AXEMEN POWER EQUIPMENT

INVERTER DC TIG/DC MMA WELDER

OPERATOR'S MANUAL

PART NUMBER: ATM60160
MODEL: TIG160

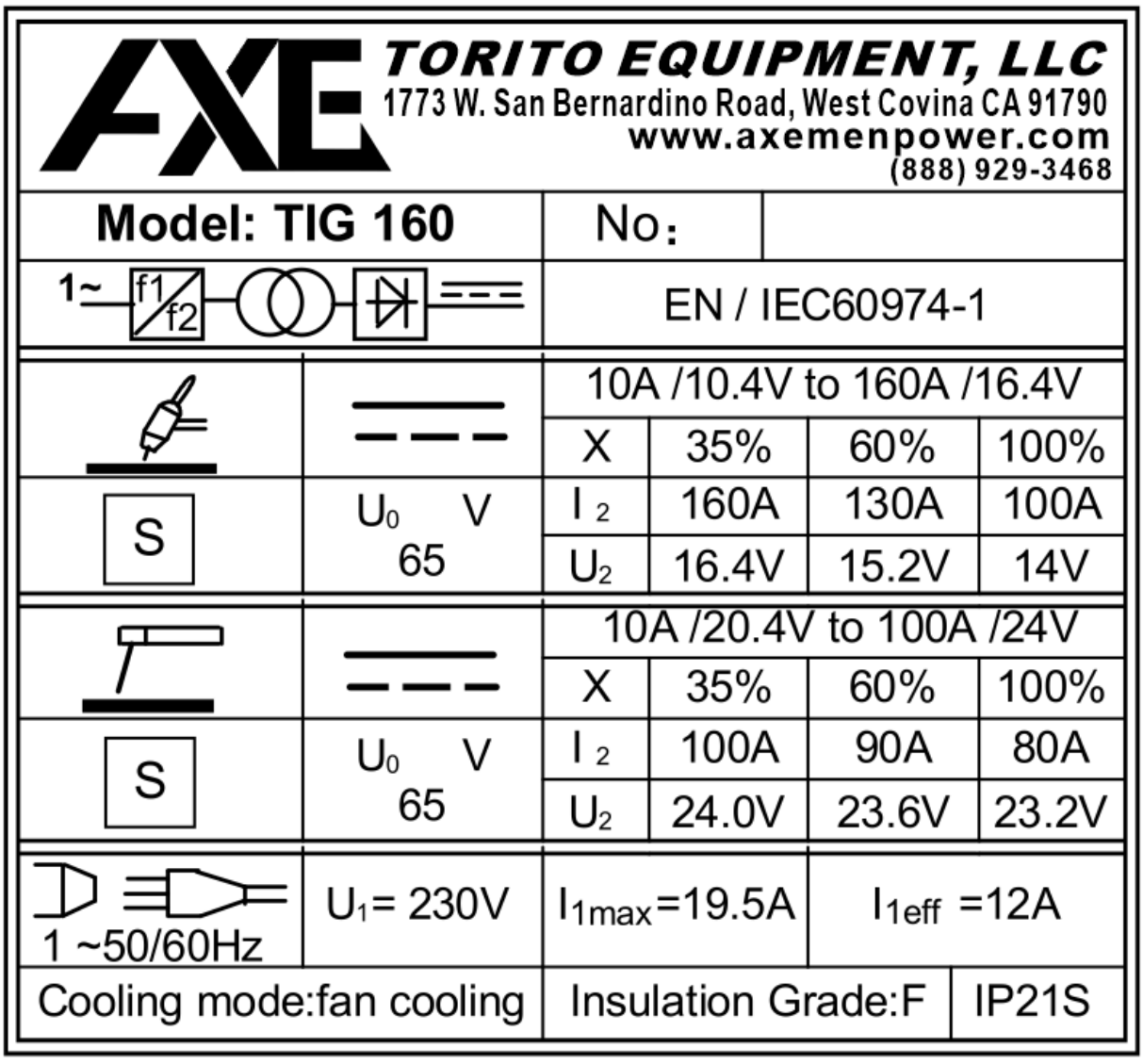
WARNING: Safety Depends on You. Axemen Power machine is designed and built with safety in mind. However, your overall safety can be increased by proper installation and thoughtful operation on your part. DO NOT INSTALL, OPERATE OR REPAIR THIS EQUIPMENT WITHOUT READING THIS MANUAL AND THE SAFETY
PRECAUTIONS CONTAINED THROUGHTOUT.

