MIG-130S
MIG Welding System

USER GUIDE

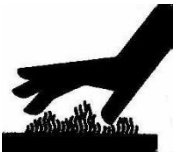
HVALLEY TOOLS

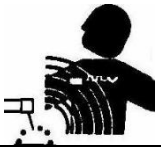
HValley Tools LLC
1065 Industrial Blvd
Southampton PA 18966
215-938-5060
HValleyTools.Com
Info@HValleyTools.Com

TABLE OF CONTENTS

PRECAUTIONS AND SAFE USE

Welding may result in injury to you and others, so please implement proper protections and precautions when welding.

	Electric shock-may result in serious injury or even death! Ensure devices are properly grounded. Do not touch live parts with naked skin, wet gloves or wet clothes. Be sure you are insulated from the ground and workpiece. Confirm the safety of your working position.
	Smoke may be harmful to your health! Keep your head away from fumes and smoke to avoid inhalation of waste gas while welding. When welding, keep the working environment well-ventilated with exhaust or ventilation equipment.
	MIG and ARC radiation may hurt your eyes and burn your skin! Use a proper welding mask and wear protective clothing to protect your eyes and body. Ensure onlookers have a proper mask or curtain to avoid injury.
	Improper use and operation may result in fire or explosion. Welding sparks may cause fires, please ensure there are no flammables near the welding are and pay attention to fire safety. Ensure there is a fire extinguisher nearby, and make sure someone has been trained to operate the fire extinguisher. Do not weld in a closed unventilated container. Do not use this machine for pipe thawing.
	Hot workpieces can cause severe scalds or burns. Do not touch the workpiece(s) with bare hands. If continuously working, periodically cool the welding torch to avoid overheating the tip.

	Excessive noise can be harmful to people's hearing. Wear proper hearing protection when welding. Ensure onlookers have a proper hearing protection or distance to avoid injury.
	Magnetic field can impair cardiac pacemaker operation. People with a cardiac pacemaker should consult their physician prior to attempting to use welding equipment.
	Moving parts may injure your body. Please keep away from moving parts (like fan). Each door, panel, cover, baffle plate, and protective device the like should be closed and located correctly.
	Seek professional support with operating issues. When an issue arises with the installation and operation or the unit, please refer to the operating manual before attempting repairs. If the issue persists, or you still cannot solve the problem, please contact the dealer to obtain professional support.

Working Environment

Prior to welding, properly inspect the work area for potential hazards before starting any welding operations.

1) Welding should be carried out in a dry environment with humidity below 90%.
2) The temperature of the work area should be between 14ºF and 104ºF.
3) Avoid welding in sunlight and rain. Keep everything dry at all times.
4) Avoid welding in dusty areas or environment with corrosive chemical gas.
5) MIG and ARC welding should be operated in an environment without strong airflow.
6) Weld in a well-ventilated area or use proper ventilation systems to remove harmful fumes and gases.

Safety Tips and Recommendations

This unit is equipped with an over-current/over-voltage/over-heating protection circuit. When the supplied voltage, output current or inner temperature exceeds these limits, the unit will stop automatically. Please check those conditions prior to restarting. WARNING: excessive use of the unit with these conditions will lead to welder damage.

1. Ventilation
   - 1.1. This welder will create powerful electrical currents that require the unit to have constant cooling.
   - 1.2. The internal fans are critical to ensuring proper and effective cooling of the machine.
   - 1.3. The operator must ensure that the louvers are uncovered and unblocked for proper airflow.
   - 1.4. The minimum distance between the unit and nearby objects should be 76 inches.
   - 1.5. Good ventilation is of critical importance for optimum performance and longer lifespan of the unit.
2. Overload Operation
   - 2.1. Remember to operate the welder within the allowable duty cycle (refer to the corresponding duty cycle).
   - 2.2. Ensure that the welding current does not exceed the max load current.
   - 2.3. Overload could obviously shorten the machine's lifespan, or even damage the machine.
3. Exceeding Recommended Voltage
   - 3.1. Verify the power supply voltage range of the unit, please refer to “Technical Parameters” table.
   - 3.2. This unit is equipped with automatic voltage compensation, which enables it to maintain a voltage range within the allowable supply ranges.
   - 3.3. Power supply voltage that exceeds the recommended levels may lead to damaging the components of the unit.

