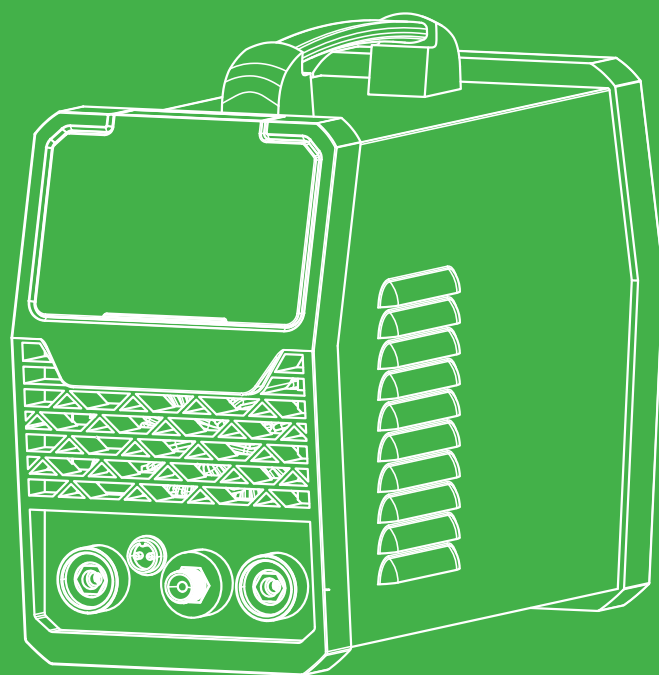


STAHLFEST

SFW210TIG **TIG WELDING MACHINE**



USER'S MANUAL

Read me first

Thank you for using welder ! For the important safety of your body, please read this manual book and understand its contents before operation. Thank you for your cooperation!

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Use and Characteristic

The WS series inverter DC argon arc welding machine integrates manual welding, ordinary argon arc welding, and cleaning functions. It can weld carbon steel, stainless steel, copper, titanium and other materials. Because this series of welding machines have ideal performance, static and external characteristics and good dynamic characteristics, and relatively complete control functions, it exhibits the following characteristics:

- IGBT high-frequency soft switching conversion, high efficiency, small size and light weight;
- The advanced control scheme significantly improves the performance of the welding machine and meets the welding process requirements to a greater extent;
- Manual welding, ordinary argon arc welding, cleaning-multi-purpose machine;
- Cleaning function, cleaning the color of the workpiece after ordinary argon arc welding
- Easy arc starting, stable arc, high welding quality; Manual arc welding ~ small spatter, stable current, high reliability, and good weld formation;
- Digital panel adjustment, complete functions, multi-parameter adjustment;

Safety Precaution

Generally Safety Precaution

- Ensure to follow precautions specified in this manual, or else, an accident may happen.
- The design and construction of input power supply, selection of installation site and use of high pressure gas shall be performed according to the relevant standards and rules.
- Irrelevant personnel are not allowed to enter the welding workplace. Only the qualified personnel can install, overhaul, maintain and operate the welding machine.
- Qualified staff is needed for installation, maintenance and use.
- Make sure the welding machine is not used for other purposes except welding (such as charging, heating and pipeline unfreezing, etc).
- If the ground is uneven, please avoid dumping welding machine.

Avoid electrical shock or burn

- Touching electric parts is forbidden.
- Ensure to invite professional electrician to ground the welding machine with copper

conductor with specific cross section.

- Ensure to invite professional electrician to connect power source in welding machine with copper conductor with specific cross section. The insulating sheath cannot be damaged.
- Ensure to insulate the body and base metal when working in the wet and restricted area.
- Please use safety net when working at heights.
- Please close the input power when not in use.



Avoid welding fume and gas damaging human body

- Ensure to use specified exhaust equipment to avoid gas poisoning and suffocation.
- The protective gas will be deposited around the container bottom to cause suffocation. Pay attention to the ventilation.



Avoid welding arc, splash and welding slag damaging human body

- Ensure to wear protective glasses with enough overshadow. The arc will result in ocular inflammation and the welding splash and slag will burn eyes.
- Ensure to use protective supplies for welding, such as leather protective gloves, caftan, cap, welding spats and apron to avoid welding arc light, welding splash and slag burning skin.



Avoid fire, explosion and fracture and other accidents

- The welding place cannot have the combustibles because splash and hot weld joint will result in fire.
- The cables and base metal must be connected firmly, or else, it may be heat to result in fire.
- Must not weld in the combustible gas or container with the combustibles, or else, it may result in explosion.
- Ensure to prepare fire extinguisher just in case.

**To prevent the rotating moving parts wounding**

- Must not make fingers, hair and clothes close to the cooling fan and wire feed roll and other rotating parts.
- When feeding wire, must not make the welding gun end close to eyes, face and body to avoid wire damaging person.

**Avoid falling gas cylinder and breaking gas regulator**

- The gas cylinder shall be fixed reliably, or else it may dump to result in human injury.
- Must not put gas cylinder in a place with high temperature or sunshine.
- When opening gas cylinder valve, must not make face close to the gas outlet, or else high-pressure gas may damage person.
- Ensure to use gas regulator provided by the company and follow the use regulations.

**Prevent the movement of welding**

- Must not stand under the welding machine and motion direction when moving welding machine with fork lift truck or crane, or else, the welding machine may fall to cause injury.
- The rope sling shall bear enough pull force and cannot be broken when suspending. The angle between rope sling and hook shall be no more than 30°

Precautions of electromagnetic compatibility

1. Overview

Welding brings electromagnetic interference.

Minimize the interference emission of arc welding equipment with proper installation way and correct application method.

The products described in the manual belong to Class A equipment (all occasions except residential area powered by public electrical power system).

Warning: Class A equipment is not applicable to residential area powered by public electrical power system. It is difficult to guarantee electromagnetic compatibility because of conduction and radiated interference.