AXEMEN POWER DC TIG/MMA INVERTER WELDER	MODEL: TIG160

Thank you for selecting quality AXEMEN POWER products.

Please examine the packaging and equipment for damage. Claims for material damaged in shipment must be notified immediately to the company by email: support@axemenpower.com or call (888) 929-3468
For future reference, please record your equipment identification information on the table below. Model Name, Date of Purchase and operator's manual.

Model:_____ Date of Purchase: _____



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SETUP – ACCESSORIES LIST

1. Welding Lead WP-17 TIG Torch
2. Welding Lead – Electrode Holder 300A
3. Grounding Clamp with lead 10ft
4. PVC Hose
5. Additional starter kit

SAFETY PRECAUTIONS

Safe operation and proper maintenance is your responsibility. We have compiled this operator's manual, to instruct you in basic safety, operation and maintenance of your AXEMEN POWER product to give you the best possible operator/owner experience. Welding and related cutting operations require basic experience and common sense. Exercise extreme caution and care in all activities related to welding or cutting. Your safety, health and even life depends upon it. While accidents are never planned, preventing an accident requires careful planning. Stay alert!

Please carefully read this manual before you operate your AXEMEN POWER unit. This manual, if read in full, can assist the user in obtaining helpful information concerning the safe operation of this unit. Do not operate the unit until you have read this manual and you are thoroughly familiar with the safe operation of the unit. If you feel you need more information, please contact Axemen Power Support. The content of this manual is not meant to be an exhaustive primer on welding. It is written to an audience that, if not professional, will have at least some basic knowledge of welding terms and practices.

Do not attempt to alter or defeat any piece or part of your unit, particularly any safety device. Keep all shields and covers in place during unit operation should an unlikely failure of internal components result in the possible presence of sparks and explosions. If a failure occurs, discontinue further use until malfunctioning parts or accessories have been repaired or replaced by qualified personnel.

Note on High Frequency electromagnetic disturbances:
Certain welding and cutting processes generate High Frequency (HF) waves. These waves may dis-turb sensitive electronic equipment such as televisions, radios, computers, cell phones, and related equipment. High Frequency may also interfere with fluorescent lights. Consult with a licensed electrician if disturbance is noted. Sometimes, improper wire routing or poor shielding may be the cause.

WARNING! HF can interfere with pacemakers. See EMF warnings in following safety section for further information. Always consult your physician before entering an area known to have welding or cutting equipment if you have a pacemaker.

These safety precautions are for protection of safety and health. Failure to follow these guidelines may result in serious injury or death. Be careful to read and follow all cautions and warnings. Protect yourself and others.

Welding and cutting processes produce high levels of ultraviolet (UV) radiation that can cause severe skin burn and damage. There are other potential hazards involved with welding such as severe burns and respiratory related illnesses. Therefore, observe the following to minimize potential accidents and injury:

Use appropriate safety glasses with wrap around shields while in the work area, even under welding helmets to protect your eyes from flying sparks and debris. When chipping slag or grinding, goggles and face shields may be required.

