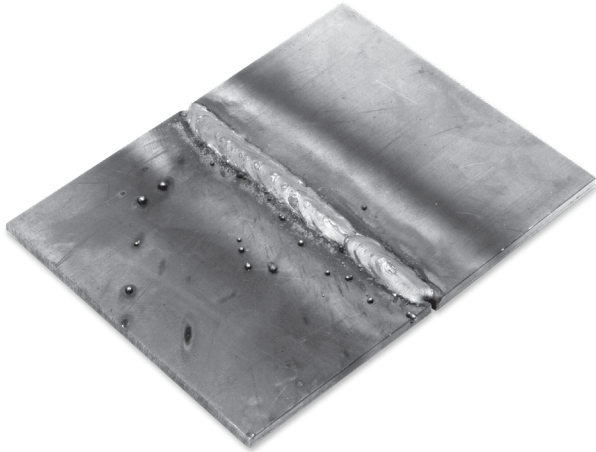
- Push button to open Spool Gun Side Cover.
- Remove the Thumbscrew that retains the Wire Spool.
IMPORTANT NOTE: Thumbscrew has Left-Hand threads.
- Place Wire Spool on Spindle and replace the Thumbscrew.
- Loosen the Wire Tensioning Screw until it is possible to feed the welding wire through the drive roller grooves.
- Feed the wire by hand from the Spool into the Wire Inlet Guide, past the Drive Rollers and into the Wire Inlet Tube.
- Tighten the Wire Tensioner Thumb Screw until it applies light pressure onto the welding wire. **NOTE:** 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.
- Remove the Nozzle and Contact Tip.
- Close the Spool Gun Side Cover.
- Plug in Welder to power source and turn on the Welder.
- Trigger the Spool Gun to feed the wire and adjust the Wire Tensioner Thumb Screw so that the wire does not slip.
- Replace Contact Tip and Nozzle.
- Feed wire through the gun and cut the wire exposing a ~3/4" length beyond the contact tip.



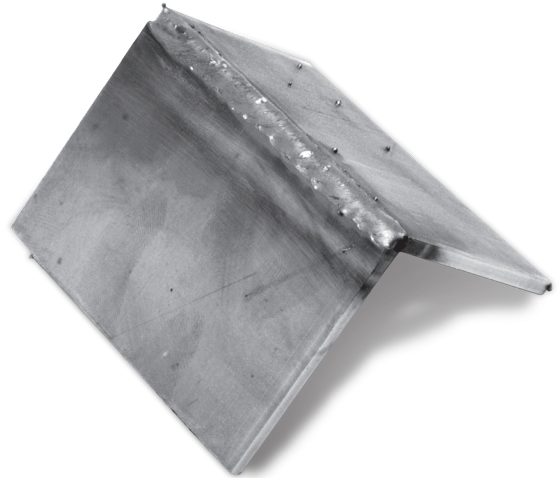
SPOOL GUN WELDING OPERATION

- Plug in the Welder and move the Power Switch at the Upper Rear Panel to the “ON” position.
- Set the MIG Gun/Spool Gun Selector located on the Front Panel by pressing the  Button to select to the Spool Gun Mode (**FIG 15**).
- Connect the 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, oils, corrosion etc. It is recommended to place the ground clamp as close to the weld area as possible. Aluminum has a layer of oxide on the surface that should be removed prior to welding.
- Open the valve on the Argon shielding gas bottle and adjust the flow rate if necessary.
- Depress the Spool Gun trigger for a few seconds pointing the welding gun away from your body and then let go of the trigger and cut the wire back to ~3/4” stick-out length.
- Using the Welding Face Shield or welding helmet, gloves, and long sleeve shirt and pants, put the end of the wire sticking out of the Spool Gun into the joint to be welded.
- Position the Spool Gun so that it is perpendicular to the base metal with 10-15° angle in the direction of push travel.
- Depress the trigger to start the wire feed which starts the arc. **NOTE:** When welding aluminum with a Spool Gun it is recommended to use a push technique. Using a drag technique will result in poor, dirty welds.
- When welding aluminum a spray arc transfer is preferred rather than short arc transfer that can be more commonly used on steels. This method involves using a longer wire stick out (~3/4”). When the Welder settings and technique have been dialed in the spray arc transfer should create a hissing sound and little or no spatter. Once positioned the trigger can be pulled and the weld started.
- Release the trigger on the Spool Gun to stop the weld.
- After welding is completed, close the valve completely on the Shielding Gas Bottle, turn Power Switch to the “OFF” position and unplug Welder.

