



SINCE 1958
HUGONG

TOTAL WELDING AND CUTTING SOLUTIONS



User Manual

TIG Welder Novi AC/DC 233

Type - NVT233ACDCW



Read this manual carefully before using the welding machine.

Table of contents	Page
1. Safety regulations	4
1.1 General safety regulations	4
1.2 Specific safety regulations and warnings	5
1.2.1 Electric shock	5
1.2.2 The vapor and the gas	5
1.2.3 UV and IR arc radiation	6
1.2.4 Fire hazard	6
1.2.5 Hot materials	6
1.2.6 Sparks and flying debris	7
1.2.7 Electromagnetic field	7
1.2.8 Shielding gas cylinders can explode	7
1.2.9 Residual risks	8
2. Intended use	8
2.1 Scope	8
2.2 Permitted applications	8
2.3 Prohibited use	8
3. Product description	9
3.1 General product description	9
3.2 Available welding processes	9
3.3 Suitable materials	9
4. Technical specifications	10
4.1 Technical specifications of the welding machine	10
4.2 Duty Cycle	10
4.3 Protection class	10
4.4 EMC classification	10
4.5 Noise emission	10
5. Use	11
5.1 Power Supply	11
5.2 Connecting the shielding gas	11
6. Service	11
6.1 Front panel	11
6.2 Back Panel	11
6.3 Display functions	12
6.4 Operation of panel buttons	13
6.4.1 Main adjustment knob	13
6.4.2 Auxiliary setting button	13
6.5 Lasmodi	14
6.5.1 DC TIG / DC Pulse TIG	14
6.5.2 AC TIG / AC Pulse TIG	14
6.5.3 AC/DC MIX TIG	14
6.6 Lasparameters	15
6.6.1 Welding cycle	15
6.7 Memory Management	15
6.7.1 Save / Load Program	15
6.8 System Settings	15
6.8.1 Language settings	15
6.8.2 Display of unit of measurement	16
6.8.3 Screen brightness	16
6.8.4 System Information	16
6.8.5 Communication information (Bluetooth)	16
6.9 Parameters	17
6.9.1 MMA	17
6.9.2 TURNING	17
6.9.3 DC TIG	17
6.9.4 AC TIG	17
6.9.5 AC Pulse TIG	17
6.9.6 AC/DC MIX TIG	17

Table of contents	Page
7. Transport and storage	17
7.1 Transport	17
7.2 Lookup	17
8. Error codes and malfunctions	18
8.1 Overview of error codes	18
9. Maintenance	19
9.1 Pre-use inspection and periodic maintenance	19
9.2 Periodic and annual maintenance	20
10. Circuit diagram	21
11. Warranty conditions	22–25



© 2026 HUGONG All rights reserved. No part of this publication may be reproduced, stored in an automated data file, or made public in any way without the express prior written permission of the publisher, except as provided by law.

1 SAFETY REGULATIONS

1.1 General Safety Regulations

WARNING: Read and understand all instructions. Failure to follow all instructions listed below may result in serious injury. The warnings, points of attention, and instructions discussed in this manual cannot cover all possible circumstances or situations that may arise. The user must understand that common sense and caution are factors that cannot be built into this product but must be applied by the user themselves.

- Follow the instructions in this manual.
- Switch off the welding machine when not in use.
- Connect the ground cable as close as possible to the welding area to ensure proper grounding.
- Ensure that no part of the body comes into contact with the welding wire when simultaneously making contact with the welding material, the ground, or an electrode while the machine is switched on.
- Do not weld from an uncomfortable or unstable position. Always ensure a firm and safe working posture to prevent accidents.
- Do not let cables hang over or around your body.
- Always wear suitable personal protective equipment, including a full protective welding suit, welding gloves, safety shoes, and a welding helmet with the correct degree of darkening.
- Avoid prolonged exposure to the welding arc and protect the skin against UV radiation and infrared radiation.
- Before each use, check all power, welding, and ground cables, as well as plugs and connections, for damage, wear, and proper insulation.
- Before use, check that all parts are clean, undamaged, and in good condition, and that there are no exposed wires.
- Keep hands and fingers away from moving parts.
- Never point the welding torch at yourself or others.
- Do not overload the machine and adhere to the prescribed duty cycle to prevent overheating and damage.
- Keep the area where you are going to weld free of flammable materials.
- Always ensure good extraction or ventilation during welding.
- Have this equipment installed, operated, and maintained exclusively by qualified personnel.
- Ensure that the workspace is clean, dry, and well-ventilated. Do not use the welding machine in damp, wet, or poorly ventilated areas.
- Always be careful when moving or transporting the welding machine.
- Ensure that harmful light rays from the welding arc are not visible to bystanders.
- Place the welding machine on a sturdy, flat surface so that it remains stable and cannot fall over.
- Wear dry protective clothing, a jacket, a shirt, gloves, and insulated footwear.
- Isolate yourself from the workpiece. Avoid contact with the workpiece or the ground.
- Use the welding machine exclusively for the prescribed applications and exclusively with consumables and accessories recommended by the manufacturer.
- Check all cables and plugs for damage and replace them immediately if damage is found.
- Use only recommended welding agents and consumables.
- Attach the welding clamp as close as possible to the workpiece on a clean and firm contact point.
- Never touch the welding wire and the earth or an earthed workpiece at the same time.