When welding or cutting, always use an approved shielding device, with the correct shade of filter installed. Always use a welding helmet in good condition. Discard any broken or cracked filters or helmets. Using broken or cracked filters or helmets can cause severe eye injury and burn. Filter shades of no less than shade 5 for cutting and no less than shade 9 for welding are highly recommended. Shades greater than 9 may be required for high amperage welds. Keep filter lenses clean and clear for maximum visibility. It is also advisable to consult with your eye doctor should you wear contacts for corrective vision before you wear them while welding.

SAFETY PRECAUTIONS (Continued)

Do not allow personnel to watch or observe the welding or cutting operation unless fully protected by a filter screen, protective curtains or equivalent protective equipment. If no protection is available, exclude them from the work area. Even brief exposure to the rays from the welding arc can damage unprotected eyes.

Always wear hearing protection because welding and cutting can be extremely noisy. Ear protection is necessary to prevent hearing loss. Even prolonged low levels of noise have been known to create long term hearing damage. Hearing protection also further protects against hot sparks and debris from entering the ear canal and doing harm.

Always wear personal protective clothing. Flame proof clothing is required at all times. Sparks and hot metal can lodge in pockets, hems and cuffs. Make sure loose clothing is tucked in neatly. Leather aprons and jackets are recommended. Suitable welding jackets and coats may be purchased made from fire-proof material from welding supply stores. Discard any burned or frayed clothing. Keep clothing away from oil, grease and flammable liquids.

Leather boots or steel-toed leather boots with rubber bottoms are required for adequate foot protection. Canvas, polyester and other men made materials often found in shoes will either burn or melt. Rubber or other non-conductive soles are necessary to help protect from electrical shock.

Flame proof and insulated gauntlet or cuffed type gloves are required whether welding or cutting or handling metal. Simple work gloves for the garden or chore work are not sufficient.

WARNING! Persons with pacemakers should not weld, cut or be in the welding area until they consult with their physician. Some pacemakers are sensitive to EMF radiation and could severely malfunction while welding or while being in the vicinity of someone welding. *Serious injury or death may occur!*

Welding and plasma cutting processes generate electro-magnetic fields and radiation. While the effects of EMF radiation are not known, it is suspected that there may be some harm from long term exposure to electromagnetic fields. Therefore, certain precautions should be taken to minimize exposure:

- Lay welding leads and lines neatly *away* from the body.
- Never coil cables *around* the body or limbs.
- Secure cables with tape if necessary to keep from the body.
- Keep all cables and leads on the same side the body.
- Never stand between cables or leads.
- Keep as far away from the power source (welder) as possible while welding.
- Never stand between the ground clamp and the torch.
- Keep the ground clamp grounded as close to the weld or cut as possible.

WARNING! Do not use welder on galvanized steel, stainless steel, beryllium, titanium, copper, cadmium, lead or zinc without proper respiratory equipment and or ventilation.
WARNING! The use of this product can expose you to chemicals such as lead, which is known to the State of California to cause birth defects, reproductive harm and cancer. Proposition 65 Warn-ing. For more information visit: www.P65Warnings.ca.gov

SAFETY PRECAUTIONS (Continued)

Welding and cutting processes pose certain inhalation risks. Be sure to follow any guidelines from your chosen consumable and electrode suppliers regarding possible need for respiratory equipment while welding or cutting. Always weld with adequate ventilation. Never weld in closed rooms or confined spaces. Fumes and gases released while welding or cutting may be poisonous. Always take precautions. Any burning of the eyes, nose or throat are signs that you need to increase ventilation.
Stop immediately and relocate work if necessary, until adequate ventilation is obtained.
Stop working completely and seek medical help if irritation and discomfort persist.

WARNING! Do not weld on galvanized steel, stainless steel, beryllium, titanium, copper, cadmium, lead or zinc without proper respiratory equipment and or ventilation.

WARNING! The use of this product can expose you to chemicals such as lead, which is known to the State of California to cause birth defects, reproductive harm and cancer. Proposition 65 Warning. For more information visit: www.P65Warnings.ca.gov

DANGER! Do not weld or cut around Chlorinated solvents or degreasing areas. Release of Phos-gene gas can be deadly. Consider all chemicals to have potential deadly results if welded on or near metal containing residual amounts of chemicals.

