YESWELDER®

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ARC-205DS

STICK WELDING MACHINE

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OPERATOR'S MANUAL

YESWELDER®

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CALIFORNIA PROPOSITION 65 WARNINGS

Welding or cutting equipment produces fumes or gases which contain chemicals known to the State of California to cause birth defects and, in some cases, cancer. (California Health & Safety Code Section 25249.5 et seq.)

Battery posts, terminals and related accessories contain lead and lead compounds, chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. Wash hands after handling.

For Gasoline Engines: Engine exhaust contains chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm.
For Diesel Engines: Diesel engine exhaust and some of its constituents are known to the State of California to cause cancer, birth defects, and other reproductive harm.
Welding produces fumes and gases. Breathing these fumes and gases can be hazardous to your health.

SAFETY PRECAUTIONS - READ BEFORE USING

Warning: protect yourself and others from injury - read and follow these precautions.
Do not install, operate, or repair this equipment without reading this manual and the safety precautions contained throughout this manual. Be sure that all installation, operation, maintenance and repair procedures are performed only by qualified individuals.

FOR ELECTRICALLY powered equipment.

- Turn off input power using the disconnect switch at the fuse box before working on the equipment.
- Install equipment in accordance with the U.S. National Electrical Code, all local codes and the manufacturer’s recommendations.
- Ground the equipment in accordance with the U.S. National Electrical Code and the manufacturer's recommendations.

FUMES AND GASES can be hazardous

- Keep your head out of the fumes. Do not breathe the fumes.
- If inside, ventilate the area and/or use local forced ventilation at the arc to remove welding fumes and gases.
- If ventilation is poor, wear an approved air-supplied respirator.
- Read and understand the Material Safety Data Sheets (MSDSs) and the manufacturer's instructions for metals, consumables, coatings, cleaners, and degreasers.
- Work in a confined space only if it is well ventilated, or while wearing an air-supplied respirator. Always have a trained watchperson nearby. Welding fumes and gases can displace air and lower the oxygen level causing injury or death. Be sure the breathing air is safe.
- 00 not weld in locations near degreasing, cleaning, or spraying operations. The heat and rays of the arc can react with vapors to form highly toxic and irritating gases.
- Do not weld on coated metals, such as galvanized, lead, or cadmium plated steel, unless the coating is removed from the weld area, the area is well ventilated, and while wearing an air-supplied respirator. The coatings and any metals containing these elements can give off toxic fumes if welded.

ARC RAYS can burn eyes and skin.

- Use a shield with the proper filter and cover plates to protect your eyes from sparks and the rays of the arc when welding or observing open arc welding. Head shield and filter lens should conform to ANSI Z87.1 standards.
- Wear suitable clothing made from durable flame-resistant material to protect your skin and others from the arc rays.
- Protect other nearby personnel with suitable, non-flammable screening and/or warn them not to watch the arc nor expose themselves to the arc rays or to hot spatter or metal.

ELECTRIC SHOCK can kill.

- The electrode and work (or ground) circuits are electrically “hot” when the welder is on. Do not touch these “hot” parts with your bare skin or wet clothing. Wear dry, hole-free gloves to insulate hands. Insulate yourself from work and ground using dry insulation. Make certain the insulation is large enough to cover your full area of physical contact with work and ground. In addition to the normal safety precautions, if welding must be performed under electrically hazardous conditions (in damp locations or while wearing wet clothing; on metal structures such as floors, gratings or scaffolds; when in ramped positions such as sitting kneeling or lying, if there is a high risk of unavoidable or accidental contact with the work piece or ground) use the following equipment: MIG Semiautomatic DC Constant Voltage (Wire) Welder DC Manual (Stick) Welder, AC Welder with Reduced Voltage Control. TIG Welder AC/DC or DC. SIGNIFICANT DC VOLTAGE exists in inverter-type welding power sources after removal of input power. Turn Off inverter, disconnect input power and discharge input capacitors according to instructions before touching any parts.
- In semiautomatic or automatic wire welding, the electrode, electrode reel, welding head, nozzle or semiautomatic welding gun are also electrically “hot”.
- Always be sure the work cable makes a good electrical connection with the metal being welded. The connection should be as close as possible to the area being welded.
- Ground the work or metal to be welded to a good electrical (earth) ground

