



INVERTER FUSION LTD

DIGITAL INVERTER WELDING TECHNOLOGY



# FUSION RANGE

*DC TIG, AC/DC TIG & MMA Welding Machines*



[www.inverterfusion.co.uk](http://www.inverterfusion.co.uk)

## **Fusion DC Inverters**

130MA & 160MA	4
175MA	5
180MA	6
200MA	7
200HF & 200PHF	8 & 9
200HF FREERANGER WELDER GENERATOR	10

## **Fusion AC/DC Inverter**

210 AC/DC	11
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## **Fusion 110V DC Inverters**

151MA, 151HF & 151PHF	12 & 13
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## **Accessories**

	14 & 15
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The Fusion professional range is powered by planar technology for superior performance and reliability



# **Ask The TIG**

All the know how - tips, advice and much more. Ask The TIG, at:

[www.inverterfusion.co.uk/askthetig](http://www.inverterfusion.co.uk/askthetig)

# FUSION RANGE










We manufacture our Fusion range of high quality, lightweight, portable welding machines at our factory in Honiton, Devon.





The range comprises models for both professional and DIY/hobby use and includes 110v machines for use in 110v applications.

Our Fusion welding machines are available through a network of distributors situated throughout the UK – please visit our website for details of your nearest stockist.

## All Fusion welding machines:

-  Have very high duty cycles – 100% for some models – to reduce ‘downtime’
-  Are enclosed in a robust, durable toughened nylon case, with a protection class of IP23, to stand up to harsh, dirty environments
-  Have 35-50mm dix output sockets for fast fitting of standard welding cables
-  Work at temperatures from -10 <math>\lt; >+40^{\circ}</math> Centigrade to handle most climatic conditions
-  Include a comprehensive 2 year parts and labour warranty with all repairs being carried out by our expert engineers at our factory in Devon
-  Are supplied with a detailed user manual but should you have any questions regarding the use or maintenance of your machine our experienced engineers are available to answer them on our UK hotline – 01404 549791 – or you can visit our Ask The TIG pages on our website.
-  Are generator friendly for use anywhere – best results are achieved using a generator fitted with an AVR

## The professional welders in the range are also:

-  Powered by planar technology transformers which are much smaller and lighter than other transformers and give superior performance and unequalled reliability compared to traditional wound technology
-  Fitted with a forced fan wind tunnel cooling system to prevent contamination from dust and dirt leading to high reliability and longevity
-  Equipped with a digitally controlled automatic arc force which makes welding with all types of electrodes exceptional
-  Controlled by a digital processor to ensure a future proof design with software updates easily installed



# 130MA & 160MA



## **Fusion 130MA & Fusion 160MA DC Inverters**

- Operator friendly, easy to use machines for light duty welding and maintenance
- Ideal for hobby/DIY and semi-professional use
- Up to 100% duty cycle for continuous welding
- Single control knob for quick and easy adjustment of the welding current
- Electronically controlled automatic arc force, hot start and anti-stick down circuits ensure smooth uninterrupted welding
- 130MA welds electrodes up to 3.2mm and 160MA welds electrodes up to 4.0mm







## **Fusion 175MA DC Inverter**

- Excellent choice for general stick welding and maintenance operations
- Operator friendly, easy to use machine
- Up to 100% duty cycle for continuous welding
- Powerful enough to weld up to 5mm electrodes at 175 Amps
- Easily welds Mild Steel and Low Hydrogen electrodes
- Electronically controlled automatic arc force, hot start and anti-stick down circuits ensure very smooth DC welding



**2 YEARS**  
WARRANTY

### Technical Specifications

	<b>130MA</b> 130 AMP	<b>160MA</b> 160 AMP	<b>175MA</b> 175 AMP
Input Voltage AC 50/60Hz +/- 15%	240	240	240
Typical Input Fuse Rating Amps	13 SB	16 SB	16 SB
Recommended Generator Rating	5KVA	5KVA	6.5KVA
MMA Power Output Amps	20 - 130	20 - 160	20 - 175
TIG Power Output Amps	20 - 130	20 - 160	20 - 175
100% Duty Cycle @ 20 °C (MMA)	100 Amps	100 Amps	140 Amps
100% Duty Cycle @ 20 °C (TIG)	120 Amps	120 Amps	160 Amps
Max Open Circuit Volts	56	56	75
Power Factor @ 100%	0.71	0.71	0.71
Efficiency @ 100%	0.94	0.94	0.94
Weight	6 kg	6 kg	8 kg



**180MA**

### ***Fusion 180MA DC Inverter***

- The perfect choice for heavy duty welding
- Up to 100% duty cycle for continuous welding with all types of electrode, including cellulosic, up to 4mm
- Powered by planar technology for superior performance and unrivalled reliability
- Specially developed MSD automatic arc force and digitally controlled anti-stick down and hot start programmes
- Precise controls allow easy electrode ignition even with difficult materials
- Clear digital LED display panel allows quick and easy selection of MMA or TIG welding mode
- Very tough encoders, without end stops, for all control functions.





