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## R-TECH MTS251TFT DIGITAL MIG - MMA - DC TIG WELDER

### OPERATION INSTRUCTIONS



Version 2023-12-V1



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Thank you for selecting the R-Tech MTS251-TFT Digital MIG, DC TIG & MMA Welder.

The MTS251-TFT has many benefits over traditional welders, including colour screen with easy navigation & EASY SETUP, 20 memory stores, MIG welding with optional spool on gun, DC HF TIG pulse welding with spot and tack functions, remote foot pedal option and an industrial 35% duty cycle.

We want you to take as much pride in operating our MTS251-TFT Digital as much pride as we have in making this product for you. Please read all information in this manual before operation

**PLEASE EXAMINE CARTON AND EQUIPMENT FOR DAMAGE IMMEDIATELY**

When this equipment is shipped, title passes to the purchaser upon receipt from the courier. Consequently all claims for material damaged in shipment must be made by purchaser against the transportation company used.

Please record your equipment identification below for future reference. This information can be found on data plate at rear of machine.

Product: MTS251-TFT

Serial No. \_\_\_\_\_

Date of Purchase \_\_\_\_\_

Where Purchased \_\_\_\_\_

Whenever you request replacement parts or information on this equipment please always supply information you have recorded above

Pay particular attention to the safety instructions we have provided you for your protection The level of seriousness to be applied to each section is explained below

WARNING



This statement appears where the information must be followed exactly to avoid serious personal injury.

CAUTION

This statement appears where the information must be following to avoid a minor personal injury or damage to this equipment.

## **Introduction**

The R-Tech MTS251-TFT digital MIG - MMA - DC TIG welder is a member of our field acclaimed family of welding machines. Premium features include

Large TFT Screen  
35% Industrial duty cycle  
Inverter power source - more efficient  
Electronic HF for fast arc starting in DC TIG and low interference

### **EASY SETUP MIG - MMA - DC TIG**

Professional weld settings built in  
Settings from 1.0 to 8mm pre-installed for easy setup  
Simple to use easy navigation - no complicated menus - all settings on single screen.

### **MANUAL MODE DC TIG**

Full control of every weld parameter you could ever need  
Pre-flow gas, start amps, slope up time, main amps, slope down time, end amps and post flow gas  
2 Start modes - HF Fast start & LIFT  
2T, 4T, foot pedal & torch switch control modes  
4TS trigger mode, Ideal for pipe welding, switch from start to main amps as required  
DC Pulse up to 150Hz  
20 professional memory stores  
Spot welding - Spot weld feature with stitch function  
Fast Tack welding - Tack weld feature with stitch function

### **Welding Capability – Duty Cycle**

The R-Tech MTS251-TFT Digital is rated at 250 Amps at 35% duty cycle on a ten minute basis. If the duty cycle is exceeded a thermal protector will shut machine off until the machine cools.

## **Safety Precautions**

**Read entire section before starting installation.**

### **Warning!**



Electric Shock can kill – Only qualified personnel should perform this installation. Turn off input power at the fuse box before working on this equipment. Do not touch electrically live parts. Always connect the machine to an earthed mains supply as per national recommended standards.

### **Select suitable location**

Place the welder where clean cooling air can freely circulate in and out of the front & rear louvre vents. Dirt, dust or any foreign material that can be drawn through vents into welder must be kept to a minimum. Failure to observe these precautions can result in excessive operating temperatures which can lead to plant failure.

### **Grinding**

Do not direct grinding particles towards the welder.  
An abundance of conductive material can cause plant failure.

### **Transport & unloading**

Never underestimate the weight of equipment, never move or leave suspended in the air above people.  
Use recommended lifting/handling equipment at all times.

## Electrical installation

### WARNING ELECTRIC SHOCK CAN KILL



Electric Shock can kill – Only qualified personnel should perform this installation. Turn off input power at the fuse box before working on this equipment. Do not touch electrically live parts. Always connect the machine to an earthed mains supply as per national recommended standards.

#### Machine grounding and High Frequency Interference Protection

This welder must be grounded to earth. See national electrical codes for proper grounding methods.

The high frequency generator being similar to a radio transmitter may cause interference to radio, TV and other electronic equipment. These problems may be the result of radiated interference.

Proper grounding methods can reduce or eliminate this.

Radiated interference can develop in the following ways

1. Direct interference from welder power source
2. Direct interference from the welding leads
3. Direct interference radiated from feedback into power lines
4. Interference from re-radiation by un-grounded metallic objects.

Keeping these contributing factors in mind, installing equipment as per following instructions should minimize problems.

1. Keep the welder input power lines as short as possible and enclose as much of them as possible in metal conduit or equivalent shielding. There should be a good electrical contact between this conduit and ground (Earth).
2. Keep the work and electrode leads as short as possible. Tape the leads together where practical.
3. Be sure the torch and earth leads rubber coverings are free from cuts and cracks that allow welding power leakage
4. Keep earth lead connection to work in good condition – Clean area on workbench where earth clamp is situated on a regular basis.

## **Electrical installation cont.**

### **Input Connections**

Make sure the voltage, phase and frequency of input power is as specified on machine rating plate located at rear of machine.

Have a qualified electrician provide suitable input power as per national electrical codes. Make sure machine is earthed / grounded.

Make sure fuse or circuit breaker is correct rating for machine. Using fuses or circuit breakers smaller than recommended will result in 'nuisance' shut off from welder inrush currents even if welding at low amperages.

Failure to follow these instructions can cause immediate failure within the welder and void machines warranty.

Turn the input power OFF at the mains switch & fuse box before working on this equipment. Have a qualified electrician install & service this equipment.

Allow machine to sit for 5 minutes minimum to allow the power capacitors to discharge before working inside this equipment. Do not touch electrically live parts

The MTS251-TFT requires a 240V 50/60Hz supply. It requires a 32A supply. It comes with a 2.5 metre mains cable attached.

Connect wires according to national coding.

Brown wire – Live

Blue wire – Neutral

Green/Yellow Wire – Earth (Ground)

### **Connecting to an Engine Driven Generator**

If connecting this machine to an engine driven generator please ensure the following

Minimum Generator KVA Output – 10 KVA continuous Generator to be fitted with AVR (automatic voltage regulation) DO NOT USE ON A GENERATOR WITHOUT AVR

Connecting to a generator without the above minimum requirements will invalidate your warranty.



