



HUNTINGDON FUSION
TECHNIQUES  HFT

Short Form Catalogue

**Argweld[®], PurgEye[®] and Techweld[®]
Product Lines**

Introduction



Huntingdon Fusion Techniques HFT®, established in 1975, is acknowledged as a worldwide leader in the field of Weld Purging.

HFT® provides worldwide customer support, cost effective solutions, qualified technical advice and quality weld purging products for achieving ultra clean welds produced in a well purged environment.

The HFT® Family Series of **Weld Purge Monitors**® are considered vital to companies needing zero colour, oxide free welds in critical industries.

Leading pipework fabricators, sheet metal welding companies and pipeline manufacturers around the globe in construction, petrochemical, aerospace, power generation and process industries rely on these advanced products for the welding of stainless steel, titanium and other corrosion resistant metals as well as for plugging pipes and orifices made of all other tubular materials.

All of our products manufactured to internationally recognised standards following fully accredited quality control procedures.

With offices and branches stretching across all continents, HFT® are able to provide tube and pipe purging systems, **Weld Purge Monitors**® and weld purging accessories necessary for achieving that perfectly clean, oxide free and zero colour weld.

The trademarks and product names **Argweld**®, **PurgEye**®, **PurgElite**®, **QuickPurge**®, **IntaCal**®, **RootGlo**®, **PurgeGate**®, **Techweld**® **MultiStrike**® **Tungsten Electrodes**, **Techweld**® **MultiStrike**® **TEG-1000 Grinder**, **Weld Purge Monitors**®, **Weld Trailing Shields**®, **Flexible Welding Enclosures**®, **Weld Purge Film**®, **Weld Purge Super Adhesive**®, **Weld Backing Tape**®, **Weld Purge Tape**®, **Weld Purge Plugs**™, **HFT Pipestoppers**® are synonymous with HFT® for design, innovation and manufacture of advanced tube, pipe and pipeline weld purging products as well as weld purging accessories for sheet metal and platework manufactured from stainless steels and reactive alloys.

HFT® is proud to be the world's premier pioneering innovator, designer and manufacturer in the field of tube, pipeline and pipe weld purging equipment, weld purge monitoring and weld purging technology.

WELD PURGING PRODUCTS Innovators, Manufacturers and Internationally Renowned Specialists

Proud Members of The American Welding Society

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PurgEye® 100 IP65

WELD PURGE MONITOR®



Sealed Dustproof and Waterproof



HFT® bring to the market place a World “first”, and fully accredited IP65 standard rated Weld Purge Monitor®. The **PurgEye® 100** now has a dustproof and waterproof outer case that prevents the ingress of dust or moisture even to the extent of having hard water spray directed against it.

More new features make the **PurgEye® 100 IP65** incredible value for money and the best technical choice available.

The innovative push button auto calibration facility allows the user to calibrate at atmospheric level and again at the lowest oxygen reading for increased accuracy.

The **PurgEye® 100** will indicate oxygen levels from 20.94% down to 100 ppm (0.01%).

PurgEye®, the only genuine Weld Purge Monitor® on the market, developed by HFT® original innovators and manufacturers for over 40 years.

Keeping your Eye on the Purge!

MAIN FEATURES:

- New IP65 dustproof and waterproof accredited.
- Vacuum brazed stainless steel probe assembly.
- Robust carry / presentation storage case.
- Auto safety break wrist or neck carry strap.
- Push button ‘auto calibration’ feature.
- Low battery indicator and low sensor indicator.
- Enlarged screen and larger digits.
- Tripod mount.
- Protective rubber cover (optional).
- Special leak tight quick connect/disconnect fittings for gas purge tubing.
- Automatic sleep mode when not in use.

SOME ADVANTAGES and KEY FEATURES :

IP65 Sealed Dustproof and Waterproof Accredited

Dustproof standard rated 6 dust tight (no ingress of dust) and waterproof standard rated 5 protected against water jets (water projected from a nozzle against the enclosure from any direction shall have no harmful effect).

Vacuum Brazed Stainless Steel probe Assembly

Leak tight 'one piece' sealed assembly prevents erroneous readings due to leaks in connections.

More Robust Carry/Presentation Storage Case

Ergonomically designed case with double sided preformed cut outs, give a safe location for each part of your **PurgEye®** instrument.

Auto Safety Break Wrist Or Neck Carry Strap

Quality lanyard fitted with an auto break.

Automatic Sleep Mode

When the monitor registers more than 20% oxygen for periods longer than 1 hour, it will automatically switch off to conserve sensor and battery life.



Low Sensor Indicator

You will never again be with an unusable monitor!

The "low sensor level signal", allows plenty of time to obtain a new sensor which you can simply fit and calibrate yourself.

Low Battery Indicator

The **PurgEye® 100** Weld Purge Monitors® have a low battery indicator that appears in the corner of the screen. This was a feature designed for the first time in the earlier models, such as the Mark V (MKV) meter which used old technology in comparison to this revolutionary latest **PurgEye® 100** model.

Auto Calibration Feature

Calibrate your own monitor at any time without having to return it to the factory. Also, each time you weld to ensure that your readings are the most accurate possible.

The calibration facility even has the ability at the touch of a small button to calibrate both at atmospheric level of 20.94% and at 0.01% (100 ppm) level of oxygen.



Tripod Mount

A rugged tripod mount has been integrated into the housing. This allows the **PurgEye® 100 IP65** Weld Purge Monitor® to be firmly mounted on a tripod of your choice. With mounting the instrument on a tripod, easy visual observation is provided so you can see the **PurgEye® 100** from any part of the working space.

A range of tripods or other fixing Instruments are available on which you can mount and station your **PurgEye® 100**.

Enlarged Easy To Read Screen

The new enlarged screen uses 24 mm height digits for easy viewing at longer distances from the work station. These digits are approximately 41% larger than the previous obsolete MKV model.

Immediate Welding

After connecting the **PurgEye® 100** to the purge gas exhaust, you will have immediate readings showing reduction of oxygen down to your desired level.

Guaranteed Accuracy

The **PurgEye® 100** Weld Purge Monitor® indicates oxygen levels from 20.94% down to 100 ppm (0.01%), so use an Argweld® **PurgEye®** Weld Purge Monitor® everytime for guaranteed accuracy of oxygen indication to allow a weld start with minimal risk of oxidation.

TECHNICAL DATA:

The **PurgEye® 100** is shipped in a new low volume ergonomically designed, attractive, more robust carry / presentation and storage case to maintain the instrument in good condition and to keep it together with all accessories.

The **PurgEye® 100** can be used with any pipe welding system, any weld purging chamber or weld purging enclosure.

The sensor is easy to replace and self calibrate using the advanced calibration features of the **PurgEye® 100** and the specially written algorithm that provides extreme accuracy at 0.1% where it is especially important for weld purging.

The **PurgEye® 100 Weld Purge Monitor® Gas Detection and Analysing Instrument** can be used as a continuously reading instrument with free flow of the purge exhaust gas across the sensor, or as a sampling instrument with the hand vacuum pump and the new vacuum brazed leak tight stainless steel probe assembly extracting samples from the purged volume, as and when desired.



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Supplied With

- New leaktight vacuum brazed stainless steel probe for sampling.
- New safety easy auto break lanyard for neck or wrist.
- New strong ergonomically designed carrying storage presentation case.
- 2 x AA batteries.
- 2 meters of sampling hose.
- Sampling bulb (vacuum pump).
- User instruction booklet.



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SPECIFICATIONS:

PurgEye® 100 IP65 Accuracy Range

Measuring 20.94% down to 100 ppm oxygen

Range: (100 ppm to atmosphere)

Accuracy: At oxygen level 20.0% = ± 0.2%
At oxygen level 2% = ± 0.02%

Size: 94 mm (top width)
58.5 mm (handle width)
199 mm high (from bottom to top of eyelet) 63 mm deep (with flow adaptor)
44 mm deep (without flow adaptor)

Power: Battery type 2 x AA (included)

Scale: LCD (liquid crystal display) 24 mm
Ref: Obsolete MKV Model 17 mm
41% increase in size

Weight: 0.870 kg



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PRODUCT CODES and SIZES:

PurgEye® 100 IP65 Weld Purge Monitor® .

Model part number API0100 (stock code).