Safety Tips and Recommendations

4. Fault/Halt Indicator
   4.1. A sudden halt may occur and the red indicator on the front panel is lit.
   4.2. The welder has exceeded the standard duty cycle which triggers temperature alert due to overheating.
   4.3. Should this occur, halt the welding operations and allow the unit to cool down. Do not turn off the power and keep the cooling fan operating to reduce the unit temperature.
   4.4. Welding can be resumed after the unit temperature falls back to the standard operating range and the red indicator is off.

Welding Fundamentals

Welding is a relatively simple process for bonding two pieces of metal together. As an example, soldering two wires together is the same concept. To connect the wires, we use heat to melt solder onto the wires to create the connection and a permanent bond and circuit.

The welding process utilizes a very strong electrical current that creates enormous heat that literally melts the two pieces together, and a consumable rod (ARC Welder) or wire (MIG Welder) is melted into the joint and creates a strong metallic bond between the two pieces.

The MIG-130S is a MIG welder that uses a consumable wire that is fed through to the welding head. This unit is an easy-to-use MIG welder suitable for hobbyists and even professionals.

There is a slight learning curve and experimentation as to the welding voltage and wire feed rate. Once you have that dialed in, you typically do not need to change it unless you change the diameter of the welding wire.

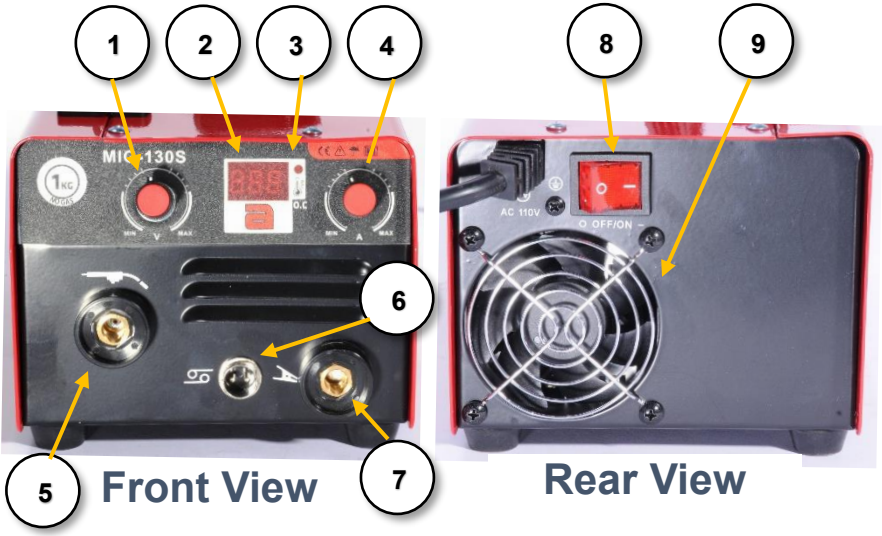
The MIG-130S works optimally with a steel wire of 0.8mm diameter. Optionally, you can use 0.6mm, 0.9mm and 1.0mm of either solid wire or cored wire. However, you will need to adjust the welding voltage and feed rate for each wire diameter used.

WHAT IS IN THE BOX / PARTSLIST

The MIG-130S system is a clean, simple and easy to use design.
NOTE: The Safety Face Shield is shown assembled and consists of three parts.