## Technical specifications

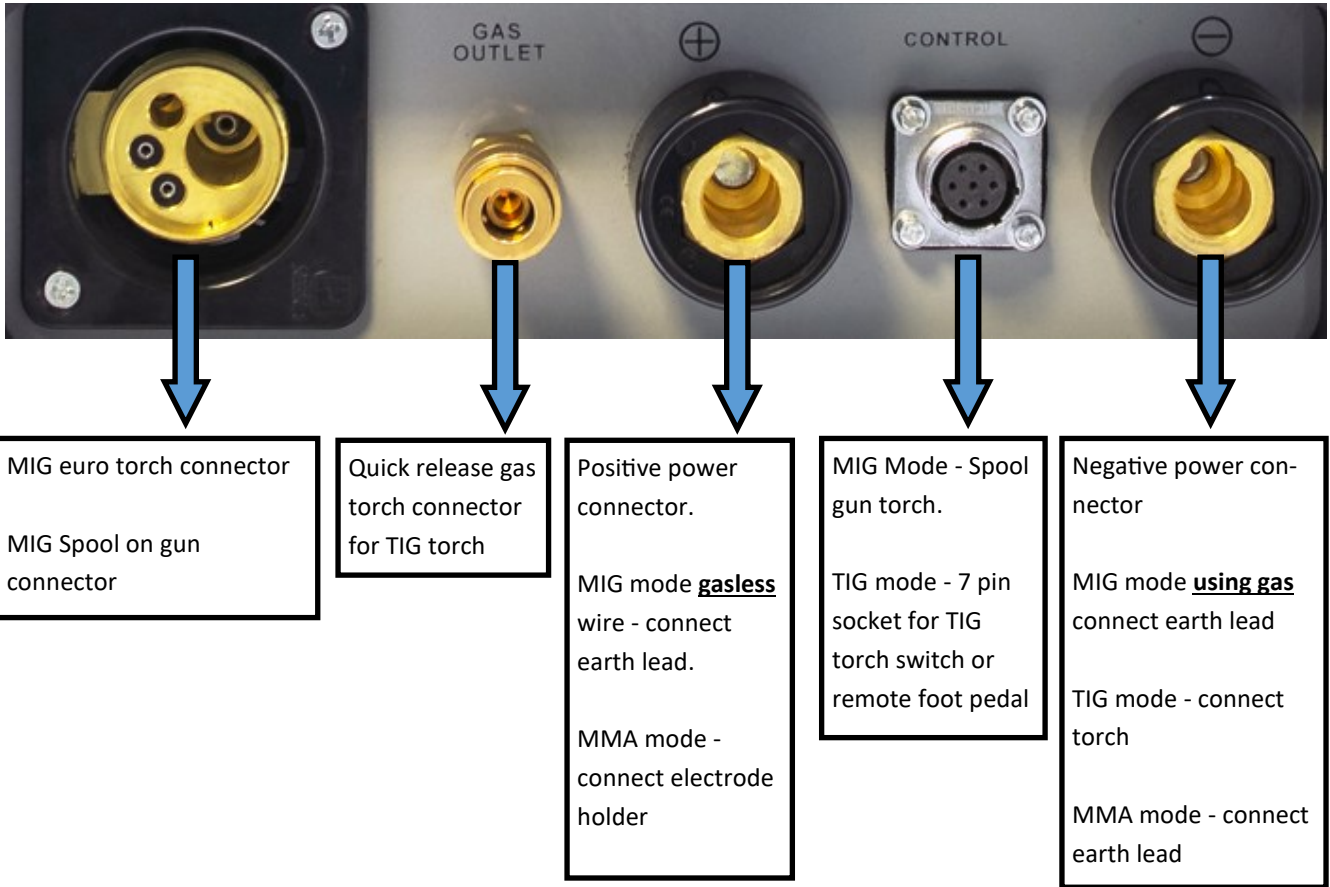
Input	240V AC 50/60Hz	Input amperage 32A
Gross weight	28 KG	
Dimensions	470H x 280W x 640L (mm)	
Insulation	IP21S	
MIG Operation	Current range DC	30A - 250A
	No load voltage	85V
	Duty cycle	35% @ 250A, 60% @200A
MIG EASY SETUP - Programs for	Wire Type - Mild steel .6mm	0.8, 1, 1.2, 1.5, 2mm
	Wire Type - Mild steel .8mm	0.8, 1, 1.2, 1.5, 2, 3, 4mm
	Wire Type - Mild steel 1.0mm	0.8, 1, 1.2, 1.5, 2, 3, 4, 5, 6, 7, 8mm
	Wire Type - Stainless steel .6mm	0.8, 1, 1.2, 1.5, 2mm
	Wire Type - Stainless steel .8mm	0.8, 1, 1.2, 1.5, 2, 3, 4mm
	Wire Type - Stainless steel 1.0mm	0.8, 1, 1.2, 1.5, 2, 3, 4, 5, 6, 7, 8mm
	Wire Type - Flux cored steel .8mm	1.5, 2, 3, 4, 5mm
	Wire Type - Flux cored steel 1.0mm	1.5, 2, 3, 4, 5, 6, 8mm
	Wire Type - Aluminium .8mm	1.5, 2, 3, 4mm (for spool gun)
MIG Manual settings	Pre-flow gas time	0 - 10s
	Upslope	0 - 1s
	Inductance	0 - 100
	Spot time	.5 - 15s
	Stitch time	0 - 15s
	Burnback	0 - 2s
	Downslope	0 - 1s
	Post flow gas time	0 - 10s
	Trigger modes Manual mode	2T,4T
	Spool gun mode	Yes

## Technical specifications

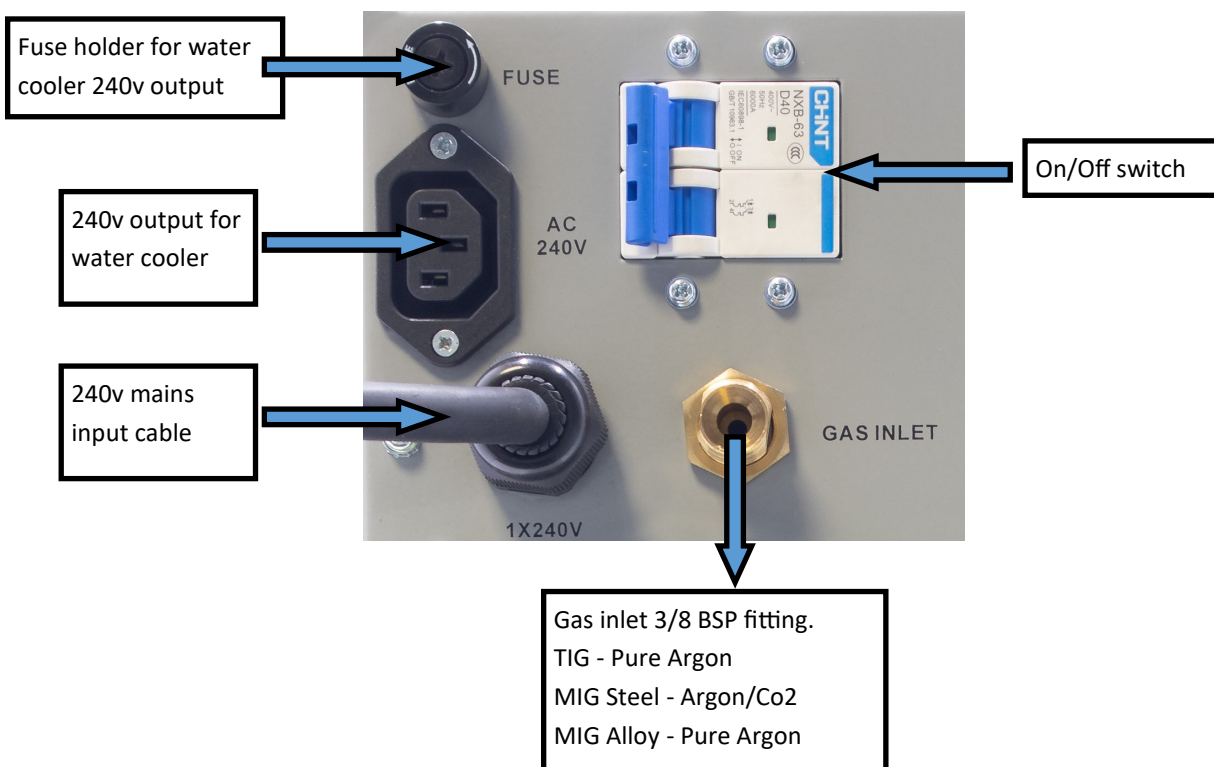
DC TIG Operation	Current range DC	10A - 250A
	No load voltage	78V
	Duty cycle	35% @ 250A, 60% @200A
	Arc starting modes	HF, Lift
	Trigger modes Manual mode	2T,4T,4TS, REMOTE PEDAL,2T+F, 4T+F
	Trigger modes EASY SETUP	2T,4T, REMOTE PEDAL, 2T+F, 4T+F
TIG EASY SETUP DC - Programs for	Metal type	Steel
	Metal thickness programs 1.6 Tungsten	1, 1.2, 1.5, 2, 3mm
	Metal thickness programs 2.4 Tungsten	1, 1.2, 1.5, 2, 3, 4, 5, 6, 8mm
TIG DC Manual settings	Pre-flow gas	0 - 10 seconds
	Up-slope / Downslope time	0 - 10 seconds
	Start / End amps	10A
	Post-flow gas time	0 - 10 seconds
	DC Pulse amps	3 - 95%
	DC Pulse width (time)	5 - 95%
	DC Pulse Hz	0.5 - 150 Hz
	Memory settings	YES - 20
TIG DC Manual SPOT Mode	Spot weld time	0.1 - 10 seconds
	Spot weld stitch time	0 - 5 seconds
TIG DC Manual TACK Mode	Tack weld time	10ms - 250ms
	Tack weld stich time	10ms - 250ms
MMA EASY DC - Programs for	Rod types mild steel	6011, 6013, 7014, 7018
	Rod diameter	2.4, 3.2, 4.0mm
	2.4mm thickness programs	1.5, 2, 3, 4, 6mm
	3.2 mm thickness programs	3, 4, 5, 6, 8mm
	4 mm thickness programs	4, 5, 6, 8, 10mm
MMA Manual	DC Amp range	10 - 200A
	Duty cycle MMA	35% @ 200A, 60% @160A
	Anti stick	YES
	Hot start time	0 - 2 seconds
	Hot start %	0 - 100%
	Arc Force	0 - 100%
	Cellulosic Rods	YES