## COMING SOON! Fusion 200MA DC Inverter

- Includes all the functionality of the Fusion 180MA but with higher power - easily welds up to 5mm electrodes.



### Technical Specifications

	<b>180MA</b>	<b>200MA</b>
	<b>180 AMP</b>	<b>200 AMP</b>
Input Voltage AC 50/60Hz +/- 15%	240	240
Typical Input Fuse Rating Amps	22 SB	22 SB
Recommended Generator Rating KVA	7	7
MMA Power Output Amps	20 - 180	20 - 200
TIG Power Output Amps	10 - 180	10 - 200
100% Duty Cycle @ 20 °C (MMA)	180 Amps	180 Amps
100% Duty Cycle @ 20 °C (TIG)	180 Amps	200 Amps
Max Open Circuit Volts	97	97
Power Factor @ 100%	0.71	0.71
Efficiency @ 100%	0.94	0.94
Weight	8 kg	8 kg

### Product Features

	<b>180MA</b>	<b>200MA</b>
Digital Power Output Meter	Yes	Yes
LED Function Display	Yes	Yes





## 200HF & 200PHF



### ***Fusion 200HF & 200PHF DC Inverters***

- Practical portable solutions for high quality TIG welding both in the workshop and on site – ideal for professional TIG welding engineers
- Up to 100% duty cycle for continuous welding
- Powered by planar technology for superior performance and unrivalled reliability
- Digitally controlled machines with LCD window & LED function display
- Full MMA welding for all types of electrode, including cellulosic, up to 4mm
- Remote current control device for easy adjustment of the welding current in difficult to access areas
- Automatic sensor to ensure spontaneous shut down if the TIG arc fails to start or is accidentally broken
- Very tough encoders, without end stops, for all control functions



### ***Fusion 200PHF DC Inverter - also includes:***

- Full pulse TIG welding capability
- Complete adjustment of both high & low level welding currents & high & low level pulse times
- Individual adjustment of the arc start, current level, up slope time, final current level and crater current time to allow complete welding sequence programmes to be established
- SPOT mode to allow repeat tack welding functions and TIG spot welding applications

### ***COMING SOON! Fusion 220PHF TIGMaster DC Inverter***

All the functionality of the Fusion 200PHF with higher power and:

- 5 pre-settable programmes
- Latest technology OLED display for added brightness and clarity
- Welds electrodes up to 5mm



#### Technical Specifications

	<b>200HF</b>	<b>200PHF</b>	<b>220PHF</b>
	<b>200 AMP</b>	<b>200 AMP</b>	<b>220 AMP</b>
Input Voltage AC 50/60Hz +/- 15%	240	240	240
Typical Input Fuse Rating Amps	22 SB	22 SB	22 SB
Recommended Generator Rating KVA	7	7	7
MMA Power Output Amps	20 – 180	20 – 180	20 – 200
TIG Power Output Amps	5 – 200	5 – 200	5 – 220
100% Duty Cycle @ 20 °C (MMA)	180 Amps	180 Amps	180 Amps
100% Duty Cycle @ 20 °C (TIG)	200 Amps	200 Amps	200 Amps
Max Open Circuit Volts	97	97	97
Power Factor @ 100%	0.71	0.71	0.71
Efficiency @ 100%	0.94	0.94	0.94
Weight	9 kg	9 kg	9 kg

#### Product Features

	<b>200HF</b>	<b>200PHF</b>	<b>220PHF</b>
High Frequency Start	Yes	Yes	Yes
Pre-Gas Timer	-	0 – 25 sec	0 – 25 sec
Start Current Control	Pre Set	5 – 70 Amp	5 – 70 Amp
Up-Slope Timer	-	0 – 15 sec	0 – 15 sec
Pulse Current Control	-	5 – 200 Amp	5 – 220 Amp
High Pulse Timer	-	0 – 5 sec	0 – 5 sec
Base Pulse Timer	-	0 – 5 sec	0 – 5 sec
Down-Slope Timer	0 – 15 sec	0 – 15 sec	0 – 15 sec
Final Current Control	-	5 – 75 Amp	5 – 75 Amp
Final Current Timer	-	0 – 5 sec	0 – 5 sec
Post Gas Timer	0 – 25 sec	0 – 25 sec	0 – 25 sec
Torch 2T & 4T Switch Control	Yes	Yes	Yes
Spot Welding Timer	-	0 – 10 sec	0 – 10 sec