Keep all cylinders upright and chained to a wall or appropriate holding pen. Certain regulations regarding high pressure cylinders can be obtained from OSHA or local regulatory agency. Consult also with your welding supply company in your area for further recommendations. The regulatory changes are frequent so keep informed.

All cylinders have a potential explosion hazard. When not in use, keep capped and closed. Store chained so that overturn is not likely. Transporting cylinders incorrectly can lead to an explosion. Do not attempt to adapt regulators to fit cylinders. Do not use faulty regulators. Do not allow cylinders to come into contact with work piece or work. Do not weld or strike arcs on cylinders. Keep cylinders away from direct heat, flame and sparks.

WARNING! Electrical shock can kill. Make sure all electrical equipment is properly grounded. Do not use frayed, cut or otherwise damaged cables and leads. Do not stand, lean or rest on ground clamp. Do not stand in water or damp areas while welding or cutting. Keep work surface dry. Do not use welder or welder in the rain or in extremely humid conditions. Use dry rubber soled shoes and dry gloves when welding or cutting to insulate against electrical shock. Turn machine on or off only with gloved hand. Keep all parts of the body insulated from work, and worktables. Keep away from direct contact with skin against work. If tight or close quarters necessitate standing or resting on work piece, insulate with dry boards and rubber mats designed to insulate the body from direct contact.

All work cables, leads, and hoses pose trip hazards. Be aware of their location and make sure all personnel in area are advised of their location. Taping or securing cables with appropriate restraints can help reduce trips and falls.

SAFETY PRECAUTIONS (Continued)

WARNING! Fire and explosions are real risks while welding or cutting. Always keep fire extinguishers close by and additionally a water hose or bucket of sand. Periodically check work area for smoldering embers or smoke. It is a good idea to have someone help watch for possible fires while you are welding. Sparks and hot metal may travel a long distance. They may go into cracks in walls and floors and start a fire that would not be immediately visible. Here are some things you can do to reduce the possibility of fire or explosion:

• Keep all combustible materials including rags and spare clothing away from area.
• Keep all flammable fuels and liquids stored separately from work area.
• Visually inspect work area when job is completed for the slightest traces of smoke or embers.
• If welding or cutting outside, make sure you are in a cleared off area, free from dry tender and debris that might start a forest or grass fire.
• Do not weld on tanks, drums or barrels that are closed, pressurized or anything that held flammable liquid or material.

Metal is hot after welding or cutting! Always use gloves and tongs when handling hot pieces of metal. Remember to place hot metal on fire-proof surfaces after handling. Serious burns and injury can result if material is improperly handled.

WARNING! Faulty or poorly maintained equipment can cause injury or death. Proper maintenance is your responsibility. Make sure all equipment is properly maintained and serviced by qualified personnel. Do not abuse or misuse equipment. Remove any faulty cords, plugs or electrical equipment from service or access. Keep all covers in place. A faulty machine may shoot sparks or may have exploding parts. Touching uncovered parts inside machine can cause discharge of high amounts of electricity. Do not allow employees to operate poorly serviced equipment. Always check condition of equipment thoroughly before starting up.

Disconnect unit from power source before any service attempt is made and for long term storage or electrical storms. If operating on a generator: Always switch off and disconnect the unit before shutting the unit down. Never start the generator with the unit switched on or connected. Failure to do so may result in damage to the unit. This damage is not covered under warranty. Make sure that any required generator grounding is performed properly and to the manufacturer's recommendations.

Further information can be obtained from The American Welding Society (AWS) that relates directly to safe welding and plasma cutting. Additionally, your local welding supply company may have additional pamphlets available concerning their products. Do not operate machinery until you are comfortable with proper operation and are able to assume inherent risks of cutting or welding.

