YESWELDER®

# ARC-400Q

## USER'S MANUAL


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

The **YESWELDER ARC-400Q 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 Arc Welder TIG Torch, Gas Regulator, and a cylinder of shielding gas, the ARC400Q becomes a TIG welder.

## SPECIFICATIONS

| Output Amperage Range | Maximum Input Amperage | Input Voltage | Rated Duty Cycle | Rod Diameter | Rod Material | Weight | Overall Dimensions |
|---|---|---|---|---|---|---|---|
| 40-400Amps DC | 44 Amps | 1phase 208VAC<br>3phase 220/230/240V<br>3phase 380/400/440V<br>3phase 460/480V | @460V<br>60%@400A<br>100%@300A<br>@200/230V<br>60%@200A<br>100%@155A | <5/32"<br>@220V<br><13/64"<br>@380V | E6010<br>E6011<br>E6011<br>E6013<br>E7018 | 20 lbs.<br>10kg | 19.29" [490mm] ×<br>10.827" [275mm] ×<br>16.34" [415mm] |

## DUTY CYCLE

The rated Duty cycle refers to the amount of welding that can be done within an amount of time. The **YESWELDER ARC-400Q** has a duty cycle of 60% at 400 Amps. 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 400 Amps 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. yeswelder 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 weatherstripping, 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 **YESWELDER ARC-400Q WELDER**, make sure you have the following:

- A properly grounded 1Phase 220-240 Volt AC, 50/60Hz, 50 Amp outlet; 3 Phase 240-480 Volt AC, 50/60Hz, 50 Amp outlet.
- 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.

# UNPACKING

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

- **YESWELDER ARC-400Q WELDER**
- Ground Clamp with 10' [3m] Cable.
- Electrode (stick) Holder with 10' [3m] Cable.
- Instruction Manual.

# COMPONENTS & CONTROLS

### Power Switch

The Power Switch is located on the upper rear panel **(FIG A)**.


**FIG. A**


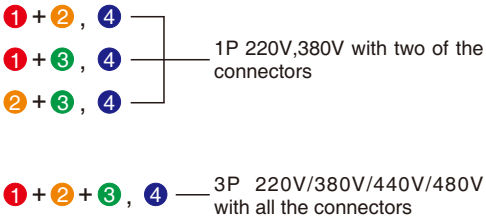


**FIG. A**

### Power Indicator LED

Illuminates green when the unit is plugged in and the Power Switch is set to the ON position **(FIG B)**.

### Thermal Protection LED

Illuminates Amber when the unit has reached the maximum internal component temperature **(FIG B)**. 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 components. When a safe temperature has been reached, the protective circuit will automatically switch the welder output back on.

### Amperage Adjustment Knob

The Amperage Adjustment Knob **(FIG B)** allows the output amperage to be adjusted from 40 to 400 Amps.

### Positive (+) Connector

Located at the lower right of the Front Panel **(FIG B)**. When "Stick" welding, the GROUND Clamp Cable is plugged in here. If using the optional TIG Torch, the GROUND Clamp Cable is plugged in here.

### Negative (-) Connector

Located at the lower left front of the Front Panel **(FIG B)**. When "Stick" welding, the ELECTRODE Cable is plugged in here. If using the optional TIG Torch Kit, the TIG TORCH Cable is plugged in here.

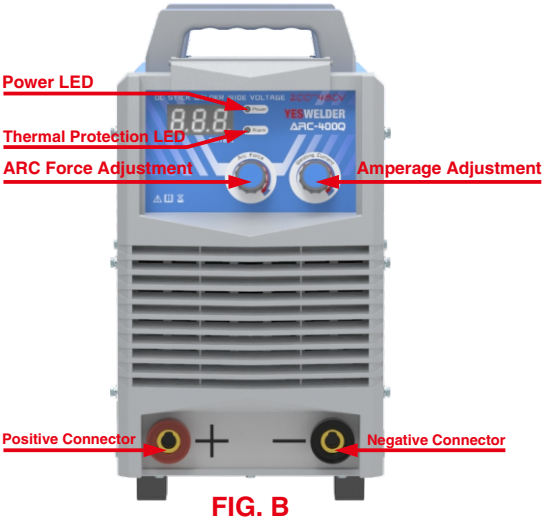


FIG. B

## WELDER SET-UP FOR ARC OR "STICK" WELDING

**⚠ DANGER**

**ELECTRIC SHOCK CAN CAUSE INJURY OR DEATH!**
**Disconnect welder from power supply before assembly, disassembly, or maintenance of the torch, contact tip, and when installing or removing nozzles.**

1. Be sure the power cord is unplugged and the power switch is in the "Off" position.
2. Insert the Brass Connector of the Electrode Cable into the Negative ( - ) Brass Receptacle on the Front Panel. Note that the Keyed Tab of the Brass Connector fits into the Keyed Slot at the top of the Negative ( - ) Brass Receptacle **(FIG C)**. Seat fully and turn 180° clockwise to lock in place.
3. Insert the Brass Connector of the Ground Cable into the Positive ( + ) Brass Receptacle on the Front Panel. Note that the Keyed Tab of the Brass Connector fits into the Keyed Slot at the top of the Positive ( + ) Brass Receptacle **(FIG D)**. Seat fully and turn 180° clockwise to lock in place.
4. Attach the Ground 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.
5. Place a Welding Rod between the jaws of the Electrode or "Stick" Holder.

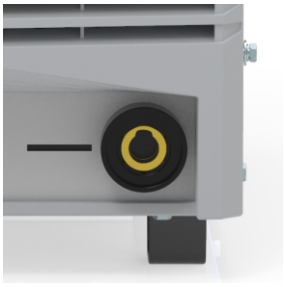

FIG. C

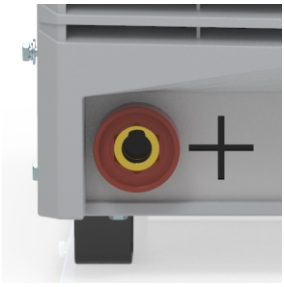

FIG. D

# PREPARING TO “STICK” WELD

1. Plug the power cord into a properly grounded, 1Phase 220-240 Volt AC, 50/60Hz, 50 Amp outlet; 3 Phase 240-480 Volt AC, 50/60Hz, 50 Amp outlet
2. Make sure the Electrode or “Stick” is not making contact with the grounded workpiece.

**⚠ 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.**

3. Switch the Power Switch to “On”.

**⚠ 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).**

**⚠ 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. Remove all flammable items within 35 feet of the welding area. Always keep a fire extinguisher nearby while welding.**

**⚠ 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 OSHAapproved respirator when welding. Always work in a properly ventilated area.**

**⚠ 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 clamps 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. |