EVOLVE 200

USER MANUAL

REV.20201219

JTECLOUD

CONTENTS

1. Product overview

IN CASE OF BAD OPERATION YOU DEMAND THE ATTENDANCE OF QUALIFIED STAFF

WARNING

IMPORTANT: BEFORE STARTING THE EQUIPMENT, READ THE CONTENTS OF THIS MANUAL, WHICH MUST BE STORED IN A PLACE FAMILIAR TO ALL USERS FOR THE ENTIRE OPERATIVE LIFE SPAN OF THE MACHINE.THIS EQUIPMENT MUST BE USED SOLELY FOR WELDING OPERATIONS.

SHENZHEN JASIC TECHNOLOGY CO., LTD. solemnly promises:

This product is manufactured according to relevant standards of China and relevant international standards, and meets safety standards such as GB15579.1, IEC 60974-1, EN 60974.1, AS 60974.1 and UL 60974.1.

2014/35/EU (LDV) – 2014/30/EU (EMC) – 2002/95 (RoHs) and with the instructions contained in the harmonized standard, if applicable: EN 60974-1 EN 60974-2 EN 60974-3 EN 60974-5 EN 60974-7 EN 60974-10 EN 60974-12

Relevant design plans and manufacturing technologies of this product are patented.

Operate after reading this manual carefully.

1. JASIC has the right to revise this manual at any time without prior notice.

2. Though contents in this manual have been carefully checked, inaccuracies might have occurred. For any inaccuracy, please contact us.

3. This manual was released in Nov, 2020.

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1.1 Conformity declaration

IN CASE OF BAD OPERATION YOU DEMAND THE ATTENDANCE OF QUALIFIED STAFF

The equipment doesn't comply with EN/ IEC 61000-3-12.

The installer or the user must be sure that it can be connected to the public low voltage power line, if necessary, in consultation with the network distributor.

1.1.1 Re2T/4T Norm

The symbol on the product or on its packaging indicates that this product may not be treated as household waste. Instead, it shall be handed over to the applicable collection point for the recycling of electrical and electronic equipment. By ensuring this product is disposed of correctly, you will help prevent potential negative consequences for the environment and human health, which could otherwise be caused by inappropriate waste handling of this product. For more detailed information about recycling of this product, please contact your local city office, your household waste disposal service or the shop where you purchased the product.

1.1.2 Safety Precautions

WELDING AND ARC CUTTING CAN BE HARMFUL TO YOURSELF AND OTHERS. The user must therefore be educated against the hazards, summarized below, deriving from welding operations.

ELECTRIC SHOCK – May be fatal.

Install and earth the welding machine according to the applicable regulations.

Do not touch live electrical parts or electrodes with bare skin, wet gloves or wet clothing. Isolate yourselves from both the earth and the workpiece.

Make sure your working position is safe.

FUME AND GASES – May be hazardous to your health.

Keep your head away from fumes.

Work in the presence of adequate ventilation, and use ventilators around the arc to prevent fume and gases from forming in the work area.

ARC RAYS – May injure the eyes and burn the skin.

Protect your eyes with welding masks fitted with filtered lenses, and protect your body with appropriate safety garments.

Protect others by installing adequate shields or curtains.

RISK OF FIRE AND BURNS

Sparks (sprays) may cause fires and burn the skin; you should therefore make sure there are no inflammable materials in the area, and wear appropriate protective garments.

NOISE

This machine does not directly produce noise exceeding 80dB. The plasma cutting/welding procedure may produce noise levels beyond said limit; users must therefore implement all precautions required by law.

PACEMAKERS

The magnetic fields created by high currents may affect the operation of pacemakers. Wearers of vital electronic equipment (pacemakers) should consult their physician before beginning any arc welding, cutting, gouging or spot welding operations.

EXPLOSIONS

Do not weld in the vicinity of containers under pressure, or in the presence of explosive dust, gases or fumes. All cylinders and pressure regulators used in welding operation should be handled with care.

1.1.3 Ecodesign Regulations

The equipment has been designed in order to be compliant with the Directive 2009/125/EC and the Regulation 2019/1784/EU.

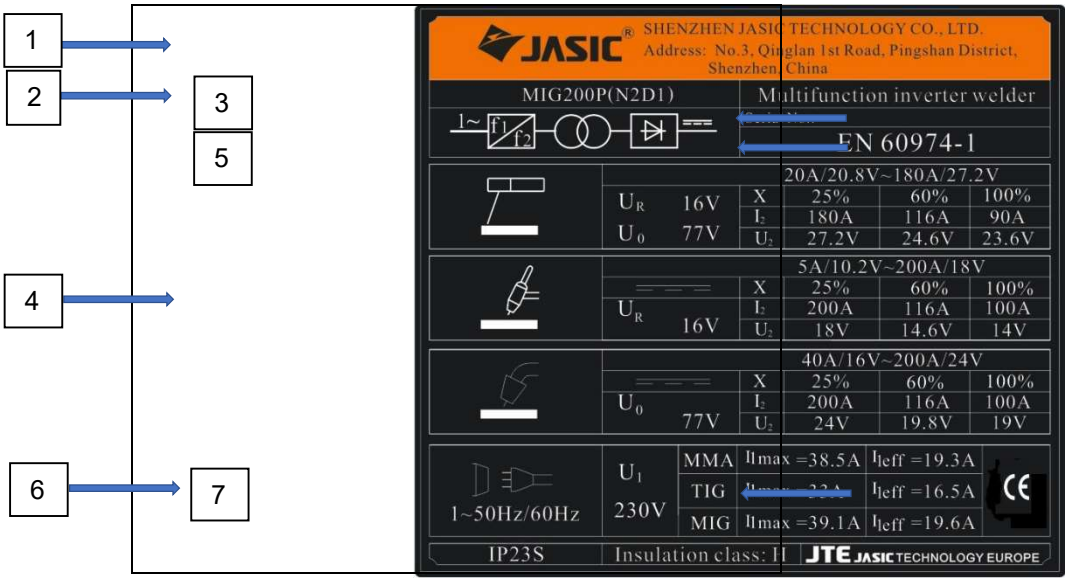
Model	Minimum power source efficiency %	Maximum idle state power consumption (watt)	Equivalent model
EVOLVE 200	82 %	45 watt	No equivalent model available

Idle state occurs under the condition specified in below table:

Iddle state	
Condition	Present
MIG mode	X
TIG mode	
MMA mode	
FAN OFF condition	X

The values of efficiency and consumption in idle state have been measured by method and conditions defined in the product standard EN 60974-1:20XX.
Manufacturer's name, product name, code number, product number, serial number and date of production can be read from rating plate.

Serial number plate reference



Serial No. Plate references	
1	Manufacturer's name and address
2	Product name

3	Serial Number of the product **AA** = year of production **BB** = week of production **CCC** = progressive number
4	Symbol of welding current source type
5	Conformity references
6	Output data
7	Power supply data
7	Protection data / symbols / other

Typical gas usage for **MIG/MAG** equipment:

Material type	**Wire diameter [mm]**	**DC electrode positive**		Speed wire (m/min)	**Shielding gas**	Gas flow (lt/min)
		A	V			
Carbon, low alloy steel	0,9 ÷ 1,1	95 ÷ 200	18 ÷ 22	3,5 – 6,5	Ar 75%, CO_2 25%	14 ÷ 19
Aluminium	0,8 ÷ 1,6	90 ÷ 240	18 ÷ 26	5,5 – 9,5	Argon	14 ÷ 19
Austenitic stainless steel	0,8 ÷ 1,6	85 ÷ 300	21 ÷ 28	3 - 7	Ar 98%, O_2 2% / He 90%, Ar 7,5% CO_2 2,5%	14 ÷ 16
Copper alloy	0,9 ÷ 1,6	175 ÷ 385	23 ÷ 26	6 - 11	Argon	12 ÷ 16
Magnesium	1,6 ÷ 2,4	70 ÷ 335	16 ÷ 26	4 - 15	Argon	24 ÷ 28

TIG Process:
In TIG welding process, gas usage depends on cross-sectional area of the nozzle. For commonly used torches:
Helium: 14-24 l/min
Argon: 7-16 l/min

Notice: Excessive flow rates will cause turbulence in the gas stream which may aspirate atmospheric contamination into the welding pool.
Notice: A cross wind or draft moving can disrupt the shielding gas coverage, in the interest of saving of protective gas, use screen to block air flow.

End of life

At end of life of product, it has to be disposed for recycling in accordance with Directive 2012/19/EU (WEEE). Information about the dismantling of product and Critical Raw Material (CRM) present in the product can be found in the website.

1.2 Front panel general descriptions

1.2.1 Button descriptions

BUTTON1-MODE：Mode change

BUTTON2-2T/4T：Welding operate mode change

BUTTON3-PROG：Welding materials selection

BUTTON4-SETTINGJOB：Welding technology parameter selection

1.2.2 Knob

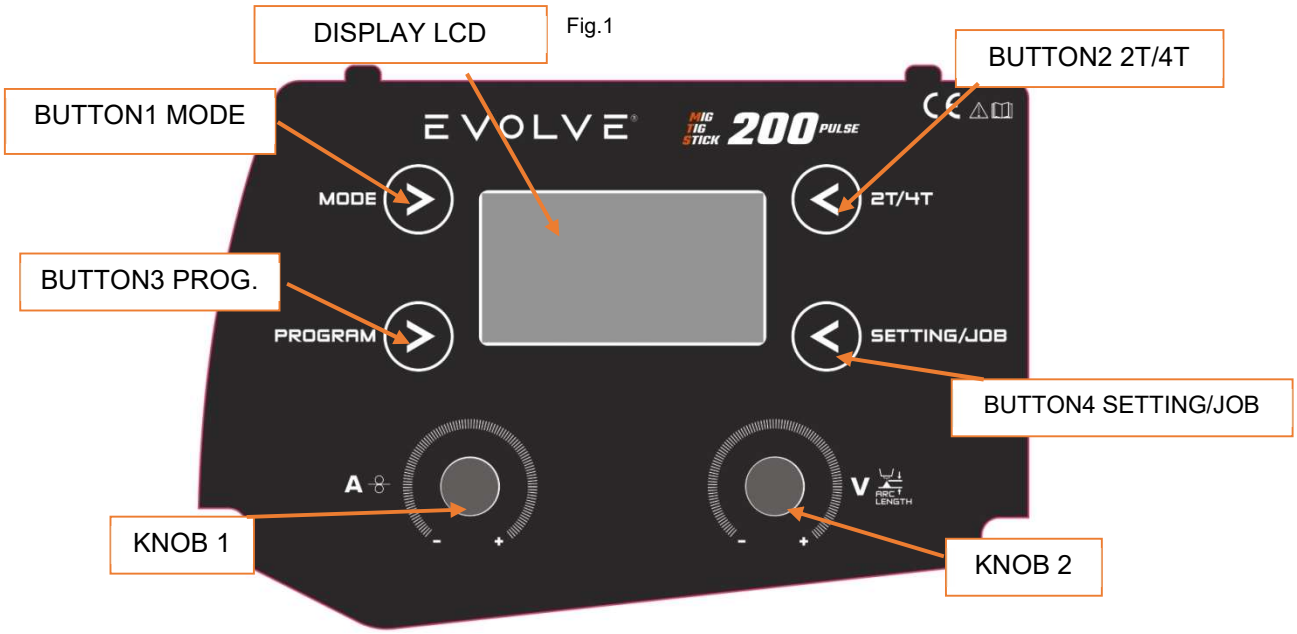
KNOB1: Current and wire speed knob

KNOB2: Voltage and ARC length knob

1.2.3 Front panel commands descriptions

FRONT PANEL COMANDS DESCRIPTIONS

Fig.1



1.2.4 Front panel display descriptions

During the welding process, the display shows the real output current and voltage.

At the end of the welding process, the display shows latest welding values of the output current and voltage.

The latest setting data will be shown in the display when the buttons or the KNOBs of the control panel are used.

1.3 Boot up self-test and display

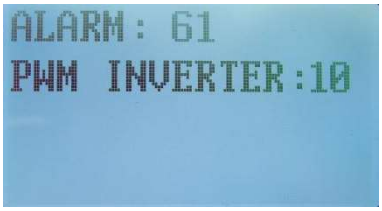
1.3.1Boot up interface descriptions

At the power on in the first interface, the machine shows the Serial number and the last software and firmware installed.