1	Main Welding Unit
2	MIG Grounding Clamp Cord
3	MIG Welding Head with Feed Wire
4	Cleaning Brush
5	Handheld Safety Face Shield

FEATURES AND FUNCTIONS



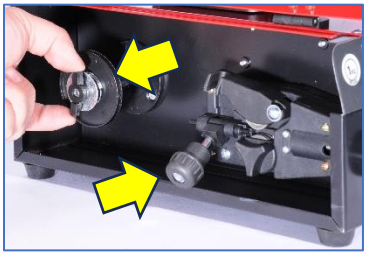
1	MIG Welding Wire Feed Rate Adjustment Knob
2	Digital Voltage/Current Display.
3	LED Overload Indicator
4	MIG Welding Voltage/Current Adjustment Knob
5	MIG Welding Head Wire Feed Cable Connector
6	MIG Welding Head Power Connection
7	MIG Grounding Clamp Cord Connector
8	Main Power Control Switch – ON/OFF
9	Welding Unit Cooling Fan

SAFETY FACE SHIELD ASSEMBLY

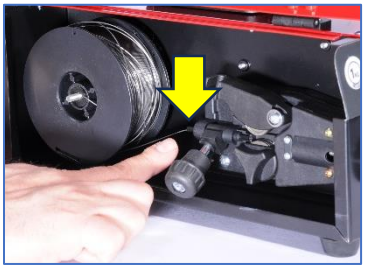
Proper eye and face protection is required and essential! Here are the steps to assemble the basic handheld safety face shield.

INSTALLING WELDING FEED WIRE

1) Press and lift the locking latch on the left hand side of the unit side cover.

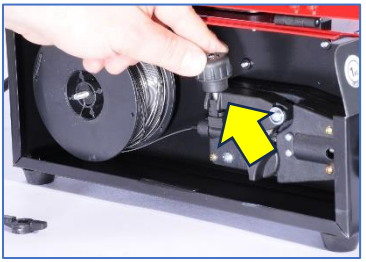


2) Loosen and remove the spindle knob and unthread and release the tensioning latch.

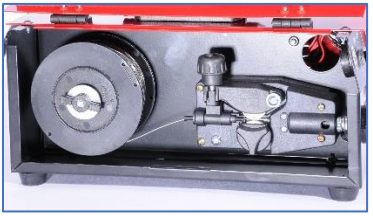


3) Place the coil onto the spindle, with the feed from the bottom and reattach the knob and tighten.

4) Carefully feed wire through both openings.

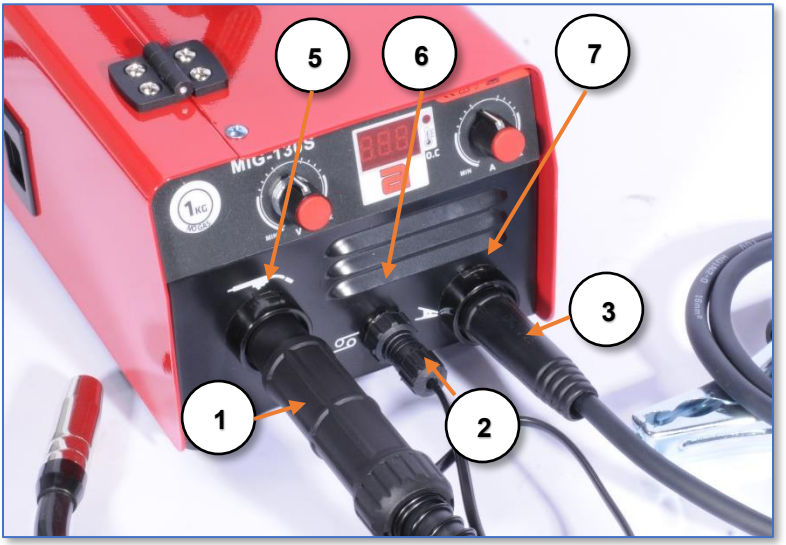


5) Raise the tensioning latch and tighten till it is just snug.



Done! This is the view when the coil is installed properly.

SETUP AND OPERATION



The picture above illustrates how the welder unit and cables are connected for proper operation. The connections outlined below are for “Basic Operation”. Verify that the Power Switch is OFF!

When connecting cables, each connector has a metal key on the end of it. Align the key with the matching female key, insert and twist to the right till it is secure.