1.2 Specific safety regulations and warnings

1.2.1 Electric shock



- Wear dry protective clothing: jacket, shirt, gloves, and insulated footwear.
- Isolate yourself from the workpiece. Avoid contact with the workpiece or with the ground.
- Do not attempt to repair or maintain the welding machine while it is switched on.
- Check all cables and cords for exposed wires and replace them immediately if damage is found.
- Use only recommended replacement cables and cords.
- Always attach the ground clamp to the workpiece or workbench as close as possible to the welding area.
- Never touch the welding wire and the earth or an earthed workpiece at the same time.
- Do not use a welding machine to thaw frozen pipes.

WARNING: Electric arc welding machines can cause an electric shock that can result in injury or death. Touching live parts can cause fatal electric shocks and severe burns. During welding, all metal parts connected to the welding wire are under electrical voltage. Poor ground connections pose a hazard; therefore, always ensure the ground cable is properly connected before starting to weld.

1.2.2 The vapor and the gas



- Do not inhale fumes released during welding. Ensure that the air you breathe is clean and safe.
- Work exclusively in a well-ventilated area or use a ventilation system to remove welding fumes from the work environment.
- Do not weld on coated materials (such as galvanized steel, cadmium-plated materials, or materials containing zinc, mercury, or barium). These can release harmful fumes that are dangerous to inhale. If necessary, use a fan, respiratory protection with air supply, or remove the coating in the welding area.
- The fumes released when certain metals are heated are extremely toxic. Consult the material's safety data sheet (MSDS/SDS) for the manufacturer's instructions.
- Do not weld near materials that release toxic fumes when heated. Fumes from cleaning agents, sprays, and degreasers can be highly toxic when heated.

WARNING: Vapors released during the welding process displace clean air and can lead to injury or death.

1.2.3 UV and IR arc radiation



- Always use a welding mask that covers your entire face, from the neck to the top of the head and to behind both ears.
- Use a welding filter that complies with ANSI standards and also wear safety glasses. For welding machines with an output current of up to 160 amperes, a welding filter with protection grade 10 is recommended; above 160 amperes, protection grade 12. Consult ANSI standard Z87.1 for more information.
- Cover all unprotected skin that may be exposed to the welding arc with protective clothing and safety shoes. Flame-retardant fabrics or leather shirts, jackets, trousers, and overalls provide suitable protection.
- Use welding screens or other shields to protect other persons from the arc radiation released during welding.
- Warn people in the welding area before igniting a welding arc, so that they can protect themselves.

DANGER: The welding arc produces ultraviolet (UV) and infrared (IR) radiation that can cause injury to the eyes and skin. Never look at the welding arc without suitable eye protection.

1.2.4 Fire hazard



- Do not use an electric arc welding machine in areas where flammable or explosive materials are present.
- Remove all combustible materials within a radius of 10 meters (35 feet) of the welding arc. If removal is not possible, completely cover these materials with fire-resistant covers.
- Take precautions to prevent flying sparks from causing fires or explosions in hidden spaces, cracks, or other places that are not immediately visible.
- Always keep a fire extinguisher within reach for emergencies.
- Wear clean, oil-free clothing without pockets or flaps where sparks can collect.
- Do not carry flammable objects with you, such as lighters or matches.
- Attach the ground cable as close as possible to the welding area to prevent unwanted current paths that could cause electric shocks or fire hazards.
- After welding, trim the excess welding wire to approximately 6 mm (¼ inch) to prevent unintended arc formation.

WARNING: Do not weld containers or pipes that contain or have contained flammable gases, liquids, or other flammable substances. Welding produces sparks and heat that can ignite flammable and explosive materials.

1.2.5 Hot materials



- Do not touch welded materials with bare hands.
- Do not touch the nozzle of the TIG torch immediately after welding. Wait until it has cooled down sufficiently before touching it.

Warning: Welded materials are hot and can cause severe burns if handled improperly.

1.2.6 Sparks and flying debris



- Wear suitable personal protective equipment at all times: ANSI-approved safety goggles or a face shield, a welding helmet, and hearing protection (earplugs) to prevent sparks from entering your ears or hair.

Warning: Welding produces hot sparks that can cause injury. Removing slag from welds can cause flying particles.

1.2.7 Electromagnetic field



- Electromagnetic fields can cause interference in various electrical and electronic devices, such as pacemakers.
- Consult your doctor before using an electric arc welding machine or cutting device.
- Keep persons with a pacemaker away from the welding area during welding.
- Do not wrap cables around your body while welding.
- Bundle the TIG torch line and the ground cable together where possible.
- Keep the TIG torch lead and the ground cable on the same side of your body.

1.2.8 Shielding gas cylinders can explode



- Never expose cylinders to high temperatures, sparks, open flames, mechanical shocks, or welding arcs.
- Do not touch the cylinder with the TIG torch.
- Never weld on a gas cylinder.
- Always secure cylinders upright to a transport trolley or a fixed object.
- Keep cylinders away from welding work and electrical circuits.
- Always use the correct pressure regulator, gas hose, and couplings for the specific application.
- Do not look inside the shut-off valve or the valve when you open it.
- If possible, always use the cylinder protective cap.