Dimensions with carrying storage case:

290 x 265 x 120 mm

Nett weight	0.870 kg
Gross weight	1.1 kg
Volumetric weight	1.42 kg

Instrument weight 0.870 kg instrument only (excluding carry case).

Customs tariff for international shipments around the world:

European customs tariff:	9026 1089
International customs tariff:	9026 80 6000
United States customs tariff:	9026 80 6000

ACCESSORIES, SPARES and REPLACEMENTS:

- Gorilla tripod.
- Camera tripod.
- Sensor removal tool.
- Rubber protective housing.



PurgEye® 100 IP65 shown with protective rubber housing available as an accessory.

Note: This is not a General Gas Detection or Analysing Instrument.

Don't use cheap instruments that are merely oxygen monitors which are re-labeled or repackaged, use a purpose designed, high quality Weld Purge Monitor®.

PurgEye® 200 IP65 WELD PURGE MONITOR® Now with PurgeNet™



Reads down to 1 ppm

This **Argweld® PurgEye® 200 IP65** hand held model now with PurgeNet™ reads down to 1 part per million (ppm), (accurate to 10 ppm).

This low cost unit has made several breakthroughs in design and development technology in weld purge monitoring.

Being rechargeable battery operated as well as mains powered and hand held, this is an excellent portable unit for use on construction sites where stainless-, duplex- and chrome-steel as well as titanium and nickel alloy tubing or pipe is being welded.

Equally, this can be used in workshops where the hand held feature is valuable, along with the desire to obtain readings as low as 1ppm.

The **PurgEye®** Family Range of Weld Purge Monitors® have become the standard instruments of today, recognised and used by most companies who need to produce quality weld joints.

PurgEye®, a Family Series of **Weld Purge Monitors®**, helping customers to keep your 'Eye' on the Purge!

MAIN FEATURES:

- Internal electro-mechanical pump with 1 l/m flow rate.
- USB lead included to control PurgeLog™ software.
- IP65 rated.
- Long life, faster response sensor.
- Internal rechargeable battery or mains power operated.
- Battery life up to 10 hours.
- Hand held easy to use instrument.
- Warning alarm levels between 1 and 999 ppm.
- Flow detection for accurate reading of gas samples.
- Outstanding protection against HF interference.
- Large character OLED screen for easy reading.
- Power on / off with standby button for sensor warm up.
- Can be charged by plugging directly into mains power with charging lead or optional charging dock.



TECHNICAL DATA and SPECIFICATION

Can be used with any tube or pipe weld purging system, any weld purging chamber or weld purging enclosure.

Accuracy range:

Measuring 1000 down to 1 ppm oxygen.
Accuracy: = ± 0.002%.

Power: 90/250V single phase 50hz or 60hz A.C. supply or internal battery pack.

Auto Power-Off

If the **PurgEye® 200 IP65** is left with an over-range reading for more than 15 minutes, then it will automatically turn off to conserve battery power.

Warning Alarm

The Warning Alarm can be set to any level between 1 and 999 ppm and has both audible and visual indication when the alarm threshold is exceeded.

Power On/ Off

If the **PurgEye® 200 IP65** is off, then pressing the standby button will switch it on and it will start the sensor warm-up procedure. The **PurgEye® 200 IP65** can be turned off by holding the standby button for approx. 10 seconds or until it turns off.

Integral Sample Pump

The **PurgEye® 200 IP65** is equipped with an internal electro-mechanical sampling pump that can be switched on and off as needed. An alert icon flashes in the event of insufficient gas flow.

Alarm Mute

An alarm mute facility can be switched on and off as required.

Alarm ▲ and Alarm ▼ Buttons

Pressing either of the alarm buttons will display the current alarm threshold setting. When the alarm threshold is displayed, the first digit will flash, pressing either of the alarm buttons at this point will increase or decrease the value of the flashing digit.

Guaranteed accuracy

The **PurgEye® 200 IP65** Weld Purge Monitor® indicates oxygen levels from 1000 down to 1 ppm (0.0001%) accurate to 0.002% of reading, WΣW so use an Argweld® **PurgEye®** Weld Purge Monitor® everytime for guaranteed accuracy of oxygen indication to allow a weld start with minimal risk of oxidation.

Large Character OLED Screen

The large OLED screen allows the reading to be easily read and is mainly symbol rather than text based. The OLED display does not need a backlight and can be viewed from greater angles than LED screens.

PurgeNet™ facilities:

1. Control of welding power sources such as orbital welders and any other automatic welding systems to switch on and off according to oxygen values.
2. Use of PurgeLog™ software to transfer weld purge data for quality control of welds.

Notes: PurgeLog™ software provided free with instrument.



Low battery Indicator

Low battery icon allows 20 minutes work before recharging is necessary.

Warming up icon

The wait icon displays 1,2,3,4 flashing bars to show progress of warm up.



Alarm Icon

Alarm icon flashes when preset oxygen level is exceeded.

PPM / Percentage oxygen level icon

Oxygen level displayed in parts per million (ppm) or percentage (%) at the touch of a button.

Flow detection icon

The flow warning exclamation icon will be displayed whenever the flow of sample gas drops below the minimum flow rate required for an accurate reading.

Blocked filter icon

The alert icon, indicates when there is insufficient flow of purge gas which could be caused by a blocked filter.



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PurgEye® 300 Nano

WELD PURGE MONITOR®



An accurate “Eye” on your Money



The Argweld® **PurgEye® 300 Nano** is an ultra low cost entry level **Weld Purge Monitor®** that measures and clearly indicates actual oxygen levels from 1000 parts per million (ppm) right down to 10 ppm on a large alpha numeric display.

There are no knobs, no switches, no controls, making this a really simple ‘plug and play’ instrument.

A unique new low cost long life sensor is used, that has the capacity to measure oxygen down to 1 ppm. Sensor warm up time is less than 60 seconds. Readings are exceptionally accurate down to 10 ppm.

The **PurgEye® 300 Nano** avoids the disadvantages of monitors with ‘wet cell’ technology that have to be constantly calibrated and have sensors replaced.

The **PurgEye® 300 Nano** can be used as a calibration check instrument for other **Weld Purge Monitors®** in use as well as for oxygen monitors that may be used for weld purging. In addition, the instrument can be used to check purge gas quality and whether there are leaks of air into purging hose connections anywhere in the system.

FEATURES

- Small, light and inexpensive compared to more sophisticated instruments with this range of measurement.
- Integrally mounted sensor shielded against electrical interference.
- Specifically developed for weld purging of high quality weld joints where pristine purging techniques are used.
- Suitable for all aseptic, hygienic and clean-in-place welds.
- Low repair, refurbishment and recalibration costs.
- Operation with orbital welders, tube and pipe welding as well as for all welding enclosures, chambers and boxes.
- Ideal for welding stainless steel in high purity and ultra clean applications, as well as recommended for titanium, zirconium, niobium and nickel alloy welding.
- No pump, no moving parts to fail.
- AC 110/230 single phase operation.
- International electrical standards and connectors
- Ultra low cost

PurgEye®, a complete family of Weld Purge Monitors®



The Argweld® **PurgEye® 300 Nano** has secure 'leak tight' connectors for weld purge hoses.

Also, the instrument can be used with optional accessory hand pump and gas sampling probe.



Rear of **PurgEye® 300 Nano** with mains lead and power supply connection to allow operation from AC 110 to 230 V single phase 50/60 Hz electrical supplies.



SPECIFICATION

- Operating voltage 110/230 V single phase 50/60Hz, the unit uses an external 12 V PSU with an input voltage range of AC 90 to 260 which is included
- Less than 60 seconds warm up time.
- Readings accurately displayed in ppm.
- Power consumption 18W.
- Dimensions: 145 x 190 x 70 mm.
- Range: 1000 - 1 ppm.
- Accuracy: $\pm 2\%$ of scale reading.
- 40 cm of red tube.
- 1 metre of green tube.