1.3.2 Boot up self-test process and descriptions

At the same time, the fan is controlled for a short period in order to load the fly-back power supply of the inverter and allow the initial self-test.

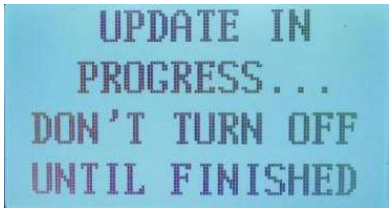
The self-test involves check on the inverter, check on the wire feeder motor driver, check on the auxiliary power supply for the machine and check on the mains cabling of the machine.



If there are errors during the self-test, the corresponding error code will be shown in the display with a short description of the error. The flow chart will indicate the errors. During the initial self-test, the errors found are fatal errors, that means the alarms does not allow the machine to continue and the display stops other visualizations and shows the error code and description.

1.3.3 Machine software upgrade descriptions

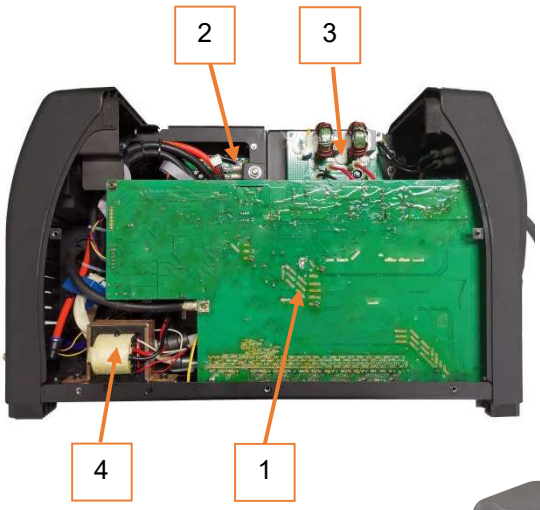
In this start-up phase, if an update has arrived from the JTE cloud and for new software, this update remains stored in the internal wifi and connection board and a message is shown on the display to tell the operator that he has the option to accept the download of the new software or to reject it. At this point, the user can choose to remain using the machine (press NO) as it was before the last shut down or, accept to upgrade the firmware of the machine (press YES).

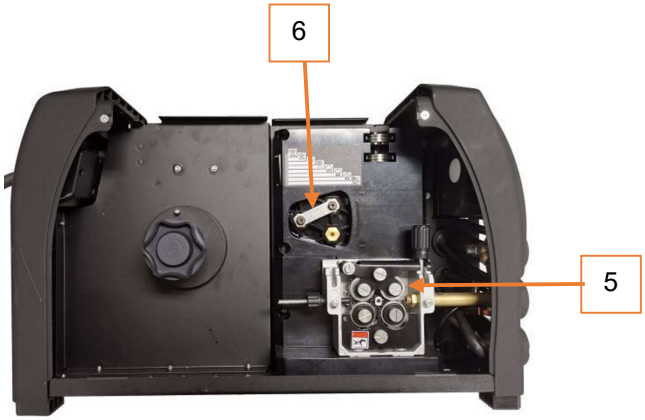


If the operator agrees to download the new software, the display asks the operator not to turn off the machine and starts uploading the new software, an upload that takes about a minute.At the end of the upload, the machine displays the data as the figure in chapter 1.3.1 with the new software.

1.4 Photos of the machine and instructions

Photos of the machine and instructions are as follows:





Code	Name	Description	Refer to schematics
1	PCB	MOTHER BOARD	TJ010
2	PCB	COMMUNICATION BOARD	TJ003
3	PCB	EMC BOARD	TJ013
4	TRANSFORMER	THE MAIN TRANSFORMER	/
5	MOTOR	WIRE FEEDER	INTERNAL MIG WIRE FEEDER
6	DEVICE	POLARITY SWITCHING DEVICE	POLARITY CHANGE
7	PANEL	FRONT PANEL	/

1.5 Main parameters of the welding machine

Model		MIG200P(N2D1)
Input	Input power	AC230V single-phase 50/60Hz
	Rated input capacity	5.83KVA
	Power factor	0.65
	Rated efficiency	82%
	Rated no-load voltage	77V
	Rated maximum output	MMA 180A/27.2V Lift TIG 200A/18V MIG 200A/24V
	Rated duty 2T/4T	25%@AC230V Single-phase
	Welding current	MMA 20A/20.8V ~ 180A/27.2V Lift TIG 5A/10.2V ~ 200A/18V MIG/pulsed MIG 20A/16V ~ 200A/24V
Ambient	Operation temperature	-10 ~ +40℃
	Storage temperature	-25 ~ +55℃
	Protection class	IP23S
	Insulation class	H
	Cooling method	Air cooling
	Dimension of bare welding source	605mm*400mm*230mm
	Dimension of packaged welding source	730mm*585mm*330*mm
	Weight of bare welding source	17.0kg
	Weight of complete welding source	19.0kg

1.6 Wi-Fi connection

The machine can be connected in a Wi-Fi network.

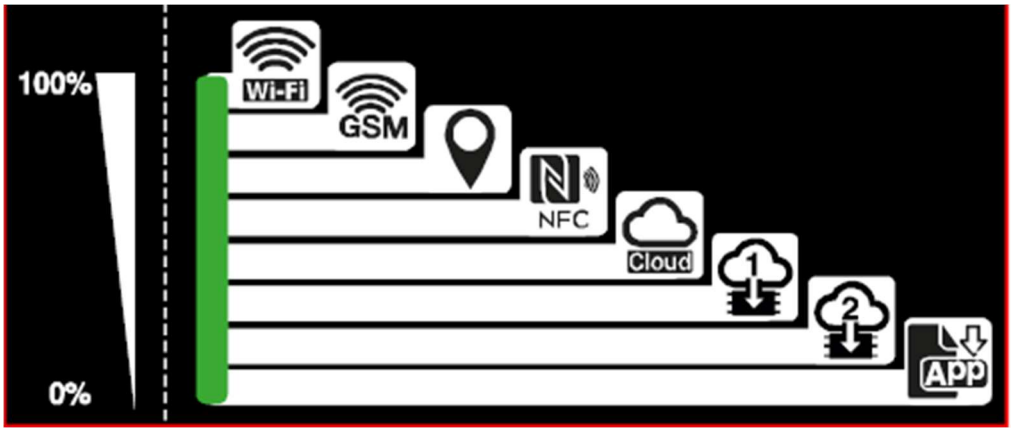
By Wi-Fi connection, it is possible to upgrade the machine firmware, use the app mobile as remote control, and save welding data in the JTE cloud.

To connect on the Wi-Fi, the state of the Wi-Fi connection is available by the LEDS.

To configure the Wi-Fi connection, download and install the App in your mobile and follow the instructions.

The App is available in the App store for IOS, and in the Play store for Android.

1.6.1 LED meanings legend



1.6.2 LED meanings instructions

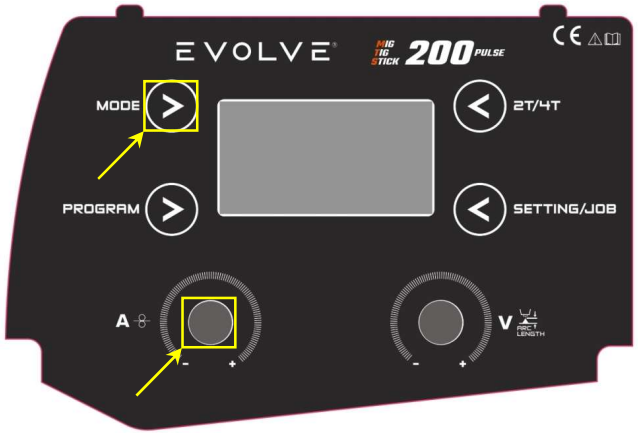
LED	FUNCTION	ON	OFF	BLINK
1	WIFI	Wi-Fi connected	Wi-Fi off	Configuration needed
2	GSM	GSM connected	GSM disconnected	GSM in connection
3	GPS	GPS Position obtained	No GPS position obtained	
4	NFC	NFC present	NFC not present	TAG Read
5	CLOUD	Cloud connection OK	No Cloud connection	Data exchange from/to cloud
6	FW1	FW1 update present	FW2 update not present	Downloading from the JTE cloud
7	FW2	FW2 update present	FW2 update not present	Downloading from the JTE cloud
8	Mobile APP	Mobile app connected	Mobile app not connected	-----

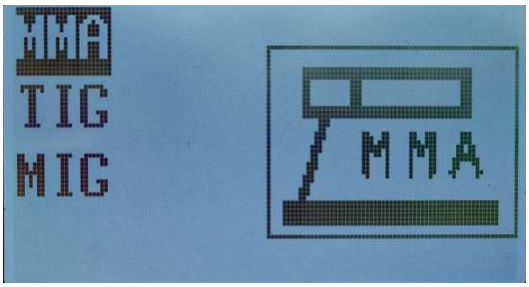
2. Instructions for welding function

2.1 Welding mode instructions

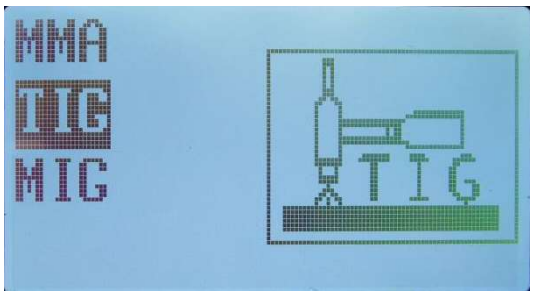
Welding mode includes: MMA mode, TIG mode and MIG mode.

By pressing the MODE button, the work mode starts flashing. By the left knob on the front panel, it is possible to choose between MMA to TIG or MIG mode. Turning the knob clockwise or counterclockwise scrolls through the three selections.

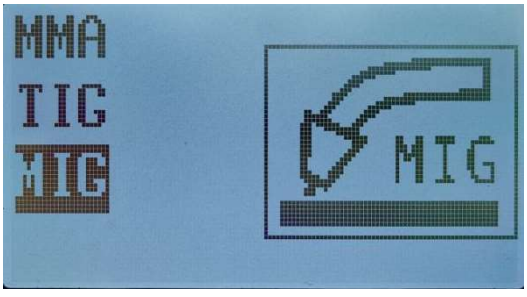




Select MMA



Select TIG



Select MIG

What explained is related to the solution for choosing the MIG or MMA or TIG working mode with the mode button. The simplest solution to change the work mode is to press the torch button for the 2T/4T you want to use.

For example, if the machine is set in MMA mode and the operator wants to weld in MIG, it is sufficient that he presses the button of the MIG torch. At that point, the machine returns to the MIG program previously used without requiring the operator to perform any other operation, in fact he will find the last setting and the last adjustment. Same thing happens by pressing the button of the TIG torch.