WARNING: High-pressure gas cylinders can explode if damaged. Therefore, always handle them with the utmost care.

Important notes:

- If the welding machine is used for an extended period, the thermal protection light on the control panel may illuminate. This indicates that the internal temperature of the welding machine has exceeded the permissible limit. In this case, stop welding and wait until the machine has cooled down and the indicator light goes out. You can then resume welding.
- Switch off the main switch and close the argon gas valve before temporarily leaving the workplace or after the welding work is completed.
- Welders must wear work clothing made of sturdy canvas and a welding helmet or face shield for protection against arc light and heat radiation.
- Install light-tight shields around the workplace to protect others from the effects of arc radiation.
- Keep flammable and explosive materials away from the welding area.
- Ensure that every power connection of the welding machine is correctly connected and grounded.

1.2.9 Residual risks

Despite the implemented safety measures, the following residual risks remain:

- Exposure to UV and IR radiation from the welding arc.
- Exposure to welding fumes and fumes.
- Burns caused by hot workpieces, electrodes, and torch parts.
- Electric shocks caused by contact with live parts.
- Fire hazard due to sparks and hot welding spatter.
- Electromagnetic fields that can affect medical implants.
- Noise emission dependent on the welding process used.

Warning: Users must always wear the prescribed personal protective equipment.

2. INTENDED USE

2.1 Scope

The TIG welding system nvt233ACDCW is intended exclusively for professional TIG and MMA welding of metallic materials such as carbon steel, stainless steel, copper, aluminium, magnesium, and similar alloys.

The machine is designed for use in industrial and professional environments by adequately instructed and qualified users.

The device may only be used:

- Within the technical specifications described in this manual.
- With approved welding accessories.
- With the prescribed mains voltage.
- With a correctly connected shielding gas supply.
- With a correctly connected cooling system if a water-cooled torch is used.

2.2 Permitted applications

- Within the technical specifications described in this manual.
- With approved welding accessories.
- With the prescribed mains voltage.
- With a correctly connected shielding gas supply.
- With a correctly connected cooling system if a water-cooled torch is used.

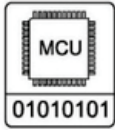
2.3 Prohibited use

- Use in explosive environments.
- Use in rain or in direct contact with water.
- Use as a power source for other equipment.
- Thawing of pipes or structures.
- Use with damaged cables, connectors, or housing.
- Use without proper grounding.
- Use without shielding gas during TIG welding processes.
- Use of non-approved accessories.
- Changes to hardware, software, or security features.

Warning: Use outside the described applications is considered improper use. Damage and injury resulting therefrom are the sole responsibility of the user.

3. PRODUCT DESCRIPTION

3.1 General product description



The NVT 233 AC/DC inverter AC/DC TIG welding system utilizes an MCU (Microcontroller Unit) as the central processor. This allows the welding machine and the entire welding process to be coordinated efficiently. The status of both the machine and the welding process is monitored and adjusted in real time. This ensures that each welding machine offers a high degree of consistency and delivers reliable, stable welding results.

With the NVT 233 AC/DC, the MCU controls every waveform in real time during AC square wave welding. As a result, sharp arc noise during AC welding is significantly reduced, and arc switching noise is greatly minimized. This reduces hearing strain on the welder and also limits tungsten electrode consumption.

The NVT 233 AC/DC uses a special high-frequency arc ignition technology, which ignites the arc more easily and reliably.

During the setting of the welding parameters, the exact parameter values and the WYSIWYG ("What You See Is What You Get") values are displayed in real time on the digital display. This allows the welding parameters to be set accurately, the welding process to be precisely controlled, and excellent welding results to be achieved.



Thanks to the application of advanced IGBT inverter technology, the main transformer and the choke coil have a more compact design. As a result, the dimensions and weight of the power source are significantly reduced. Additionally, copper losses are limited, while efficiency and power factor are improved. Consequently, the energy-saving effect is substantial.

3.2 Available welding processes

- DC TIG (DC-TIG)
- AC TIG-lassen (AC-TIG)
- DC pulse TIG (DC-PTIG)
- AC pulse-TIG-lassen (AC-PTIG)
- AC-DC MIX TIG
- DC electrode erosion / MMA erosion (DC-MMA)

3.3 Suitable materials

- Carbon steel
- Cast iron
- Stainless steel
- Copper and copper alloys
- Aluminum and aluminum alloy
- Magnesium and magnesium alloy

4. TECHNICAL SPECIFICATIONS

4.1 Technical specifications of the welding machine

Model	NVT 233 AC/DC
Welding processes	TIG DC, TIG AC, Pulse TIG, AC Pulse TIG, MMA
Supply voltage	120 V / 230 V
Mains frequency	AC $\pm 15\%$
PFC (Power Factor Correction)	50/60 Hz
Input voltage range	Yes
Open circuit voltage (OCV)	100-250V
Protection class	69 V
Insulation class	IP21S
Cooling	H
Dimensions (L x W x H)	Air / water
Weight	538 x 241 x 402 mm
	18 kg

4.2 Duty Cycle

The duty cycle indicates how much time the welding machine can weld continuously within a 10-minute period, expressed as a percentage of those 10 minutes.