FAMILY RANGE of WELD PURGE MONITORS®

The family range includes the following models:

- **PurgEye® 100 IP65** which is our most popular instrument worldwide. This is a portable, battery operated, general purpose instrument for use in workshops as well as on construction sites for all tube and pipework, as well as for chamber purging and basic testing of weld purge gas supplies.
- **PurgEye® 200 IP65** now with PurgeNet™ new rechargeable battery powered measuring down to 10 ppm.
- **PurgEye® 300 Nano** as per this brochure.
- **PurgEye® 300 Plus** now with PurgeNet™ fully programmable with data recording for 1000 to 10 ppm.
- **PurgEye® 500 Desk** now with PurgeNet™ like the 300 with an integral pump as well.
- **PurgEye® 600** 'All in one' Computerised Colour Touch Screen with wireless USB download of recorded data from 1000 ppm down to 10 ppm.
- **PurgEye® 1000 Remote** now with PurgeNet™ The 10 ppm sensing head can monitor up to 1 km away.
- **PurgEye® 1500 Site** now with PurgeNet™ IP65 rated with the lid open, IP68 with lid closed. Flow detection for accurate reading of gas samples. Integral pump

PurgEye® 500 Desk WELD PURGE MONITOR® Now with PurgeNet™



The **Argweld® PurgEye® 500 Desk with PurgeNet™** is a very much upgraded version of the former PurgEye® 500.

PurgeNet™ allows accessories to be added in series with the Weld Purge Monitor® to allow control of a welding cycle based upon weld purging conditions.

Accessories include:

- An interface for all automatic welding systems, to give stop go commands based on oxygen levels.
- A warning light accessory that is visible from long distances.
- A Dew Point Monitor.
- A temperature gauge connected with the purging cycle to allow control of gas according to interpass temperature

The **PurgEye® 500 Desk** will display oxygen readings down to 1 ppm and will give the highest industry accuracy readings down to 10 ppm.

As before, this model has an integral electro-mechanical pump for drawing gas samples across the sensor to provide accurate readings and consistent values for the automatic welding systems and other accessories. **PurgeLog™** software is provided with the monitor for data capture to allow a print out of all weld purge results providing quality control certification for each weld.

This model is ideal for critical welds on materials such as stainless, duplex and chrome steels, titanium, zirconium and nickel alloys. It can be used for joints made in welding chambers and **Flexible Welding Enclosures®** as well as for orbital welding applications and for use with pipe weld purging systems.

This rugged, HF proof instrument measures and clearly indicates actual oxygen levels from 1000 down to 1 ppm (highly accurate to 10ppm).

The unit is menu driven by two of the four buttons on the front panel and it has an internal alarm with high and low points for oxygen level that can be set with the other two buttons.

The long life zirconia sensor has very little maintenance requirement and saves the constant bi-annual changing of "wet cells" that are used in other oxygen measuring systems.

In addition, the low cost of maintenance and the fast turnaround makes your choice of an HFT® purpose designed Weld Purge Monitor® a much better financial investment over one of the 'Badged' alternative oxygen monitors.

PurgeLog™ software package is included for connecting to a computer for storing and printing results and graphs for quality control purposes.

FEATURES

- **PurgeNet™** connector for smart accessories.
- Designed to monitor with the sample pump running continuously.
- Provided with a UK power lead with a fused plug and a series of adaptors for connection to all other single phase systems.
- Reads PPM or Percentage.
- Operation from a single phase mains supply, 90/260 v, 50 or 60 Hz.
- Faster sensor response.
- OLED screen.

SPECIFICATIONS

- The unit is supplied with an external 12 V Power Supply Unit (PSU) with an input voltage range of 90 to 260 AC.
- PurgeLog™ data logging software* included.
- PurgeNet™ facility for accessories, to control Orbital Welding Machines or other automatic or semi automatic welding systems, remote warning systems either visual or audible, dew point meters and so on.
- Readings accurately displayed in ppm or percentage.
- Power consumption 18 W.
- Instrument dimensions: 145 x 190 x 70 mm.
- Range: 1000 - 1 ppm.
- Accuracy: $\pm 2\%$ of scale reading.
- Pump flow rate: 3.5 - 4 l/m.
- 150 mm of green tube with filter supplied.

* PurgeLog™ Data Logging Software requires a PC running a minimum of Microsoft® Windows 95/98/XP or NT4.

Highly improved shielding against all sources of HF, RF and EMF radiation.

Tested and approved in the harshest of welding environments.

CASE for PURGEYE® DESK WELD PURGE MONITOR®

This storage carrying case is manufactured from rigid ABS allowing for maximum protection of PurgeEye® Desk Weld Purge Monitors®.

There is an integrated specially cut section in the lid to allow the manual and any other important documentation to be stored.

This case is ideal for storage and retrieval of PurgeEye® 500 Desk Weld Purge Monitors® in workshop



SHIPPING INFORMATION

Dimensions:	385 x 330 x 100 mm
Nett weight:	2.2 kg
Gross weight:	2.7 kg
Volumetric weight:	2.5 kg



PurgEye® 600 Touch

WELD PURGE MONITOR®

Now with PurgeNet™



© HFT®

The PurgEye® 600 Computerised Colour Screen Weld Purge Monitor® measuring from atmospheric oxygen levels down to 1 ppm. The 'All in One' instrument!

With the ever more stringent quality control standards being applied to the welding of titanium, nickel alloys, stainless and duplex steels in aerospace, offshore, pharmaceutical, food, beverage, semi conductor industries etc, it has been necessary to develop an attractively priced **Weld Purge Monitor®** that will read from atmospheric oxygen levels down to 1 part per million (highly accurate to 10 ppm).

The **PurgEye® 600** Weld Purge Monitor® has broken all technological boundaries as an 'all in one' unique monitor.

PurgeLog™ data logging capability is included, that allows the operator to download data onto a memory stick, obviating the need for a computer connection.

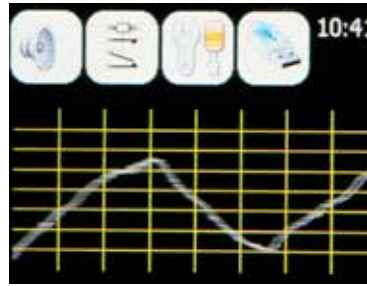
Not only have we been able to achieve these terrific World beating features, we have also integrated an electromechanical sampling pump.

The colour touch screen with graphics model allows the user to pre-set upper and lower ppm levels of their choice to trigger alarms.

FEATURES

- The long life sensor reads from 20.94% down to 1 ppm (accurate to 10 ppm).
- Readings indicated as a percentage or in ppm.
- Now including **PurgeNet™** allowing control of automatic welding equipment with other accessories including visual on/off light for remote viewing, a dew point meter and audible alarm.
- State of the art circuitry providing stable, accurate readings.
- USB transfer of data and weld certification quality control documentation with unique **PurgeLog™** software.
- Real time clock to date stamp quality control records.
- Internal sampling pump with gas filtration.
- Quick fit / disconnect 'leak tight' purge tube fittings.
- Highly improved shielding against all sources of HF, RF and EMF radiation.
- Tested and approved in the most extreme circumstances.
- Stylish desktop model.
- Power from 110 / 220 AC single phase supply.
- Storage, carrying presentation case included.

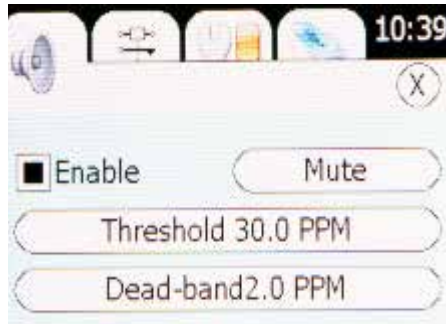
MAIN DISPLAY



The main display can be in one of three modes (see above). The user can switch between these display modes by touching the display area of the screen.

When the user touches one of the top icons, a menu will appear. The required option needs simply to be selected. These icons and menu items are as follows.

Alarm menu



Mute: Select mute to toggle the mute feature of the sounder.

Threshold: This is the level over which the alarm will be active.

Dead-band: Sets an area where the alarm will not change state, to prevent rapid alternating when the measured reading is close to the threshold.

Data logging menu



Start Logging: Select 'Start' to begin a new log file.

Stop logging: Select 'Stop' to end the current log file, this will ask for the serial number for the weld (only if 'auto naming' is not ticked). This is used as the 'file name'.

Set Clock: Select this option to select the current time and date (note, this icon will only appear if a compatible memory stick has been connected).