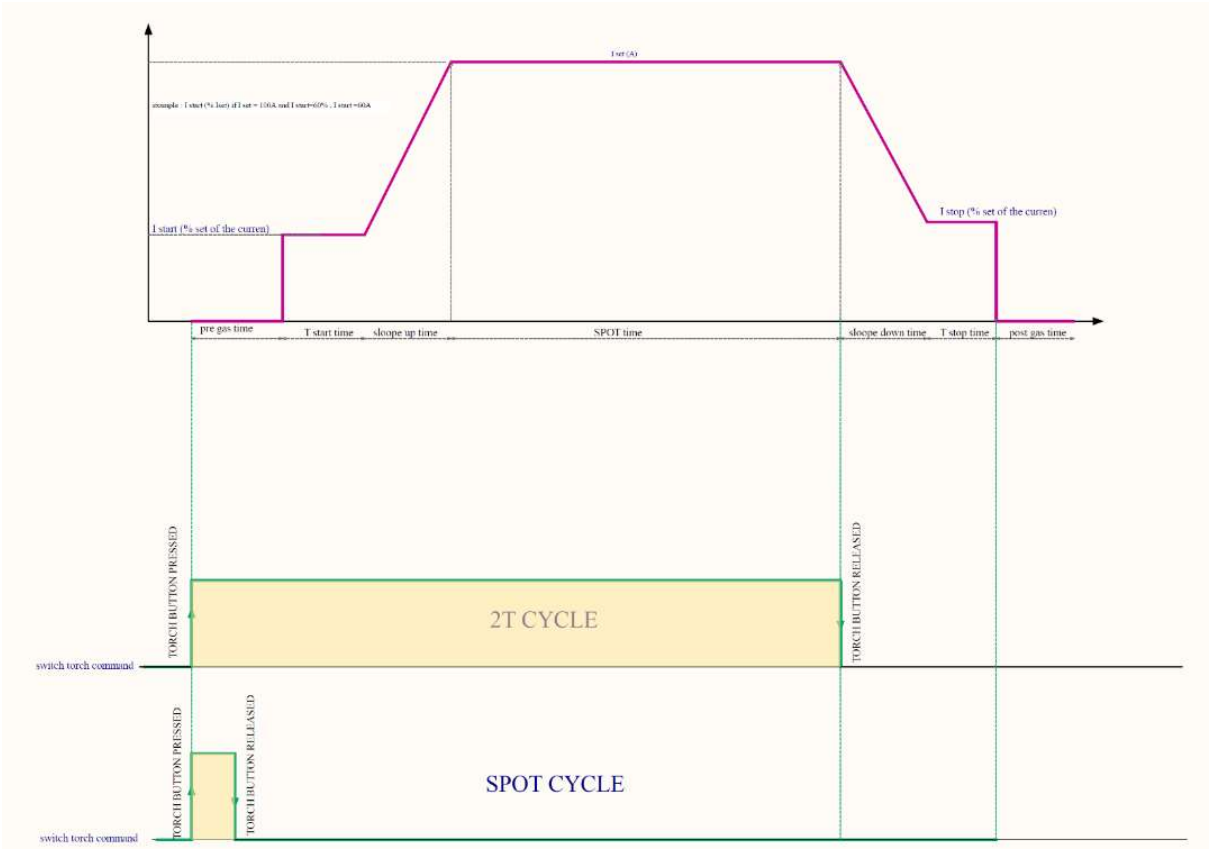
For MMA selection, on the other hand, it is always necessary to use the mode button also because before changing the working mode, the generator checks whether the output of the machine is short-circuited.

Push the knob to confirm the selected welding mode. Press MODE button to esc without changing selection.

2.2 Welding operate mode instructions

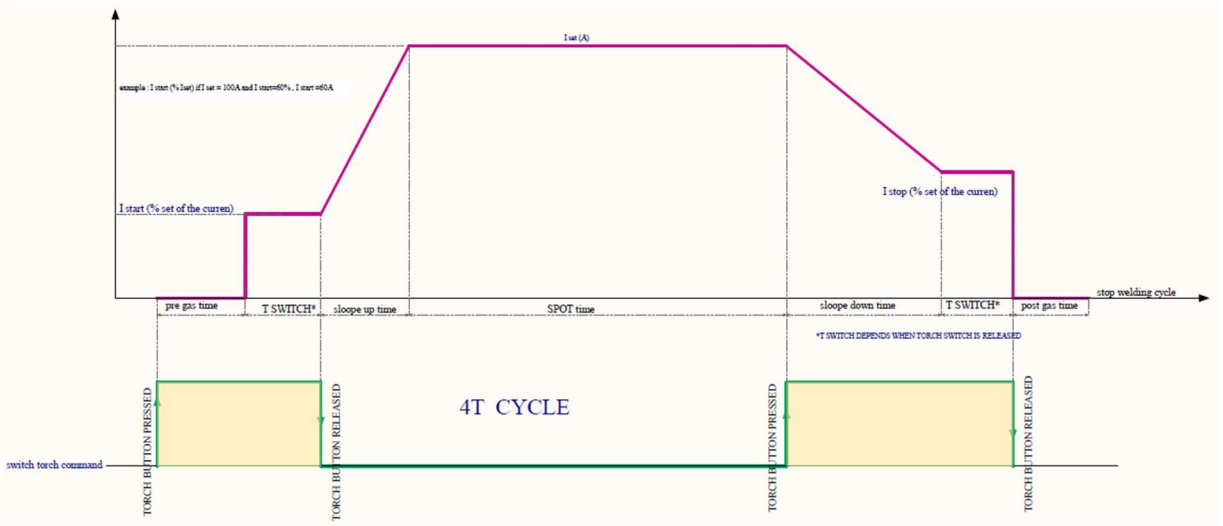
Welding operate mode includes: 2T mode, 4T mode and SP mode. Welding operate mode is switched by pushing the 2T/4T button, three kinds of Welding mode corresponding schematic diagrams as shown below.

2.2.1 2T mode / 2T Spot mode

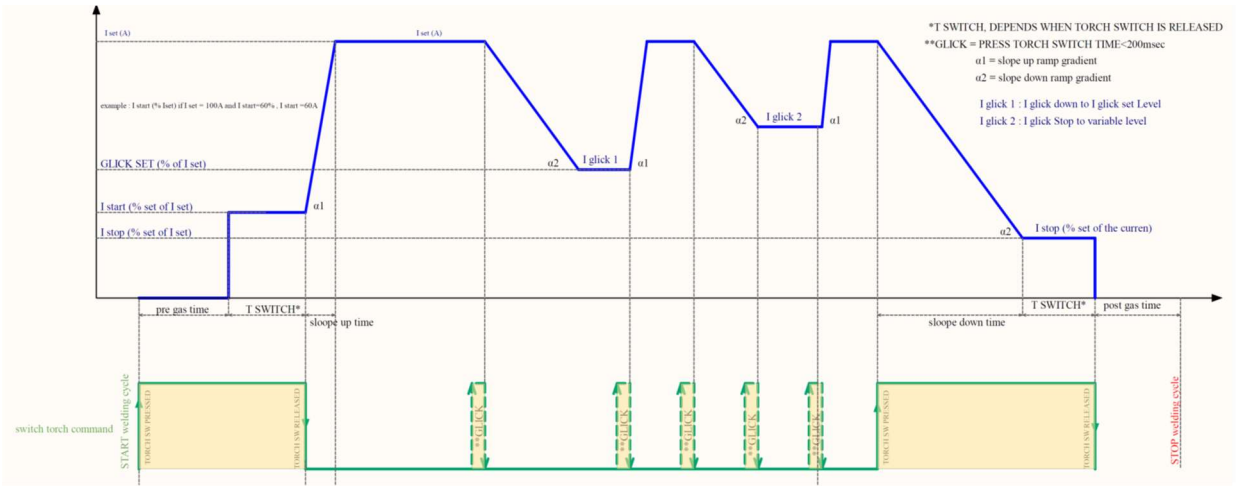


2.2.2 4T mode

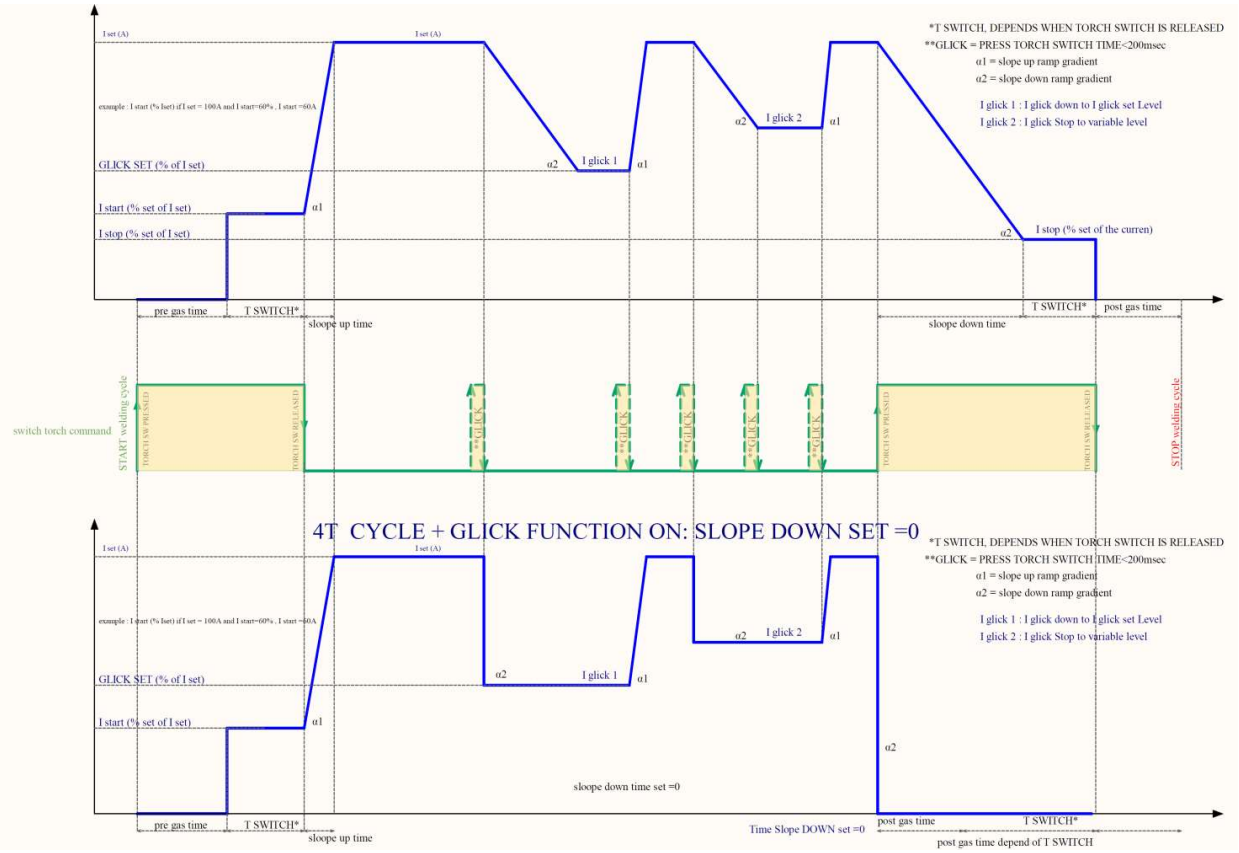
4T 2T/4T (example)



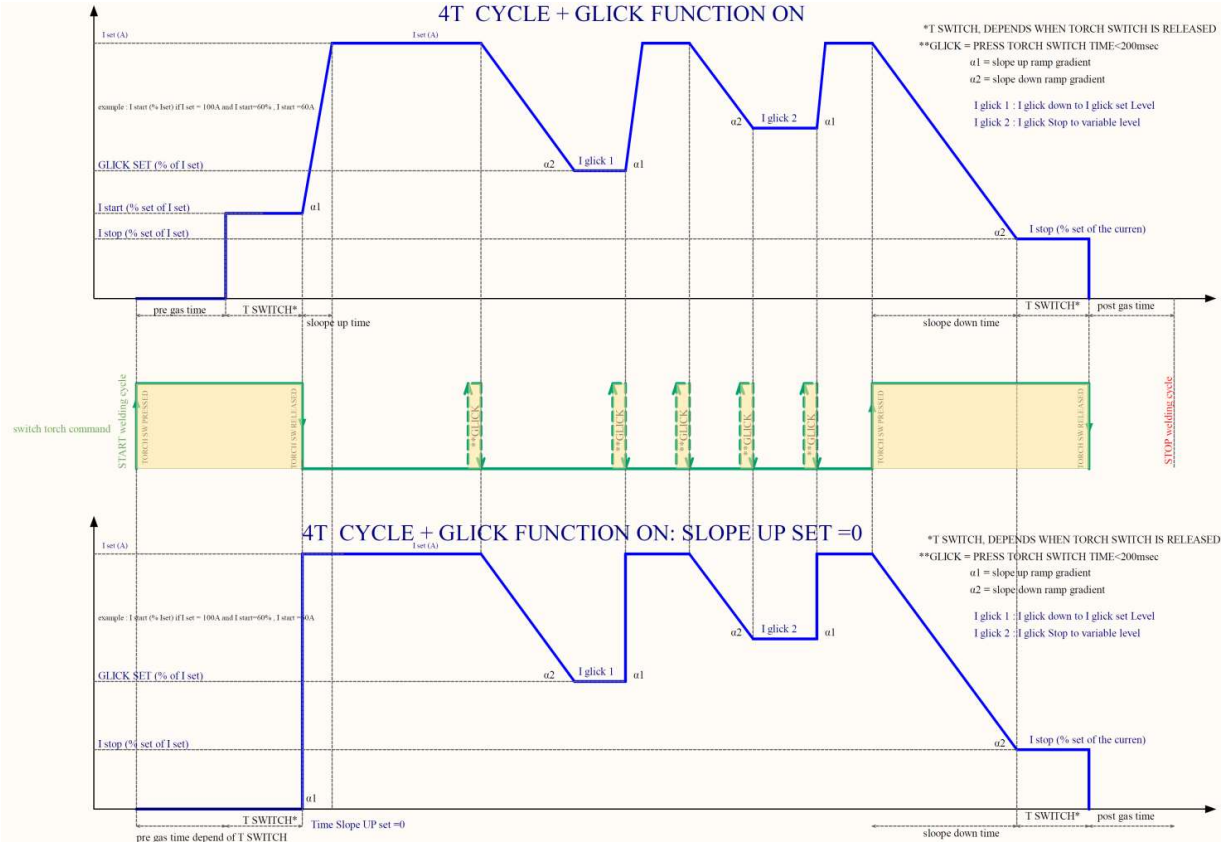
4T 2T/4T + GLICK FUNCTION ON (example)



4T 2T/4T+GLICK FUNCTION ON Slope DOWN set to 0 (example)



4T 2T/4T + GLICK FUNCTION ON Slope UP set to 0 (example)



2.3 Welding materials selection instructions

MMA, TIG and MIG mode all contain Welding materials, specifications and synergic select functions. Select Welding materials and specifications by pushing the PROG button, the program will match the corresponding welding condition automatically according to the selected welding materials and specifications.

