TOOLIOM®

TL-1955 PRO

USER'S MANUAL

Note: Please read this user's manual carefully before using this product.

The **TOOLIOM TL-195S PRO WELDER** provides a convenient method of performing “stick” welding carbon steel or stainless steel. Inverter technology provides the capability of welding thin or heavy gauge steel with precision and ease. When adding the optional lift TIG torch **(not included)**, gas regulator, and a cylinder of shielding gas, the TL-195S PRO becomes a TIG welder.

SPECIFICATIONS

Output Current Range:	Input Current	Input Voltage	Rated Duty Cycle	Rod Diameter	Rod Material
20~195A	$I1_{max}$=42A (110V) $I1_{eff}$=32.5A (110V) $I1_{max}$=29A (220V) $I1_{eff}$=22.4A (220V)	110V or 220V	60% @ 195A	1/16"~5/32" 1.6~4.0mm	E6010 E6011 E6013 E7014 E7018 Stainless Steel

DUTY CYCLE

The rated duty cycle refers to the amount of welding that can be done within an amount of time. The **TOOLIOM TL-195S PRO** has a duty cycle of 60% at 195A. 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 195A with a 60% duty cycle, within a 10 minute block of time you can weld for 6 minutes with 4 minutes of cooling for the welder. If the duty cycle is exceeded, the welder will automatically shut off, however the fan will continue running to cool the overheated components. When a safe temperature has been reached, the welder will automatically switch the welder output back on. To increase the duty cycle you can turn down the amperage output control.

READ AND UNDERSTAND ALL INSTRUCTIONS AND PRECAUTIONS BEFORE PROCEEDING.
This unit emits a powerful high voltage and extreme heat which can cause severe burns, dismemberment, electrical shock and death. TOOLIOM shall not be held liable for consequences due to deliberate or unintentional misuse of this product.

SAFETY INFORMATION

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

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

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

⚠ CAUTION
CAUTION used with the safety alert symbol, 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 the welder. Save for future reference.

⚠ DANGER ELECTRIC SHOCK CAN KILL!

- 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 torch, contact tip and when installing or removing nozzles.
- Always wear dry, protective clothing and leather welding gloves and insulated footwear. Use suitable clothing made from durableflame-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 ventilatedareas.
- The electrode and work (or ground) circuits are electrically “hot” when the welder is on. Do not allow these “hot” parts to come in contact with your bare skin or wet clothing.
- Separate yourself from the welding circuit by using insulating mats to prevent contact from the work surface.
- Be sure that the work piece is properly supported and grounded prior to beginning an electric welding operation.
- Always attach the ground clamp to the piece to be welded and as close to the weld area as possible. This will give the least resistance and best weld.

⚠ DANGER WELDING SPARKS CAN CAUSE FIRE OR EXPLOSION!

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

⚠ WARNING ELECTROMAGNETIC FIELDS CAN BE A HEALTH HAZARD!

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

⚠ WARNING ARC RAYS CAN BURN!

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

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

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

⚠ CAUTION HOT METAL AND TOOLS WILL BURN!

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

⚠ 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.

REQUIRED ITEMS

Before you begin using the **TOOLIOM TL-195S PRO STICK WELDER**, make sure you have the following:

- A properly grounded 1Phase 110/220 Volt AC, 50/60Hz, 50A circuit breaker.

NOTE: Unit must be grounded to work properly and safely!

- A clean, safe, well-lit, dry and well-ventilated work area.
- A non-flammable, long sleeve shirt or WELDING Jacket
- Heavy Duty Welding Gloves
- Auto-Darkening Welding Helmet to provide eye protection during welding operations. Note: MUST be a #11 lens or darker.
- Dedicated stainless steel wire welding brushes for each material to be welded.

CONTENTS

Remove all items from the box. Compare with list below to make sure unit is complete.