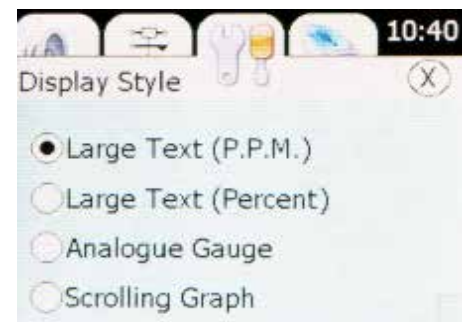
Relay menu



Threshold: This is the level over which relay one (R1) or relay two (R2) will be active.

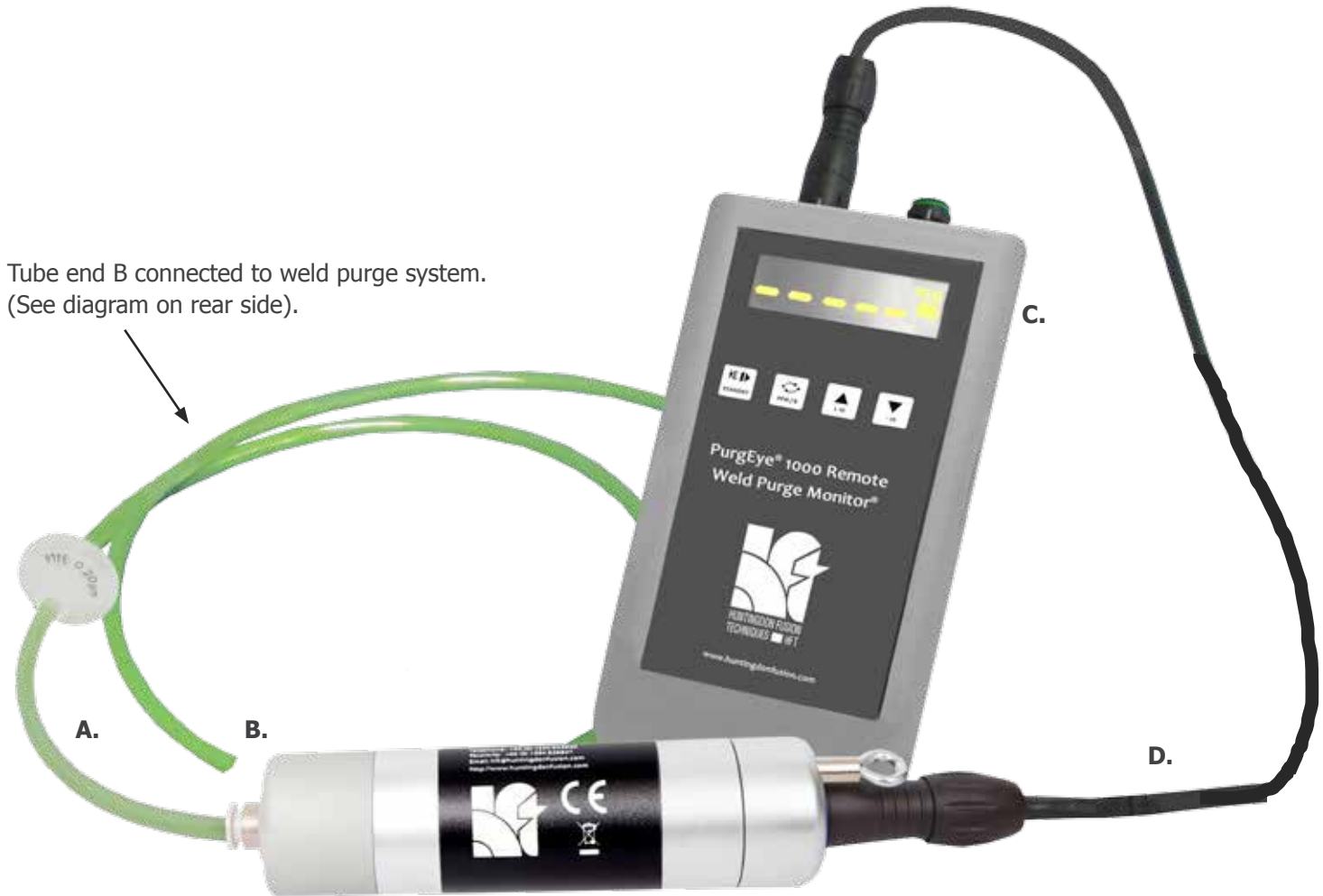
Dead-band: Sets an area where the relevant relay will not change state, to prevent rapid switching when the measured reading is close to the threshold level.

Display style



This allows the user to select which of the main display styles to use, examples show at the top of page.

PurgEye® 1000 Remote WELD PURGE MONITOR® Now with PurgeNet™



When welding joints in long tube lines or pipeline sections, it is often not possible or practical to measure the purge gas exhaust close to the weld.

HFT® has developed an answer to this difficulty, namely a remote sensing head that can be fitted onto the purging system, directly at the weld location and moved from joint to joint. The new, fast response zirconia oxygen sensor will measure oxygen level in the purge gas and transmit the information electronically to the monitor up to 1 km away.

In this way, the operator can be certain that the weld purge reading is correct and that the joint will not be adversely affected by oxidation.

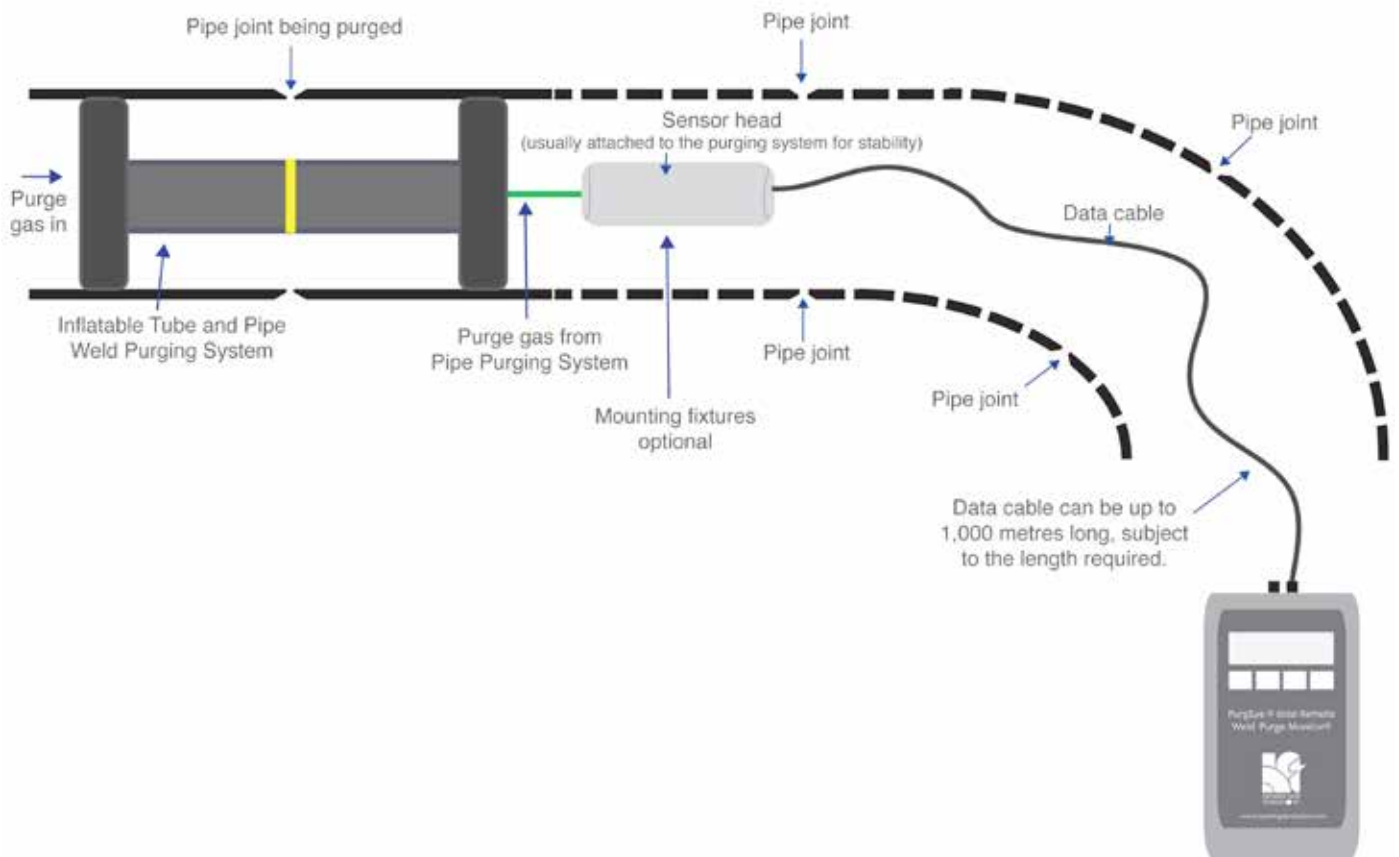
The exhaust purge gas, from the Weld Purging System, flows through tube **A** and is measured by the remote sensing unit **B** which sends the result electronically back to the display unit **C**, via data cable **D**. (See above picture, photo and diagram on page 2).