2.4 Welding technology parameter selection instruction

MMA, TIG and MIG mode correspond to different welding technology parameters, it can be used to adjust the welding technology of the specified mode parameters, and the welding technology menu can be extended by pushing the SET/JOB button, rotating the encoder KNOB1/KNOB2 to choose the specified welding parameters.

2.5 Welding storage group selection instructions

TIG and MIG mode contain functions of welding data storage group, used to store multiple sets of welding process parameters.

2.6 MMA welding function instructions

2.6.1MMA welding connection caption

Connect the electrode holder to the positive polarity and the earth clamp plugs to the negative polarity.

the electrode holder

the earth clamp plugs

2.6.2 VRD set and instructions

This function reduces the output no-load voltage at a value less than 25V in a very short time.

It increases the safety conditions of the machine user: the no-load voltage is not dangerous but contact through human body and live parts of earth cable and electrode holder can cause a shock with loss of equilibrium control or similar.

The symbol “VRD ON” means that VRD protection is active with an output no-load voltage equal to 15V.

When “VRD” feature is off, an icon led shows voltage greater than 25V.

VRD OFF: The reduction of the output voltage will have after 200msec of the stop welding.

VRD ON: The reduction of the output voltage will have in every case after 30sec of stop welding.

VRD Set: In MMA mode, press the 2T/4T/JOB Button to switch VRD ON / VRD OFF.

2.6.3 MMA manual mode setting

2.6.3.1 MMA welding display

MMA welding display is as follows:

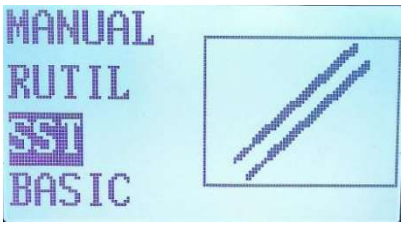
In this case, there was a set current of 70 A with the VRD set in On position, and the system set a synergy for the stainless steel with 2,0 mm electrodes.

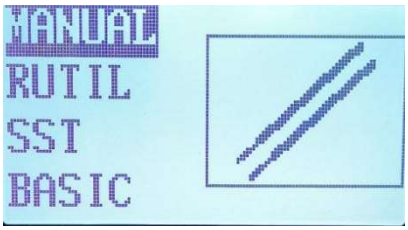
2.6.3.2 Parameters setting

Push the PROG button to select the type of work to be performed in the electrode adjustment.

Select the material by rotating the KNOB1 and confirm by pushing KNOB1.

The selections available are MANUAL, RUTIL, SST, BASIC, ALMG and CELL.





ETTINGN IN MANUAL ELECTRODE

Rotate KBOB1 to adjust the output current from Mini set to Max set: 20-180A.

Rotate KNOB2 to adjust the arc force %.

SETTING MENU

Push the SETTING button to enter in the setting menu.

SELECT the sub menu by knob1 and confirm by pushing the knob1.

- Technical Parameter (See Table 2.2)

- JOB menu: select the job

- MACHINE INFO: can show the machine SN and more information.

- RESTORE FACTORY: restore default settings of the working data in the selected welding section.

POWER LIMITATION

The Power limitation function improves the quality of welding in MMA mode.

It can be adjusted from 0 (max limitation) -100% (OFF).

With this parameter, you can have a limitation of the output power through the check of the output voltage. If the voltage exceeds the nominal value expected for the arc [U_2=(20+0,04 I^2)V] of the percentage set by the Power Limit, the current drops in proportion in order to keep the value of output power constant.

ANTI-STICKING ON /OFF:

It prevents the electrode from sticking to the part while welding is being performed.

Set ON /or OFF by knob2 and confirm by pressing knob2.

2.6.4 MMA synergic mode setting

Press the PROG button to select the synergic material.

To select the ELECTRODE DIAMETER, push the PROG button twice until the diameter is flashing on the display.

Rotate KNOB 1 to select the diameter and confirm selection by pressing KNOB 1.

Rotate KNOB 1 to adjust the output current limitation for the selected electrode. The range of this adjustment changes for each type of electrode.

On the right side, the display will show the thickness of the work part with selected current.

The 2T/4T button can be used to set VRD ON or VRD OFF.

The electrode synergic settings are similar for other materials.

Stick synergic Materials and Electrode size	
Material	**Electrode size (mm)**
RUTIL	2,0-2,5-3,25-4,0
SST	2,0-2,5-3,25-4,0
BASIC	2,5-3,25-4,0
ALMG	2,5-3,25
CELL	2,5-3,25-4,0

2.7 TIG welding function instructions

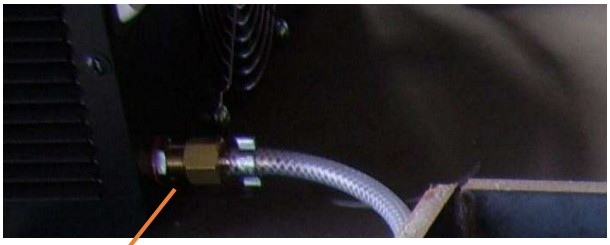
2.7.1 TIG welding connection caption

Connect the earth cable of workpiece to the positive polarity.

Connect the TIG torch to the negative polarity.

Connect the auxiliary plug of the torch.

Connect the gas hose of torch to the output nipple.



Connect the argon gas bottle to the input gas nipple located on the back side of machine.

2.7.2 TIG welding display and function instructions

2.7.2.1 TIG welding display

TIG welding display is as follows:

In this case, there was a set current of 100A with Welding operate mode selected 2T, the system set a synergy for the stainless steel with 1, 6 mm electrodes.

2.7.2.2 TIG Electrode adjustments

SETTING TIG MODE

To select the TYPE of TIG MODE, push the button MODE twice: the TIG type flashing.

Select the TIG TYPE by rotating the KNOB1 and confirm by pushing KNOB1.

Select the TIG TYPE by rotating the KNOB1 and confirm by pushing KNOB1.

The TIG type settings are:

- STANDARD MANUAL,

- PULSE,

- MIX

Press the PROG button to enter in the material selection menu. Select the material by KNOB1 and confirm by pushing the KNOB1.

It is possible to select: MANUAL (this is the standard manual mode), or materials listed in the display (STEEL, Fe).

In STEEL and Fe, the parameter will be adapted to the material and tungsten diameter selected.

Press the PROG button twice to enter in the tungsten diameter selection menu. Select the diameter by KNOB1 and confirm by pushing the KNOB1.

2.7.2.3 2T/4T Setting

Push the 2T/4T button to enter in the 2T/4T menu.

Select the 2T/4T by KNOB1 and confirm by pushing the KNOB1.

It is possible to select 2 Time, 4 Time, SP (SPOT).

2.7.2.4 SETTING menu

SETTING MENU

Push the SETTING button to enter in the setting menu.

SELECT the sub menu by knob1 and confirm by pushing the knob1.

- Technical Parameter (See Table 2.2)

- JOB menu: select the job

- MACHINE INFO: can show the machine SN and more information.

- RESTORE FACTORY: restore default settings of the working data in the selected welding section.

2.7.3 SETTING TIG PULSE

2.7.3.1 Electrode adjustments

To select the TYPE of TIG MODE, push the MODE button twice.

Select the TIG TYPE by rotating KNOB1 and confirm by pushing the KNOB1.

Press the PROG button twice to enter in the tungsten diameter selection menu. Select the diameter by KNOB1 and confirm by pushing the KNOB1.

2.7.3.2 2T/4T Setting

Push the 2T/4T button to enter in the 2T/4T menu.

Select the 2T/4T by KNOB1 and confirm by pushing the KNOB1.

It is possible to select 2 Time, 4 Time, SP (SPOT).

2.7.3.3 SETTING menu

SETTING MENU

Push the SETTING button to enter in the setting menu.

SELECT the sub menu by knob1 and confirm by pushing the knob1.

- Technical Parameter (See Table 2.2)

- MACHINE INFO: can show the machine SN and more information.

- RESTORE FACTORY: restore default settings of the working data in the selected welding section.

2.7.4 SETTING TIG MIX

2.7.4.1 Electrode adjustments

To select the TYPE of TIG MODE, push the MODE button twice.

Select the TIG TYPE by rotating KNOB1 and confirm by pushing the KNOB1.

Press the PROG button twice to enter in the tungsten diameter selection menu. Select the diameter by KNOB1 and confirm by pushing the KNOB1.

2.7.4.2 2T/4T Setting

Push the 2T/4T button to enter in the 2T/4T menu.

Select the 2T/4T by the KNOB1 and confirm by pushing the KNOB1

It is possible to select 2 Time, 4 Time, SP (SPOT).

2.7.4.3 SETTING menu

SETTING MENU

Push the SETTING button to enter in the setting menu.

SELECT the sub menu by knob1 and confirm by pushing the knob1.

- Technical Parameter (See Table 2.2)

- MACHINE INFO: can show the machine SN and more information.

- RESTORE FACTORY: restore default settings of the working data in the selected welding section.

2.7.5 TIG STANDARD SETTING

The standard manual is always supported by a default setting of the advanced setting data.

The default settings help to have the optimizations of the trigger parameters.

The display shows:

-in the top line, the TIG mode type and 2T/4T set (2T, 4T, SP).

-in the central and left side, the display shows SETTTING CURRENT.

-in the bottom line, the material and diameter set.

2.7.6 TIG GLICK FUNCTION

The Glick function is available in TIG 4T mode.

By this function, it is possible to change the set of output current during the welding.

The set will be reduced in % as the GLICK setting: setting range OFF-90.

.

The GLICK setting is available in the TECHNICAL PARAMETRE MENU.

Example: If the GLICK setting is 50, and the output current set is 130A, the reduction of set will be at 75A.

The output current set will be changed by a short pressing of the TIG torch switch.

By the short pressing of the torch switch, you can reduce the set, and/or return back to the machine setting output current.

By a long pressing, the welding 2T/4T will be stopped.

To disable GLICK function, you set it in OFF.

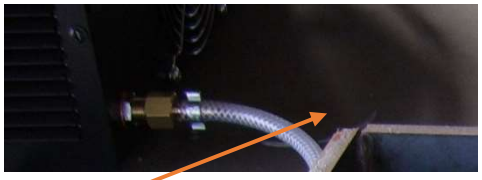
Table 2.1: TECHNICAL PARAMETER MENU IN TIG MODE

MODE	2T	4T	SP (spot)
TIG STD	- pre gas -Time Slope up -Time Slope down - post gas -I start -I stop Time start Time stop	- pre gas -I start -Slope up -Slope down -I stop Post gas Glick	- pre gas -I start -Slope up Time start Time stop- Slope down -I stop - Post gas Time Spot
TIG PULSE MAN	- pre gas -I start -Slope up Time start Time stop -Slope down -I stop- post gas -Pulse BALANCE -Pulse I low -SOFTNESS frequency	- pre gas -I start -Slope up -Slope down -I stop post gas -Pulse BALANCE -Pulse I low -Pulse frequency Glick	- pre gas -I start -Slope up Time start Time stop -Slope down -I stop -Pulse BALANCE -Pulse I low -Pulse frequency Time Spot
TIG PULSE SYN	- pre gas	- pre gas	- pre gas
TIG MIX	pre gas -I start -Slope up Time start Time stop -Slope down -I stop-T-stop post gas -Pulse BALANCE -Pulse I low -SOFTNESS frequency	pre gas -I start -Slope up -Slope down -I stop post gas -Pulse BALANCE -Pulse I low -Pulse frequency Glick	-pre gas -I start -Slope up Time start Time stop -Slope down -I stop -Pulse BALANCE -Pulse I low -Pulse frequency Time Spot

NOTE: if the “Timer Slope Up” is set to OFF, the other parameters for the ramp setting (timer start, I start, Slope down Time stop, I stop) will be hide.