2. Advice of environment assessment

Before installing the arc welding equipment, the user shall evaluate the potential electromagnetic disturbance of the surrounding. The considerations are as follows:

- ◆ Check surrounding of arc welding equipment for other power cables, control cables, signals and telephone wire.
- ◆ Check for broadcasting and television launching and receiving equipment;
- ◆ Check for computer and other controllers;
- ◆ Check for high security level equipment, such as industrial protective equipment;
- ◆ Consider the health of surrounding staffs, such as staffs with hearing aid and cardiac pacemaker;
- ◆ Check for calibrating or detection equipment;
- ◆ Pay attention to immunity to interference of other equipment. The user shall make sure that the surround equipment can be compatible. The additional protective measures may be required;
- ◆ Welding or other activity time.

The environmental range is decided based on the building structure and possible activities. This range may exceed the boundary of building.

3. Method of reducing radiation emission

- ◆ Public power supply system

The arc welding equipment shall be connected into public power supply system with the method recommended by the manufacturer. In case of interference, please take addition preventive measures, such as connecting filter with public power supply system. Ensure to consider power able shielding for fixed arc welding equipment. The power cables can be shielded with the metal pipe or other equivalent methods. Ensure to keep electrical continuity for shielding.

◆ Maintenance of arc welding equipment

Ensure to perform routine maintenance for arc welding equipment according to the method recommended by the manufacturer. When welding equipment runs, all equipment inlets, auxiliary doors and panels shall be closed and tightened appropriately. The arc welding equipment cannot be changed in any form, unless the relevant change and adjustment are allowed in the manual. The spark gap of arc initiation device and arc stabilizing device shall be adjusted and serviced according to the suggestion of manufacturer.

◆ Welding cable

The welding cable shall be short as much as possible and close to each other. Moreover, welding cable shall be next to or close to ground cable.

◆ Equipotential lap

Pay attention to lapping of metal objects in the surrounding. The lapping of metal objects and workpiece will increase job hazard. When the operator touches these metal objects and electrode, he may suffer from electrical shock. The operator shall be insulated from these metal objects.

◆ Workpiece earthing

The workpiece may be not provided with earthing because of electrical safety or workpiece position, such as hull or building steel frame. When earthing is available for workpiece, radiation emission may be reduced. But it is not always the case. Therefore, we must prevent the increased risk of electric shock of users caused by the workpiece earthing or the damage of other electric equipment. When necessary, some workpiece should be directly earthed, but directly grounding is not allowed in some countries, user can achieve this effect only by selecting the appropriate capacitor according to the regulations of the host countries.

◆ Shielding

The shielding of surrounding equipment and other cables can reduce the electromagnetic interference. The whole welding area can be shielded for special applications.

Main technical information

1. Main technical parameter

| | | |
|------------------------|---------------------------|------------|
| Model | SFW210TIG | |
| Rated input voltage(V) | 1PH 220V \pm 5%,50/60Hz | |
| | MMA | TIG |
| Rated input power(KVA) | 6.6 | 4.8 |
| Rated input current(A) | 37 | 27 |
| No-load voltage(V) | 56V | |
| Output current(A) | 20-170 | 20-190 |
| Rated Output | 170A/26.8V | 190A/17.6V |
| Rated duty cycle(%) | 40% | |
| Efficiency(%) | 80 | |
| Insulation grade | F | |
| Protection grade | IP21 | |
| Weight(Kg) | 9.4 | |
| Dimension | 396*142*268 | |

Installation

1. Environment

- ◆ Install in a dry environment with humidity less than 90% at 20°C and 50% at 40°C.
- ◆ The temperature should be in the range of -10°C-40°C when welding, and -20°C-55°C for storage and transportation.
- ◆ Shelter the machine from direct sunshine and rain. Avoid raindrops.
- ◆ Avoid using it in an environment with strong air flow when TIG welding.
- ◆ The inclination of the welding power is less than 10° the altitude no more than 1000m.
- ◆ Avoid using it in a dusty, acid or other corrosive environment.
- ◆ The machine should be placed more than 20cm from the wall, and more than 10cm from other welding machines.

2. Requirement of the input power source

- ◆ Waveform: standard pure sine wave
- ◆ Fluctuation range: AC220V ±15%
- ◆ Frequency: 50Hz/60Hz

3. Input power

| Model | | SFW210TIG |
|--------------------------|-----------------|--------------------|
| Input power | | 1PH AC220V±15% |
| Min. power of power grid | | 8 |
| Input protection | Fuse | 63 |
| | Circuit breaker | 63 |
| Cable | input | 2.5mm ² |
| | output | 16mm ² |
| | ground | 2.5mm ² |

Enlarge the input , output and grounding cable according to the cable length.

Remark: the specifications of fuse and circuit breaker in the table above are only for reference.

4. Installation of the machine

The power supply of this series of products should be single phase AC220V 50/60Hz. Use a distribution cabinet with an automatic air switch. Ensure safe grounding.

4.1 MMA welding:

- ◆ Connect welding cable to the machine.
- ◆ Turn off the machine.
- ◆ Connect the input cable to the distribution cabinet, switch on.

4.2 TIG welding:

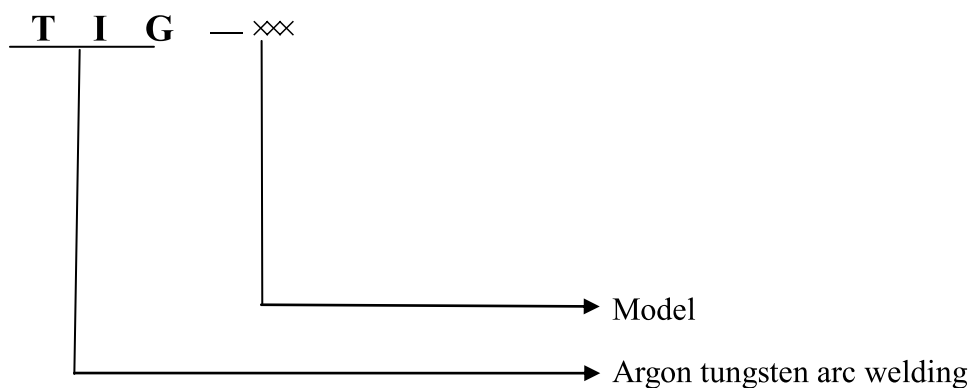
- ◆ Connect the earth cable to the positive pole, TIG torch to the negative pole.
- ◆ Connect the hose to the machine and gas bottle.
- ◆ Turn off the machine.
- ◆ Connect the input cable to the distribution cabinet, switch on.