# 200PHF FREERANGER



## Fusion 200HF FreeRanger Welder Generator

- Combines a Fusion 200HF TIG welding machine (see pages 8 & 9 for specification details) with a Honda GX390 OHV petrol-powered engine, together with a UK manufactured Harrington generator on a handy, easy to transport trolley
- Offers the ultimate in flexibility and portability
- Can also be plugged into a mains input socket for workshop use



### Technical Specifications

	<b>FREERANGER</b>
Engine	Honda GX390 OHV
Fuel	Unleaded Petrol
Running Time	2.6 hrs @ V* Load
Noise Level	74dB (A) @ 7 m
Power Generator	Sincro ET-R Voltage Regulated
Auxiliary Power Output	7.5 KVA – 6 KW
Auxiliary Output Sockets	1 x 240V & 1 x 110V **
Safety Fuse Breaker	3 Pole 32 Amp SB
Output Voltage AC 50/60Hz +/-15%	240V
Dimensions (inc. trolley)	940 x 700 x 620mm
Weight	84 kg

\*\* Optional variants available on export models





## Fusion 210 AC/DC Inverter

- Powerful AC/DC inverter welder – dual wave technology for welding specialist aluminium alloys
- Power Factor Correction increases the power factor to 0.99, reducing the power draw and allowing a high output to be achieved with only a 16A fuse
- Up to 100% duty cycle for continuous welding
- Powered by planar technology for superior performance and unrivalled reliability
- Electronic ignition control automatically adjusts the initial ignition settings to ensure the optimum start for both TIG and MMA welding
- Noise reduction system to significantly reduce noise during the welding of aluminium
- 99 pre-settable programmes



Technical Specifications	210 AC/DC	Fully adjustable features include:
Input Voltage AC 50/60Hz +/- 15%	240	HF Start
Typical Input Fuse Rating Amps	16 SB	AC Balance Control
Recommended Generator Rating	6KVA	AC Frequency Control
TIG Power Output	5 - 210 Amps	Pulse Time & Current Control
MMA Power Output	5 - 170 Amps	Pre Gas Time, Post Gas Time
100% Duty Cycle @ 20 °C (TIG)	160 Amps	Ignition Energy
100% Duty Cycle @ 20 °C (MMA)	175 Amps	Start Current
Power Consumption TIG	4.8 kVA	Up Slope Time, Down Slope Time
Power Consumption MMA	5.5 kVA	Crater Fill Current
Power Factor @ 100%	0.99	Hot Start
Insulation Class	H	Arc Force
Torch Cooling	Gas*	Remote Current Control
Weight	9 kg	Two or Four Touch



\*Optional water cooler & water cooled torch available

## FUSION 110V RANGE



Designed specifically for use on sites where higher voltage machines are not permitted.

- Up to 100% duty cycle for continuous welding
- Powered by planar technology

### ***Fusion 151MA DC Inverter***

- Perfect for heavy duty welding
- Welds all types of electrode, including cellulosic, up to 4mm
- Clear LED digital display

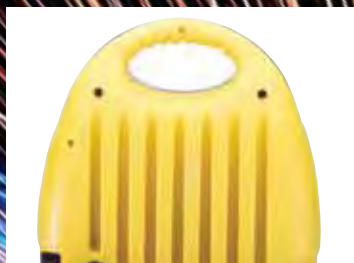
### ***Fusion 151HF & Fusion 151PHF DC Inverters***

- Ideal for professional TIG welding engineers
- Digitally controlled machines with LCD window & LED function display
- Full MMA welding capability for all types of electrode, including cellulosic, up to 3mm
- Remote current control device for easy adjustment of the welding current in difficult to access areas
- Automatic sensor to ensure spontaneous shut down if the TIG arc fails to start or is accidentally broken

### ***The Fusion 151PHF also includes:***

- Full pulse TIG welding capability
- Complete adjustment of both high & low level welding currents & high & low level pulse times
- Individual adjustment of the arc start, current level, up slope time, final current level and crater current time to allow complete welding sequence programmes to be established
- SPOT mode to allow repeat tack welding functions and TIG spot welding applications