2.8 MIG welding function instructions

2.8.1 MIG WELDING connection caption



Connect the gas bottle to gas input nipple on the back side.

Connect the MIG gun to the socket.

Connect the earth cable of workpiece to the negative polarity.

Push the wire between the driving rolls up to see it outside the euro torch connector. Close the upper rolls with the shaft.

Check if the driving rolls match the appropriate wire diameter.

2.8.2 MIG welding display and function instructions

2.8.2.1 MIG welding display

MIG welding display is as follows:

cOnce the self test 2T/4T is finished, the display shows the last work session before the last machine shutdown.

In this case, we find the machine with the first line at the top with the description of MIG pulse, 4T and with the line below written with AL Mg5 1.2 argon Job 6.

The line above indicates the welding mode setting, then the 2T/4T of the torch button.

In the line below, it shows: the data of the synergic program used with the base material, the diameter of the wire, the chosen gas and finally the Job used in which these parameters are stored.

Data 99 A and 18.7 refer to the values of the last current and voltage detected in the weld.

MIG selection: Press the MIG torch to switch to the last MIG setting, or push MODE button and select the MIG mode by KNOB1 and confirm by pushing the KNOB1.

2.8.2.2 WIRE LOADING: INC WIRE function

To load the wire in the torch, push (push1) and hold (≈3 seconds) the torch switch until the display shows INCH WIRE. When display shows INCH WIRE, release the torch switch and push it (push2) again.

The wire feeder starts to rotate in ramp mode up to a speed of 10mt / min.

In this function, the wire comes out without using gas.

Release the torch switch to stop the INCH WIRE function.

Note: In 2T mode at the push1 of the torch switch, the wire feeder starts to rotate at slow speed.

In 4T mode at the push1 of the torch switch, the wire feeder does not start rotation. It starts rotation only after inch wire mode is activated and pressing the torch switch again.

2.8.2.3 SETTINGS IN MIG TYPE

The MIG type settings are:

STANDARD MANUAL, STANDARD SYNERGIC, PULSE, TWICE PULSE

2.8.2.4 MIG welding material setting

Press the PROG button to enter in the material selection menu. Select the material by KNOB1 and confirm by pushing the KNOB1.

2.8.2.5 MIG solder wire diameter setting

Press the PROG button twice to select and enter in the diameter selection menu. Select the diameter by KNOB1 and confirm by pushing the KNOB1.

2.8.2.6 MIG welding gas setting

Press the PROG button 3 times to select and enter in the gas selection menu. Select the gas by KNOB1 and confirm by pushing the KNOB1.

2.8.2.7 2T/4T Setting

Push the 2T/4T button to enter in the 2T/4T menu.

Select the 2T/4T by the KNOB1 and confirm by pushing KNOB1.

It is possible to select 2 Time, 4 Time, Special with timer.

2.8.2.8 SETTINGS IN MIG MODE

Select the menu by the MODE button and confirm by pushing KNOB1.

Go in the back menu by pushing the KNOB1 or setting button.

SETTING MENU

Push the SETTING button to enter in the setting menu.

SELECT the sub menu by knob1 and confirm by pushing the knob1.

- Technical Parameter (See Table 2.2)

- JOB menu: select the job

- MACHINE INFO: can show the machine SN and more information.

- RESTORE FACTORY: restore default settings of the working data in the selected welding section.

JOB MENU

By the job menu, it is possible to manage the JOBS Nr.

To enter, rotate Knob 1 (left) to select the Job Menu and push the knob to confirm and enter in the JOB Menu.

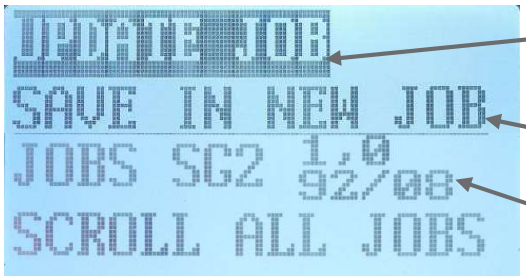
2.8.3 JOBS

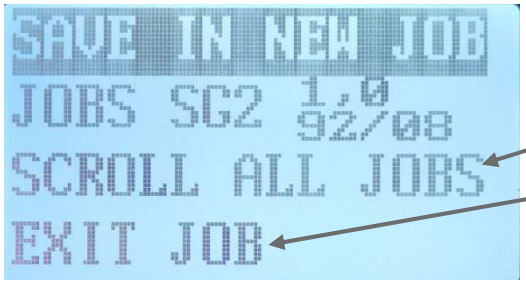
The machine can save up Nr.100 Jobs in the MIG Synergic mode.

10 Demo Jobs are available from Job 101 to Job 110.

If a Job is selected, the reference Nr. of the Job is showing in the display.

By the Job menu it is possible:





UPDATE JOB: Update the selected Job with the modified data. It depends from the "Job protection level" (see Job protection Level section).

SAVE IN NEW JOB: Save the actual JOB data in a New JOB Nr.

JOBS "material" "diameter" "gas"
Can scroll the Jobs with same three data: -Material type, -Wire diameter, -Gas type

SCROLL ALL JOBS: You can scroll through all available jobs.

EXIT JOB: Exit from selected Job.
When no Job is loaded, all data are freely editable.

2.8.3.1 UPDATE JOB

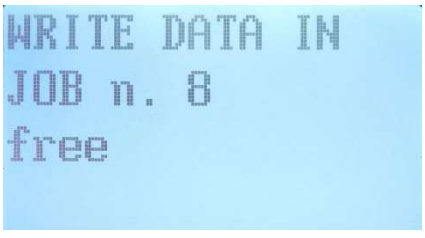
If the protection level allows, it is possible to update the modified data of the current job. (See Job protection Level section)

2.8.3.2 SAVE IN A NEW JOB.

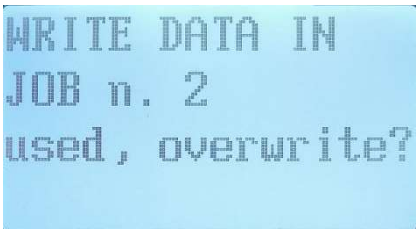
Copy the actual working data in a new Job.

Select Save in a new Job by knob1, confirm by pushing the knob, select the job NR. to save it and confirm by pushing the knob.

The free jobs Nr. are shown in the display.



The used jobs Nr. are shown in the display.



In this case, the display asks confirmation to overwrite the existing job with new data. Confirm by pushing the knob1 or exit by pushing a button.

2.8.3.3 Job LOAD

There is possibility to load a Job in two ways:

a) Select the JOBS by same three main data of actual job : MATERIAL, DIAMETER, GAS

b) SCROLL ALL JOBS

Select the mode to load the Job by the knob1and confirm by pushing the knob.

Select the job to load by the Knob 1 and confirm by pushing the knob.

ect all Jobs with SG2, 1.0

2.8.3.4 MAKE a NEW JOB

Make a new Job by the machine control panel following this procedure:

-EXIT to the loaded JOB.

-Set the data for the new Job: material, diameter of the wire, gas, 2T/4T… special parameters.

-Save in a New Job.

2.8.3.5 Job MAKER

The Jobs can also be defined by APP mobile and /or JTE Cloud.

By the Job maker, it is possible to define a free Job description and define the job protection level.

Job DESCRIPTION

By the App Mobile or the Cloud, it is possible add a short description of the Job.

The Job description will be shown in the Job data.

2.8.3.6 Job PROTECTION

The editable working data of a job are the “Current” and the “Arc Length” settings.

There are 4 protection levels of the Jobs:

- Job protection *level “0”:* the Job data can be free modified

  A modified job is highlighted by the symbol * near to the Job nr.

- Job protection *level “1”:* the data can be modified in the range +/- 10%.

  Available data to modify are the Current setting and Arc length.

  A modified job is highlighted by the symbol * near to the Job nr.

  It is possible to update the modified Job data.

- Job protection *level “2”:* the data can be modified in the range +/- 10%.

  Enabled data to modify are Current setting and Arc length.

  Cannot update the modified Job data.

- Job protection *level “3”:* no modifications available, No data and Job Nr. can be changed.

The default protection level is level “2”.

Different Protection level can be selected by the app mobile or cloud.

2.8.4 MIG manual mode setting

The standard manual is always supported by a default setting of the advanced setting data.

The default settings help to have the optimizations of the trigger parameters.

The display shows the MIG mode type and 2T/4T set (2T, 4T) in the top line.

In the central and left side, the display shows the setting of the wire speed.

Set the wire speed by KNOB1 (left knob).

In the central and right side, the display shows the arc voltage.

Set the arc voltage by KNOB2 (right knob).

2.8.5 MIG synergic mode setting

Press the PROG button to enter in the MYG TYPE menu.

Select the SYNERGIC MODE by KNOB1 and confirm by pushing the KNOB1.

The material, diameter of wire, and gas are as the latest MIG setting.

Use the procedure to set the MATERIAL, WIRE diameter and GAS

Set the 2T/4T by 2T/4T button.

Select 2T/4T type by rotating KNOB1 and confirm by pressing the KNOB1.

In this case, the 4 time 2T/4T is selected.

SETTING MENU

Push the SETTING button to enter in the setting menu.

SELECT the sub menu by knob1 and confirm by pushing the knob1.

- Technical Parameter (See Table 2.2)

- JOB menu: select the job

- MACHINE INFO: can show the machine SN and more information.

- RESTORE FACTORY: restore default settings of the working data in the selected welding section.

2.8.6 MIG PULSE mode setting

Press the PROG button to enter in the MIG TYPE menu.

Select the SYNERGIC MODE by KNOB1 and confirm by pushing the KNOB1.

The material, diameter of wire, and gas are as the latest MIG setting.

Use the procedure to set the MATERIAL, WIRE diameter and GAS.

Set the 2T/4T by 2T/4T button.

Select the 2T/4T type by rotating KNOB1 and confirm to press the KNOB1.

In this case, the 4 time 2T/4T is selected.

SETTING MENU

Push the SETTING button to enter in the settings menu.

SELECT the sub menu by knob1 and confirm by pushing the knob1.

- Technical Parameter (See Table 2.2)

- JOB menu: select the job

- MACHINE INFO: can show the machine SN and more information about the machine.

- RESTORE FACTORY: restore default settings of the working data in the selected welding section.

The display shows the MIG mode type and 2T/4T set (2T, 4T) in the top line.

In the central and left side, the display shows the setting current.

Set the output current by KNOB1 (left knob).

In the central and right side, the display shows the thickness of the work pieces.

Set the ARC VOLTAGE by the KNOB2.

Wire consumption information:

It is possible to show the wire consumption in the display:

a) By left knob, you can change the set of the current, after the right side of the display shows the material thickness, if you push the right knob, the wire consumption will be shown.

Material thickness

Wire consumption mt/min

During the welding, the display can show the wire consumption in g/min by pushing the right knob.