The sensing head **B** can be supplied with mounting fixtures so that it can be fitted to an internal pipe clamp with purging seals or to any other type of mechanical or inflatable pipe purging system.

Portable 'handy' Weld Purge Monitor® to read from 1000 ppm down to 1 ppm, highly accurate down to 10 ppm.

A distant 'Eye' on the Purge up to 1 km away!

PurgEye® 1000 sensor head fitted with internal electro mechanical pump to draw gas sample from purge system exhaust to sensing head.





Portable 'handy' Weld Purge Monitor® to read from 1000 ppm down to 1 ppm, accurate to 10 ppm.

Variable length data cable from 10 to 1,000 metres depending upon requirements.



Electro mechanical purge **gas sampling pump** is mounted inside the hermetically sealed stainless steel sensing head and powered by the data cable from the display unit.

Pump runs continuously. Pump symbol moves when pump is running.

Accessories for use with PurgeNet™ is the Visual Alarm Indicator

- Diameter 40 mm.
- Mounted height 165 mm.
- Standard part with optional green light.
- Fixing nut.



Spares and Accessories

- 100 m Reel Outdoor Cable with locking connector, reels of extension cable can be connected together to make longer lengths as required up to 1 km
- Sturdy protective storage carrying and presentation case
- Sample tube set with filter
- Filters (pack of 10)

PurgEye® 1500 Site IP68 WELD PURGE MONITOR® with PurgeNet™



Reads down to 1 ppm



The **PurgEye® 1500 Site IP68** is a portable, 1ppm Oxygen Weld Purge Monitor® integrated into a robust case. Specifically designed for use in rugged site conditions.

This model has an internal battery that allows it to be used for 10 hours out on site before recharging is necessary. The **PurgEye® 1500 Site IP68** can also be plugged into mains electricity for use in a workshop and for recharging the battery.

The **PurgEye® 1500 Site IP68** has a solid state, long life sensor of a unique design with a much faster response time and high stability of readings. It will give readings down to 1 ppm with a high accuracy down to 10 ppm.

The monitor is integrated in a conveniently sized case which seals to IP68 standard, then, when in use, the lid is merely opened so that the monitor can be connected to the exhausting purge gas supply.

The new, ultra sharp image OLED screen is conveniently angled in a purposely moulded box to be seen from all positions. The OLED screen does not need a backlight.

The **PurgEye®** Family Range of Weld Purge Monitors® have become the standard instruments of today, recognised and used by most companies who need to produce quality weld joints.

MAIN FEATURES:

- Internal electro-mechanical pump with 3 l/m flow rate.
- USB lead included to control PurgeLog™ software.
- IP65 rated with the lid open, IP68 with lid closed.
- Long life, faster response sensor.
- Internal rechargeable battery or mains power operated. Recharging carried out via PurgeNet™.
- Battery life up to 10 hours.
- Warning alarm levels between 1 and 999 ppm.
- Flow detection for accurate reading of gas samples.
- Outstanding protection against HF interference.
- Large character OLED screen for easy reading.
- Power on / off with standby button for sensor warm up.

PurgEye®, a Family Series of Weld Purge Monitors®, helping customers to keep your 'Eye' on the Purge!

TECHNICAL DATA and SPECIFICATION

Can be used in conjunction with any tube or pipe weld purging system, any weld purging chamber or weld purging enclosure.

Accuracy range:

Measuring 1000 down to 1 ppm oxygen.

Accuracy: = $\pm 0.002\%$ (to 10 ppm).

Power: rechargeable, 10 hours battery pack or mains electricity 90/250V single phase AC 50/60 Hz.

Auto Power-Off

If the **PurgEye® 1500 Site IP68** is left with an over-range reading for more than 15 minutes, then it will automatically turn off to conserve battery power.

Warning Alarm

The Warning Alarm can be set to any level between 1 and 999 ppm and has both audible and visual indication when the alarm threshold is exceeded.

Power On/ Off

If the **PurgEye® 1500 Site IP68** is off, then pressing the standby button will switch it on and it will start the sensor warm-up procedure. The **PurgEye® Site** can be turned off by holding the standby button.

Integral Sample Pump

The **PurgEye® 1500 Site IP68** is equipped with an internal electro-mechanical sampling pump that can be switched on and off as needed. An alert icon flashes in the event of insufficient gas flow.

Alarm Mute

An alarm mute facility can be switched on and off as required.

Alarm ▲ and Alarm ▼ Buttons

Pressing either of the alarm buttons will display the current alarm threshold setting. When the alarm threshold is displayed, the first digit will flash, pressing either of the alarm buttons at this point will increase or decrease the value of the flashing digit.

Guaranteed accuracy

The **PurgEye® 1500 Site IP68** Weld Purge Monitor® indicates oxygen levels from 1000 down to 1 ppm (0.0001%), so use an Argweld® **PurgEye®** Weld Purge Monitor® everytime for guaranteed accuracy of oxygen indication to allow a weld start with minimal risk of oxidation.

Large Character OLED Screen

The large OLED screen allows the display to be easily read and is mainly symbol rather than text based. The OLED display does not need a backlight and can be viewed from greater angles than LED screens.

PurgeNet™ facilities:

1. Control of welding power sources such as orbital welders and any other automatic welding systems to switch on and off according to oxygen values.
2. Use of PurgeLog™ software to transfer weld purge data for quality control of welds.
3. Connection of other smart accessories for weld purging.

Notes: PurgeLog™ software provided with the instrument.

Accessory interface cables need only be purchased when required.



Low battery Indicator

Low battery icon allows 20 minutes to re-charge batteries.



Warming up icon

The wait icon displays 1,2,3,4 flashing bars to show progress of warm up.



Alarm Icon

Alarm icon flashes when preset oxygen level is exceeded.

PPM / Percentage oxygen level icon

Oxygen level displayed in parts per million (ppm) or percentage (%) at the touch of a button.

Flow detection icon

The flow warning exclamation icon will be displayed whenever the flow of sample gas drops below the minimum flow rate required for an accurate reading.

Blocked filter icon

The alert icon, indicates when there is insufficient flow of purge gas which could be caused by a blocked filter.





The **PurgEye® 1500 Site IP68 Weld Purge Monitor®** can be used as a continuously reading instrument with free flow of the purge exhaust gas across the sensor, or as a sampling instrument with the integral electro-mechanical vacuum pump.



Carrying case

- Virtually indestructible casing.
- IP65 when lid open, IP68 when lid closed.
- Compact and small.

SHIPPING DETAILS

The **PurgEye® 1500 Site IP68 Weld Purge Monitor®** is shipped integrated into a new, low volume, ergonomically designed, robust carrying, presentation and storage case to maintain the instrument in good condition and to keep it together with all accessories.

Carrying case dimensions:

Shipping dimensions: 380 x 100 x 300 mm

Netto weight: 2.0 kg

Volumetric weight: 2.28 kg

Supplied with:

- PurgeNet™ adaptor for charging with International multi-plug options.
- Filter with length of green tube.
- Calibration and quality control test certificate.
- User instruction booklet.

Optional items:

- PurgeNet™ automatic welding machine interface.
- PurgeNet™ traffic light visual warning accessory.

Traffic Light accessory:

- Diameter 40 mm.
- Mounted height 165 mm.
- Standard part with optional green light.
- Fixing nut.



PurgElite®

INFLATABLE TUBE and PIPE WELD PURGING SYSTEM

From 1 to 24 inch (25 to 610 mm) diameters



Incorporating a “NEW” 1 inch (25 mm) system, a first to the market place, another great innovation by Huntingdon Fusion Techniques HFT®.