The nominal duty cycle is based on welding with the nominal output current. When the welding current is reduced, the allowable duty cycle increases.

Always use the welding machine within the specified duty cycle.

Load duty cycle curve

Nominal duty cycle: 60%

- Leave for 6 minutes
- Rest/cool down for 4 minutes

Warning: Overloading will damage the machine!

4.3 Protection class

The welding machine has a protection rating of IP21S.

During the use of the welding machine:

Do not insert fingers or objects with a diameter smaller than 12.5 mm (especially metal objects) into the welding machine.

Do not apply excessive pressure to the housing of the welding machine.

4.4 EMC classification

This equipment complies with EN IEC 60974-10 and is classified as Class A welding equipment. Class A equipment is intended for use in industrial environments. In residential environments supplied via the public low-voltage grid, this equipment may cause electromagnetic interference. In such cases, the user may be required to take additional measures.

Note: Before installation, check if the following are located in the vicinity:

- Data cables.
- Telecommunication cables.
- Radio or television receivers.
- Measuring and control equipment.
- Security or alarm systems.
- Pacemakers and other medical implants.

4.5 Noise emission

- The noise level during welding depends on the process used, the welding current, the material, and the working environment.
- When the equivalent sound level exceeds the locally permitted limit, suitable hearing protection must be worn.

5. Use

Please note: The welding machine is supplied without a three-phase power plug. The power cable is pre-assembled, but the correct three-phase power plug must be fitted by the user or a qualified installer.

5.1 Power Supply

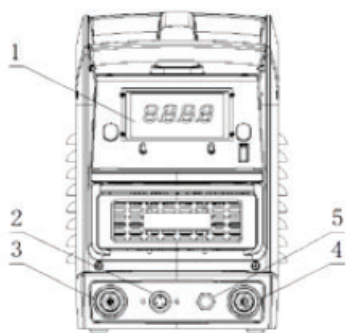
- Connect the machine to a 3~400 V mains connection.
- The power cable at the rear provides the full power supply for the welding machine.

5.2 Connecting the shielding gas

- Connect the hose from the pressure regulator on the argon cylinder to the Gas Input connection at the rear of the machine.
- Check that the gas system is correctly connected before starting to weld.

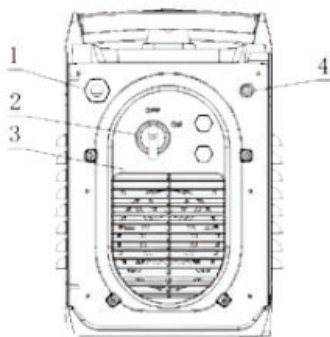
6. SERVICE

6.1 Front panel



1. Panel
2. TIG welding torch control connection
3. "+" or DC TIG grounding cable
4. "-" or TIG welding torch connection
5. Gas outlet

6.2 Rear panel



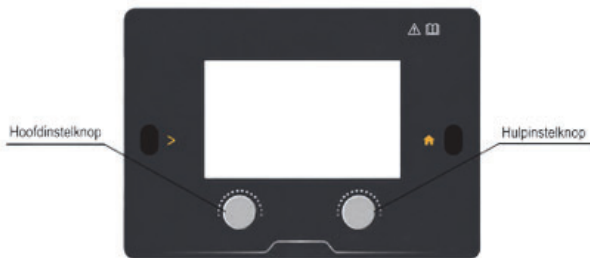
1. Power cable
2. On/off switch
3. Back panel
4. Shielding gas inlet connection

6.3 Display functions



No.	Element	Function
1 & 2	Parameterscherm	Displays the set welding current (A) and output voltage (V).
3	Supply voltage	Display of the connected mains voltage
4	Left rotary knob	Navigating through menus and adjusting selected parameters.
5	Right rotary knob	Setting values and confirming menu options.
6	Menu bar	Provides access to process settings, memory functions, and system settings.
7	USB port	For importing/exporting welding programs, performing software updates, and saving machine data.
A	Navigation key (Previous/back)	Used to navigate through menus and return to a previous setting or parameter group.
B	Home key	Provides direct access to the main screen and the most important machine settings. This allows the user to quickly return to the start menu.

6.4 Operation of panel buttons



6.4.1 Main adjustment knob

(Operation: press to select, turn left and turn right)



Operation of the button

1. Select between first, second, and third level menus.
2. Press to go to the next menu level (cyclically selectable).
3. Confirming a function or setting.



Turning the knob

1. Select between the parent and child options in the first, second, and third level menus.
2. Turn to the right to select the next function in the current menu.
3. Turn left to select the previous function in the current menu.

6.4.2 Auxiliary setting button

(Operation: press to select, turn left and turn right)



Turning the knob

1. Selecting functions left, right, up, and down within the three-level menu.
Turn to the right to display the next function in the menu.
 - Turn to the left to display the previous function in the menu.
2. Adjusting parameter values in the third menu level.
 - Turning to the right increases the set value.
 - Turning to the left lowers the set value.