Table 2.2: TECHNICAL PARAMETER MENU IN MIG MODE

MODE	2T	4T	SP (spot)
MIG MAN	- INDUCTANCE - post gas (sec) pre gas- DROP IND CORR BBT	- INDUCTANCE post gas (sec) pre gas- DROP IND Glick CORR BBT	- INDUCTANCE post gas (sec) pre gas- DROP IND TIME SPOT CORR BBT
MIG SYNERGIC	- INDUCTANCE - pre gas -I start -Slope up -Time start -Slope down (sec) -Time stop -I stop CORR BBT	- INDUCTANCE pre gas -I start -Slope up -Time start -Slope down (sec) -Time stop -I stop Glick CORR BBT	- INDUCTANCE pre gas -I start -Slope up -Time start -Slope down (sec) -Time stop -I stop TIME SPOT CORR BBT
MIG PULSE	- INDUCTANCE pre gas HOT start -I start -Slope up -Time start -Slope down (sec) -Time stop -Pulse BALANCE -Pulse I low -I stop CORR BBT	- INDUCTANCE -pre gas HOT start -I start -Slope up -Time start -Slope down (sec) -Time stop -Pulse BALANCE -Pulse I low -I stop Glick CORR BBT	- INDUCTANCE -pre gas HOT start -I start -Slope up -Time start -Slope down (sec) -Time stop -Pulse BALANCE -Pulse I low -I stop TIME SPOT CORR BBT
MIG TWICE PULSE	- INDUCTANCE - pre gas -I start -Slope up -Time start -Slope down -Time stop -I stop -Pulse BALANCE -Pulse I lo -TWICE -TWICE frequency CORR BBT	- INDUCTANCE - pre gas -I start -Slope up -Time start -Slope down -Time stop -I stop -Pulse BALANCE -Pulse I lo -TWICE -TWICE frequency Glick CORR BBT	- INDUCTANCE - pre gas -I start -Slope up -Time start -Slope down -Time stop -I stop -Pulse BALANCE -Pulse I lo -TWICE -TWICE frequency TIME SPOT CORR BBT

NOTE: 1.if the “Timer Slope Up” is set to OFF, the other parameters for the ramp setting (timer start, I start, Slope down Time stop, I stop) will be hide.

2.CORR BBT:this parameter can adjust the ‘burnback voltage’ and the ‘burnback time’ at the same time.

3. Instructions for MOBILE Application

3.1 REMOTE CONTROLS

MIG TORCH DIGITAL
(Optional:This chapter will be effective when this accessory is selected)

Top Button + sets the current (or the voltage in MIG manual)

Left Button – Adjust the arc length in synergic (or the wire speed in MIG manual)

Right Button + Adjust the arc length in synergic (or the wire speed in MIG manual)

Bottom Button - sets the current (or the voltage in MIG manual)

TIG TORCH DIGITAL
(Optional:This chapter will be effective when this accessory is selected)

Top Button Trigger

− sets the current

+ sets the current

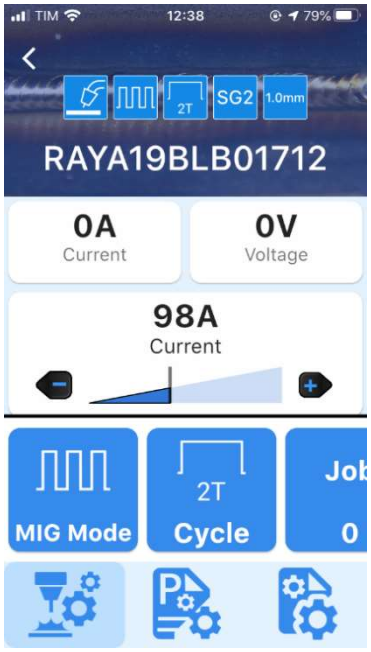
Top Button Trigger

TIG PEDAL with ANALOG POTENTIOMETER

Regulation by pedal from minimum current setting, to the current set.
In synergic mode, the mini current setting is the mini of synergic program.
In manual mode, the mini current setting is the mini current of the machine.
For the connections details, contact the service center.

MMA REMOTE CONTROL ANALOG POTENTIOMETER
Regulation by the MMA remote control from minimum current setting, to the current set. For the connections details, contact the service center.

3.2 REMOTE CONTROL APP MOBILE



By the app mobile, it is possible to set the machine data by your mobile.

The remote controls by app mobile are shown in the mobile's display.

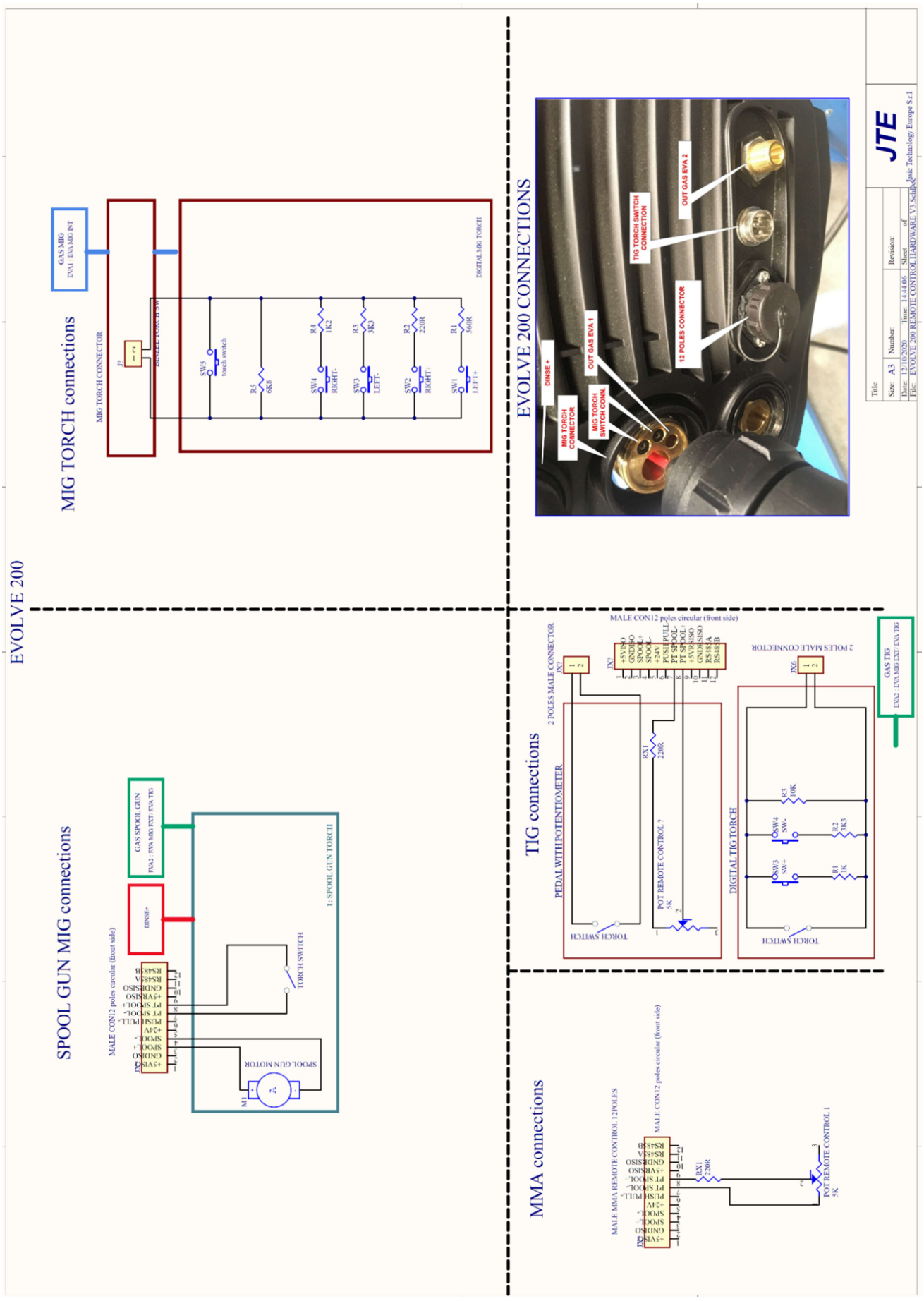
The App is available in the App store for IOS, and in the Play store for Android.

Download and install the App mobile in your mobile, and follow the instructions.

4. Torch and remote control available

	Analog remote control	*SPOOL GUN*	*MIG*		*TIG*		
TYPE	*MMA/TIG/MIG REMOTE CNT. ANALOG.*	*SPOOL GUN torch SW*	*MIG TORCH NORMAL*	*MIG TORCH DIGITAL*	*TIG TORCH NORMAL*	*TIG TORCH DIGITAL*	*TIG PEDAL ANALOG. POT.*
PINS machine connections	*12 POLES CON. 7-8*	*12 POLES CON. 3-4 MOTOR 7-8 PT*	*MIG torch connector 1-2*	*MIG torch connector 1-2*	*2 POLES TIG CON. 1-2*	*2 POLES TIG CON. 1-2*	*12 POLES CON.7-8 (analog POT.) + 2 POLES TIG CON. 1-2*

4.1 Remote control connection



5. Alarms of the machine and troubleshooting

Table 5.1 Alarms of the machine and troubleshooting

ALARM CODE	SHORT DESCRIPTION	USER DESCRIPTION	USER ACTION 1	USER ACTION 2	USER CAUSE1	USER CAUSE2
1	ALARM_VREFINT	ANOMALY IN THE CONTROL BOARD POWER SUPPLY	POWER OFF / POWER ON	CONTACT THE SERVICE CENTER	CONTROL BOARD FAULT	
2	ALARM_VBAT	ANOMALY IN THE CONTROL BOARD POWER SUPPLY	POWER OFF / POWER ON	CONTACT THE SERVICE CENTER	BATTERY LOW	FAULT CONTROL BOARD
3	ALARM_CPU_TEMPERATURE	HIGH THEMPERATURE OF THE CPU	POWER OFF and wait a few minutes for cooling	CONTACT THE SERVICE CENTER	HIGH AMBIENT TEMPERATURE	CONTROL BOARD FAULT
10	ALARM_BUS_I2C	ANOMALY IN THE CONTROL BOARD COMUNICATION INTERFACE	POWER OFF / POWER ON	WAIT A COUPLE OF MINUTES	CONTROL BOARD FAULT	BAD ELECTRICAL CONNECTION
12	ALARM_MONITOR_5V	ANOMALY IN THE CONTROL BOARD POWER SUPPLY	POWER OFF / POWER ON	CONTACT THE SERVICE CENTER	CONTROL BOARD FAULT	CLOUD CONNECTION BOARD FAULT
13	ALARM_MONITOR_MINUS_15V	ANOMALY IN THE CONTROL BOARD POWER SUPPLY	POWER OFF / POWER ON	CONTACT THE SERVICE CENTER	CONTROL BOARD FAULT	
14	ALARM_MONITOR_15V	ANOMALY IN THE CONTROL BOARD POWER SUPPLY	POWER OFF / POWER ON	CONTACT THE SERVICE CENTER	CONTROL BOARD FAULT	
15	ALARM_HALL_I2	ANOMALY IN THE HALL SENSOR	POWER OFF / POWER ON	CONTACT THE SERVICE CENTER	BAD ELECTRICAL CONNECTION	CONTROL BOARD FAULT HALL SENSOR FAULT
16	ALARM_TABLE_MEMORY	MEMORY DATA ERROR	POWER OFF / POWER ON	CONTACT THE SERVICE CENTER	BAD ELECTRICAL CONNECTION	CONTROL BOARD FAULT, MEMORY DATA BOARD FAULT
20	V_PROBE_ALARM	OUTPUT VOLTAGE ERROR AT THE START UP MACHINE	POWER OFF / POWER ON	CONTACT THE SERVICE CENTER	CONTROL BOARD FAULT	
21	ALARM_NO_FUNCTION	NO SYNERGIC PROGRAM AVAILABLE	CHANGE SYNERGIC PROGRAM	CONTACT THE SERVICE CENTER	NO ABILITATIONS	SOFTWARE BUG
23	ALARM_ADC	CONTROL BOARD INTERNALL ERROR	POWER OFF / POWER ON	CONTACT THE SERVICE CENTER	CONTROL BOARD FAULT	
30	TORCH_IN_SC	ANOMALY IN THE OUTPUT VOLTAGE	CHECK THE TORCH DO NOT TOUCH THE WORKING DESK	CONTACT THE SERVICE CENTER	SHORT CIRCUIT OF THE TORCH WITH THE NEGATIVE OUTPUT	CONTROL BOARD FAULT
40	ALARM_NTC1_OPEN	ANOMALY IN THE THEMPERATURE SENSOR	POWER OFF / POWER ON	CONTACT THE SERVICE CENTER	NTC DISCONNECTOR FAULT	CONTROL BOARD FAULT
42	ALARM_NTC1_IN_SHORT_CIRCUIT	OVER TEMPERATURE ERROR IN THE POWER INVERTER	WAIT COOLING A FEW OF MINUTES	CONTACT THE SERVICE CENTER	FAULT COOLING SYSTEM	TEMPERATURE ERROR IN THE OUTPUT SIDE OF THE POWER INVERTER
44	ALARM_TEMPERATURE INVERTER	OVER TEMPERATURE IN THE INPUT SIDE OF THE POWER INVERTER	WAIT COOLING A FEW OF MINUTES	CONTACT THE SERVICE CENTER	FAULT COOLING SYSTEM	OVER TEMPERATURE IN THE INPUT SIDE OF THE POWER INVERTER
51	ALARM_POWER_LOW	POWER SUPPLY NETWORK TOO LOW	POWER OFF / POWER ON	CONTACT THE SERVICE CENTER	WRONG POWER SUPPLY NETWORK	CONTROL BOARD FAULT
52	ALARM_POWER_HIGH	POWER SUPPLY NETWORK TOO HIGHT	POWER OFF / POWER ON	CONTACT THE SERVICE CENTER	WRONG POWER SUPPLY NETWORK	CONTROL BOARD FAULT