Inert gas is expensive; it's probably the second most costly contribution to welding after filler wire. Care needs to be taken when selecting a purging technique since the majority of pipe purging systems are flagrant abusers, particularly home made systems.

The most efficient systems are those such as **PurgElite®** and based on twin inflatable dams. The designs are such as to minimise the purge volume and incorporate automatic advanced gas flow and control technology. Losses due to leakage are insignificant.

After 40 years of manufacturing expertise in the field of Tube and Pipe Weld Purging Systems, Huntingdon Fusion Techniques HFT® brings to the market yet another great advanced innovation.

PurgElite® is designed to help tube and pipe welders save money, time, gas and achieve better welds.

These superior systems, which have many unique features, keep us right at the forefront of technical innovation by bringing you a simple, low cost solution to make the cleanest of welds.

Due to the new design, we have significantly reduced prices whilst continuing to bring you a technically superior product.

The volume to purge is kept small, resulting in valuable savings in both time and cost of inert gas used.

The **PurgElite®** Inflatable Pipe Weld Purging Systems have two heavily protected inflatable dams connected by a newly designed, high temperature resistant, inert gas purging tube.

The inert gas purges oxygen as well as other unwanted gases and vapours out of the space between the dams with inert gas replacing it through **IntaCal®**, a unique, much lower cost, simpler, trouble free valve than used elsewhere.

This new, low profile valve allows us to manufacture a 1" Inflatable Pipe Purging System which has never been previously achieved.

Don't use old fashioned purge bladders or homemade devices like cardboard, paper dams or foam bungs. They contain a lot of water, water vapour and air, which put your weld at risk and end up costing you more money

Use the proper tool for the job! **Purge the 'Elite' way!**

KEY FEATURES and BENEFITS

Quick and easy to install.

IntaCal® innovative purge gas feed device

No complicated valve to set.

Inflation and purging with only one line

Specially developed flexible dam connection hose, with protective sleeve, resistant to hot metal of up to 700°C (1,292°F).

Low vapour pressure material.

No scratching of polished surfaces.

For all grades of stainless steel and duplex, polished interiors, titanium, zirconium, exotic metals and alloys.

PurgElite® cost saving systems can be positioned accurately.

RootGlo® centrepiece glow positioning indicator

The glow strip in the centre of each system gives ease of use when positioning the device underneath the weld.

RootGlo® is resistant to high temperatures whereas competitors material shrivels up to nothing, outgassing into the purgespace.

RootGlo® gives 20 hours of illumination for only 10 minutes exposure to daylight.

Faster

The **PurgElite®** system is very quick and easy to install. It can be positioned accurately and the dams inflate instantly.

Purging time is a fraction of that required by conventional methods leading to significant savings and waiting costs. Return on Investment charts are available on request.

The volume to be purged is localised.

Flexible Spinal Hose

The hose can bend to go through the tightest of angles. For further information see the last page of this leaflet.



Size range: 1 to 24 inch (25 to 610 mm) OD

The first ever 1 inch (25 mm) \varnothing system to the market place. Another innovation by Huntingdon Fusion Techniques HFT® is leading the way in Weld Purging Technology!



Low Price

Dramatic decrease in prices over all similar models.

Cost-effective in less than only one weld.

Repeatability

Highly reliable, giving regular, repeatable, controlled high quality results, with zero colour welds.

Gas pressure control ensures an even positive root bead with no notching.

Manufactured to nuclear quality standards with nuclear approved materials, these systems guarantee bright, shiny, coke and oxide-free welds.

Because **PurgElite®** Inflatable Pipe Weld Purging Systems have no metal parts exposed, internally polished stainless steel tubes are protected from contamination and scratching.



OUT OF DATE

- Large metal valve
- Complicated valve adjustment
- Occasional burst bladders
- Metal parts scratch interiors of polished pipes
- High vapour pressure materials that outgas when heated



NEW PURGELITE® SYSTEM

- No metal parts to scratch interior of polished pipes
- No large complicated valve
- No wasted time setting valve
- Low vapour pressure materials



MIX and MATCH

Any one size of dam can be connected with any other diameter, see example below:



PurgElite® Inflatable Pipe Weld Purge Systems in use together with the latest state of the art technology **PurgEye® Weld Purge Monitor®**. The PurgEye® Monitors allow the user to see when the conditions are perfect for welding.

In this way, bright clean welds are easily achieved.



This range of PurgElite® Tube and Pipe Purging Systems are for pipes of nominal diameters from 1 inch (25 mm) to 24 inch (610 mm).

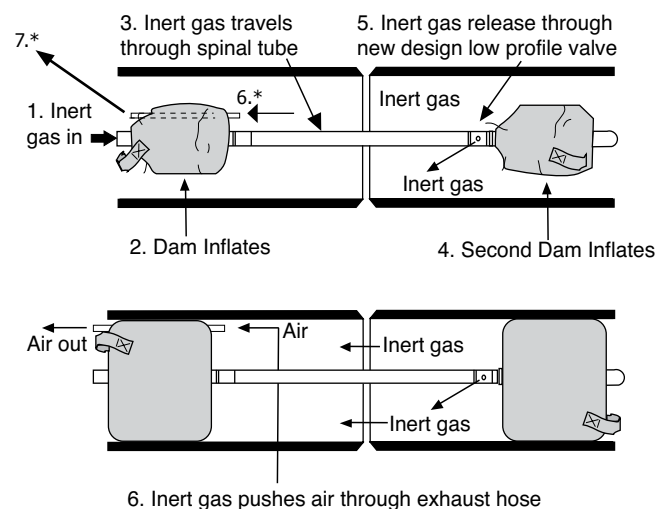
The connecting spinal tube can be shortened or lengthened to accommodate specific requirements.



Simple steps for tube and pipe weld purging for that perfect oxide free clean weld!

6*. Air is pushed out of the exhaust tube to Weld Purge Monitor®.

7*. Exhausting air can be measured by Weld Purge Monitor® or it can be just emptied to atmosphere.





© HFT®



Suitable for fabrications with bends

HEAT PROTECTIVE COVERS

The Heat Resistant Covers are held on with ties and there are holes provided for the PurgElite® fittings, such as inlet, exhaust and crimped end.

Temperature rating up to 300°C.

The heat covers are provided in sets of two and they are available for each specific diameter from 1 - 24 inch.



© HFT®

PURGE TIME (to 0.1% oxygen and less)

By using **PurgElite®** Tube and Pipe Purging Systems, the main savings are obtained in reduced purging and waiting time, and in the much lower quantity of inert gas used.

Purging with old fashioned systems and home made devices will require a flow rate of at least 24 ltrs/min (50 cu ft/hr) for longer periods.

The chart below shows a typical purge time to reduce the air space to less than 0.01% oxygen.

TEST PIPE

Diameter 4" (102 mm) - 316 Stainless Steel

Old fashioned or home made devices:

Purge time to 1000 ppm	40 - 60 minutes
Inert gas usage at 25 l/m	1000 - 1,500 litres

PURGELITE® 2015 RESULT

Purge Time to 100 ppm	0.36 mins
Inert gas usage at 15 l/m	5.4 litres

CONCLUSION

Welding a 4" pipe joint with PurgElite® Systems will save about 1 hour per joint and approx. 1000 litres of argon per joint at £ 0.23 per litre = £ 230.00 plus 1 hour labour, say £ 250.00 total.
 Cost of 4" PurgElite® System is £ 112.00
 Cost-effective in less than one weld.

Do not use old fashioned purge bladders that burst or homemade devices like cardboard, paper dams or foam bungs. They contain a lot of water, water vapour and air, which put your weld at risk and end up costing you more money.

Use the proper tools for the job!

A PurgElite® System to Purge your tubes and pipes the 'Elite' way!

QuickPurge®

TUBE, PIPE and PIPELINE WELD PURGING SYSTEMS



Inert gas is expensive; it's probably the second most costly contribution to welding after filler wire. Care needs to be taken when selecting a purging technique since the majority of pipe purge systems are flagrant abusers that demand very high levels of inert gas use.

The most efficient systems are those such as **QuickPurge®** and based on twin inflatable dams. The designs are such as to minimise the purge volume and incorporate automatic advanced gas flow and control technology. Losses due to leakage are insignificant.

Using a 400 mm diameter QuickPurge® solution compared to a home-made product the savings on gas for a single pipe weld alone is in the region of US\$ 20,00.