TYPES OF WELD JOINTS



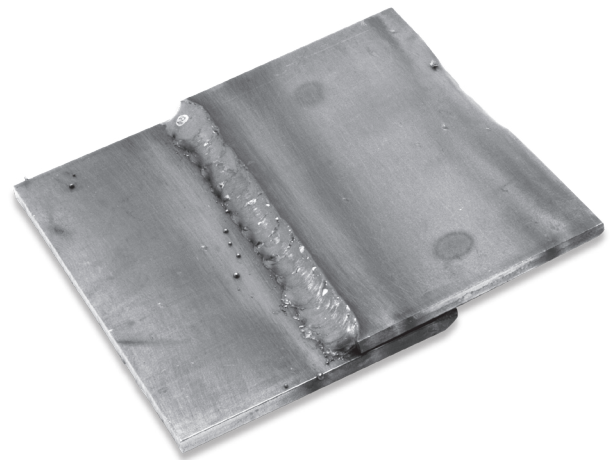
BUTT WELD is a joint between two pieces that are laying in the same direction.



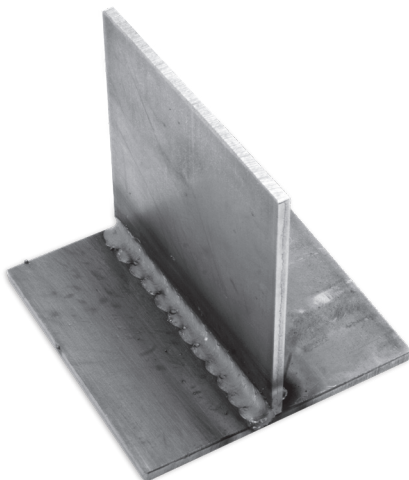
CORNER WELD is a joint between two pieces that meet at or near perpendicular at their edges.



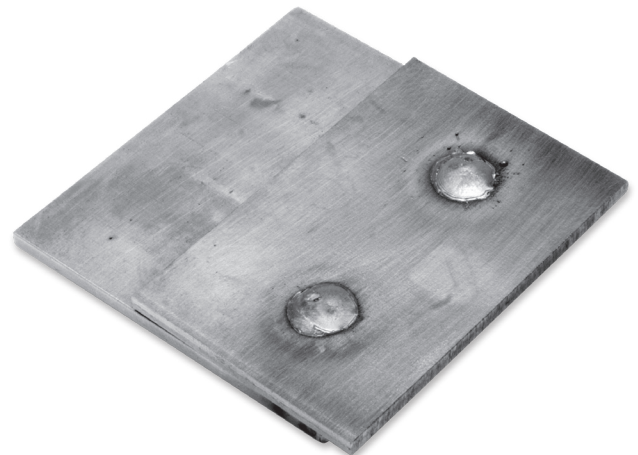
EDGE WELD is a joint between two pieces where the edges are being joined.



LAP WELD is a joint between two overlapping pieces.







TEE WELD is a joint between two pieces where one is perpendicular to the other.



PLUG WELD is a joint which joins two overlapping pieces by filling in a hole punched in the top piece.