1. Connect the MIG Welding Head Wire Feed Cable into the MIG Wire Feed Connector. Features and Functions, position 5.
2. Connect the MIG Welding Head Power Cable into the MIG Power Connector. Features and Functions, position 6.
3. Connect the MIG Grounding Clamp Cable into the MIG Grounding Clamp Cord Connector. Features and Functions, position 7.
4. Verify that all cables are properly installed and sufficiently tight.

OPERATING YOUR WELDER

At this point, you can now begin your welding project!

1. Turn the Welding Main Power Switch to the ON position.
2. The unit will “spin up” and verify all the indicator lights and displays are working correctly.
3. Reminder: after reloading the wire coil, you will need to feed the wire through the cable until it protrudes beyond the head.
4. Typically, 1-1/2” is recommended as a basic starting length.

Starting Up – General Settings and First Time Setup

1. Use 1 amp per .001 in (0.0025 cm) of metal thickness as a general rule. For example, if you’re welding steel that is .125” (0.32 cm) thick, set the amp dial to 125 amps.
2. Note: that you might find you need to adjust the amperage after you start welding as different types of metals may need a slightly higher or lower amperages.
3. Increase the wire size for higher amp ranges:
   3.1. .023” (0.58 mm) wire for 30-120 amps.
   3.2. .030” (0.76 mm) wire for 40-145 amps.
   3.3. .035” (0.89 mm) wire for 50-180 amps.
   3.4. .045” (1.1 mm) wire for 75-250 amps.
4. Select the starting wire feed speed based on the amps you’re using. Multiply by 1” per amp for .045” wire, 1.6” per amp for .035” wire, 2” per amp for .030” wire, and 3.5” per amp for .023” wire. Then adjust accordingly as you weld.

Adjusting Wire Speed

As you begin welding, if you find the wire is pushing you away from your pieces, reduce the wire speed. And conversely, if you are being pulled too close, increase the speed.

Troubleshooting

If you experience issues while using your MIG-130S MIG Welder, please review the Common Problems and Solutions Section.

If any conditions persist, please contact product support for assistance, ProductSupport@HValleyTools.Com

Common Problems and Solutions

Problem	Causes and Solutions
The wire does not move, or wire feed jams or entangles.	Check for the following conditions: 1) Feed roll is not too tight or loose. 2) Feed roll groove is too worn. 3) Wire conduit is not blocked. 4) Welding tip is clear of spatters. 5) Welding tip is not damaged, dented or cracked.
Main Power Switch indicator does not switch on.	1) Verify that the unit is properly plugged into a power outlet. 2) Check power cable connectors for damage. 3) Check supply voltage fuses.
Unit is not welding properly.	There are many factors that can affect welding performance. 1) Check the trimming settings of the welding power control and arc length. 2) Check that the ground clamp is properly connected. Check for fowling and dirty clamp connections. 3) Power supply voltage is uneven, too low or too high.
Over-Heating LED is ON	1) The unit is overheated. Leave the unit on and cooling fan running and wait for the Overheat LED to turn off. 2) Verify the cooling fan is operating. 3) Usage exceeding operating limits, wait for cool-down cycle to finish. 4) Power supply voltage is uneven, too low or too high.

Recommended Maintenance

1) After each use, remove welding spatters from the welding head tip and check the condition of the parts. Check for dents, cracks and any imperfections. Replace damaged parts immediately as they will impact performance and user safety!
2) Inspect the insulating tips of the welding head for any damage. Replace damaged parts immediately as they will impact performance and user safety!
3) Verify that the welding head cable and grounding cables are properly and securely attached to the main unit.
4) Inspect the power supply cable for any damage and replace it immediately. Damaged cables can lead to the main unit being damaged or failing.

Technical Specifications

Specification	Model MIG-130S
Rated input voltage	AC110V±15% 50/60HZ
Rated Input Power (A)	3.5
Working Voltage (V)	15.5-20.0
No-Load Voltage (V)	30
Duty Cycle (%)	40
Power Factor	0.73
Efficiency	85
Insulation Class	F
Protection Class	IP21

NOTES

NOTES

HVALLEY TOOLS

HValley Tools LLC
1065 Industrial Blvd
Southampton PA 18966
215-938-5060
HValleyTools.Com
Info@HValleyTools.Com