After a decade of manufacturing **QuickPurge®** Inflatable Tube and Pipe Purging Systems, HFT® launched the vastly improved QuickPurge® Mark III System. This model has new innovations that place the design firmly ahead in the field of tube and pipe weld purging. Developed specifically for high speed weld joint purging of pipes, tubes and vessels, the QuickPurge® is already in use internationally.

QuickPurge® provides dramatic savings in time and volumes of inert gas giving a return on investment to be less than one weld.

QuickPurge® is used for high quality, weld purging of reactive metal tube and pipe joints, as well as other cylindrical product joints, to ensure that zero colour welds are achieved.

INNOVATIONS INCLUDE:

- **IntaCal®** technology eliminates the old fashioned valve system and all of the presetting necessary, as well as helping to prevent the risk of over inflation.
- Typical purge times for the **QuickPurge®** would be less than 3 minutes for a 12" \varnothing joint and 8 minutes for a 36" \varnothing joint, down to 0.1% oxygen and correspondingly faster for smaller diameters.
- **RootGlo®** positioning strip is a highly luminescent central band that allows the operator to position the QuickPurge® quickly and accurately. It can be clearly seen through the weld root gap. RootGlo® absorbs enough energy during daylight hours to provide up to 20 hours of luminescence inside the joint.
- **PurgeGate®** is an addition to QuickPurge® Systems that will prevent the inflatable dams from bursting due to excess pressure or flow.

HEALTH AND SAFETY:

Using QuickPurge® will avoid the filling of complete pipe systems with argon, reducing cost and obviating a risk to life, when releasing a pipe system full of argon at the end of a weld.

Key applications include weld purging of weld joints from 6 to 88" (152 to 2,235 mm) in fields including refineries, mining operations, power stations, LNG terminals, compressor stations, LNG carriers, pipelines, biomass systems and all process industry joints in tubes, pipes and vessels.

FEATURES:

- QuickPurge® is manufactured from a heat resistant material so that the high temperatures at close proximity to the weld do not damage the devices.
- Leak tight quick fit coupling for purge / inflation hose are complete with "o" ring for gas tight sealing and stainless steel collet to hold the tube mechanically tight. Also fitted with "anti-release" circlip to prevent parts accidentally separating inside the pipe.
- Light weight, allowing easy insertion, easy positioning and easy movement from joint to joint.
- Special attention has been paid to the selection of low vapour pressure materials to minimise outgassing in the purge space during welding, giving greater assurance of obtaining a clean, oxide free weld root.
- The unique design of the central sleeve dramatically reduces purge volumes.
- QuickPurge® Systems are ready to use with little set-up time.
- Perfect central alignment and weld root observation with the new RootGlo® centring band.
- There are no metal parts in the proximity of the weld ensuring that NDT examination is not disrupted and there is no scratching of internal pipe surfaces.
- The weld purge gas is dispersed evenly through IntaCal® to avoid turbulence in the purge space.
- Four pull straps are manufactured on each dam, which are multiple stitched with tough kevlar thread, each with a breaking strain of over 1000 lbs, enables easy manipulation around bends and fittings as well as in straight pipes.
- Friction free coatings are applied to allow easy movement through pipes from one joint to another.
- Lower operating costs, with gas and time savings.

OPERATION:

The system has a large diameter sleeve to reduce the volume to be purged and this connects to its two inflatable dams that isolate the purge volume.

Inside this sleeve is a black hose for inert purge gas entry, which is connected to the new IntaCal® system. There are no complicated valves to set.

There is an additional hose (blue) for auxiliary purging with extra inert gas, plus a **Weld Purge Monitor®** hose (red) that connects directly to any one of the **PurgeEye®** Weld Purge Monitors®.

Once inserted and positioned, the QuickPurge® System is inflated by the inert purge gas supply to seal the dam ends, after which the excess gas purges the interspace.

The two inflatable end dams seal the purge zone with gas tight seals to prevent any ingress of air during the root pass, the hot pass, right through to the end of any post weld heat treatment.

No contamination can reach the inside of the weld zone and it is highly unlikely that there can be any weld failures attributable to root oxidation.

QuickPurge® is the perfect choice for the golden welds, as well as all other welds in stainless, duplex, titanium and nickel alloy pipes.

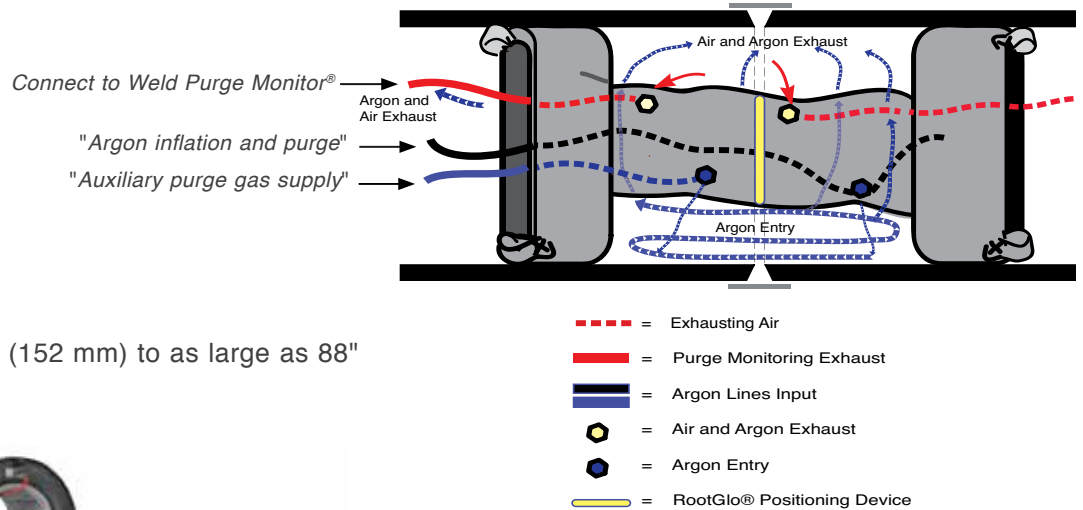
When welding chrome steel and high strength stainless steel joints, our HotPurge® range is recommended due to the requirements for preheating and post heating (see separate literature for more information).



SPECIFICATION:

- Range from 6 to 88" (152 to 2,235 mm).
- Most sizes are kept in stock for immediate delivery.
- Rugged material, no outgassing, high temperature resistant and friction free to allow easy movement through pipes.
- Operating temperature 250°C (482°F) continuous use and up to 280°C (536°F) for short periods. (HotPurge™ Systems are recommended for use where temperatures could be as high as 760°C).
- RootGlo® central band will glow up to 20 hours after exposure to daylight.
- As standard, PurgeGate® is fitted to all systems and protects the inflatable dams from bursting due to over pressurisation. QuickPurge® is really the easiest 'plug and play' system available for tube, pipe, vessel and pipeline weld purging.
- Purge gas release system IntaCal® prevents complicated valve setting, ensuring the inert gas is dispersed evenly and helps eliminate over inflation of the dams.

Typical installation of a standard QuickPurge® System



Sizes from as small as 6" (152 mm) to as large as 88" (2,235 mm).



1. The QuickPurge® System is positioned using the pull straps.
2. It is inflated using the same inert gas source for purging.
3. Once the purging system is inflated and seals in the pipe, the air space is purged by the inert gas, displacing the air between the dams to the outside via the exhausts, until the oxygen reading on your Weld Purge Monitor® is low enough to commence welding.
4. During welding, the flow rate of inert gas should be maintained, to purge any unusual outgassing around the weld zone caused by increasing temperature.
5. When the weld is completed and allowed to cool below oxidation temperature, the purge gas hose can be disconnected.

The system then auto-deflates and is removed using the pull straps.

Do not use makeshift or homemade devices like cardboard dams or foam bungs. They contain a lot of water, water vapour and air, putting your weld at risk and end up costing you more money.



RootGlo® to position QuickPurge® in pipe





HotPurge®

Pipe Weld Purging Systems for Heat Treated Chrome and High Strength Stainless Steels



with PurgeGate®



INTRODUCTION:

A wide range of high strength steels containing chromium, vanadium and molybdenum as alloying elements (generally referred to as CMV steels) is prone to cracking during welding.

The crack tendency can be reduced by a combination of preheat and post weld heating since this prevents steep temperature excursions and the formation of brittle and undesirable intermetallic phases.