4.3 Clean welding:

- ◆ Connect the earth cable to the positive pole, TIG torch to the negative pole.
- ◆ Turn off the machine.
- ◆ Connect the input cable to the distribution cabinet, switch on.

Model establishment and illustration

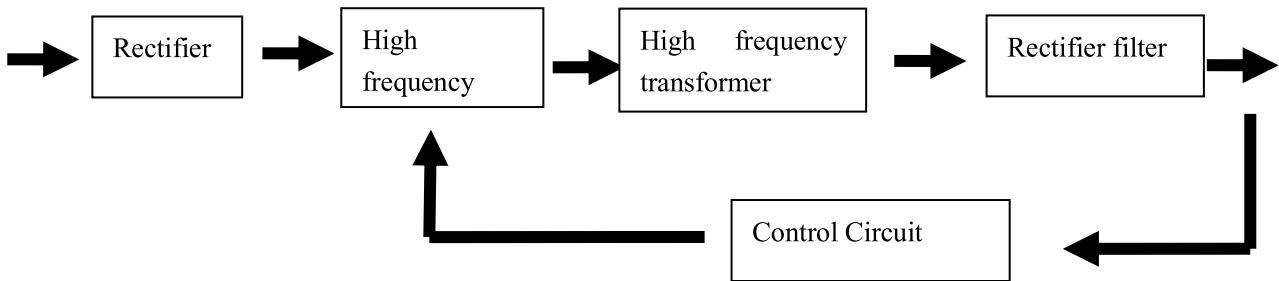
TIG series welding machine model establishment and description as shown in figure 1:



(Figure 1) TIG series welding machine model establishment and description.

Brief description of the principle

The schematic diagram of the TIG series welding machine is show figure 2:

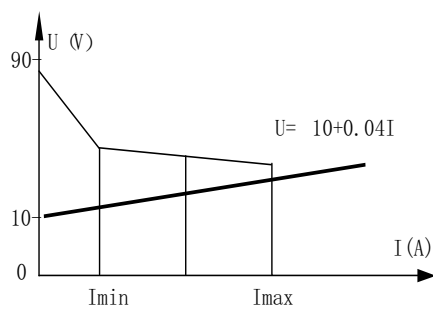


(Figure 2) Welding machine schematic

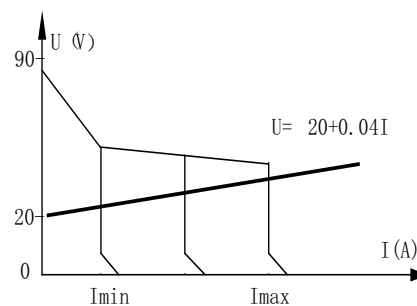
The welding machine adopts IGBT high frequency inverter technology, power frequency 220V power input, direct rectification and then sent to the inverter composed of IGBT and other components to become high frequency alternating current, high frequency alternating current obtained after inverter is passed through high frequency transformer after the step-down,high frequency rectifier rectifies and filters, the output is suitable for the DC current of the welding. Through this process, the dynamic response of the welder is improved, the volume and weight of the transformer and the reactor are reduced, and the efficiency of the whole machine is improved.

The design of the control circuit enables the welder to always achieve good welding process performance when external conditions change(such as grid voltage fluctuations and different output cable lengths).It is easy to arc,the are is stable,the weld is well formed,and the welding current can be continuously adjusted.

TIG-p series welding machine output characteristics such as shown in figure 3:



(3a)TIG welding output characteristics



(3b)MMA welding output characteristics

MMA/TIG welding output characteristics: Drooping characteristics.

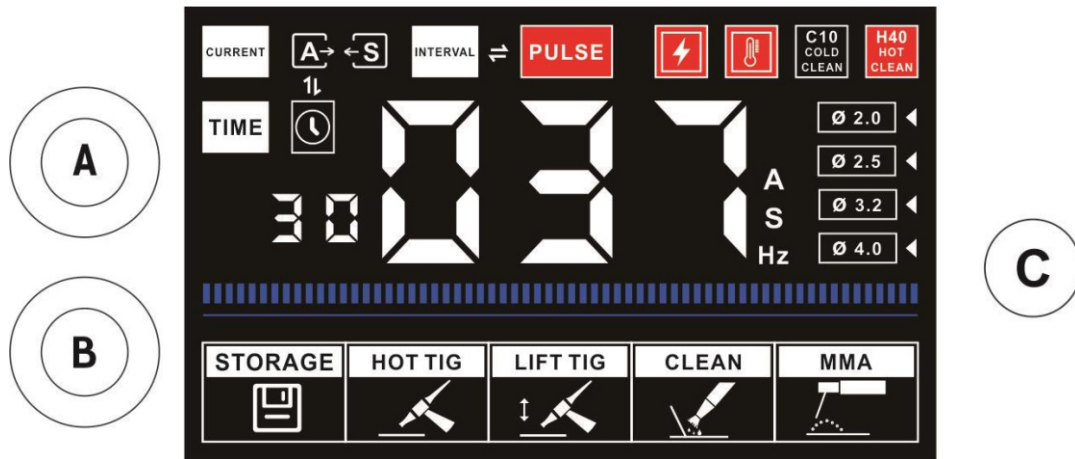
Operation and instruction

1. Function

1.1 Welding machine panel

1.1.1 Main Function Interface

- (1) Touch the A button to select the parameter item.
- (2) Touch the B button to select the weld function; long press 2S to store and switch to the next channel.
- (3) Rotate the C encoder to adjust the size of each parameter; touch to switch the diameter of the welding rod; long press 5S to enter and exit the hot welding pulse function.





Panel view

(4) Parameter Description

CURRENT  Welding current.

TIME  Post flow time.