Table 5.1 Alarms of the machine and troubleshooting						
ALARM CODE	**SHORT DESCRIPTION**	**USER DESCRIPTION**	**USER ACTION 1**	**USER ACTION 2**	**USER CAUSE1**	**USER CAUSE2**
61	ALARM_PWM_INVERTER	STARTUP TEST ERROR	POWER OFF / POWER ON	CONTACT THE SERVICE CENTER	ANOMALY IN THE POWER INVERTER	CONTROL BOARFD FAULT
62	ALARM_V_POWER_MOTOR	CONTROL BOARD FAULT	POWER OFF / POWER ON	CONTACT THE SERVICE CENTER	ANOMALY IN THE MOTOR DRIVER FAULT	CONTROL BOARFD FAULT
63	ALARM_PWM_MOTOR	CONTROL BOARD FAULT	POWER OFF / POWER ON	CONTACT THE SERVICE CENTER	ANOMALY IN THE MOTOR DRIVER FAULT	CONTROL BOARFD FAULT
67	ALLARM TABLE CALIBRATION	CALIBRATION ERROR	POWER OFF / POWER ON	CONTACT THE SERVICE CENTER		
71	ALARM_CTE	THERMAL 2T/4T ERROR	WAIT COOLING THE POWER STAGE A FEW OF MINUTES		OUT OF LIMIT OF THE MACHINE WORKING	
72	ALARM_MOTOR_SPEED	MOTOR SPEED ERROR	CHECK TORCH CONSUMABLE PARTS, PRESSURE OF THE ROLLS		TORCH QUALITY	BAD MOTOR FIXING ROOLS
73	ALARM_MOTOR_ENCODER	MOTOR SPEED ERROR	POWER OFF / POWER ON	CONTACT THE SERVICE CENTER	FAULT OF THE CONTROL BOARD	FAULT OF THE SPEED SENSOR
76	ALARM_MOTOR_BRAKE	MOTOR BRAKE ERROR	POWER OFF / POWER ON	CONTACT THE SERVICE CENTER	FAULT CONTROL BOARD	
77	ALARM MOTOR CURRENT	MOTOR ERROR	WAIT ALARM RESET POWER OFF / POWER ON	CONTACT THE SERVICE CENTER	TOO STRONG FIXING ROOLS	BAD QUALITY OF THE TORCH
80	ALARM DITER STOP	CONTROL BOARD FAULT / CLOUD CONNECTION BOARD FAULT	FOR EVOLVE 200 PRESS THE RIGHT UPPER BUTTON TO RESET THE ALARM	CONTACT THE SERVICE CENTER	FAULT CONTROL BOARD	FAULT CLOUD CONNECTION BOARD

Appendix 1 SPARE FUNCTIONS instructions

1) FAN CONTROL :

The ON /OFF of the fan is controlled automatically.

The fan works if the internal inverter temperature is >30°C during the welding.

The fan works in standby mode of the machine if the internal inverter temperature is >40°C

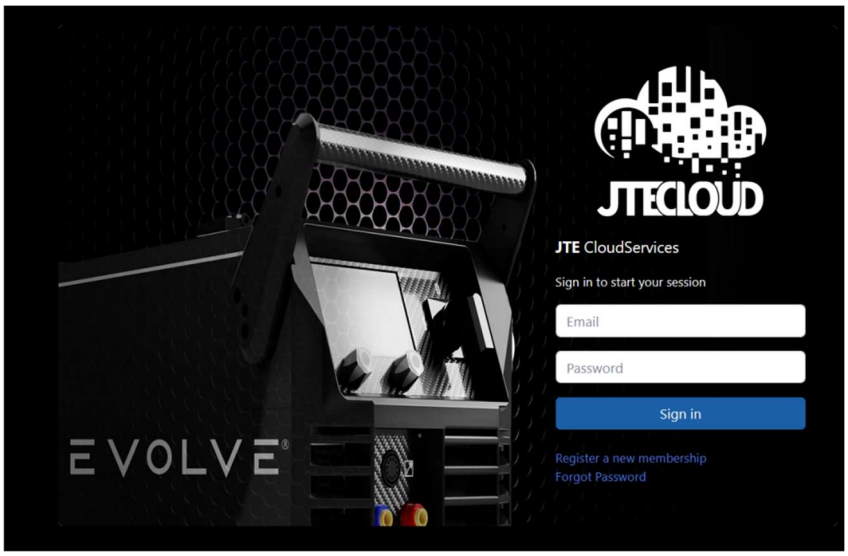
2) OPTIONAL FUNCTIONS:

ON DEMAND FUNCTIONS, ENABLES, DISPLAYS are available from the JTE Cloud

See the instructions on the JTE cloud.

3) JTE CLOUD:

a. Official website of JTE cloud platform：https://cloud.jteurope.com/user/login.

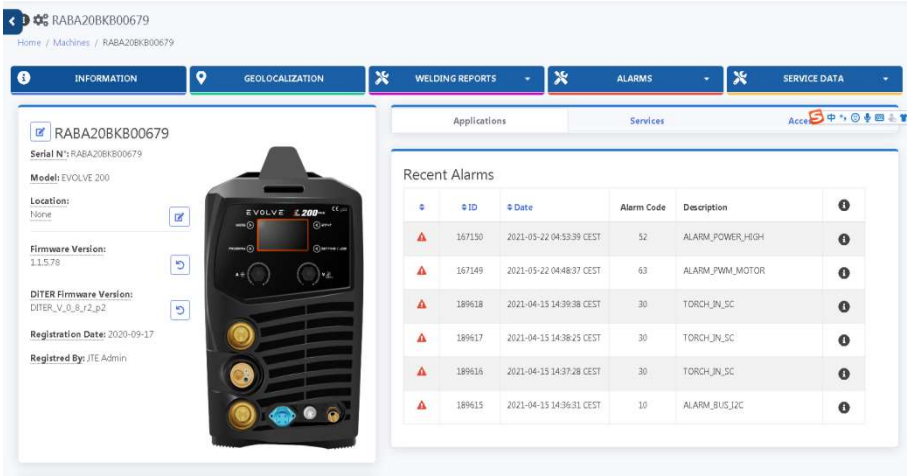


b. In JTE cloud, you can register and pay attention to your machine information.

For example:machine information,alarm information,software update, Welding procedure test report, etc.

①Machine information and alarm information

Machine information and alarm information are displayed on the home page.



Machine information Contains:Serial Number,Model,Location,Firmware Version,Registration Date, etc.

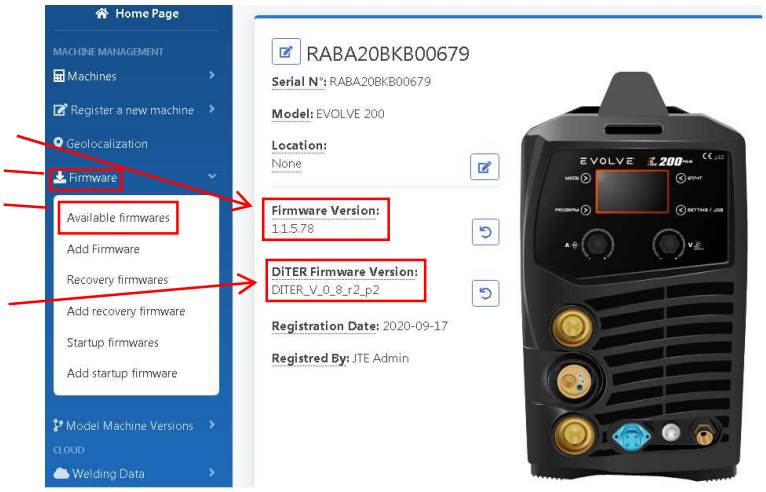
Alarm information Contains:Alarm ID,Date,Alarm code,description, etc.

②Software update

Software update Contains Firmware Version software update and DITER Firmware Version software update.

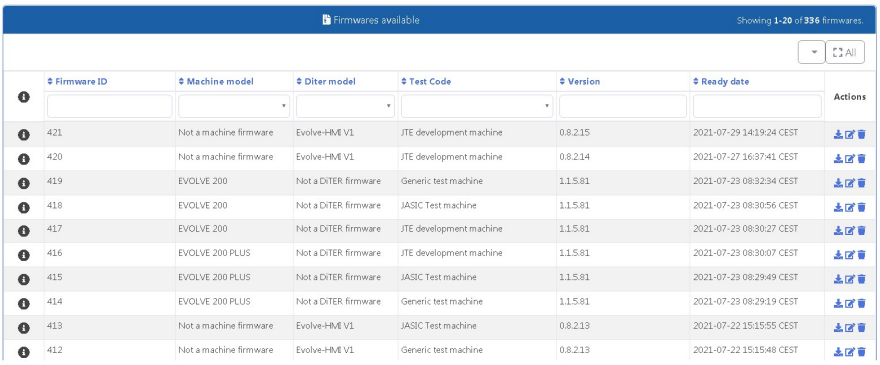
Select the Firmware Version as the following picture can upgrade or lower the mainboard Firmware Version.

Select the DITER Firmware Version can upgrade or lower the DITER Firmware Version.



In the picture shown above,Firmware contains Available firmwares,Add Firmware,Recovery firmwares, etc.

Click on the Available firmwares,the firmware information is shown in the following picture.

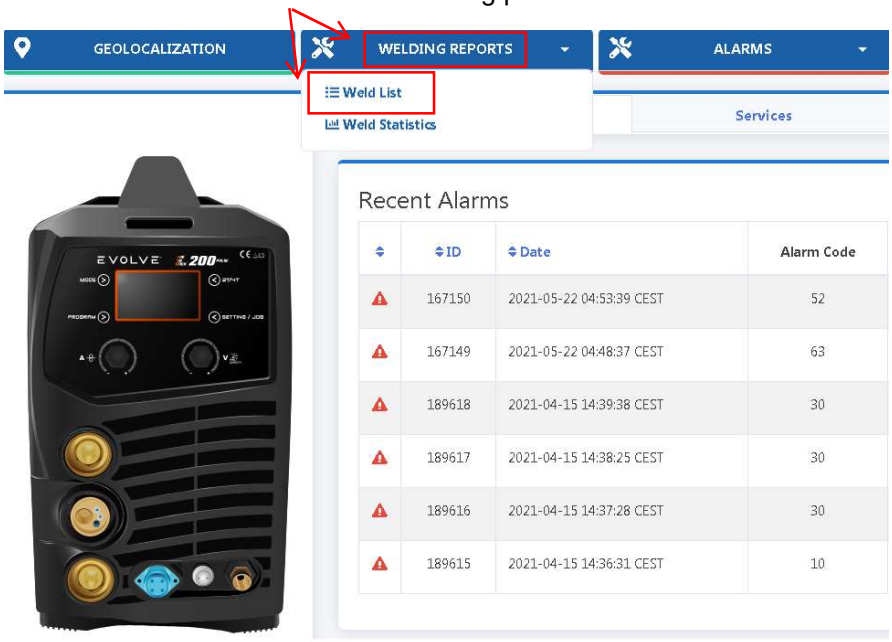


In addition， we will provide paid services of custom software which will bring you a better effect and experience of welding.