1. TOOLIOM TL-195S PRO Stick Welder
2. Work Clamp
3. Electrode Holder
4. Power Adapter Cord

CONTROL AND DISPLAY PANEL

1 Amperage Display
Display the current value.

2 Input Voltage
Auto identify the input voltage

3 Welding Mode
Select welding modes “Stick” or “Lift TIG” by press button [B]

4 VRD
Select “ON” or “OFF” of VRD by press button [C]
Note: If the VRD indicator is on, the VRD is enabled.
ON: Anti electrical shock, poor welding effect.
OFF: Risk of electrical shock, good welding effect.

5 ARC Force
Select “ARC Force” by press button [A], and adjust the value by turning knob [D]
Superimposed current value to anti-stick.
Note: If the “ARC Force” has a value, the “ARC Force” indicator is on.

6 Hot Start
Select “Hot Start” by press button [A], and adjust the value by turning knob [D]
Boosts the current during starting to provide easy, quick, and reliable arc starts.
Note: If the “Hot Start” has a value, the “Hot Start” indicator is on.

Welding Mode	Current(A)		Welding Param		
	110V	220V	VRD	ARC Force	Hot Start
Stick	20~142	20~195	ON/OFF	0~10	0~10
Lift TIG	15~142	15~195	/	/	/

Thermal protection LED illuminates when the unit has reached the maxi-mum internal component temperature. This occurs when the duty cycle has been exceeded.
The Welder will automatically shut off however the fan will continue running to cool the overheated compo-nents. When a safe temperature has been reached, the protective circuit will automatically switch the welder out-put back on.