## Connections

### Front panel connections



### Rear panel connections



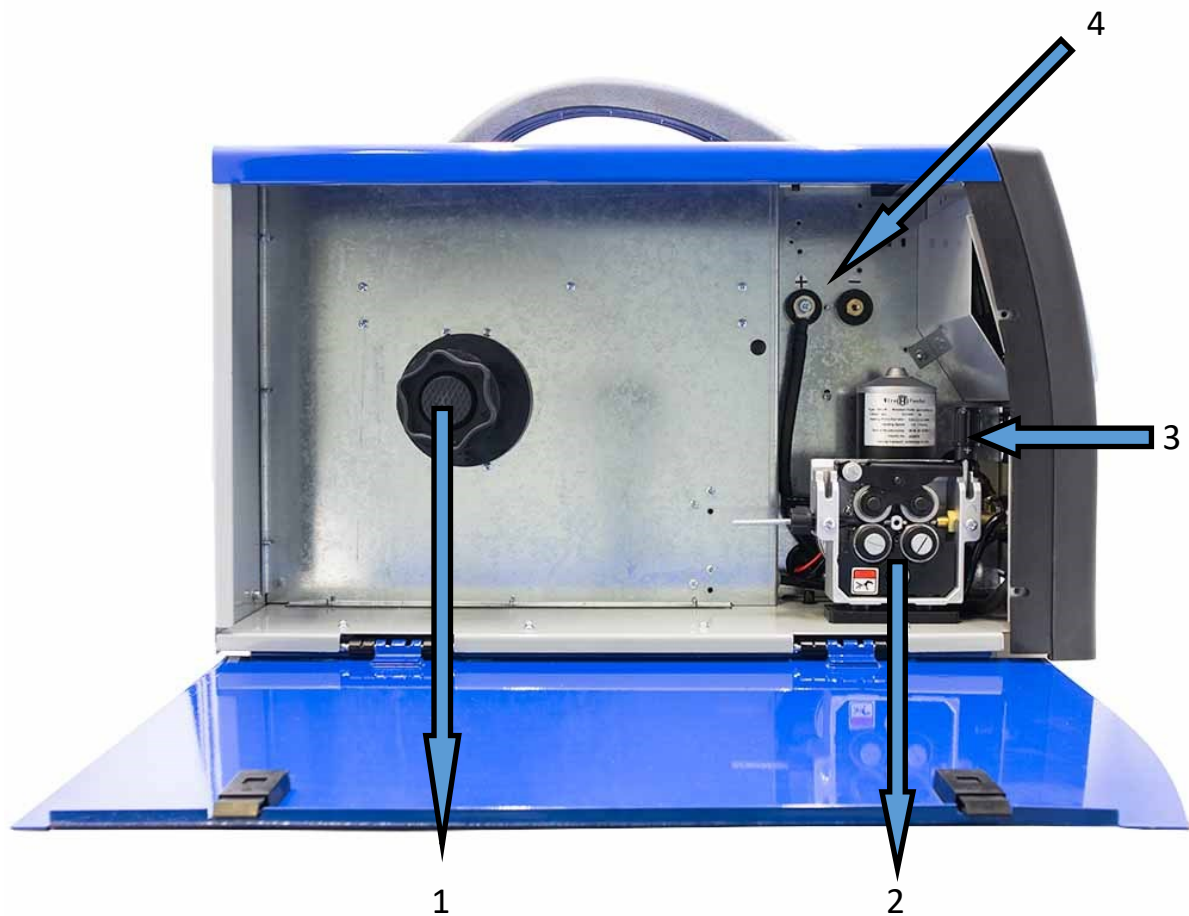
## Rear panel connections cont..

Extra earth connection



Extra earth connection, used if you experience local interference (not normally used)

## Wire feed assembly, wire reel holder & gasless wire



1 - Wire reel retainer. Screw in to retain wire roll adaptor onto wire reel.

2 - Wire Feed Drive Assembly. To change roller size release retaining screw, remove roller and turn roller around and slide onto shaft making sure the right size groove is in line with wire and refit retaining screw. The MIG181 comes fitted with a dual roller 0.6mm and 0.8mm.

3 - Roller tensioner - This sets the pressure of rollers, the best way to adjust tension is to slacken off pressure so that MIG welding wire does not feed, slowly adjust pressure until wire feeds smoothly, you should be able to stop wire feeding by holding wire and it should slip on rollers. If you have too little pressure wire will slip when welding causing unwanted Burn back into tips or erratic weld beads size.

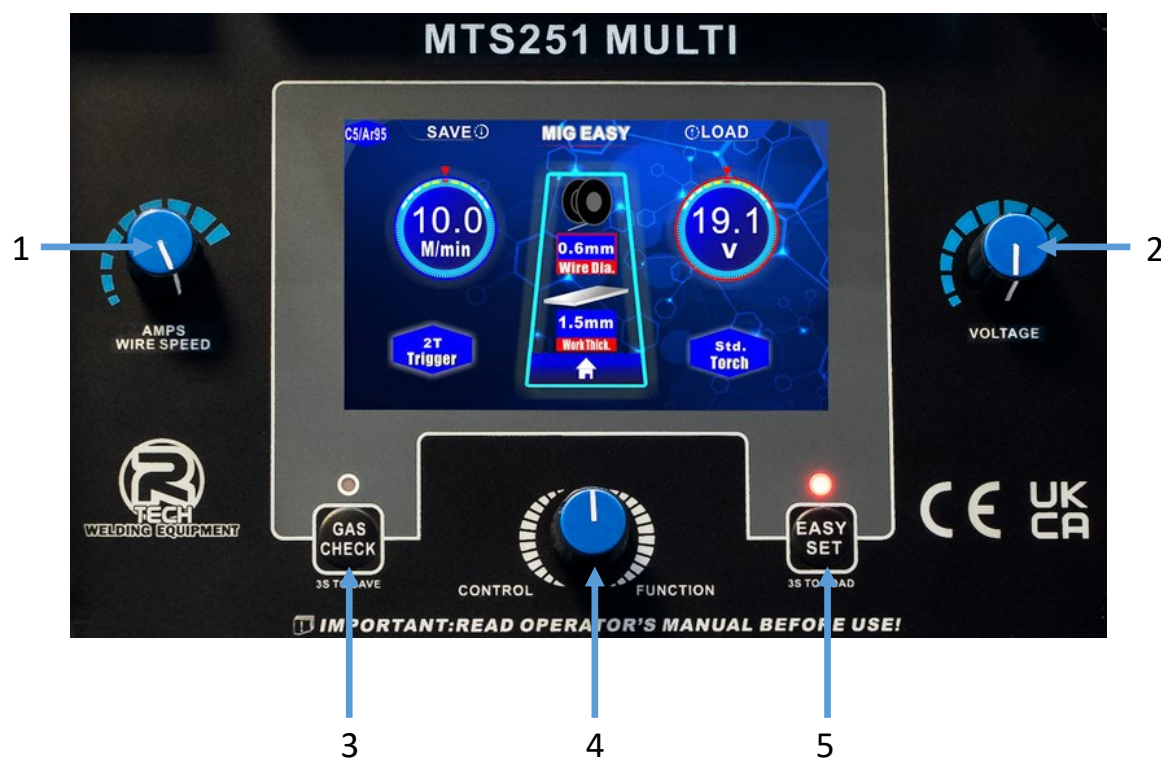
4 - When using gasless wire, move internal cable to negative connector – This then makes the torch negative, you would then connect Workpiece earth lead to + positive connector on front of machine

## Front panel

Digital Colour Screen

Easy to navigate menu system - on previous digital machines, the settings for ALL modes were on one screen, now you only see settings on screen for the mode you are using.

EASY SET mode - pre-programmed weld settings for MIG - DC TIG & MMA



**1 - AMPS / Wire speed control knob**

MIG mode controls wire feed speed / trim  
MMA mode controls welding amperage

**2 - VOLTAGE control knob**

MIG mode controls welding voltage / trim

**3 - Gas check button / Save**

To enable easy setting of gas flow.  
SAVE button - For saving manual mode memory settings

**4 - Control function selector knob**

Turn to adjust and select setting, press in to set.