TROUBLESHOOTING

PROBLEM	CAUSE	CORRECTION
Welder Will Not Power Up	Welder not plugged into proper power supply	Check power supply. The MIG 140 requires a properly grounded, 120 Volt AC, 20 Amp power supply.
	Facility power source breaker tripped	Reset breaker.
	Welder Breaker tripped	Reset breaker at rear panel.
	Power switch not fully on	Check that Power Switch is fully "ON".
	Duty Cycle exceeded; RED Overtemp Indicator illuminated; welder overheated	Leave Power Switch on allowing cooling fan to run for 15 minutes/Indicator goes out then re-try.
Wire Will Not Feed	MIG/Spool Gun Selector  set on "Spool Gun" Mode when attempting to use standard MIG Gun	Set Spool Gun Selector  to the "MIG" position.
	Wire Tensioner not adjusted properly allowing slippage	Tighten Drive roller tensioner.
	Duty Cycle exceeded, Welder overheated & RED Overtemp Indicator illuminated	Leave Power Switch on allowing cooling fan to run for 15 minutes cooling welder then re-try.
	MIG/Spool Gun Selector  not set on "Spool Gun" when attempting to use Spool Gun.	Set MIG/Spool Gun Selector  to the "Spool Gun" Mode.
Wire Burning Back to Contact Tip	Drive motor wire tension is insufficient, allowing wire slippage	Increase drive roller tensioner.
	Wire speed setting may not be adequate for welding amperage setting.	Lower welding amperage, as necessary.
		Increase Wire Speed, as necessary.
	Wire "Stickout" from end of Contact Tip too short	Cut wire "Stickout" to 1/4".
Welder Will Not Produce An Arc	Ground cable not attached to metal being welded	Attach ground clamp to metal being welded.
	Ground clamp attached to a contaminated or rusty work piece	Prepare a thoroughly clean a spot for the ground clamp.
	Ground cable connector not fully secured to Welder terminal	Check ground clamp connection at Welder for tight connection.
	Wrong ground clamp from another device is attached to work piece	Check that the correct welding ground from Welder being used is attached to the work piece.
	Gun Contact Tip is excessively worn	Replace Contact Tip.

TROUBLESHOOTING

PROBLEM	CAUSE	CORRECTION
Intermittent Welding Arc	Incorrect input voltage	Check power supply. The MIG 140 requires a properly grounded, 120 Volt AC, 20 Amp power supply.
	Wrong size drive roller groove	Check drive roller size and install drive roller as required to match wire size being run.
	Poor ground	Prepare a thoroughly clean area on work piece for the ground clamp.
		Check condition of ground clamp and clean clamping surfaces if necessary.
		Check ground clamp attachment at Welder for tight connection.
	Wire slipping in drive rollers	Tighten drive roller tensioner.
	Wrong size or worn contact tip	Replace the contact tip for one of correct size or new condition.
Shielding Gas Not Flowing Out of MIG Gun	Gas regulator not opened enough	Open gas flow knob further to allow more gas through.
	Gas cylinder empty	Refill welding gas bottle.
	MIG Gun connector not fully inserted into socket of Welder	Loosen MIG Gun hold-down wing nut and fully insert connector into socket before re-tightening wing nut.
	O-rings on MIG Gun damaged or missing	Replace MIG Gun O-rings.
	Gas leaking from hose or fittings	Tighten fittings or replace damaged parts as necessary.
	Gas diffuser plugged with spatter	Replace gas diffuser.
Welder Goes Into Overload, RED Overtemp Indicator Illuminated	Duty Cycle exceeded and Welder has overheated from excessive usage	Leave Power Switch on allowing cooling fan to run for 15 minutes cooling welder then re-try.
Wire Binding Up Ahead of Drive Feed Rolls	Wire tension set too high	Loosen drive roller tension.

ACCESSORIES

MIG WIRE

#23022 / 23025	0.023" Solid MIG Wire (4" / 8") Spool
#23023 / 23036	0.030" Solid MIG Wire (4" / 8") Spool
#23024 / 23027	0.035" Solid MIG Wire (4" / 8") Spool
#23028	0.030" Flux Core Wire 4" Spool
#23029	0.035" Flux Core Wire 4" Spool

MIG GUN CONSUMABLE ITEMS

#12211	0.023" Contact Tips (5 Pack)
#12224	0.030" Contact Tips (5 Pack)
#20412	0.035" Contact Tips (5 Pack)
#12210	Nozzle
#20000	MIG Consumables Kit (2 Nozzles, 20 Contact Tips)

OPTIONAL ITEMS

#19015	MIG Welders Pliers
#55070 / 55071	Leather MIG Welding Gloves (M / L)
#55068 / 55068	Leather TIG Welding Gloves (M / L)
#12762	L, XL, XXL Cotton Welding Jacket
#55065	L, XL, XXL Leather Welding Jacket
#21484	XL View Auto Darkening Welding Helmet
#21483	Large View Auto Darkening Welding Helmet
#20077	Stainless Steel Wire Brush
#20172	Spool Gun
#51139	Copper 3 x 3 Welders Helper Set
#20639	10' Long Ground Cable Extension
#31739	25' Long 110V Heavy Duty Welder Extension Cord

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

PDF version of this manual is available at eastwood.com

The Eastwood Company 263 Shoemaker Road, Pottstown, PA 19464, USA 800.343.9353 eastwood.com

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