 Base current (pulse mode);

 **INTERVAL**
 Interval time.



Pulse time



Cold clean C5-C9, hot clean H10-H40



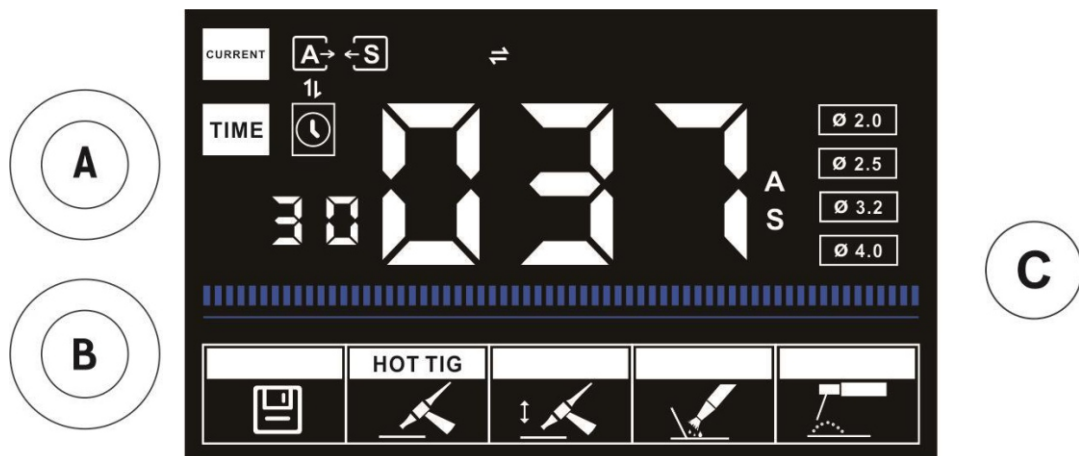
Overcurrent protection light: there may be original damage inside the machine, this case needs to be cautious, confirm and then turn on the machine; or misjudgment, this case just in the boot.



Overheat protection lamp: the internal temperature of the machine is overheated, the machine is turned on and idle to be cooled down, it can be restored to normal.

1.1.2 Hot welding interface

- (1) Touch the A button to switch parameters, welding current and post gas time.
- (2) Touch the B button to select the weld function, long press 2S to store and switch to the next channel.
- (3) Rotate C encoder to adjust the parameter size; long press 5S to enter and exit the hot welding pulse function.



(4) Parameter Description



Welding current adjustment



Post flow time adjustment (0.0-10.0S)



Press and hold the B key to store and switch to the next channel. 9 channels,

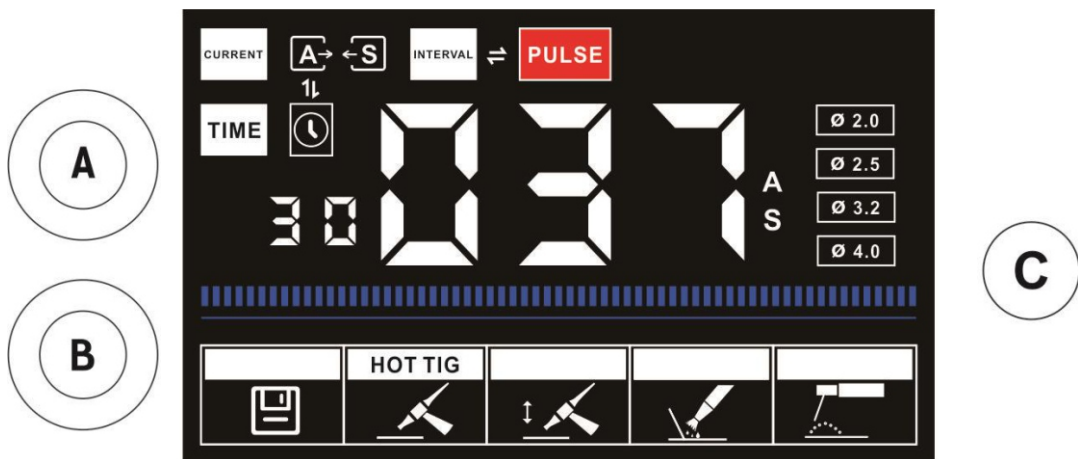
F0-5 channels store self-tuning parameters, F6-9 built-in parameters. For example, select F0 channel in advance, adjust the corresponding parameters, then press and hold the B key, automatically jump to the next channel F1, F0 channel parameters are saved, and so on. F6-D0.8, spot welding 0.8mm workpiece; F7-L0.8, pull welding 0.8mm workpiece; F8-D3.0, spot welding 3.0mm workpiece; F9-L3.0, pull welding 3.0mm workpiece.

1.1.3 Hot pulse welding interface

(1) Touch the A button to switch parameters, peak current, post flow time, base current, interval time, pulse frequency.

(2) Touch the B button to select the weld function.

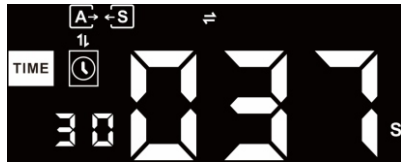
(3) Rotate C encoder to adjust the size of each parameter; long press 5S to enter and exit the hot welding pulse function.



(4) Parameter Description



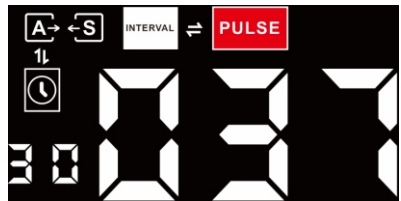
Peak current adjustment



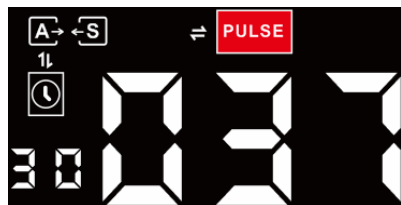
Post flow time adjustment (0.0-10.0S)



Base current adjustment



Interval time (30-70)