**5 - EASY SET button / Load**

Press to enable / disable EASY SET mode  
LOAD button - For loading manual mode memory settings

## **Controls and settings**

The MTS251-TFT features 6 main operating modes

MIG in EASY mode

MIG in Manual mode

DC TIG in EASY mode

DC TIG in Manual mode

MMA (STICK) in EASY mode

MMA (STICK) in Manual mode

### **MIG EASY MODE**

R-Tech Easy mode takes the guesswork out of MIG welding. You normally had to enter wire feed speed and welding voltage before beginning to weld on manual welders, we have done this for you.

You simply select the following from easy to understand screen.

Wire diameter being used

Material thickness

The machine will set wire feed and welding voltage.

You can then trim the wire speed / voltage to suit your personal travel speed etc.

TO ENTER EASY MODE - PRESS EASY BUTTON ON FRONT PANEL - EASY HOME SCREEN WILL SHOW

### **MIG MANUAL MODE**

In manual mode you have full control of all weld settings

Wire feed speed

Welding voltage

2/4T Trigger operation

Spool gun on/off

You can also adjust advanced features as below

Start / end amps

Pre and post flow gas

Up-slope and downslope

Spot and stick weld timer

## **MMA EASY MODE**

R-Tech Easy mode takes the guesswork out of MMA welding. You normally had to enter welding amperage , we have done this for you.

You simply select the following from easy to understand screen.

Electrode diameter and type being used  
Material thickness

The machine will set the required welding amperage.

You can then trim the voltage to suit your personal travel speed etc.

## **MMA MANUAL MODE**

In manual mode your have full control off all weld settings

Welding amperage  
Hot start time  
Hot start %  
Arc force %



## **DC TIG EASY MODE**

R-Tech Easy mode takes the guesswork out of TIG welding. You normally had to set the welding amperage before beginning to weld on manual welders, we have done this for you.

You simply select the following from an easy to understand screen.

Tungsten size being used  
Material thickness

The machine will set the required welding amperage.

You can then trim the welding amperage to suit your personal travel speed etc.

TO ENTER EASY MODE - PRESS EASY BUTTON ON FRONT PANEL - EASY HOME SCREEN WILL SHOW

## **DC TIG MANUAL MODE**

In manual mode you have full control of all weld settings

Welding amperage  
HF or Lift start  
2T/4T/4TS/2T+F/4T+F trigger modes

Pre flow gas time  
Start amps  
Up-slope time  
Down-slope time  
End amps  
Post flow gas time

You can also adjust advanced features as below

### **Pulse mode on/off**

Pulse time %  
Pulse amps %  
Pulse Frequency Hz

### **Spot / Tack mode**

Spot / Tack time  
Stitch time

## Operation

When you first turn on machine you will see the following main function select screen.



Turn the middle selector knob to scroll through settings available below, then press in knob to select.



MIG Ar95/C5 - MIG welding with MIG gas - most common.

MIG Ar80/C20 - MIG welding with industrial high thickness MIG gas.

MIG AL - Aluminium MIG welding with pure argon gas

MIG SS - Stainless steel MIG welding

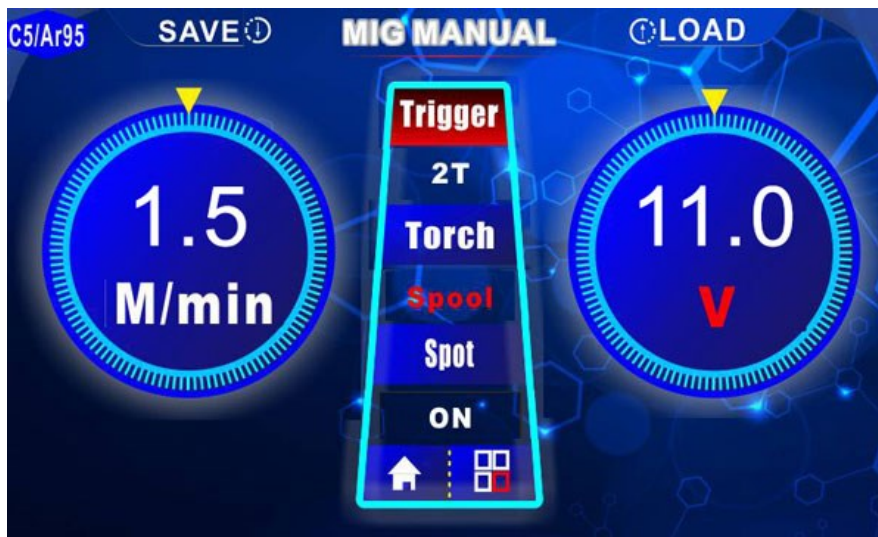
MIG Flux - Gasless MIG welding

TIG DC - TIG welding with pure argon gas

STICK DC - MMA Stick welding

## MIG Operation - EASY SET

Once you have selected required MIG mode you will see a screen as below.



This is the MIG manual screen.

Now press in the EASY SET button and the following screen will be shown



Use the middle knob to cycle through settings, when a setting is highlighted in red, use the left control knob to change setting.

Wire diameter being used 0.6, 0.8, 1.0mm & Material thickness in mm  
2/4T Trigger operation & Torch Standard / Spool gun torch

Once you have selected the required wire diameter and material thickness, the recommended wire feed speed and welding voltage is shown, you can trim both these settings to suit personal travel speed etc.

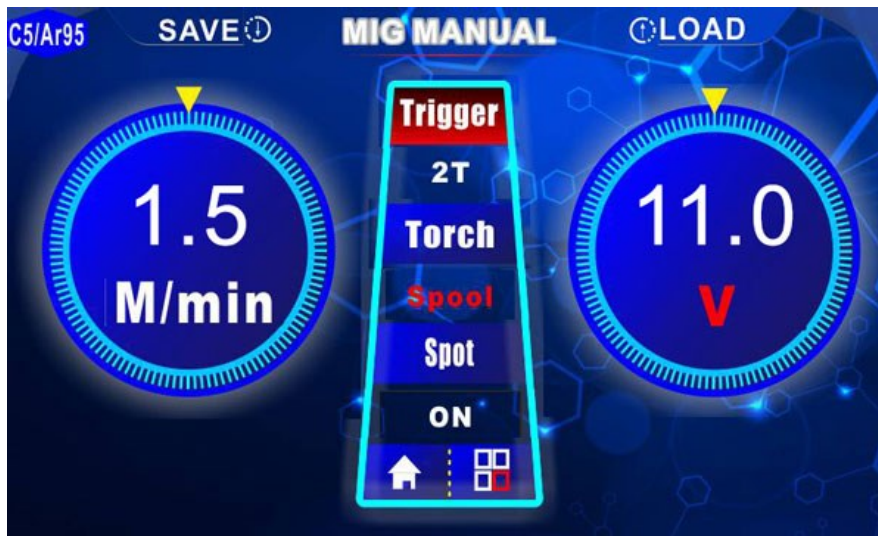
To trim M/Min use middle knob to highlight M/Min in red, then adjust using left knob.

To trim Voltage, use right side control knob.

Spool gun operation - when using spool gun, the knob on gun itself trims / controls the wire feed speed.

## MIG Operation - manual mode

Once you have selected required MIG mode you will see a screen as below.



This is the MIG manual screen.

Use the middle knob to cycle through settings, when a setting is highlighted in red, use the left control knob to change setting.

- Wire feed speed
- Welding voltage
- 2/4T Trigger operation
- Spool gun on/off
- Spot welding on/off

Once you have selected the required base options, you can then move to advanced settings screen by highlighting the icon below and pushing in middle knob.



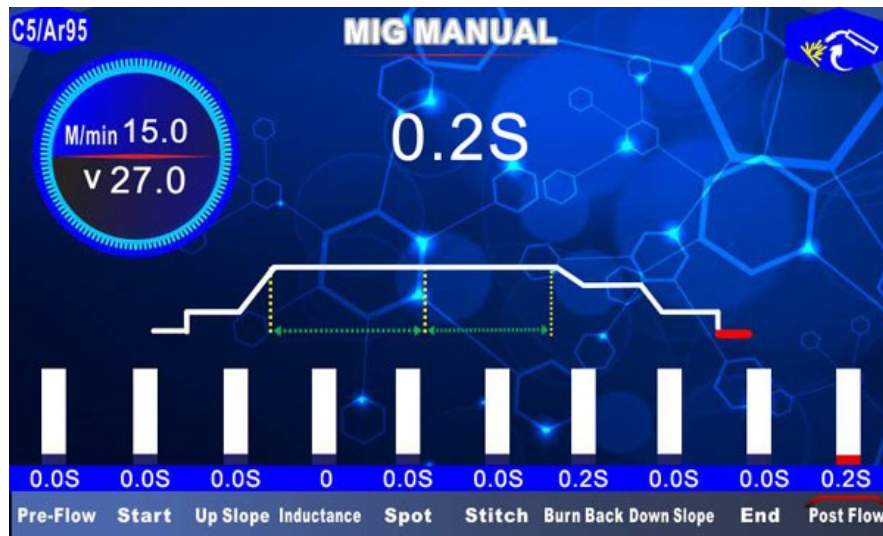
### Spool gun operation

When using the spool on gun, the control knob on the gun controls the wire feed speed.