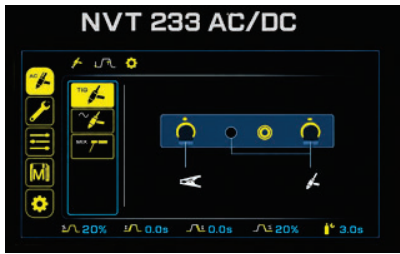


Pressing the button

- Confirming a function or setting.

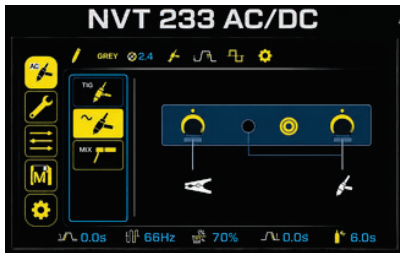
6.5 The-modes

6.5.1 DC TIG / DC Pulse TIG



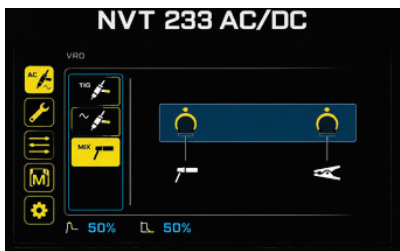
Select this welding mode for DC TIG welding and DC Pulse TIG welding. This setting is used for welding steel, stainless steel, copper, titanium, and other metals that are welded with direct current. In pulse mode, the welding current automatically alternates between a peak current and a base current for better heat control and less distortion.

6.5.2 AC TIG / AC Pulse TIG



Select this welding mode for AC TIG welding and AC Pulse TIG welding. This setting is primarily intended for welding aluminium and magnesium alloys. The alternating current provides a cleaning effect on the material surface, while the pulse function offers additional control over the weld pool and heat input.

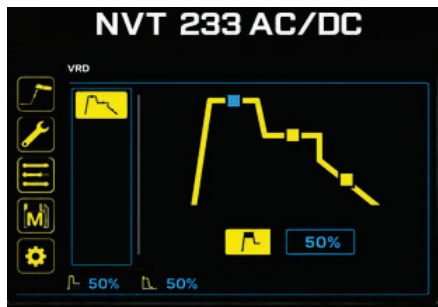
6.5.3 AC/DC MIX TIG



AC/DC MIX TIG combines the benefits of AC and DC welding in a single welding process. The AC phase ensures effective cleaning of the aluminum oxide layer, while the DC phase provides deeper penetration, a higher melt rate, and a higher welding speed. This welding mode is particularly suitable for thick aluminum structures where both optimal cleaning and maximum penetration are required.

6.6 Lasparameters

6.6.1 Welding Cycle

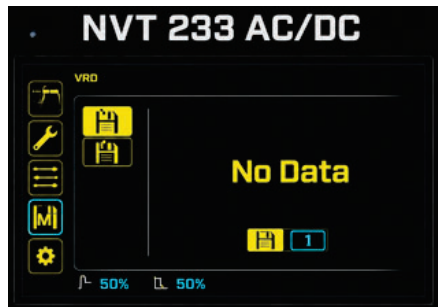


1. Gas pre-flow time – time during which shielding gas flows out before ignition of the welding arc.
2. Startup current – welding current used to start the welding process.
3. Upslope time – the time during which the current gradually increases from the startup current to the welding current.
4. Welding current – set main welding current during welding.

5. Downslope time – the time during which the current is gradually reduced after the welding is completed.
6. Final current – current value maintained during the phase-out.
7. Post-flow time – the time during which shielding gas continues to flow after the welding arc has been extinguished to protect the weld pool and the tungsten electrode.

6.7 Memory Management

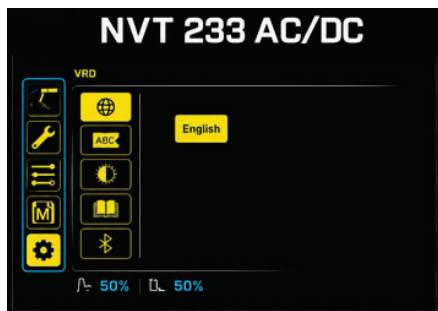
6.7.1 Save / Load Program



Select Save or Load and choose the desired program memory with the rotary knob. Confirm the choice to save or activate the program.

6.8 System Settings

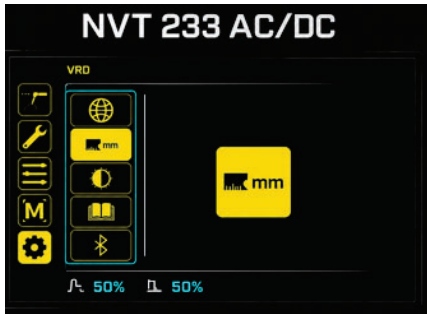
6.8.1 Language settings



Select the desired language with the rotary knob and confirm your choice to save the language settings. Available languages may vary depending on the installed software version.