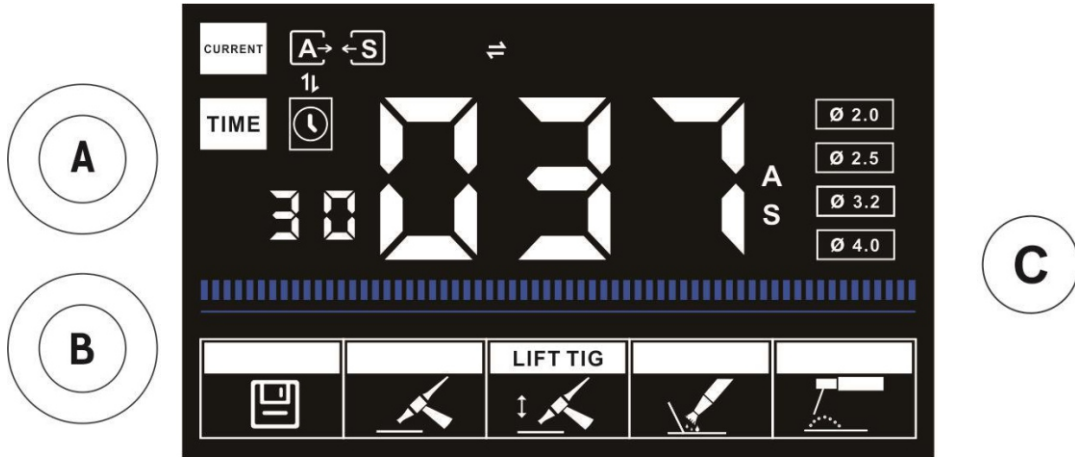
Pulse frequency (0.2-50)



Press and hold the B key to store and switch to the next channel. 9 channels, P0-5 channels to store self-tuning parameters, P6-9 built-in parameters. For example, select P0 channel in advance, adjust the corresponding parameters, then press and hold the B key, automatically jump to the next channel P1, P0 channel parameters are saved, and so on. P6-L1.0, pull welding 1.0mm workpiece; P7-L1.5, pull welding 1.5mm workpiece; P8-L2.0, pull welding 2.0mm workpiece; P9-L3.0, pull welding 3.0mm workpiece.

1.1.4 Life TIG interface

- (1) The A button is useless.
- (2) Touch the B button to select the weld function.



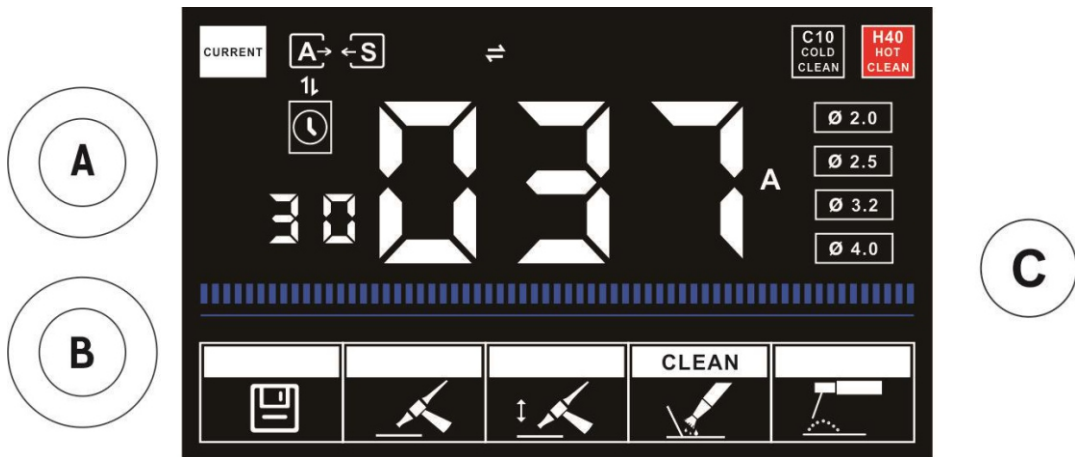
(4) Parameter Description



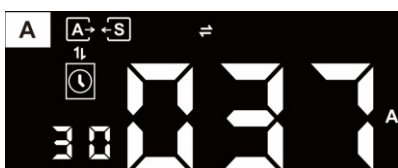
Welding current adjustment

1.1.5 Clean interface

- (1) The A button is useless.
- (2) Touch the B button to select the weld function.
- (3) Rotate the C encoder to adjust the current level.



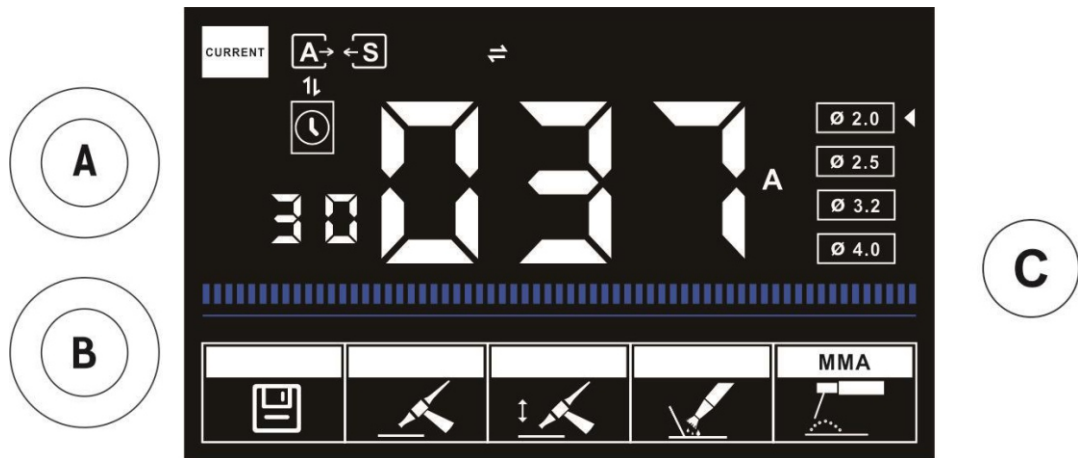
(4) Parameter Description



Cleaning current adjustment;

1.1.6 MMA welding interface

- (1) The A button is useless.
- (2) Touch the B button to select the weld function.
- (3) Rotating the C encoder to adjust the current level; light touch to select the diameter of the welding rod (2.0/2.5/3.2) while adjusting the knob to change the current level on the corresponding welding rod;