The screen below shows all the advanced MIG manual options.

Use the middle selector to cycle through the available modes, selected mode is highlighted in red.

Use the left knob to adjust value.



For most common MIG welding we suggest setting all to zero apart from Burnback 0.2s and post flow 0.2s.

Pre-flow gas - adjusts gas time on before weld power and wire speed activated.

Start / End - Power for start / finish of weld

Up-slope - time from start power to main power.

Inductance - 0 = softer arc with less splatter, 100 = stronger/harsher arc, more splatter.

Spot - Sets length of spot weld

Stitch - If above zero, the spot weld will be repeated after this delay.

Burnback - Time in seconds that power continues after wire stops at trigger release - This stops wire sticking to workpiece. Recommended general setting is 0.2s

Down-slope - time from main power to end power setting in seconds.

Once you have set the above you can go back to main MIG screen by turning middle knob to highlight the following icon in RED, then pressing in middle knob. There you can adjust wire speed and voltage.





## DC TIG EASY MODE

Once you have selected DC TIG mode, Press EASY SET and you will see a screen as below.



R-Tech Easy mode takes the guesswork out of TIG welding. You normally had to enter desired amperage to weld on manual welders, we have done this for you.

You simply select the following from easy to understand screen.

Trigger operation 2T/4T/PEDAL/2T+F/4T+F

Start type - HF/Lift

Tungsten size

Work thickness

Options are

1.6mm Tungsten = 1.0, 1.2, 1.5, 2, 3mm

2.4mm Tungsten = 1.0, 1.2, 1.5, 2, 3, 4, 5, 6, 8mm

Simply turn middle knob until selection is highlighted in RED, then use left knob to adjust as required.

The machine will set main amperage power required. You can trim + / - 10A to suit personal style.

Trim amperage by highlighting A in RED, then use left knob to trim.

To exit to function select menu, highlight home in RED then press middle knob.

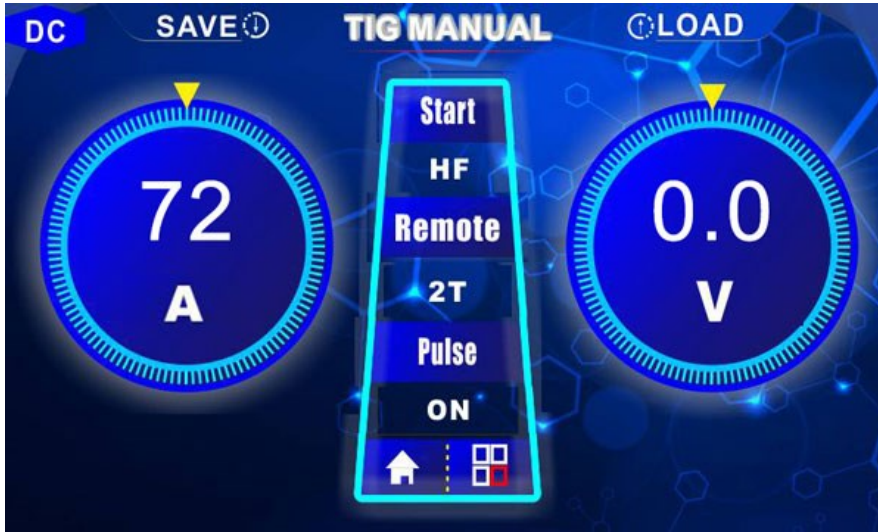


To go to TIG manual screen, press the EASY SET button so LED is off.

## DC MANUAL MODE

R-Tech DC TIG manual mode gives you full control over every weld parameter available.

### DC MANUAL - HOME SCREEN



You can select the following from menu by turning middle selector to highlight in RED.  
Then you adjust the settings by turning left control knob.

#### START MODE

HF start - normal auto arc starting.

LIFT - Lift start for welding without HF when working on vehicles to protect electronics.

#### REMOTE SETTING

2T - Press trigger to start weld, release to finish weld.

4T - Press and hold trigger to start weld at start amps, release trigger to go to main amps. To finish weld - Press and hold trigger to go to end amps, release and weld will stop. If you wish to abort weld during main amps, quickly tap trigger and main arc will stop and post flow gas will run.

PEDAL - Press foot pedal to start weld, fully depress pedal to get 100% of amps shown in recommended settings. I.E If main amperage setting was 120A, on a full depress of pedal you will get 120A, if pedal only pressed halfway you will get 60A

2T+F - Torch trigger operation for on/off with amperage control by slider / rotary knob on torch handle.

4T+F - Torch trigger latch operation same as 4T but with amperage control by slider / rotary knob on torch handle.

4TS - Torch trigger latch operation same as 4T with the function to switch between start and main amperage by quickly tapping trigger during main amps - Ideal for pipe welding where you want to switch to start amps to get continuous weld bead whilst repositioning or getting new filler rod.

## DC MANUAL MODE cont..

### PULSE / SPOT / TACK Options

**Off** - No pulse settings in main weld settings screen

**On** - Pulse settings shown in main weld settings screen, These being:-

Pulse time % - Sets pulse time (width) as a percentage of total pulse

Pulse frequency - from 0.1Hz to 150Hz, Pulse Amps % - Sets base amps as a percentage of main amps.

**Easy** - Pulse settings shown in main weld settings screen, Pulse time fixed at 50% and Pulse Amps fixed at 35% - Only Pulse frequency is adjustable from 0.1Hz to 150Hz

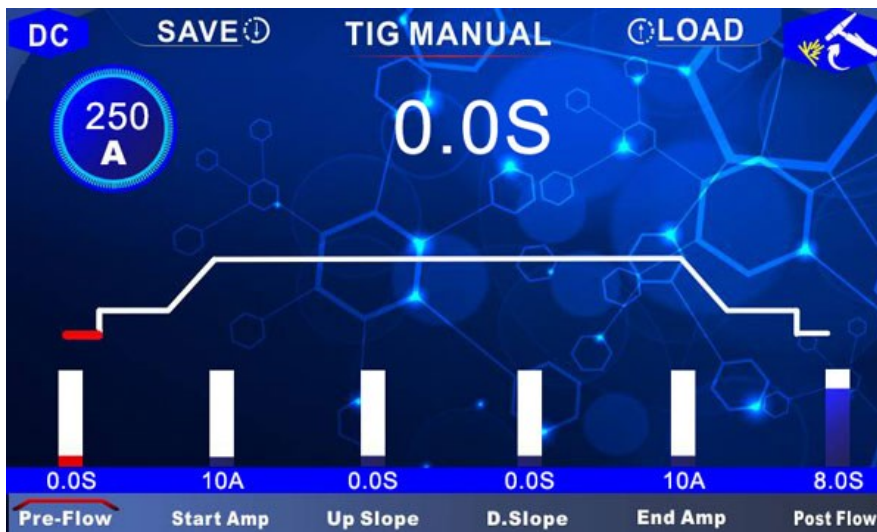
**SPOT** - Spot welding with optional stitch time function.

**TACK**- Tack welding with optional stitch time function.

Once you have selected the required base options, you can then move to advanced settings screen by highlighting the icon below and pushing in middle knob.