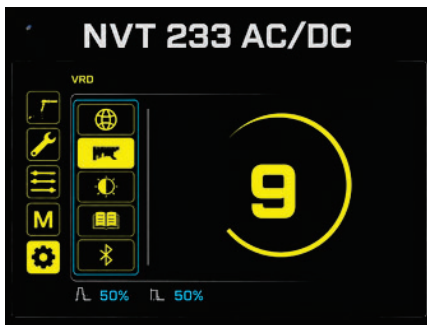
- Dutch
- Engels
- German
- French
- Spanish

6.8.2 Display of unit of measurement



This screen displays the set unit of measurement. In the current software version, dimensions are displayed in millimeters (mm).

6.8.3 Screen brightness



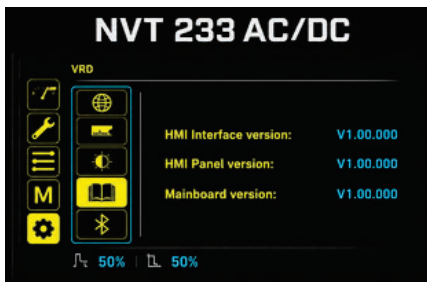
Select the brightness setting and adjust the desired value with the rotary knob. The set value is displayed immediately on the screen.

Screen brightness: 0 – 10

Factory setting: 9

Direct visual display of the set brightness level

6.8.4 System Information

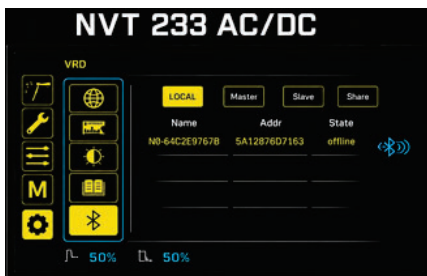


This screen is intended solely for information and contains no adjustable parameters.

Displayed information:

- Software version
- Mainboard version
- Control Panel version
- Firmware information
- System status (depending on software version)

6.8.5 Communication information (Bluetooth)



This screen is intended solely for information and diagnosis. No parameters can be adjusted.

Displayed information:

- Local Info (device information)
- Link Mode
- Found Devices
- Device name
- Bluetooth address (MAC address)
- Connection status (Online / Offline)

6.9 PARAMETERS

6.9.1 MMA

- MMA-lasstroombereik: 10 – 180 A
- MMA electrode type: Rutile, basic, stainless steel, cast iron, and other common coated electrodes.
- Electrode diameter: 1.6 – 6.0 mm (depending on type and application).

6.9.2 TURNING

Arc ignition: HF (high frequency) / Lift-Arc (depending on the machine version)

6.9.3 DC TIG

- Rated current: 5 A – 230 A
- DC Puls TIG
- Peak current: 5 A – 230 A
- Base flow: 10% – 90%
- Pulse frequency: 0.2 Hz – 300 Hz
- Pulsverhouding (Duty Cycle): 10% – 90%

6.9.4 AC TIG

- Rated current: 15 A – 230 A
- AC frequency: 50 Hz – 150 Hz
- AC-balance: 50% – 90%

6.9.5 AC Pulse TIG

- Peak current: 15 A – 230 A
- Base flow: 10% – 90%
- AC frequency: 50 Hz – 150 Hz
- AC-balance: 10% – 90%
- Pulse frequency: 0.2 Hz – 300 Hz
- Pulsverhouding (Duty Cycle): 10% – 90%

6.9.6 AC/DC MIX TIG

- Rated current: 15 A – 230 A
- MIX frequency: 0.2 Hz – 300 Hz
- MIX DC-duty cycle: 10% – 90%
- MIX DC-stroom: 10% – 90%

7. TRANSPORT AND STORAGE

7.1 Transport

During transport:

- **Protect the machine from shocks.**
- **Prevent tipping.**
- **Remove connected torches and cables if possible.**
- **Always secure gas cylinders individually.**
- **Store the machine in a dry, dust-free environment.**

Transport temperature:

-20 °C to +55 °C

7.2 Lookup

Storage temperature:

-20 °C to +55 °C

Relative humidity:

Maximum 90%, non-condensing.

8. ERROR CODES AND MALFUNCTIONS

8.1 Overview of TIG AC/DC 233 error codes

Error code	Fault / Warning	Possible cause	Corrective action
ERR1	Overheating / overload	Excessive load, insufficient cooling or blocked ventilation openings	Stop welding and allow the machine to cool down.
ERR1-1 NTC1	Overheating	Internal temperature too high	Switch off the machine and allow it to cool down.
ERR1-2 NTC2	Overheating	Temperature protection activated	Check the fans and airflow.
ERR1-3 NTC3	Overheating	Internal components are too hot	Allow the machine to cool down and reduce the load.
ERR1-4	Duty-cycle protection	Duty cycle exceeded	Observe the required rest periods according to the specified duty cycle.
ERR2	Overvoltage	Mains voltage too high	Check the power-supply voltage.
ERR3	Undervoltage	Mains voltage too low	Check the power-supply voltage and cabling.
ERR4	Water shortage	No water cooler is connected, but the machine is configured for water cooling	Set the water-cooler function to "Off" and configure the machine for gas cooling.
ERR5	Output overcurrent	Short circuit, overload or defective torch/cable	Check the welding circuit and all connections.
ERR7	Torch-switch lockout	Torch switch remains activated or is defective	Check the torch and torch switch.
ERR13	Communication error	Fault between the control modules or display	Restart the machine and check the connections.
ERR13	Output-current detection fault	Defective current sensor or measuring circuit	Have the machine checked by a qualified service technician.
ERR16 / ERR20	NTC temperature-sensor malfunction, interruption or phase failure	Defective temperature sensor, cable break or phase problem	Check the power-supply voltage and have the machine inspected.