- Maintain the electrode holder, work clamp, welding cable and welding machine in good, safe operating condition. Replace damaged insulation
- Never dip the electrode in water for cooling.
- Never simultaneously touch electrically “hot” parts of electrode holders connected to two welders because voltage between the two can be the total of the open circuit voltage of both welders. When working above floor level, use a safety belt to protect yourself from a fall should you get a shock.
- Wear dry, hole-free insulating gloves and body protection.
- Insulate yourself from work and ground using dry insulating mats or covers big enough to prevent any physical contact with the work or ground.
- Do not use AC output in damp areas, if movement is confined, or it there is a danger of falling.
- Use AC output ONLY if required for the welding process.
- If AC output is required, use remote output control if present on unit
- Additional safety precautions are required when any of the following electrically hazardous conditions are present: in damp locations or while wearing wet clothing; on metal structures such as floors, gratings, or scaffolds; when in cramped positions such as sitting, kneeling, or lying; or when there is a high risk of unavoidable or accidental contact with the work piece or ground. For these conditions, use the following equipment in order presented: a semiautomatic DC constant voltage (wire) welder, a DC manual (stick) welder, or an AC welder with reduced
open-circuit voltage. In most situations, use of a DC, constant voltage wire welder is recommended. And, do not work alone!
- Disconnect input power or stop engine before installing or servicing this equipment. Lockout/tagout input power according to OSHA 29 CFR 1910.147 (see Safety Standards).
- Properly install and ground this equipment according to its Owner’s Manual and national, state, and local codes.
- Always verify the supply ground - check and be sure that input power cord ground wire is properly connected to ground terminal in disconnect box or that cord plug is connected to a properly grounded receptacle outlet.
- When making input connections, attach proper grounding conductor first - double-check connections.
- Frequently inspect input power cord for damage or bare wiring; replace cord immediately if damaged - bare wiring can kill.
- Turn off all equipment when not in use.
- Do not use worn, damaged, undersized, or poorly spliced cables.
- Do not drape cables over your body.
- If earth grounding of the workpiece is required, ground it directly with a separate cable
- Do not touch elect rode if you are in contact with the work, ground, or another electrode from a different machine.

- Do not touch electrode holders connected to two welding machines at the same time since double open-circuit voltage will be present
- Use only well-maintained equipment. Repair or replace damaged parts at once. Maintain unit according to manual.
- Wear a safety harness if working above floor level.
- Keep all panels and covers securely in place.
- Clamp work cable with good metal-to-metal contact to workpiece or worktable as near the weld as practical.
- Insulate work clamp when not connected to workpiece to prevent contact with any metal object
- Do not connect more than one electrode or work cable to any single weld output terminal.

WELDING and CUTTING SPARKS can cause fire or explosion

- Remove fire hazards from the welding area. If this is not possible, cover them to prevent the welding sparks from starting a fire. Remember that welding sparks and hot materials from welding can easily go through small cracks and openings to adjacent areas. Avoid welding near hydraulic lines. Have a fire extinguisher readily available. Welding on closed containers, such as tanks, drums, or pipes, can cause them to blow up. Sparks can fly off from the welding arc. The flying sparks, hot workpiece, and hot equipment can cause fires and burns. Accidental contact of electrode to metal objects can cause sparks, explosion, overheating, or fire. Check and be sure the area is safe before doing any welding
- Where compressed gases are to be used at the job site, special precautions should be used to prevent hazardous situations. Refer to "Safety in Welding and Cutting" (ANSI Standard Z49.1) and the operating information for the equipment being used.
- When not welding, make certain no part of the electrode circuit is touching the work or ground. Accidental contact can cause overheating and create a fire hazard.
- Remove all flammables within 3S ft (10.7m) of the welding arc. If this is not possible, tightly cover them with approved covers.