### Technical Specifications

**151MA**    **151HF**    **151PHF**  
**150 AMP**    **150 AMP**    **150 AMP**

Input Voltage AC 50/60Hz +/- 15%	110	110	110
Typical Input Fuse Rating Amps	40 SB	40 SB	40 SB
Power Transformer Rating KVA	5	5	5
Recommended Generator Rating KVA	7	7	7
MMA Power Output Amps	20 - 150	20 - 120	20 - 120
TIG Power Output Amps	10 - 150	5 - 150	5 - 150
100% Duty Cycle @ 20 ° C (MMA)	150 Amps	120 Amps	120 Amps
100% Duty Cycle @ 20 ° C (TIG)	150 Amps	150 Amps	150 Amps
Max Open Circuit Volts	92	92	92
Power Factor @ 100%	0.71	0.71	0.71
Efficiency @ 100%	0.94	0.94	0.94
Weight	8 kg	9 kg	9 kg

### Product Features

**151MA**    **151HF**    **151PHF**

High Frequency Start	-	Yes	Yes
Pre-Gas Timer	-	-	0 - 25 sec
Start Current Control	Pre Set	Pre Set	5 - 70 Amp
Up-Slope Timer	-	-	0 - 15 sec
Pulse Current Control	-	-	5 - 150 Amp
High Pulse Timer	-	-	0 - 5 sec
Base Pulse Timer	-	-	0 - 5 sec
Down-Slope Timer	-	0 - 15 sec	0 - 15 sec
Final Current Control	-	-	5 - 75 Amp
Final Current Timer	-	-	0 - 5 sec
Post Gas Timer	-	0 - 15 sec	0 - 25 sec
Torch 2T & 4T Switch Control	-	Yes	Yes
Remote Current Control	-	Yes	Yes
Spot Welding Timer	-	-	0 - 10 sec



**WH8000****Solar Powered Welding Helmets**

- Auto darkening
- Variable delay from dark to light states
- Ideal for Arc, MIG & TIG welding
- High strength mask material
- High clear view filter
- Lens sensitivity controls
- Full conformity with ANSI & CE regulations
- Available in a variety of metallic colours

**Technical Specifications****WH7000****WH8000**

Technical Specifications	WH7000	WH8000
Power Supply	Solar & Lithium combination	Solar & Lithium combination
Filter Size	110mm x 90mm x 8mm	110mm x 90mm x 8mm
UV/IR Protection	Up to shade DIN 15 at all times	Up to shade DIN 15 at all times
Operating Temperature	-5° C - 55° C	-5° C - 55° C
Light State	Shade DIN 4 (3)	Shade DIN 4 (3)
Variable Dark Shade	Shade DIN 9 - 13 (5 - 9)	Shade DIN 9 - 13 (5 - 9)
Switching Time (from light to dark)	1/25000 second	1/25000 second
Delay Time (from dark to light)	Adjustable 0.15 - 0.8 sec	Adjustable 0.3 - 0.6 sec
Sensitivity Adjustable	Yes	Yes
Shade Adjustable Knob	Yes	Yes

**IFL Holdall**

- Tough, durable holdall designed to fit all models in the Fusion range

All Fusion machines can be supplied with an accessory pack:

### ***Light Duty Stick Welding Accessory Package***

- 200 Amp MMA Electrode Holder & Crocodile Clamp, fitted with 2m Cable & 35mm Dix Plug

### ***Heavy Duty Stick Welding Accessory Package***

- 400 Amp MMA Electrode Holder & Earth return, fitted with 3m Cables & 35mm Dix Plug

### ***Scratch Start TIG Welding Accessory Package***

WP17 Torch Accessory Kit including:

- 150 Amp WP17V 4m TIG Torch, fitted with Plugs & Handle Mounted Gas Valve
- Back Cap 1.6 & 2.4mm Collets, Bodies & Tungstens
- 400 Amp MMA Electrode Holder, 400 Amp Earth Return fitted with 3m Cables & 35mm Dix Plugs

### ***HF TIG Welding Accessory Package***

WP17 Torch Accessory Kit including:

- 150 Amp WP17 4m switched TIG Torch fitted with plugs
- Back Cap 1.6 & 2.4mm Collets, Bodies & Tungstens
- Argon Gas Supply Hose 3m, fitted with 1/4" & 3/8" BSP nuts
- 400 Amp MMA Electrode Holder, 400 Amp Earth Return fitted with 3m Cables & 35mm Dix Plugs

### ***HF TIG Welding Remote Welding Accessory Package***

WP17 Torch Accessory Kit including:

- 150 Amp WP17 4m remote switched TIG Torch fitted with plugs
- Back Cap 1.6 & 2.4mm Collets, Bodies & Tungstens
- Argon Gas Supply Hose 3m, fitted with 1/4" & 3/8" BSP nuts
- 400 Amp MMA Electrode Holder & 400 Amp Earth Return fitted with 3m Cables & 35mm Dix Plugs

### ***Also available:***

- Foot pedal
- Regulator & flow meter





Your local IFL distributor:



*DIGITAL INVERTER WELDING TECHNOLOGY*