SPECIFICATIONS

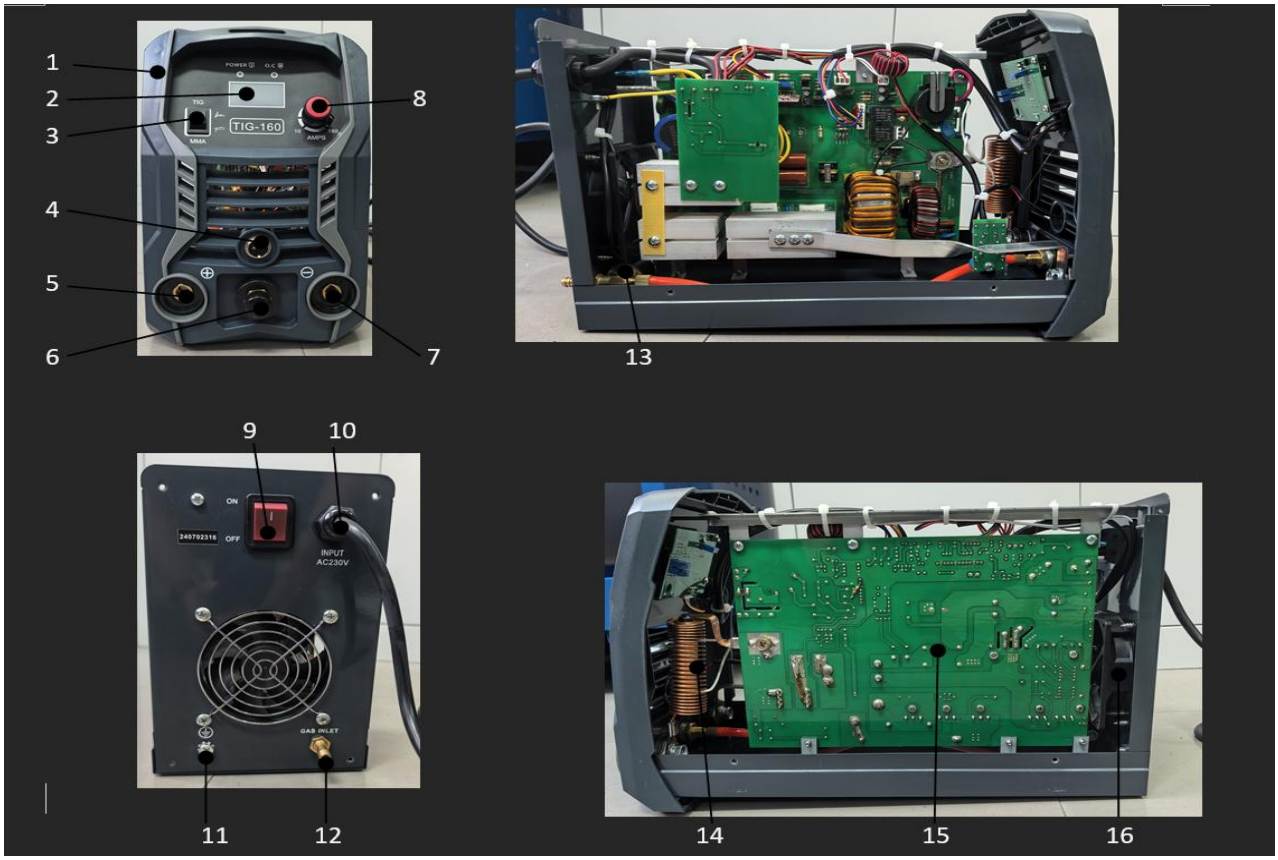
Model	TIG160 (ATM60160)	
Rated Input	240V / 60Hz / 50A	
Rate Input (kw)		
No-Load Voltage	65V	
Rate output current(A)	200A	
TIG WELDING RANGE	10-200A	
Duty cycle	50%	
STICK WELDING RANGE	10-100A	
TIG ARC STARTING MODE	HF/LIFT ARC STRIKING	
EFFICIENCY	85%	
POWER FACTOR	.93	
INSULATION CLASS	F	
PROTECTION CLASS OF ENCLOSURE	IP21S	
UNIT DIMENSION	15 X 12 X 20”	