- Do not heat, cut or weld tanks, drums or containers until the proper steps have been taken to ensure that such procedures will not cause flammable or toxic vapors from substances inside. They can cause an explosion even though they have been “cleaned”. For information, purchase “Recommended Safe Practices for the Preparation for Welding and Cutting of Containers and Piping That Have Held Hazardous Substances”, AWS F4.1 from the American Welding Society
- Vent hollow castings or containers before heating, cutting or welding. They may explode.
- Sparks and spatter are thrown from the welding arc. Wear oil free protective garments such as leather gloves, heavy shirt, cuff less trousers, high shoes and a cap over your hair.
Wear ear plugs when welding out of position or in confined places. Always wear safety glasses with side shield when in a welding area.
- Connect the work cable to the work as close to the welding area as practical. Work cables connected to the building framework or other locations away from the welding area increase the possibility of the welding current passing through lifting chains, crane cables or other alternate circuits. This can create fire hazards or overheat lifting chains or cables until they fail.
- Do not use a welding power source for pipe thawing of frozen pipes.
- Do not weld where flying sparks can strike flammable material.
- Connect work cable to the work as close to the welding area as practical to prevent welding current from traveling long, possibly unknown paths and causing electric shock, sparks, and fire hazards.
- Remove stick electrode from holder or cut off welding wire at contact tip when not In use.
- Remove any combustibles, such as butane lighter or matches, from your person before doing any welding.
- Follow requirements in OSHA 1910.252 (a) (2) (iv) and NFPA 51B for hot work and have a firewatcher and extinguisher nearby.

CYLINDERS can explode if damaged.

Shielding gas cylinders contain gas under high pressure. If damaged, a cylinder can explode. Since gas cylinders are normally part of the welding process, be sure to treat them carefully.

- Protect compressed gas cylinders from excessive heat, mechanical shocks, physical damage, slag, open flames, sparks, and arcs.
- Install cylinders in an upright position by securing to a stationary support or cylinder rack to prevent falling, tipping and chained to an undercarriage or fixed support.
- Keep cylinders away from any welding or other electrical circuits.
- Never drape a welding torch over a gas cylinder.
- Never allow the electrode, electrode holder or any other electrically" hot" parts to touch a cylinder
- Never weld on a pressurized cylinder - explosion will result.
- Use only correct shielding gas cylinders, regulators, hoses, and fittings designed for the specific application; maintain them and associated parts in good condition.
- Keep your head and face away from the cylinder valve outlet when opening the cylinder valve.
- Valve protection caps should always be in place and hand tight except when the cylinder is in use or connected for use.
- Use the right equipment, correct procedures, and sufficient number of persons to lift and move cylinders
- Read and follow instructions on compressed gas cylinders, associated equipment, and Compressed Gas Association (CGA) publication P-1 listed in Safety Standards.

MAGNETIC FIELDS can affect pacemakers.

- Pacemaker wearers keep away.
- Wearers should consult their doctor before going near arc welding, gouging or spot welding operations.
- Electric current flowing through any conductor causes localized Electric and Magnetic Fields (EMF). Welding current creates EMF fields around welding cables and welding machines

- Exposure to EMF fields in welding may have other health effects. ELECTOMAGNETIC FIELDS (EMF) and ELECTROMAGNETIC CAMPATIBILITY (EMC) AII electrical equipment generates small amounts of electromagnetic emission. Electrical emission may be transmitted through power lines or radiated through space, similar to a radio transmitter. When emissions are received by other equipment, electrical interference may result. The user is responsible for installing and using welding equipment according to the manufacture instructions. If electromagnetic disturbances are detected then it shall be the responsibility of the user to resolve the situation. H.F. RADIATION can cause interference. High-frequency (H.F.) can interfere with radio navigation, safety services, computers, and communications equipment. Have only qualified persons familiar with electronic equipment perform this installation. The user is responsible for having a qualified electrician promptly correct any interference problem resulting from the installation. If notified by the FCC about interference, stop using the equipment at once. Have the installation regularly checked and maintained. Keep high-frequency source doors and panels tightly shut, keep spark gaps at correct setting, and use grounding and shielding to minimize the possibility of interference

ARC WELDING can cause interference.

Electromagnetic energy can interfere with sensitive electronic equipment such as computers and computer-driven equipment such as robots. Be sure all equipment in the welding area is electromagnetically compatible. To reduce possible interference, keep weld cables as short as possible, close together, and down low, such as on the floor. Locate welding operation 100 meters from any sensitive electronic equipment. Be sure this welding machine is installed and grounded according to this manual. If interference still occurs, the user must take extra measures such as moving the welding machine, using shielded cables, using line filters, or shielding the work area.