### DC MANUAL - Advanced settings

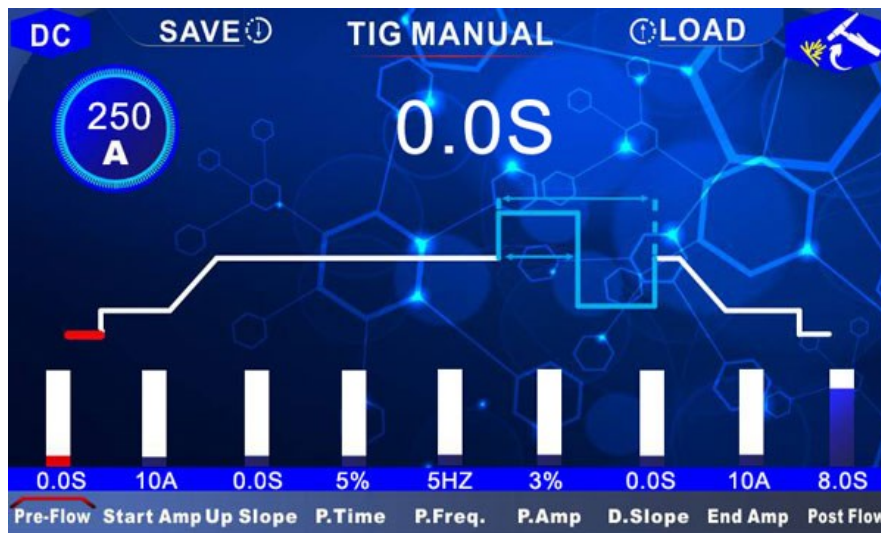


### DC TIG - No Pulse

Once you have set the advanced settings, you return to main TIG screen by turning middle knob to highlight the following icon in RED, then pressing in middle knob. There you can adjust the amperage etc.







### DC TIG - with pulse

#### Pre-flow Gas

Adjustable between 0.0 - 10 seconds

#### Start amps

Adjustable between 10A - 250A

#### Up slope

Adjustable between 0 - 10 seconds

#### Down slope

Adjustable between 0 - 10 seconds

#### End amps

Adjustable between 10A - 250A

#### Post flow gas time

Adjustable between 0 - 10 seconds

#### Pulse time

When pulse welding you have the main (peak) and base (background) amperage. By adjusting the pulse time % you determine which one will be more prominent, the pulse or base. At a low % the base current will be on longer so you will reduce heat input. At a high % the peak current will be on longer so you increase heat input.

#### Pulse Frequency

This adjusts how often the pulse will happen per second, at 0.5Hz it will be a very slow pulse and you will be able to see the change, when welding at high frequency the sound of arc will change to a higher pitch and you hardly see the change in amperage as it is so fast.

#### Pulse Amps

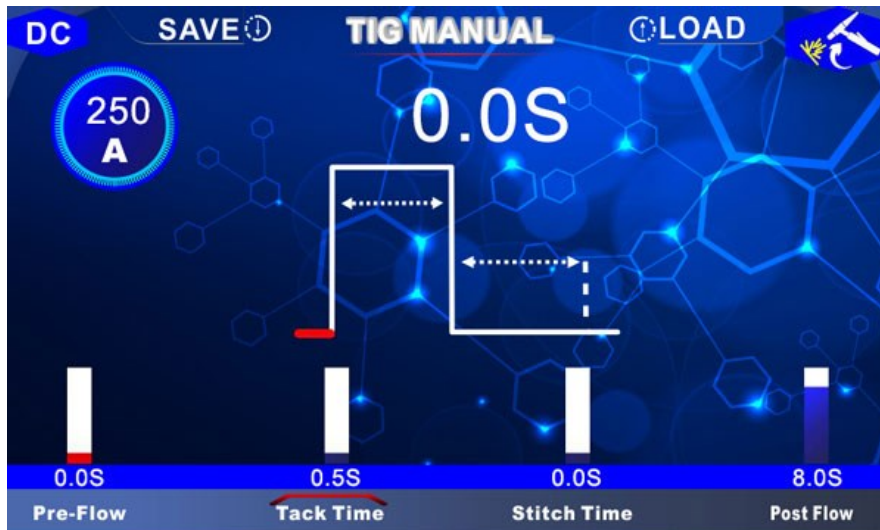
This sets the % of pulse vs base amps. I.E If main amperage (peak) is set to 120amps and you set at 50%, the base amps will be 60amps. Generally a setting of 35-75% base amps suits most jobs.

## DC SPOT / TACK Modes

Tack welding allows you to produce one single fast tack weld for a selected time when trigger is pressed. You can also set a stitch time which will then set a delay time after first tack and then another tack weld will be started and this will be repeated for as long as trigger is pressed.

### Tack time

Use control knob to adjust required tack time then press arrow button to move to next setting.  
Adjustable between 10ms - 250ms



### Stitch time

Use control knob to adjust required stitch time, then press arrow button to move to next setting.

If a stitch time of 0.0s is selected, then only one tack will happen on trigger press, once stitch time is above 0.0s then after first tack you will have this delay time and then another weld will be produced.

Adjustable between 10ms - 250ms

Once you have set the tack settings, you return to main TIG screen by turning middle knob to highlight the following icon in RED, then pressing in middle knob. There you can adjust the amperage etc.

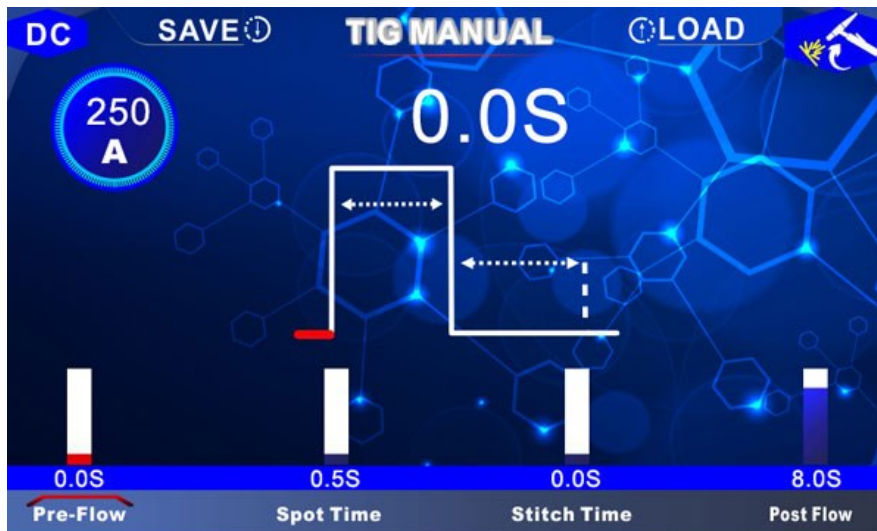


## DC TACK/SPOT Mode cont..

SPOT welding allows you to product one single spot weld for a selected time when trigger is pressed.

You can also set a stitch time which will then set a delay time after first spot and then another spot weld will be started and this will be repeated for as long as trigger is pressed.

This is setup in same way as tack weld screen, however spot time is between 0.1s and 10s and the stitch time is 0 - 5s.



Once you have set the SPOT settings, you return to main TIG screen by turning middle knob to highlight the following icon in RED, then pressing in middle knob. There you can adjust the amperage etc.

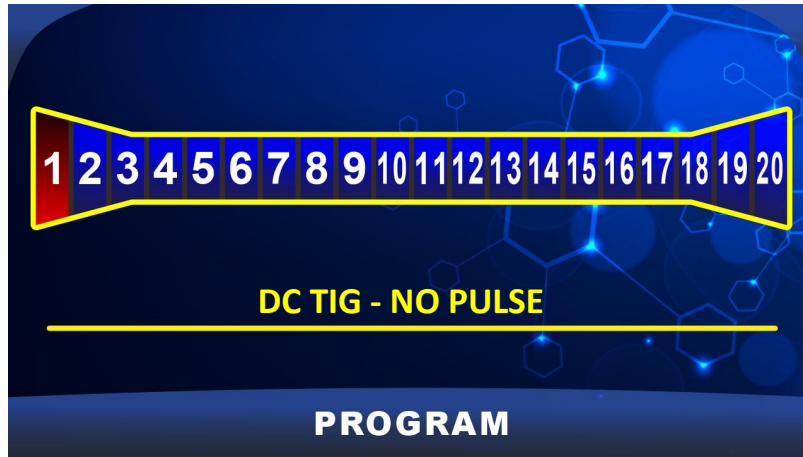


## **Memory store SAVE function**

20 memory stores are available so you can save your preferred weld settings.

To access program save menu, press the SAVE button for 3 seconds.

The following screen will appear.



Use the middle control knob to move to required save slot.

Now press and hold the SAVE button for 3 seconds then release, the saved program will turn YELLOW signalling the program has now been saved.

## **Memory store LOAD function**

To access program load menu, press the LOAD button for 3 seconds.

Now use middle control knob to select required program, press load button to load.