9. MAINTENANCE

9.1 Pre-use inspection and periodic maintenance

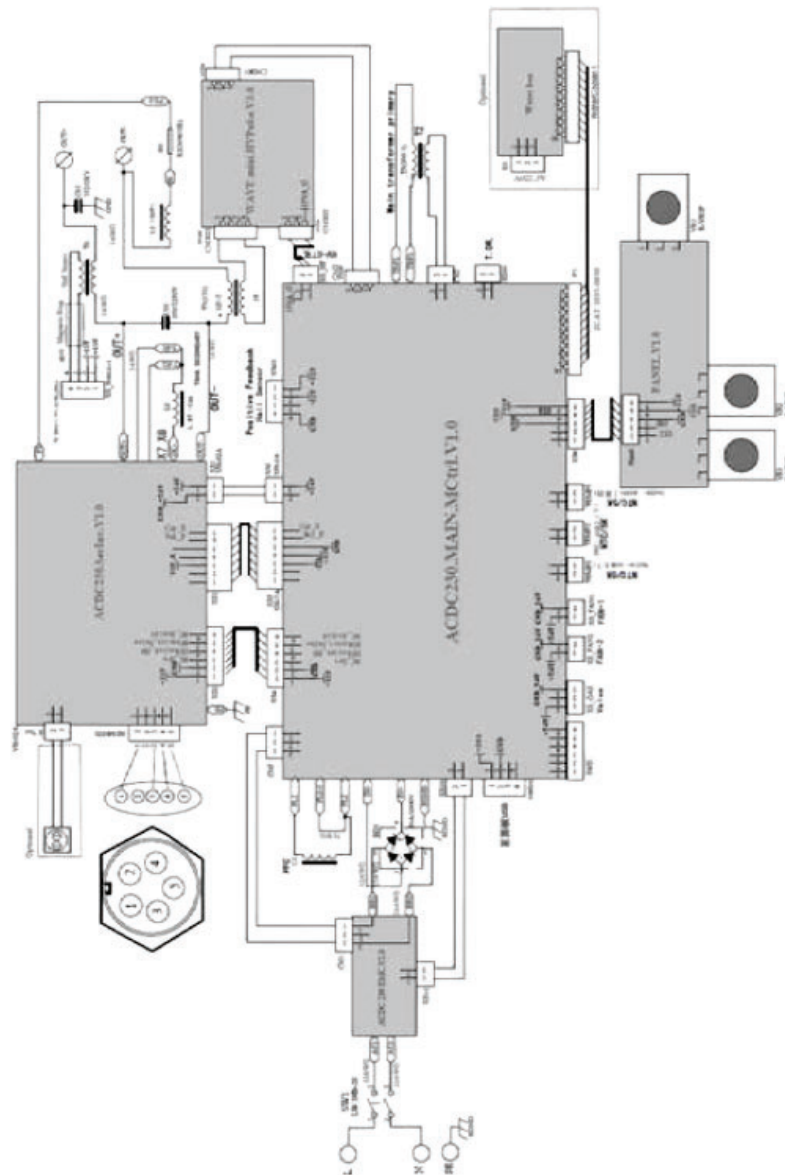
Frequency	Component	Maintenance / Action
Before each use	Power supply cable	Check for damage, wear and exposed conductors. Replace immediately if defective.
Before each use	Welding cables	Check for damage, wear and loose connections. Repair or replace as necessary.
Before each use	Ground clamp	Check for a secure connection and wear. Clean or replace as necessary.
Before each use	TIG torch and connections	Check for wear, damage, leaks and loose connections. Replace defective parts.
Before each use	DINSE connectors	Check for wear, heat discolouration and correct locking. Clean or replace as necessary.
Daily	General machine condition	Check for damage, contamination and abnormal noises.
Weekly	Ventilation openings	Remove dust, dirt and obstructions.
Weekly	Fan	Check for contamination, damage and unrestricted rotation. Clean or replace as necessary.
Weekly	Gas hose and connections	Check for damage and leaks. Repair or replace as necessary.
Weekly	Gas regulator	Check proper operation and the leak-tightness of the connections.

9.2 Periodic and annual maintenance

Frequency	Component	Maintenance / Action
Monthly	Interior of the machine*	Remove dust and dirt using dry compressed air or a vacuum cleaner.
Monthly	Electrical connections	Check for loose connections and heat discolouration. Tighten or replace as necessary.
Monthly	Cooling system	Check the operation of the fan and air circulation.
Every six months	Interior of the machine*	Thoroughly inspect for dust accumulation, corrosion and damage.
Annually	Complete machine	Have a qualified service technician perform a safety inspection and functional check.
Annually	TIG torch	Check the power cable, water hoses, gas hose and controls. Replace worn parts.