<table>
<tr><td colspan="3">ARC-205DS</td><td colspan="3">NO.:</td></tr>
<tr><td colspan="3">1~ f1 f2 1~ 1~ ⎓</td><td colspan="3">EN 60974-1</td></tr>
<tr><td></td><td colspan="2">⎓</td><td colspan="3">20A/20.8V-205A/28.2V</td></tr>
<tr><td rowspan="3">S</td><td rowspan="3">U0 60V</td><td>X</td><td>60%</td><td>100%</td></tr>
<tr><td>I2</td><td>205A</td><td>158A</td></tr>
<tr><td>U2</td><td>28.2V</td><td>26.3V</td></tr>
<tr><td rowspan="2">1~50Hz/60Hz</td><td>U1=110V</td><td>I1 max= 38A</td><td colspan="2">I1 eff= 29.4A</td></tr>
<tr><td>U1=220V</td><td>I1 max= 29A</td><td colspan="2">I1 eff= 22.4A</td></tr>
<tr><td colspan="3">Cooling way: WIND</td><td>IP21S</td><td></td></tr>
</table>

Duty Cycle is percentage of 10 minutes that unit can weld at rated load without overheating. If unit overheats, thermostat(s) opens, output stops, and cooling fan runs. Wait fifteen minutes for unit to cool. Reduce amperage or Duty Cycle before welding. Exceeding duty cycle can damage unit or gun and void warranty.

INCLUDES

Stick Welding Machine
10 feet Electrode Holder
10 feet Earth Clamp
110/220V adaptor
User Manual

OPERATING CONTROLS

Operating Controls Location and Description

The welding machine is equipped with power voltage compensation device. When the power voltage fluctuates between ±15% of rated voltage, it still can work normally. When the machine is used with longer cables than are provided, in order to prevent voltage from decreasing, increase the cable size is suggested.

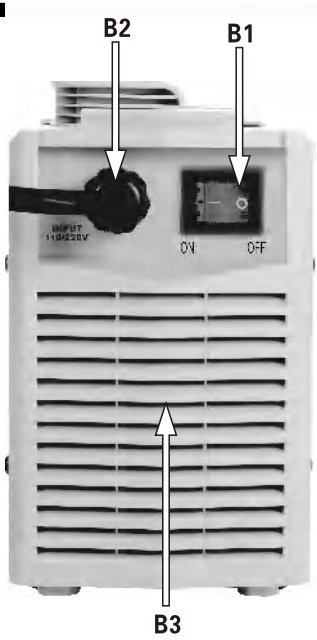
• Make sure intake of the machine is not blocked or covered to avoid malfunction of cooling system.

• Correctly connect the electrode holder and work clamp cables to match the type welding electrode you have selected. Reference the welding electrode manufacturer's polarity and amperage setting. Make sure the cable, electrode holder, work clamp, and twist lock connector is in good working condition and tight. Put the fastening plug into the fastening socket at the "+" polarity and fasten it clockwise.

• Please pay attention to the connecting terminal, DC welding machine has two connecting ways: Positive connection and Negative connection. Positive connection: holder connects with "-" terminal, while work piece with the "+" terminal. Negative connection: work piece with the "-" terminal, holder with the "+" terminal. Choose suitable way according to working demands. If unsuitable choice, it will cause unstable arc, more spatters and conglutination. If such problems occur, please change the polarity of the fastening twist lock plug at the welding machine panel.

• Make sure the voltage of power supply does not exceed permission range.

• The ARC-205DS welder can operate on both 110V and 220V input current. There are no adjustments or changes required,the welder will measure the input current and automatically adjust for the current .There is a 110V/220V power cord adapter is provided to allow easy connecting of input power.



A1-**LED METER**-indicates the output welding current in AMPS .
A2-**POWER INDICATOR** indicates the power sourse .
A3-**AMP CONTROL**- use this control to select material thickness and corresponding amperage .This control is used to adjust output power in the stick mode the current control sets the welding current.
A4-**OVER TEMPERAATURE LIGHT** - if the welder overheats due to high internal air temperature , or exceeded duty cycle , an internal thermostat will open disabling the welding output .The cooling fan will continue to run to cool the unit during this time .
A5-**POLARITY CONNECTION** - positive '+' and negative '-',there twist lock connections are used to connect the electrode holder and cables and the work clamp and cable to the output of the welder. Make sure the correct polarity connection is made to match the welding process and welding electrode selected.