## **MMA - STICK WELDING**

The MTS251 features 2 main MMA STICK operating modes

DC STICK in EASY mode  
DC STICK in MANUAL mode

### **DC MMA EASY MODE**

R-Tech EASY SET mode takes the guesswork out of MMA welding.  
You normally had to enter all weld settings before beginning to weld on manual welders,  
we have done this for you.

You simply select the following from easy to understand screen.

Electrode type  
Electrode size  
Material thickness

Once above settings have been selected, the machine will set main amperage power.

Select STICK DC from home screen, then press EASY-SET button



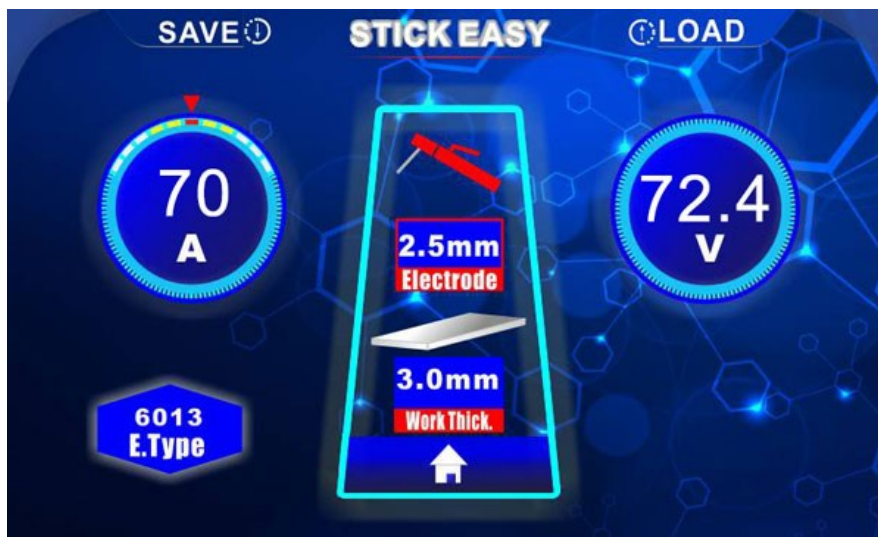
In MMA welding terminals are LIVE - ensure welding electrode holder / electrode are not in contact with  
earth / workpiece.

## Selecting EASY SET STICK MMA parameters

Use the middle control knob to move between each setting - once setting is highlighted in RED turn left control knob to adjust.

Once you have entered all 3 parameters for weld the recommended welding amperage will be shown. To trim amperage turn middle knob so amperage is in RED , use left knob to adjust trim.

You can trim + / - 10 amps to suit you personal preference of travel speed / weld bead characteristics.



### 1. ELECTRODE TYPE

DC - 6011, 6013, 7014, 7018

### 2. ELECTRODE SIZE

2.4mm, 3.2mm, 4.0mm - Note: Rods shown depending on machine maximum amperage.

### 3. MATERIAL THICKNESS

1.5mm, 2.0mm up to 8mm depending on machine maximum amperage and electrode type/size.

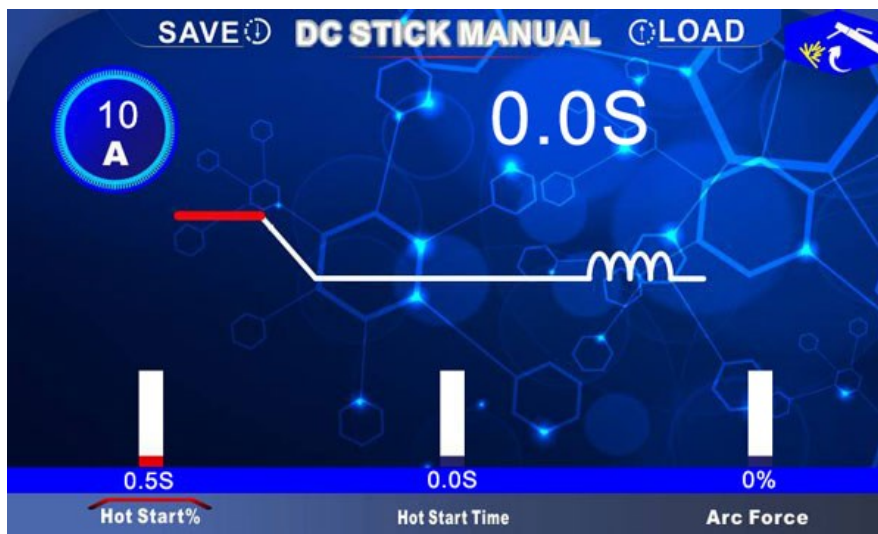
## MMA - STICK WELDING MANUAL MODE

TO ENTER MANUAL MODE - Turn off EASY SET  
Now select electrode type Standard or Cellulose.  
Adjust amperage required.

After setting home screen settings as required, now select icon as shown below and press in middle button. The advanced MMA settings screen is shown as below.



### DC MODE - STICK SETTINGS



You can now select the following 3 parameters.

Use middle knob to select parameter required, then use left knob to adjust setting.

#### Hot Start %

This controls the extra amount of amperage at beginning of weld to help stop rod sticking.  
Adjustable from 0- 100%

#### Hot Start Time

This controls how long the hot start will operate when arc is struck  
Adjustable from 0 - 2 seconds.

#### Arc Force %

This controls the arc response for when an electrode is held closer/away from workpiece.  
The arc force automatically adjusts amperage / voltage to maintain stable arc.  
Adjustable from 0- 100%

To exit this screen turn centre knob so this icon turns red and press knob in.





## Error codes

The machine will show an error code if a problem is detected.



### E01 - Overheating

Allow machine to cool down and check fan vents for obstructions

### E02 - Overcurrent

Reset machine and if problem persists contact R-Tech support team.

### E05 - Shorted Trigger

This will show after the torch trigger or foot pedal has been pressed and the arc has not been established after 4 seconds.

This is to stop the HF start system being active if trigger / foot pedal is pressed in error or switch has gone closed circuit.



			
<b>WARNING</b>	<ul style="list-style-type: none"> <li>Do not touch electrically live parts or electrode with skin or wet clothing.</li> <li>Insulate yourself from work and ground.</li> </ul>	<ul style="list-style-type: none"> <li>Keep flammable materials away.</li> </ul>	<ul style="list-style-type: none"> <li>Wear eye, ear and body protection.</li> </ul>
Spanish <b>AVISO DE PRECAUCION</b>	<ul style="list-style-type: none"> <li>No toque las partes o los electrodos bajo carga con la piel o ropa mojada.</li> <li>Aíslese del trabajo y de la tierra.</li> </ul>	<ul style="list-style-type: none"> <li>Mantenga el material combustible fuera del área de trabajo.</li> </ul>	<ul style="list-style-type: none"> <li>Protéjase los ojos, los oídos y el cuerpo.</li> </ul>
French <b>ATTENTION</b>	<ul style="list-style-type: none"> <li>Ne laissez ni la peau ni des vêtements mouillés entrer en contact avec des pièces sous tension.</li> <li>Isolez-vous du travail et de la terre.</li> </ul>	<ul style="list-style-type: none"> <li>Gardez à l'écart de tout matériel inflammable.</li> </ul>	<ul style="list-style-type: none"> <li>Protégez vos yeux, vos oreilles et votre corps.</li> </ul>
German <b>WARNUNG</b>	<ul style="list-style-type: none"> <li>Berühren Sie keine stromführenden Teile oder Elektroden mit Ihrem Körper oder feuchter Kleidung!</li> <li>Isolieren Sie sich von den Elektroden und dem Erdboden!</li> </ul>	<ul style="list-style-type: none"> <li>Entfernen Sie brennbares Material!</li> </ul>	<ul style="list-style-type: none"> <li>Tragen Sie Augen-, Ohren- und Körperschutz!</li> </ul>
Portuguese <b>ATENÇÃO</b>	<ul style="list-style-type: none"> <li>Não toque partes elétricas e electrodos com a pele ou roupa molhada.</li> <li>Isole-se da peça e terra.</li> </ul>	<ul style="list-style-type: none"> <li>Mantenha inflamáveis bem guardados.</li> </ul>	<ul style="list-style-type: none"> <li>Use proteção para a vista, ouvido e corpo.</li> </ul>
Japanese <b>注意事項</b>	<ul style="list-style-type: none"> <li>通電中の電気部品、又は溶材にヒフやぬれた布で触れないこと。</li> <li>施工物やアースから身体が絶縁されている様にして下さい。</li> </ul>	<ul style="list-style-type: none"> <li>燃えやすいものの側での溶接作業は絶対にしてはなりません。</li> </ul>	<ul style="list-style-type: none"> <li>目、耳及び身体に保護具をして下さい。</li> </ul>
Chinese <b>警告</b>	<ul style="list-style-type: none"> <li>皮肤或湿衣物切勿接触带电部件及焊缝。</li> <li>使你自已离地面和工件绝缘。</li> </ul>	<ul style="list-style-type: none"> <li>把一切易燃物品移离工作场所。</li> </ul>	<ul style="list-style-type: none"> <li>佩戴眼、耳及身体劳动保护用具。</li> </ul>
Korean <b>위험</b>	<ul style="list-style-type: none"> <li>전도체나 용접봉을 젖은 행걸 또는 피부로 절대 접촉치 마십시오.</li> <li>모재외 접지를 접촉치 마십시오.</li> </ul>	<ul style="list-style-type: none"> <li>인화성 물질을 접근 시키지 마십시오.</li> </ul>	<ul style="list-style-type: none"> <li>눈, 귀와 몸에 보호장구를 착용하십시오.</li> </ul>
Arabic <b>تحذير</b>	<ul style="list-style-type: none"> <li>لا تلمس الأجزاء التي يسري فيها التيار الكهربائي أو الألكترود بجند الجسم أو بالمعالم المبللة بالماء.</li> <li>ضع عازلا على جسمك خلال العمل.</li> </ul>	<ul style="list-style-type: none"> <li>ضع المواد القابلة للاشتعال في مكان بعيد.</li> </ul>	<ul style="list-style-type: none"> <li>ضع أدوات وملابس واقية على عينيك وأذنيك وجسمك.</li> </ul>