(4) Parameter Description



Welding current adjustment

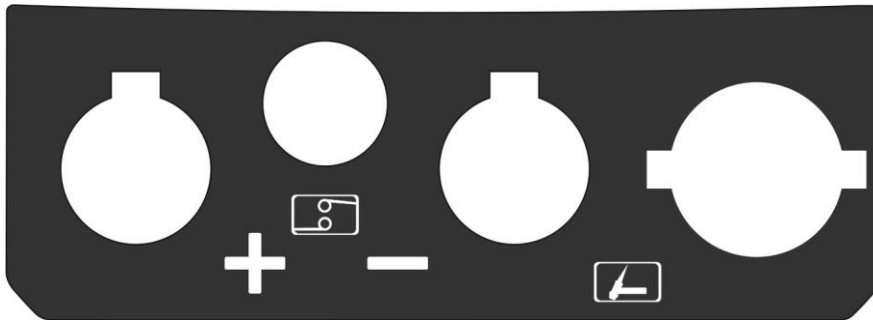


Welding rod diameter selection

1.1.6 Welding output interface

from left to right

- (1) Anode output interface: connect electrode holder under mode of MMA; connect earth clamp under mode of DC TIG, LIFT TIG and Clean;
- (2) Torch switch interface: connect switch of tig torch and clean torch;
- (3) Cathod output interface: connect earth clamp under mode of MMA; connect cable joint of the clean torch under mode of Clean, LIFT TIG., DC TIG;
- (4) Cathod output gas-electric connector: connect tig torch under mode of DC TIG;



2. Installation instruction:

Note: Please strictly follow below steps to install and debug!

Before electrical connect operation the user has to turn off the power switch of the distribution panel!

This equipment protection level is IP21, avoid using in rain!

- ◆ Connect the welding input power wire to the corresponding voltage level and $\geq 60\text{A}$ circuit breaker (connect the power wire $\geq 4^2$);
- ◆ The input power wire should be in good contact with the correspond power terminal or switch ,to prevent oxidation
- ◆ Use a multimeter to measure whether the input voltage is in the fluctuation range;
- ◆ Connect the yellow-green wire on the power cable and the grounding screw on the rear panel to $\geq 4^2$ wire and ground well.;
- ◆ If the welder is placed on an inclined plane, the welder should be secured so that it does not slip;
- ◆ Each welder is equipped with an insulated handle, which can be lifted by hand when moving the welder

2.1 MMA welding

- (1) DC EP: Cathode connect with work piece (“-”), welding torch connect with anode (“+”)。
- (2) DC EN: Anode connect with work piece (“+”), cathode connect with TIG torch (“-”)。

The operator can according the base metal and electrode material choose the connection method, Generally, the alkaline electrode is recommended to use DC reverse connection method. Acid welding electrode are not specified.

Quick check list of welding process (Only for reference)

| Electrode diameter (mm) | Recommended welding current (A) | Recommended welding voltage (V) |
|-------------------------|---------------------------------|---------------------------------|
| 1.0 | 20-60 | 20.8-22.4 |
| 1.6 | 44-84 | 21.76-23.36 |
| 2.0 | 60-100 | 22.4-24.0 |
| 2.5 | 80-120 | 23.2-24.8 |
| 3.2 | 108-148 | 23.32-24.92 |
| 4.0 | 140-180 | 24.6-27.2 |

Note: this table is suitable for low carbon steel welding, other materials can refer to the relevant materials and process manual.

2.2 Hot TIG welding

- (1) Connect gas hose to the air inlet on the back panel; air supply passage is consist of gas cylinder, argon gas regulator and gas hose. Tighten the connected part with hose hoop to prevent the gas leakage.
- (2) Connect the torch gas-electric connector and torch switch to the appropriate position and tighten clockwise.
- (3) Connect the earth clamp to Anode output socket.
- (4) Keep the Tungsten pole of the TIG torch 2-4mm to the workpiece. Press the torch power switch to start an arc. When the current rises to the pre-set value, start welding.

Titanium and alloy-TIG parameter for reference

| Thickness (mm) | Groove shape | Welding layer | Tungsten diameter (mm) | Wire diameter (mm) | current (A) | Argon gas volume (L/min) | | | Nozzle diameter (mm) |
|-------------------|-------------------|------------------|------------------------------|--------------------------|-------------|-----------------------------|-------|-------|----------------------------|
| | | | | | | | | | |
| 0.5 | I- shape | 1 | 1.5 | 1.0 | 30-50 | 8-10 | 6-8 | 14-16 | 10 |
| 1.0 | | 1 | 2.0 | 1.0-2.0 | 40-60 | 8-10 | 6-8 | 14-16 | 10 |
| 1.5 | | 1 | 2.0 | 1.0-2.0 | 60-80 | 10-12 | 8-10 | 14-16 | 10-12 |
| 2.0 | | 1 | 2.0-3.0 | 1.0-2.0 | 80-110 | 12-14 | 10-12 | 16-20 | 12-14 |
| 2.5 | | 1 | 2.0-3.0 | 2.0 | 110-120 | 12-14 | 10-12 | 16-20 | 12-14 |
| 3.0 | Y- shape | 1-2 | 3.0 | 2.0-3.0 | 120-140 | 12-14 | 10-12 | 16-20 | 14-18 |
| 4.0 | | 2 | 3.0-4.0 | 2.0-3.0 | 130-150 | 14-16 | 12-14 | 20-25 | 18-20 |
| 5.0 | | 2-3 | 4.0 | 3.0 | 130-150 | 14-16 | 12-14 | 20-25 | 18-20 |
| 6.0 | | 2-3 | 4.0 | 3.0-4.0 | 140-180 | 14-16 | 12-14 | 25-28 | 18-20 |
| 7.0 | | 2-3 | 4.0 | 3.0-4.0 | 140-180 | 14-16 | 12-14 | 25-28 | 20-22 |
| 8.0 | | 3-4 | 4.0 | 3.0-4.0 | 140-180 | 14-16 | 12-14 | 25-28 | 20-22 |
| 10 | Double Y shape | 4-6 | 4.0 | 3.0-4.0 | 160-200 | 14-16 | 12-14 | 25-28 | 20-22 |
| 20 | | 12 | 4.0 | 4.0 | 200-240 | 12-14 | 10-12 | 20 | 18 |
| 22 | | 12 | 4.0 | 4.0-5.0 | 230-250 | 15-18 | 18-20 | 18-20 | 20 |
| 25 | | 15-16 | 4.0 | 3.0-4.0 | 200-220 | 16-18 | 20-26 | 26-30 | 22 |
| 30 | | 17-18 | 4.0 | 3.0-4.0 | 200-220 | 16-18 | 20-26 | 26-30 | 22 |