WORK CABLE CONNECTION - A work cable and work clamp is supplied for.
TIG WELDING- make sure the connection is made to the + positive terminal I of the welder.
CONNECTIONS FOR STICK (SMAW) WELDING- Refer to the proper welder AMP and Polarity setting for the type welding electrode selected. The welder comes with both the Electrode Holder with Cable and the Work Clamp with Cable. Turn the Power Switch "OFF". Connect the cable quick connect plug into the correct + positive or – negative receptacle and turn it clockwise until it is tight.
B1- POWER SWITCH - Turns power on or off to the welder. When switched "ON", the Power On light and LED Meter will light and the cooling fan runs.

STICK Welding Specifications

Item	Welding Current A						
	10 ~ 20	20 ~ 30	30 ~ 55	55 ~ 70	70 ~ 85	85 ~140	140 ~ 220
Electrode Diameter Φ mm	Φ 1.0~1.4	Φ 1.4~1.6	Φ 1.6~2.0	Φ 2.0~2.5	Φ2.5~3.2	Φ 3.2~4.0	Φ 4.0~5.0
Workpiece Thickness (mm)	0.5~0.8	1.0~1.5	1.5~2.5	2.5~3.0	3.0~4.0	4.0~5.0	>5.0

Connections and Installations

(MAKE SURE ALL POWER IS OFF DURING THIS SECTION WHEN MAKING CONNECTIONS) WELDING IN STICK MODE

• Put the electrode holder and cable and the work clamp and cable connections into the output receptacle. Turn clockwise until tight. Connect the work clamp to the work piece.

• Polarity selection is done at the machine using the cable connections. You will need to switch the cables to match the polarity for the type of electrode you will be welding with. The most common is DC-. For this the electrode cable will be on the + positive connection and the work will be on the – negative connection. Check the

polarity directions of the electrode you are using, check with your welding dealer for settings.

• Place the electrode in the electrode holder.

• Turn the power switch to "ON".

• Adjust the Output AMP Control to the desired amp setting for the electrode you are

using.

• Strike an arc and weld.

General Stick Welding Guidelines

• Read the operating instructions in this manual for set up procedures.

• Read all Safety instructions before welding. If you are not sure of any safety points or require addition safety instructions. Contact your local welding supply dealer.

• The charts and general welding settings and procedures are suggestions. You will need to make adjustments to your setting depending on metal, wires and external conditions at your welding sites.

• Make sure the correct welding polarity and shield gas is used for the type welding wire and material, you are welding

• Connect your work clamp to the base metal that is to be welded. Make sure the work clamp has good electrical contact to the base metal and the metal is clean and free of paint, grease, rust, oils, etc. It is recommended to place your ground clamp as close to the weld area as possible for best electrical flow.
• Make sure your work area is clean and no flammable materials are near the welding area. Read the safety section of the manual for addition information.
• Make sure all safety equipment is used. This includes safety eye protection, welding helmet with shaded lens, gloves, and protective clothing.
• Warn any persons in the general area that you will be welding. They should have protective equipment as well.
• Never look into the welding arc without protective shaded eye protection.
• Plug in the welder to an approved electrical receptacle; consult professional electrical assistance if you're not sure of voltage and ampere rating. If extension cords are used, make sure, they are of correct size and length. Voltage drop can occur and damage welder if wrong cord sizes are used.
• When you are finished, turn the welder power switch to the off position and turn the shielding gas cylinder valve to the closed position.
• Make sure the area around you is clear of any fire hazards, since the welding process
created sparks that could have come in contact with material.
• It takes time to lean the proper technique, practice will help. Check with local schools for welding classes if you want to learn more on welding processes.
• Report any damaged equipment, so it can be safely repaired
• SAFETY IS VERY IMPORTANT. Make sure you read all safety warning labels and the instruction manual, ALWAYS WEAR PROTECTIVE EQUIPMENT.

Troubleshooting STICK-striking is difficult and easy to pause:
Make sure electrode is correct, If the electrode is not dried, it will cause unstable STICK, welding defect increases and the quality is down., If use extra-long cable, the output voltage will decrease, so please shorten the cable.
Output current not to rated value:
When power voltage departs from the rated value, it will make the output current not matched with rated value; when voltage is lower than rated value, the max output may lower than rated value.
Current is not stabilizing when machine is being operating:
It has something with factors as following., Electric voltage should be checked, there is harmful interference from electric wire net or other equipment.
When use Stick welding, too much spatter:
Maybe the welding current is too high and the electrode diameter is too small. Output terminal polarity connection is wrong; it should apply the opposite polarity at the normal technique.