OPERATING CONDITION AND WORK SURROUNDING

Operating condition:

- Voltage of power source: AC1x 230V±10%
- Frequency: 50Hz
- **Reliable grounding protection**
- Relative humidity: ≤90%(average monthly temperature≤20℃)
- Ambient temperature: -10℃ - 40℃
- The welding site should have no harmful gas, chemicals, molds and inflammable
- matter, explosive and corrosive medium, no big vibration and bump to the welder.
- Avoiding rainwater. Operating in rain is not allowed.
- Before welding, the operator should read the operation instructions and uses the welder
- correctly according to the process specification.
- Checking the welder appearance for deformation and damage.
- For the safety of the equipment and the persons, the customer must correctly make
- grounding or protecting according to the power supply system: using 4 mm2 lead to connect
- the protection grounding of the welder.
- Welding operation should be carried out in dry and good ventilating area. The surrounding
- objects should be not less than 0.5m away from the welder.
- Checking the welder output connector for tightness.
- The welder can not be moved or the cover can not be opened during the power is on and
- welding operation is carried out.
- The welder should be cared, used and managed by specialized person.
- Confirming that the power source is AC 230V, never connect to 380V power.

PARTS LIST AND DIAGRAM



Part No.	D
1	Front panel
2	LED Display
3	Rocket Switch
4	Control socket
5	Output Positive Terminal
6	Pilot Arc
7	Output Negative Terminal
8	Adjusting Knob
9	Power Switch
10	Power Cable
11	Grounding Bolt
12	Gas Inlet Valve
13	Gas Control Valve
14	HF Coil
15	IGBT Inverter Board

Maintenance and Troubleshooting

Procedures not specifically explained in this manual must be performed only by a qualified technician.

⚠WARNING

TO PREVENT SERIOUS INJURY FROM ACCIDENTAL OPERATION OR ELECTRIC SHOCK: Make sure the Power Switch of the Welder is in its "OFF" position and that the Welder is unplugged from the electrical outlet before performing any inspection, maintenance, or cleaning procedures. TO PREVENT SERIOUS INJURY FROM WELDER FAILURE: Do not use damaged equipment. If abnormal noise, vibration, or leaking air occurs, have the problem corrected before further use.

Cleaning and Maintenance

Note: These procedures are in addition to the regular checks and maintenance explained as part of the regular operation of the air-operated tool.

1. **BEFORE EACH USE, disassemble Torch, inspect and replace worn components, then reassemble Torch tightly**.
2. **Daily - Air Supply Maintenance:** Every day, maintain the air supply according to the component manufacturers' instructions. **Drain the dryer regularly.** Performing routine air supply maintenance will allow the tool to operate more safely and will also reduce wear on the tool.
3. **PERIODICALLY,** blow the dust from the cooling vents with compressed air.
4. If the unit repeatedly shuts down from thermal overload, stop all use. Have the Welder inspected and repaired by a qualified service technician.
5. **Opening the welder will void the warranty, and may result in damage to equipment or possible personal injury. DO NOT OPEN THE HOUSING.** Any repairs must be completed by a qualified technician.
6. Store the Welder and accessories in a clean and dry location out of reach of children.
7. **WARNING! If any electrical cords of this Welder are damaged, they must be replaced only by a qualified service technician.**

TROUBLESHOOTING

IMPORTANT! Be CERTAIN to shut off the Welder, and disconnect it from power and air before adjusting, cleaning, or repairing the unit. A technician should discharge all capacitors before performing any internal procedures.