Thin stainless steel sheet—TIG parameter (only for reference)

| thickness (mm) | Joint type | Tungsten diameter (mm) | Wire diameter (mm) | Current type | current (A) | Argon gas volume (L/min) | speed (cm/min) |
|-------------------|------------|------------------------------|--------------------------|--------------|-------------|--------------------------------|-------------------|
| 1.0 | butt | 2 | 1.6 | DCEN | 7-28 | 3-4 | 12-47 |
| 1.2 | butt | 2 | 1.6 | DCEN | 15 | 3-4 | 25 |
| 1.5 | butt | 2 | 1.6 | DCEN | 5-19 | 3-4 | 8-32 |

2.3 Cleaning

- (1) Connect the plug of the cleaning torch to the negative socket, insert the torch switch, and tighten it clockwise;
- (2) Connect the workpiece clamp wire to the positive socket;
- (3) Dip the cleaning torch in the cleaning fluid, touch the discolored weld, press the torch switch to ignite the arc, and the current will be the set value, and it can work at this time.
- (4) Current value C5-C10 brush type cleaning torch for cleaning thin plates, H11-40 binding cloth cleaning torch for cleaning thick plates.

2.4 Lift TIG

- (1) Connect the gas pipe of TIG torch to the gas cylinder
- (2) Connect the separated type TIG torch to negative socket, earth clamp to positive socket
- (3) Scratch the tungsten on the workpiece to start the arc, and then lift the tig torch
- (4) There is no control switch for gas flow and current. To avoid waste and safety problem, please turn off the gas cylinder and keep torch away from the workpiece

Welding machine precautions and maintenance

1. Safety points

The welding machine is equipped with overcurrent and overheat protection circuits. When the grid voltage, output current and internal temperature exceed the set standard the welding machine will automatically stop working, but excessive use (such as excessive voltage) will still lead to welding. The machine is damaged, so you still need to pay attention to the following:

◆ Make sure the ventilation is good!

When the machine is in operation, a large working current passes, natural ventilation can not meet the cooling requirements of the welder, so a fan is installed to effectively cool the welder to make it work smoothly. The user should confirm that the ventilation area is not covered or blocked, and the distance from the surrounding objects should be no less than 0.3 meters. Users should always pay attention to maintain good ventilation, which is very important for better working of the welding machine and guaranteeing longer service life of.

◆ It is forbidden to overload!

The user should pay attention to the use of the welder according to the allowable load duration of the welder (refer to the welder nameplate parameters) to keep the welding current not exceeding the maximum allowable load current. Current overload will significantly shorten the life of the welder and may even burn the welder. Load continuation rate: that is the current welding time under the load continuation rate, 10 minutes is a cycle, working time + rest time = 10 minutes; For example, 30%, 200 A/28 V, that is the output current 200 A state, should work for 3 minutes. Rest for 7 minutes; 60%, 141 A/25.6 V, in the state of output current 141 A, should work for 5 minutes, rest for 4 minutes.

Current overload will significantly shorten the life of the welder

◆ Forbidden voltage too high!

The power supply voltage is listed in the "main performance parameters" table. In general, the automatic voltage compensation circuit in the welding machine will ensure that the welding current remains within the allowable range. If the power supply voltage exceeds the allowable value, it will damage the welder. The user should fully understand this situation and take corresponding preventive measures.

- ◆ It is forbidden to use the welding machine for thawing pipes.
- ◆ The back of each welding machine is attached with a ground screw, and marked with a ground mark. Before use, select a cable with a section greater than 2.5mm² and ground the welding machine shell reliably to release static electricity or prevent accidents that may occur due to electricity leakage.
- ◆ If the welding machine exceeds the standard load duration, the welding machine may suddenly enter the protection state and stop working, which means that the welding machine exceeds the standard load duration. If the temperature is too high, the temperature control switch will be triggered and the welding machine will stop working. Meanwhile, the yellow indicator light on the front panel will be on. In this case, you do not need to unplug the power supply so that the cooling fan can continue working to cool the welder. When the yellow indicator light is off, the temperature drops to the standard range and the welding can be resumed.

2. Maintenance



Warning:

All maintenance, service and cleaning work must be performed with power removed.

Make sure you have unplugged the power cord before opening the casing.

- ◆ Dedust regularly. Use dry, clean compressed air to clean up the system. Dedust every day when operating in smoky conditions or severely polluted air.
- ◆ The compressed air should be delivered at the required pressure to avoid the destruction of the internal components.
- ◆ Check the internal contact areas to insure a tight connection (especially the plug-in joints or components) and reinforce the loose contact. If any rusting or oxidation occurs, use sandpaper to remove the oxide film and reconnect.
- ◆ Avoid water and moisture penetration. If this situation happens, apply a drying treatment to the inside of the welder and then start a megger insulation test which should include the insulation between connection joints as well as joints and casing. The welding operation could be continued only if no error detected.
- ◆ If the welder is not used for a long period of time, seal it in the original packaging and store

in dry condition.

3. Before maintenance



Warning:

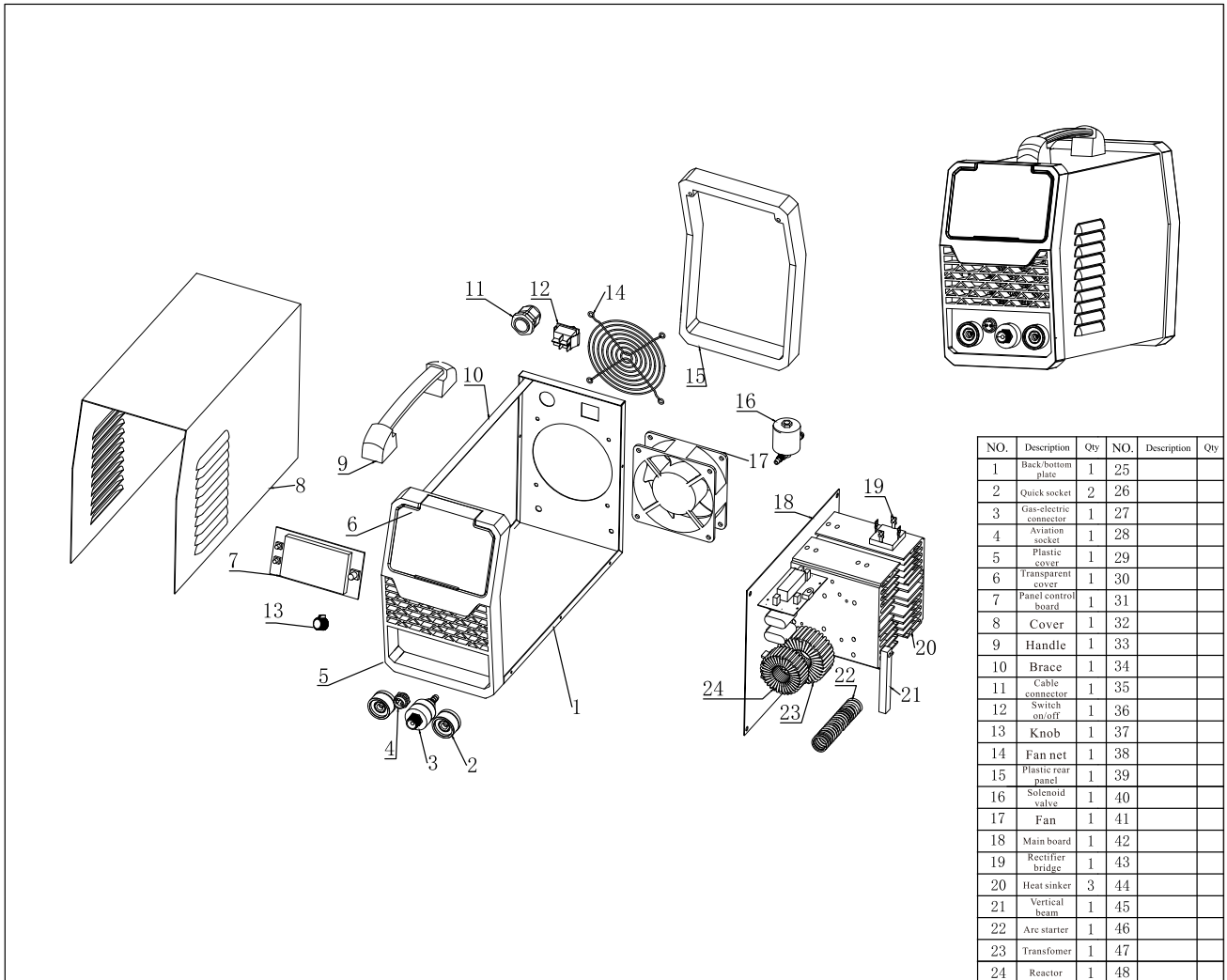
Blind experiments and imprudent overhaul could lead to the expansion of failure, and difficulty for a formal maintenance. Electronic equipment in the state of the exposed part of a voltage can lead to dangers. any direct or indirect contacts may lead to electric shocks incidents, and serious electric shock will cause death!!!

Attention: During the warranty period, if not allowed by this Company, if there is any wrong maintenance to any fault of the welding power source, the suppliers will not provide free repairs.

Exploded view

1. Exploded view

SFW210TIG



EC Declaration of Conformity

Model Name: SFW210TIG

Model: Welding Machine

Brand: Stahlfest

We Gema Tools B.V.,

declare under our sole responsibility that this product is in conformity and accordance with the following standards and regulations.

The undersigned is responsible for the compilation of technical documentation.

Satisfies the requirement of the Council Directives:

2014/35/EU Low Voltage Directive;

2014/30/EU Electromagnetic Compatibility Directive

And conforms to the norms:

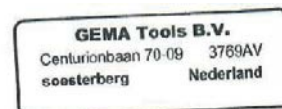
EN 60335-1:2012+A15:2021; EN 60335-2-72:2012; EN 62233:2008

EN IEC 55014-1:2021; EN IEC 55014-2:2021

EN IEC 61000-3-2:2019+A1:2021; EN 61000-3-3+A1:2019N

Signature and Stamp on undersigned responsible.

Date: May 20th, 2024



WARRANTY CARD

| | |
|---------------|--------------------|
| | |
| Product model | Date of sale |
| | |
| Serial number | Company |
| | |
| Username | Client's signature |

The product is in good conditions and fully complete. Read and agree the terms of the warranty.

GUARANTEE

The warranty period starts from the date of sale of the products and covers 1 year for all power products.

During the warranty period, free failures caused due to the use of poor-quality materials in the production and manufacturer workmanship admitted fault are removed. The guarantee comes into force only when warranty card and cutting coupons are properly filled. The product is accepted for repair in its pure form and full completeness.

WARRANTY DOES NOT COVER

- Mechanical damage (cracks, chips, etc.) and damage caused by exposure to aggressive media, foreign objects inside the unit and air vents, as well as for damage occurred as a result of improper storage (corrosion of metal parts);
- Failures caused by overloading or product misuse, use of the product for other purposes. A sure sign of overload products is melting or discoloration of parts due to the high temperature, simultaneous failure of two or more nodes, teaser on the surfaces of the cylinder and the piston or destruction of piston rings. Also, the warranty does not cover failure of the automatic voltage regulator due to incorrect operation;
- Failure caused by clogging of the fuel and cooling systems;
- Wearing parts (carbon brushes, belts, rubber seals, oil seals, shock absorbers, springs, clutches, spark plugs, mufflers, nozzles, pulleys, guide rollers, cables, recoil starter, chucks, collets, removable batteries, filters and safety elements, grease, removable devices, equipment, knives, drills, etc.);
- Electrical cables with mechanical and thermal damage;
- Product opened or repaired by a non-authorized service center.
- Prevention, care products (cleaning, washing, lubrication, etc.), installation and configuration of the product;
- Natural wear products (production share);
- Failures caused by using the product for the needs related to business activities;
- If the warranty card is empty or missing seal (stamp) of the Seller;
- The absence of the holder's signature on the warranty card.



| | | |
|--------------------|--------------------|--------------------|
| Product _____ | Product _____ | Product _____ |
| Model _____ | Model _____ | Model _____ |
| Company _____ | Company _____ | Company _____ |
| Date of sale _____ | Date of sale _____ | Date of sale _____ |

STAHLFEST