7 Positive(+)Connector
8 Negative Connector
9 Power Switch
10 Power Input

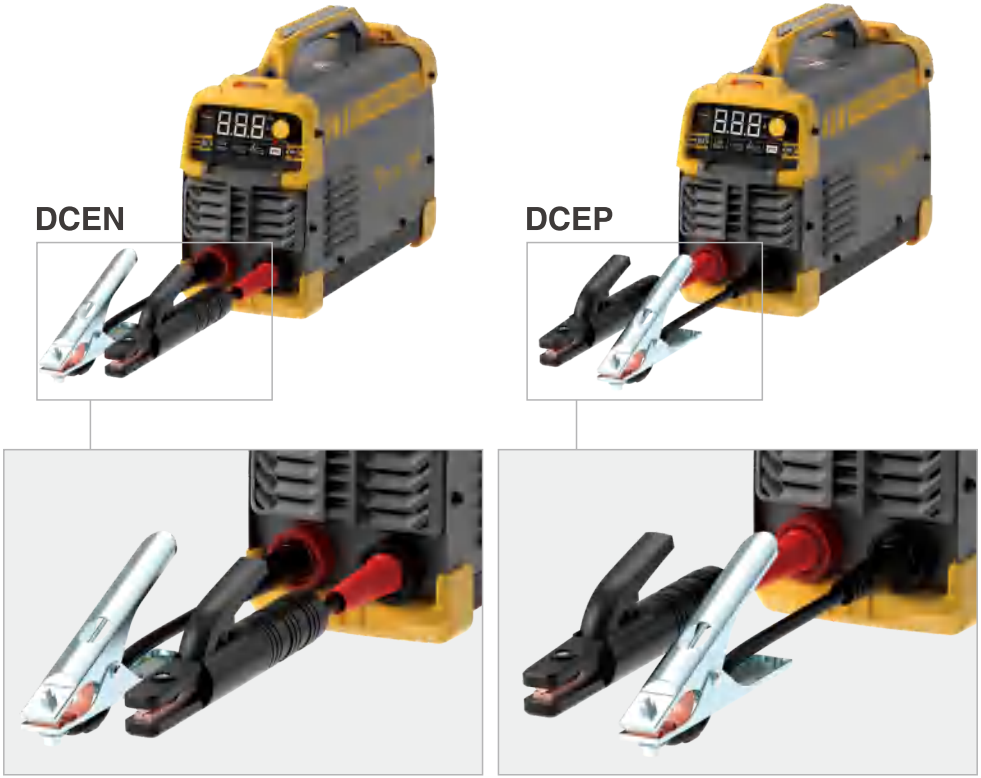
STICK WELDING OPERATION

1. Be sure the power cord is unplugged and the power switch is in the “OFF” position.

2. Stick Welding
1). Stick Welding (DCEP)
Locate the work clamp with cable and connect the plug on the cable end into the Negative (-) and locate the electrode holder with cable and connect the plug on the cable end into the Positive (+).
2). Stick Welding (DCEN)
Locate the work clamp with cable and connect the plug on the cable end into the Positive (+) and locate the electrode holder with cable and connect the plug on the cable end into the Negative (-).
Note: To connect the plug; align the key of the brass ferrule with the notch of the receptacle at the 12:00 position then rotate 1/2 turn Clockwise to lock.

3. Attach the work clamp to the workpiece as close to the welding area as possible. TO ensure good ground, clean the grounded area of any rust, grease, oils or paint.

4.Place a welding rod between the jaws of the electrode or “Stick” holder.



PREPARING TO “STICK” WELDING

1. Plug the power cord into a properly grounded, 1Phase 110/220 Volt AC, 50/60Hz, 50A circuit breaker.
2. Make sure the electrode or “Stick” is not making contact with the grounded workpiece.
3. Switch the Power Switch to “ON”.

⚠ DANGER

ELECTRIC SHOCK CAN CAUSE INJURY OR DEATH!

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. Always wear dry, protective clothing and leather welding gloves and insulated footwear.

⚠ WARNING

ARC RAYS CAN BURN!

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⚠ CAUTION

HOT METAL AND TOOLS WILL BURN!

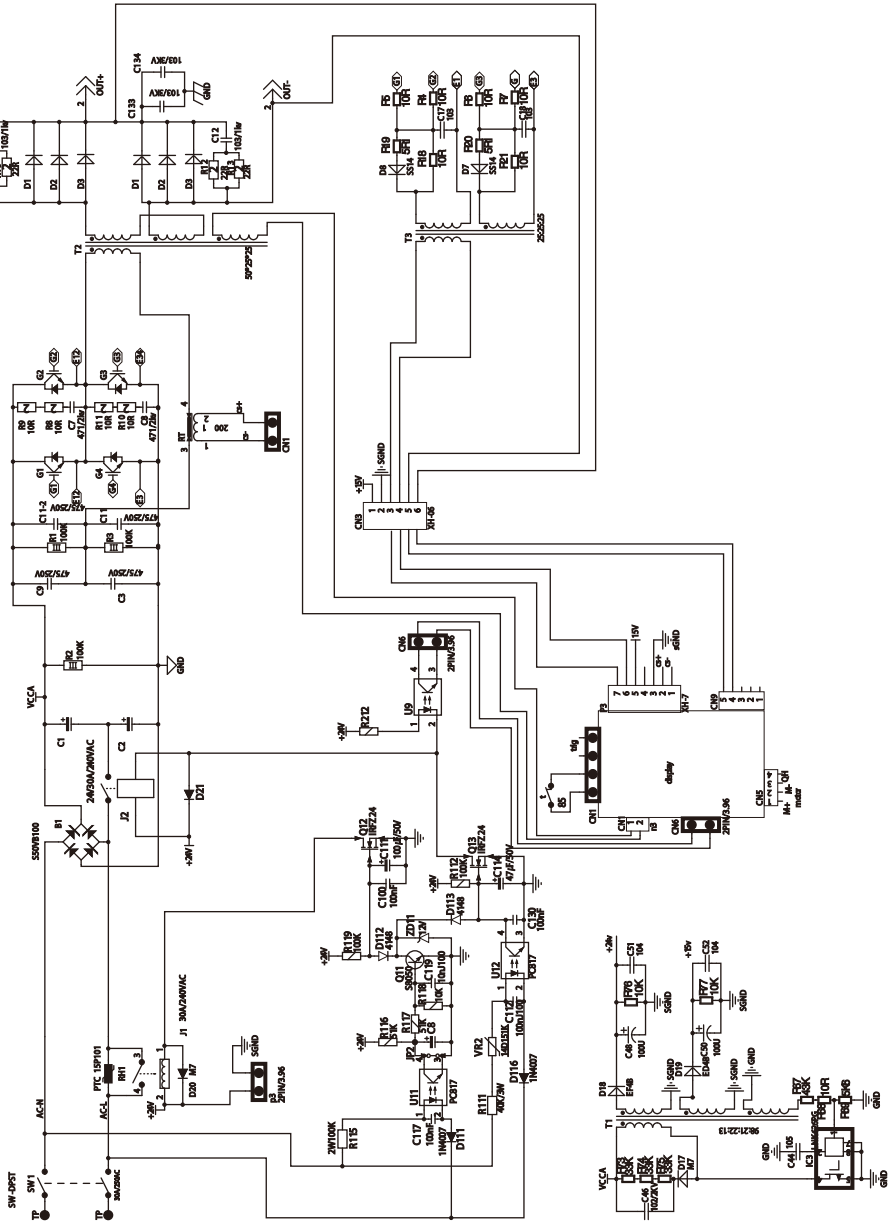
Electric welding heats metal and tools to temperatures that will cause severe burns! Use protective, heat resistant gloves and clothing.