ISSUE	Resolvable Methods
Machine runs, but will not weld in either mode. Green "ON" LED is illuminated	Check cords and wiring to the plug and receptacle. Check circuit breaker. Check power input. Poor quality power input
Stick arc has difficulty establishing, welding rod sticking	Wet welding rods. Too low of amperage. Too high of amperage. Use fresh rods. Adjust amps. Wrong polarity. Change Hot Start settings.
TIG arc will not start	Point gap wrong or points dirty. Unplug unit, wait 30 minutes then remove rear cover and metal cover. Clean and adjust to .029"-.045". Verify point gap issue by performing lift arc start before attempting adjustment. (See next page) If unit will not strike arc or no power is produced, check torch switch and foot pedal operation. If the torch switch and foot pedal are functioning ok, then contact AXEMEN POWER for full diagnosis. If one functions and not the other, then it is likely the switch mechanism has failed inside the torch or foot pedal.
Welding rod is rapidly consumed.	No/low gas flow. Contaminated gas (CO_2 or moisture). Wrong torch polarity (+). Open gas valve, readjust flow meter. Change polarity so torch is negative (-). Breeze/draft/or welder is mounted to close to work area (fans)

Tungsten is rapidly consumed	**No/low gas flow. Contaminated gas (CO2 or moisture).** **Wrong torch polarity (+).** **Open gas valve, readjust flow meter.** **Change polarity so torch is in negative (-).** **Breeze/draft/or welder is mounted to close to work area (fans)**
Porosity of the Weld. Discolored weld color. Too much spatter. **Additional TIG symptom: Tungsten is discolored.**	**Stick: Too long of arc length. Too high of amps.** **TIG: Same as above/ Low flow rate of shielding gas. Too short of post flow period. Wrong TIG cup size.**
Weld quality is poor, unstable arc. Weld is dirty/oxidized.	**Clean paint/rust from weld. Make sure work clamp has good contact. Too low of amps/Too large of tungsten. Incorrect wiring of welder.** **Tungsten (TIG) is poorly ground/contaminated.** **Draft or welder fans are blowing on weld area.**
LED illuminates yellow/green. Machine runs, but no weld power. Error code.	**Duty cycle exceeded. Allow machine to cool. Reset main power switch after full cool down period (10-15 minutes). Make sure fan is not blocked. If light does not reset after cool down period contact technical support .**
Slight whine or squeal to arc or to welder while turned on.	**Normal. Sound may vary.**
Circuit breaker trips.	**Wiring fault. Too small of wire or circuit breaker. Welder internal short. Contact AXEMEN POWER Technical Support before resuming use.**
Fan is working, sound of HF arc welding can not strike arc.	**Check control circuit and find out reasons or connect with seller.** **5.Check if control cable of torch is broken.**

Limited Manufacturer Warranty (One Year)

TORITO EQUIPMENT DBA: AXEMENPOWER CO. makes every effort to assure that its products meet high quality and durability standards and warrants to the original purchaser that this product is free from defects in materials and workmanship for the period of one years from the date of purchase. This warranty does not apply to damage due directly or indirectly, to misuse, abuse, negligence or accidents, repairs or alterations outside our facilities, criminal activity, improper installation, normal wear and tear, or to lack of maintenance. We shall in no event be liable for death, injuries to persons or property, or for incidental, contingent, special or consequential damages arising from the use of our product. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation of exclusion may not apply to you. THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS. To take advantage of this warranty, the product or part must be returned to us with transportation charges prepaid. Proof of purchase date and an explanation of the complaint must accompany the merchandise. If our inspection verifies the defect, we will either repair or replace the product at our election or we may elect to refund the purchase price if we cannot readily and quickly provide you with a replacement. We will return repaired products at our expense, but if we determine there is no defect, or that the defect resulted from causes not within the scope of our warranty, then you must bear the cost of returning the product. This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

AXEMEN POWER EQUIPMENT

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