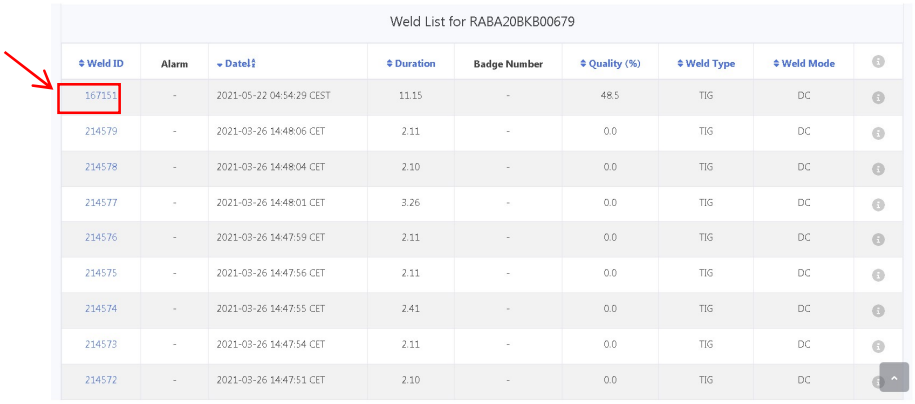
③Welding procedure test report

It will be paid services of providing the Welding procedure test report.

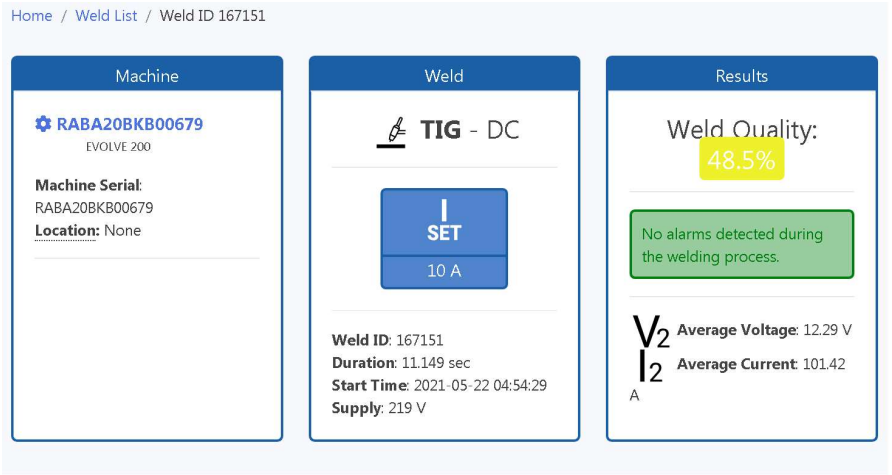
On the premise of the service being paid,to open a Welding procedure test report,click on the WELDING REPORTS and the Weld List in turn shown in the following picture.



The Weld List of the machine(RABA20BKB00679) is shown in the following picture,click on anyone Weld ID,for example,the first one 167151.



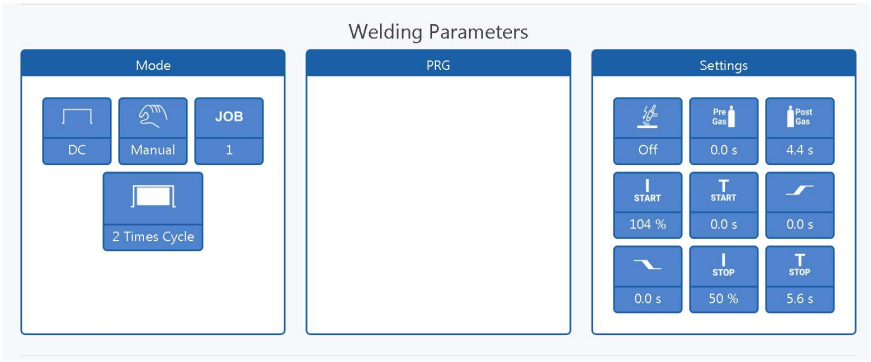
The Welding procedure test report of the Weld ID 167151 is shown in the following pictures.



The information of Machine,Weld and Results is in the picture shown above.

The welding data of the Weld ID 167151 is shown in the following picture.

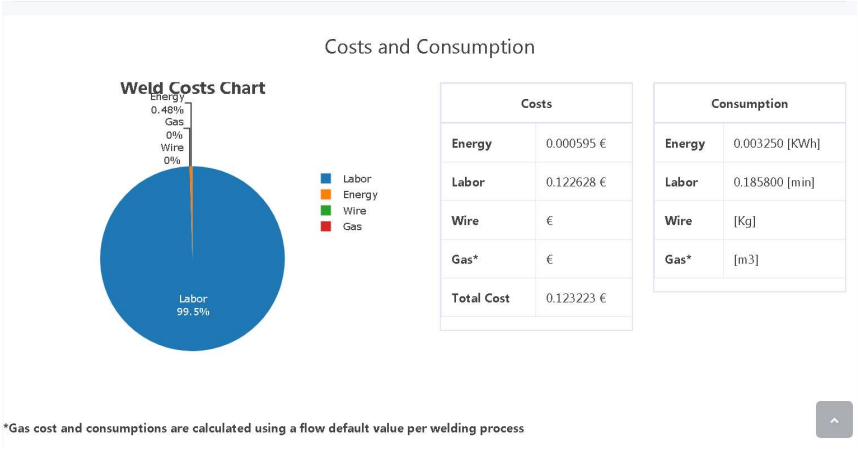
The welding Parameters of the Weld ID 167151 is shown in the following picture which contains:Mode,PRG and Settings.



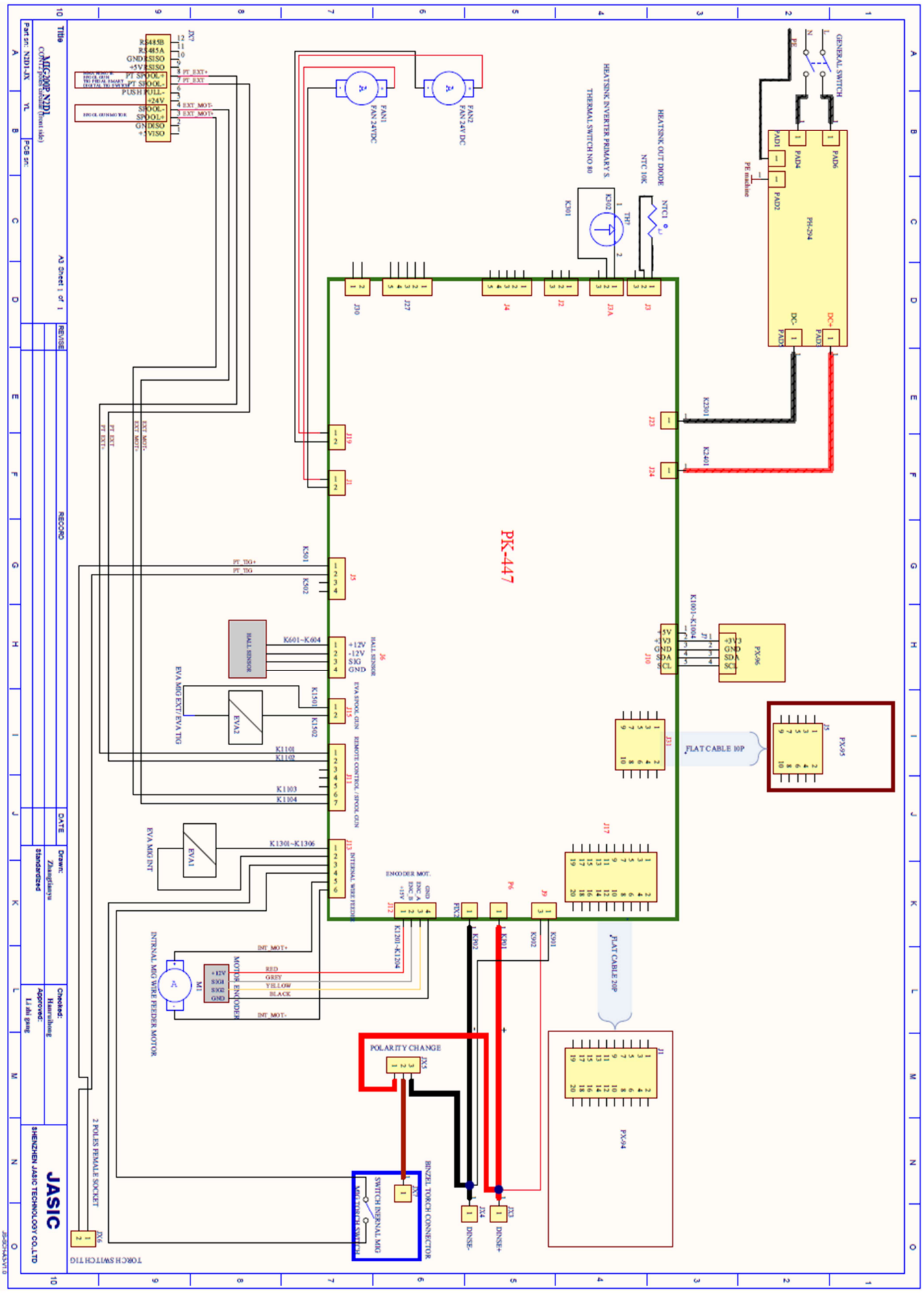
④Costs and Consumption

It will be paid services of providing the Costs and Consumption of the Weld ID.

The Costs and Consumption of the Weld ID 167151 is shown in the following picture.



Appendix 2 MACHINE SCHEMATICS



Appendix 3 SPARE PART LIST

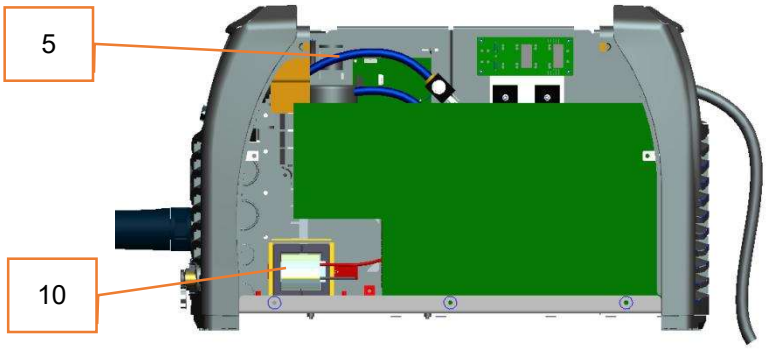
Spare parts list (*spare part list as required from REGULATION (EU) 2019/1784)

Number	Description	Ref
1	control panel;*	1
2	polarity switching device	5
3	equipment housing;*	3
4	welding torch;*	1
5	gas supply hose(s);*	4
6	gas supply regulator(s);*	2
7	wire feeder	5
8	fan(s);*	2
9	electricity supply cable;*	2
10	The main transformer	4

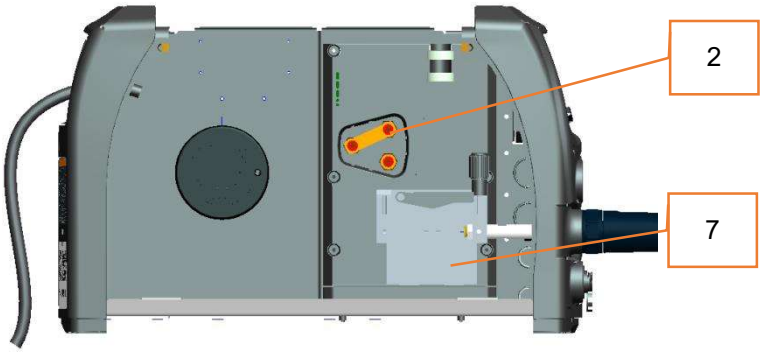
Ref 1

Ref 2

Ref 3



Ref 4



Ref 5

Appendix 4 TIG synergic programs table

Material	Electrode tungsten size
Fe	1,6; 2,4 mm
CrNi Stainless steel 308-316	1,6; 2,4 mm

Appendix 5 MIG synergic programs table

Weld Mode	Weld Material	Wire Diameter (mm)	Weld Gas
SYN STD	SG2	0,8	CO2
		0,9	
		1,0	
		0,8	80/20
		1,0	
		0,8	92/8
		0,9	
		1,0	
	SST (CrNi)	0,8	98/2
		0,9	
		1,0	
	AlMg5	1,0	Argon
		1,2	
	AlSi5	1,0	Argon
		1,2	
	Al 99,9	1,0	Argon
		1,2	
	Cusi3	0,8	Argon
		0,9	
PULSE / TWIN PULSE	SG2	0,8	80/20
		1,0	
		0,8	92/8
		0,9	
		1,0	
	SST (CrNi)	0,8	98/2
		0,9	
		1,0	
	AlMg5	1,0	Argon
		1,2	
	AlSi5	1,0	Argon
		1,2	
	Al 99,9	1,0	Argon
		1,2	
	Cusi3	0,8	Argon
		0,9	