Note: Clean the inside of the machine only after it has been completely de-energized. In dusty or industrial environments, cleaning may be necessary more frequently. In accordance with the manufacturer's documentation, it is recommended to inspect and clean the inside at least once every six months.

10. Wiring diagram



11. HUGONG Warranty Terms and Conditions

1. Warranty Period

We provide the following warranty on all our products:

- 2-year standard warranty covering manufacturing and material defects from the date of purchase.
- 5-year extended warranty, provided that the product is registered within 30 days of purchase.

The extended warranty applies exclusively to the original owner and is non-transferable.

For commercial applications, adjusted warranty periods may apply unless otherwise agreed in writing.

2. Unique HUGONG Warranty

5-year warranty when officially purchased through an authorised HUGONG dealer

The 5-year warranty on our HUGONG welding equipment is unique in the market and demonstrates our commitment to quality, durability and service.

This extended warranty applies only if:

- The machine was purchased from an authorised dealer listed on HUGONGWELDS.EU, the central platform for official HUGONG dealers and service partners.
- The product was correctly registered online within 30 days of the purchase date.
- Any repairs or maintenance are carried out exclusively by an authorised HUGONG service partner listed on HUGONGWELDS.EU.
- Repairs carried out by unauthorised parties will invalidate the warranty.

The complete list of authorised dealers and service centres can be found at:

www.hugongwelds.eu

Purchases made through unauthorised sales channels or grey-market imports are excluded from the warranty terms and conditions.

Valkenpower B.V. is the official importer of HUGONG welding equipment for Western Europe.

The extended 5-year warranty is provided exclusively by Valkenpower B.V. in cooperation with HUGONG.

3. Warranty Conditions (Standard and Extended)

To make a claim under the standard or extended warranty, the following conditions must be met:

- The product was purchased from an authorised dealer listed on HUGONGWELDS.EU.
- The product is used in accordance with the user manual and the prescribed maintenance instructions.
- Maintenance and/or repairs are carried out exclusively by authorised HUGONG service partners.
- For the extended warranty, the product must be correctly registered within 30 days of purchase.
- The original purchase invoice is available and can be provided.

Please note: Incorrect or improper use will invalidate the warranty in full, including the extended warranty.

If the product is not registered, or is registered incorrectly, within 30 days of purchase, only the standard 2-year warranty will apply.

4. What Is Covered by the Warranty?

During the applicable warranty period, HUGONG covers:

- Manufacturing defects;
- Material defects;
- Functional defects occurring during normal use.

We will:

- Repair or replace the defective part;
- Replace the entire product where appropriate;
- Or, by mutual agreement, provide a full or partial refund of the purchase price, taking depreciation into account.

The choice of remedy is at the discretion of Valkenpower B.V. or an authorised service partner.

5. What Is Not Covered by the Warranty?

The warranty does not apply in the following cases:

Normal Wear and Tear of Components Such As:

- Electrodes;
- Welding torches;
- Cables;
- Connectors;
- Filters;
- Hose couplings;
- Switches;
- Seals.

Wear Parts

- Water pumps in water-cooling units, as these are considered wear parts.

Improper Use

- Improper use;
- Overloading;
- Incorrect installation.

Product Modifications

- Products that have been altered or modified without prior written approval;
- Use of unapproved accessories or components.

External Influences

- Ingress of dust, moisture or metal particles into the machine. This is not covered by the warranty and is considered user-related damage;
- Moisture damage;
- Dust;
- Overheating;
- Voltage surges;
- Lightning strikes;
- Fire;
- Corrosion;
- Transport damage.

Rental Applications

- Use in rental applications, unless otherwise agreed in writing in advance.

6. Warranty Procedure

In the event of a defect:

- Contact our customer service department or an authorised HUGONG dealer.
- Please provide the following:
- Proof of purchase;
- Serial number, as shown legibly on the rating plate;
- A description of the problem and the circumstances under which the defect occurred.

Shipping

The product must be securely packaged and returned to the designated service centre.

Transport and shipping costs are borne by the customer unless otherwise agreed in writing.

During the repair period, there is no automatic entitlement to a loan or replacement product.

7. Limitation of Liability

HUGONG and Valkenpower B.V. are not liable for:

- Loss of income;
- Consequential damage;
- Business interruption;
- Costs associated with disassembly, installation or adjustments;
- Work carried out by third parties without prior written authorisation;
- Claims exceeding the original purchase price.

Statutory consumer rights remain unaffected.

8. Warranty on Parts and Repairs

- Repaired or replaced parts remain covered for the remaining warranty period of the original product.
- Parts purchased separately are covered by a 6-month warranty.

9. Governing Law

These warranty terms and conditions are governed by Dutch law.

Disputes will preferably be resolved through mutual consultation. Where necessary, the matter may be submitted to the competent court in Roermond or to a recognised dispute resolution body.

Questions?

Our customer service team will be happy to assist you.

Visit: www.hugongwelds.eu

For:

- dealers;
- service partners;
- product registration;
- technical support.