READ AND UNDERSTAND THE MANUFACTURER'S INSTRUCTION FOR THIS EQUIPMENT AND THE CONSUMABLES TO BE USED AND FOLLOW YOUR EMPLOYER'S SAFETY PRACTICES.

SE RECOMIENDA LEER Y ENTENDER LAS INSTRUCCIONES DEL FABRICANTE PARA EL USO DE ESTE EQUIPO Y LOS CONSUMIBLES QUE VA A UTILIZAR, SIGA LAS MEDIDAS DE SEGURIDAD DE SU SUPERVISOR.

LISEZ ET COMPRENEZ LES INSTRUCTIONS DU FABRICANT EN CE QUI REGARDE CET EQUIPMENT ET LES PRODUITS A ETRE EMPLOYES ET SUIVEZ LES PROCEDURES DE SECURITE DE VOTRE EMPLOYEUR.

LESEN SIE UND BEFOLGEN SIE DIE BETRIEBSANLEITUNG DER ANLAGE UND DEN ELEKTRODENEINSATZ DES HERSTELLERS. DIE UNFALLVERHÜTUNGSVORSCHRIFTEN DES ARBEITGEBERS SIND EBENFALLS ZU BEACHTEN.

			
<ul style="list-style-type: none"> <li>● Keep your head out of fumes.</li> <li>● Use ventilation or exhaust to remove fumes from breathing zone.</li> </ul>	<ul style="list-style-type: none"> <li>● Turn power off before servicing.</li> </ul>	<ul style="list-style-type: none"> <li>● Do not operate with panel open or guards off.</li> </ul>	<b>WARNING</b>
<ul style="list-style-type: none"> <li>● Los humos fuera de la zona de respiración.</li> <li>● Mantenga la cabeza fuera de los humos. Utilice ventilación o aspiración para gases.</li> </ul>	<ul style="list-style-type: none"> <li>● Desconectar el cable de alimentación de poder de la máquina antes de iniciar cualquier servicio.</li> </ul>	<ul style="list-style-type: none"> <li>● No operar con panel abierto o guardas quitadas.</li> </ul>	Spanish <b>AVISO DE PRECAUCION</b>
<ul style="list-style-type: none"> <li>● Gardez la tête à l'écart des fumées.</li> <li>● Utilisez un ventilateur ou un aspirateur pour ôter les fumées des zones de travail.</li> </ul>	<ul style="list-style-type: none"> <li>● Débranchez le courant avant l'entretien.</li> </ul>	<ul style="list-style-type: none"> <li>● N'opérez pas avec les panneaux ouverts ou avec les dispositifs de protection enlevés.</li> </ul>	French <b>ATTENTION</b>
<ul style="list-style-type: none"> <li>● Vermeiden Sie das Einatmen von Schweißrauch!</li> <li>● Sorgen Sie für gute Be- und Entlüftung des Arbeitsplatzes!</li> </ul>	<ul style="list-style-type: none"> <li>● Strom vor Wartungsarbeiten abschalten! (Netzstrom völlig öffnen; Maschine anhalten!)</li> </ul>	<ul style="list-style-type: none"> <li>● Anlage nie ohne Schutzgehäuse oder Innenschutzverkleidung in Betrieb setzen!</li> </ul>	German <b>WARNUNG</b>
<ul style="list-style-type: none"> <li>● Mantenha seu rosto da fumaça.</li> <li>● Use ventilação e exaustão para remover fumo da zona respiratória.</li> </ul>	<ul style="list-style-type: none"> <li>● Não opere com as tampas removidas.</li> <li>● Desligue a corrente antes de fazer serviço.</li> <li>● Não toque as partes elétricas nuas.</li> </ul>	<ul style="list-style-type: none"> <li>● Mantenha-se afastado das partes moventes.</li> <li>● Não opere com os painéis abertos ou guardas removidas.</li> </ul>	Portuguese <b>ATENÇÃO</b>
<ul style="list-style-type: none"> <li>● ヒュームから顔を離すようにして下さい。</li> <li>● 換気や排煙に十分留意して下さい。</li> </ul>	<ul style="list-style-type: none"> <li>● メンテナンス・サービスに取りかかる際には、まず電源スイッチを必ず切して下さい。</li> </ul>	<ul style="list-style-type: none"> <li>● パネルやカバーを取り外したまま機械操作をしないで下さい。</li> </ul>	Japanese <b>注意事項</b>
<ul style="list-style-type: none"> <li>● 頭部遠離煙霧。</li> <li>● 在呼吸區使用通風或排風器除煙。</li> </ul>	<ul style="list-style-type: none"> <li>● 維修前切斷電源。</li> </ul>	<ul style="list-style-type: none"> <li>● 氣表板打開或沒有安全罩時不準作業。</li> </ul>	Chinese <b>警告</b>
<ul style="list-style-type: none"> <li>● 얼굴로부터 용접가스를 멀리하십시오.</li> <li>● 호흡지역으로부터 용접가스를 제거하기 위해 가스제거기나 통풍기를 사용하십시오.</li> </ul>	<ul style="list-style-type: none"> <li>● 보수전에 전원을 차단하십시오.</li> </ul>	<ul style="list-style-type: none"> <li>● 판넬이 열린 상태로 작동치 마십시오.</li> </ul>	Korean <b>위험</b>
<ul style="list-style-type: none"> <li>● ابتعد رأسك بعيداً عن الدخان.</li> <li>● استعمل التهوية أو جهاز ضغط الدخان للخارج لكي تبعد الدخان عن المنطقة التي تتنفس فيها.</li> </ul>	<ul style="list-style-type: none"> <li>● أقطع التيار الكهربائي قبل القيام بأية صيانة.</li> </ul>	<ul style="list-style-type: none"> <li>● لا تشغيل هذا الجهاز إذا كانت الإغطية الحديدية الواقية ليست عليه.</li> </ul>	Arabic <b>تحذير</b>

**LEIA E COMPREENDA AS INSTRUÇÕES DO FABRICANTE PARA ESTE EQUIPAMENTO E AS PARTES DE USO, E SIGA AS PRÁTICAS DE SEGURANÇA DO EMPREGADOR.**

使う機械や溶材のメーカーの指示書をよく読み、まず理解して下さい。そして貴社の安全規定に従って下さい。

請詳細閱讀並理解製造廠提供的說明以及應該使用的銀焊材料，並請遵守貴方的有關勞動保護規定。

이 제품에 동봉된 작업지침서를 숙지하시고 귀사의 작업자 안전수칙을 준수하시기 바랍니다.

اقرأ بتمعن وافهم تعليمات المصنع المنتج لهذه المعدات والمواد قبل استعمالها واتبع تعليمات الوقاية لصاحب العمل.