1. While wearing a properly functioning Auto Darkening Welding Helmet, lightlydrag the tip of the Welding Rod along the workpiece surface to start an arc.
2. Feed the Welding Rod into the workpiece joint at a 15° angle.
3. Lift rod from workpiece when weld bead is completed.
4. Turn off Welder power switch.
5. Set the Electrode or “Stick” Holder on a safe, non-flammable, surface.

TROUBLESHOOTING

PROBLEM	CAUSE	CORRECTION
Contamination in weld bead	Contaminated Electrode Rod	Make sure that Electrodes are clean and dry before use.
	Contaminated Base Metal	Clean base metal of any oil, debris, coatings, or moisture. If base metal is cold rolled steel make sure to remove any mill scale.
Poor Weld Appearance	Incorrect positioning	The angle of the electrode should be at 45° and drug away from the weld arc. Failing to do so may cause poor weld appearance.
Weld Bead is Cracking	Too much heat in material	Reduce heat & allow more time between passes.
	Base Metal is absorbing too much heat	Preheat base metal (consult welding codes for requirements)
	Incorrect Filler Wire	Use correct filler wire type & diameter for the joint being welded.
Material is Warping	Insufficient Clamping	Clamp work piece tightly & weld while clA are in place.
	Insufficient Tack Welds	Add more tack welds until rigidity and stiffness is developed.
	Too Much Heat in Material	To reduce heat it is best to spread the welding out around the area. This can be done by using stitch welding techniques, alternating sides, and/or taking your time and allowing the pieces to cool between passes.
Porosity in weld bead	Contaminated Electrode Rod	Make sure that Electrodes are clean and dry before use.
	Contaminated base metal	Clean base metal making sure to remove any oil, debris, coatings, or moisture.
Difficulty Starting Arc	Incomplete Circuit	Check Ground connection. Make sure that the ground is on a freshly cleaned surface and close to the welding area. It is suggested to weld toward the ground connection
	Amperage Too Low	Based on the material welding & size/material of the electrode, pick an appropriate amperage to perform the desired weld.
	Contaminated Base Metal	Clean base metal of any oil, debris, coatings, or moisture. If base metal is cold rolled steel make sure to remove any mill scale.
Arc Wander	Electrode too far from welding surface	Move electrode so that it is contacting the weld puddle and feed rod into the puddle as needed.
Difficulty Holding Arc	Amperage Too Low	Based on the material welding and size/material of the electrode, pick an appropriate amperage to perform the desired weld.
	Electrode too far from welding surface	Move electrode so that it is contacting the weld puddle and feed rod into the puddle as needed.
	Incomplete Circuit	Check Ground connection. Make sure that the ground is on a freshly cleaned surface and close to the welding area. It is suggested to weld toward the ground connection.
	Contaminated Electrode Rod	Make sure that Electrodes are clean and dry before use.
	Contaminated Base Metal	Clean base metal of any oil, debris, coatings, or moisture.

WIRING DIAGRAM

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