Pre- and post-weld heating is required to prevent cracking of many ferritic and martensitic steels.

Ferritic stainless steels have a chromium content in the range of 11-28% and commonly used in alloys including the 430 and 407 grades. These alloys exhibit poor heat affected zone (HAZ) toughness and preheating will reduce the HAZ cooling rate, maintain the weld metal above the ductile-brittle transition temperature and may reduce residual stresses. Preheat temperature should be within the range 50 - 250°C depending on material composition.

The most common martensitic alloys e.g. type 410, have a moderate chromium content of 12-18% and this type of stainless steel is very prone to hydrogen cracking. The risk of cracking can be reduced by preheating to between 200°C and 300°C and by carrying out post-weld heat treatment, typically at 650-750°C.

HotPurge® Pipe Weld Purging Systems for Heat Treated Chrome and High Strength Stainless Steels have been developed so that preheating, welding and post-weld heat treatment (PWHT) can be carried out with the purge system in place.

The systems are suitable for use where temperatures may exceed 300°C (572°F) for up to 24 hours.

KEY FEATURES:

HotPurge® is now fitted with **PurgeGate®** which guarantees that the systems will never burst due to over inflation.

Each system incorporates RootGlo®, a band around the centre, for positioning purposes, which will glow up to 20 hours inside the pipe after only 10 minutes exposure to light.

IntaCal® technology eliminates complicated valves and valve setting procedures.

The Inflatable Dams provide an excellent leak tight seal at both ends of the purge zone.

Each system is manufactured to meet a specified internal diameter and has an expansion range of ± 12 mm.

All purging systems are re-usable.

AVAILABLE SIZES:

The Argweld® **HotPurge®** Systems are available in sizes from 6 to 88" (152 - 2,235 mm).

OPERATION:

The system is connected to an inert gas supply and inserted into the pipe to be welded.

The two inflatable dams are connected by an extra long sleeve so that they sit at the outer edge of the zone being heat treated.

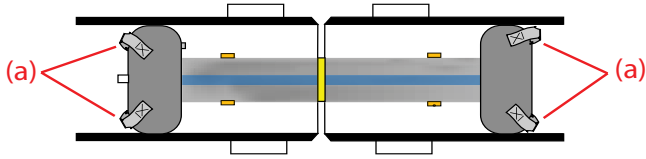
After positioning the system the argon source is opened, the dams inflate to size and the interspace is purged.

The purge will remain on during preheat, welding and post weld heat treatment.

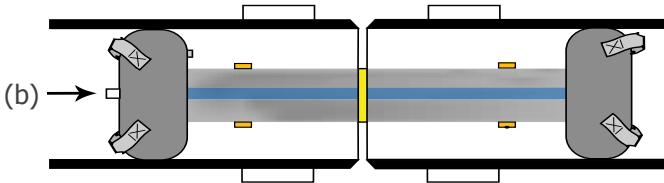
Do not use makeshift or homemade devices like cardboard dams or foam bungs. They contain a lot of water, water vapour and air, putting your weld at risk and end up costing you more money. Use the proper tools for the job!

FIVE SIMPLE STEPS FOR PERFECT RESULTS, EVERY TIME:

1. The Argweld® **HotPurge**® is positioned using the heat resistant pull tags (a).

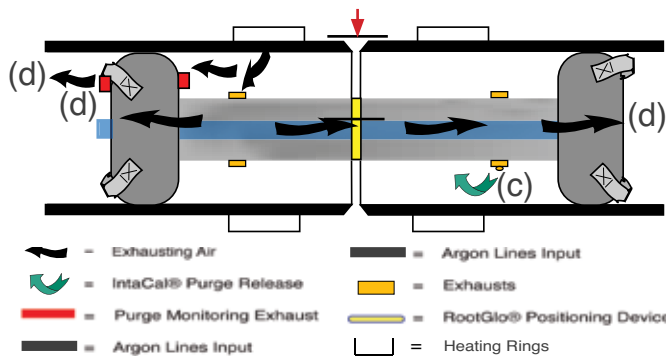


2. The **HotPurge**™ is inflated using the inert gas supply (b).

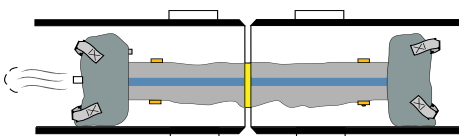


3. Once the Argweld® **HotPurge**® is inflated, the pressure opens the purge valve (c), the air space is purged by the inert gas, displacing the air between the dams to the outside (d). At the required oxygen level, the joint is ready for welding.

Joint gap normally taped for purging and removed inch by inch during root welding.



4. During welding an appropriate flow rate of inert gas should be maintained.
5. When the weld is completed and the pwht cycle has finished, the pipe should be allowed to cool below its oxidation temperature at which point the purge gas supply can be closed. Disconnect the hose to deflate the system, which can then be removed.



Another perfect pipe weld!

Argweld® PurgEye® 100 IP65 Weld Purge Monitor®

Before welding can begin using an inert gas, it is essential to know that the oxygen level at the weld area has been reduced to a satisfactorily low level.

The **PurgEye® 100 IP65** is specifically designed to measure oxygen content in weld purge gas down to 0.01%. For alloy steels an oxygen content below 0.01% is normally considered suitable to ensure that there is no oxidation of the weld.

The waiting time is dramatically reduced and by watching the Weld Purge Monitor® it will ensure that no oxygen has entered the weld zone while the metal is still hot.

Measure the oxygen content of the purged volume reliably and accurately.



Also use PurgEye®100 IP65 to measure your inert gas supplies to ensure that they are to the purity that has been ordered.

Weld Purge Dams

INFLATABLE TUBE and PIPE PURGING SYSTEMS



© HFT®

Professionally designed and manufactured **Argweld® Weld Purge Dams**. Buy the proper tools for the job and eliminate those sponge and expensive home made dams that will provide poor results.

HFT® Inflatable Purge Dams seal effectively all round the pipe, they do not outgas or allow oxygen or water vapour to pass through. These will help you to achieve zero colour welds much faster and for much less money!

They can be used for closure welds, T piece joints and dome end connections, where a conventional Tandem Weld Purging System cannot be used.

Each Weld Purge Dam provides an excellent grip in the pipe with an effective all-round seal.

Manufactured for pipe diameters from 6 - 96 inch (150 mm up to 2,440 mm).

Standard Weld Purge Dams are heat resistant up to 90°C (194°F), however, they can also be manufactured in different fabric for very high temperature applications.

Each Weld Purge Dam is easy to inflate using the purge gas. Once the Dam is inflated and seals all around the internal circumference of the pipe, the excess purge gas

spills out and purges the space around the weld joint, which then pushes the air out into the open atmosphere.

Each Weld Purge Dam is equipped with a purge / inflation hose (black), an extra purge gas hose (blue) as well as an exhaust for connecting a Weld Purge Monitor® (red).

Four pull loops are located around the circumference of the Weld Purge Dam.

It is not always practical to use a complete Inflatable Tandem Weld Purging System, so these easy to insert and easy to use, made from the correct materials for weld purging, are much more suitable.

Weld Purge Dams can be purchased for any diameter within their manufacturing range and can be used in connection with other styles or sizes of dams elsewhere within the piping system.

Now there is no more reason to put welds at risk by using cheaper materials, when for a very low cost, professionally designed and manufactured Inflatable Weld Purge Dams can be purchased instead.

USE AN ENGINEERED SOLUTION and ELIMINATE:

- Wasted time making foam plugs or similar dams made from unsuitable materials for weld purging.
- Weld coking.
- Oxidation.
- Weld root contamination.
- Weld cut-outs.
- Loss of corrosion resistance.
- Other issues that might occur as a result of using wood, masking tape, foam or other unsuitable materials that can release massive amounts of air, oxygen, hydrogen, carbon, gases and water into the weld zone during the welding process.

Apart from the benefit of having a metallurgically sound weld, the difficulties of cleaning an oxidised weld are eliminated, saving vast amounts of money in labour and material costs as well as the disposal costs where acids are concerned.

HEAT RESISTANT DAMS:

For applications where temperatures might reach as high as 760°C(1,400°F), such as welding chrome steels or high strength stainless steels, Argweld® Heat Resistant Dams are available.

Can be used in conjunction with:

ARGWELD® PURGEYE® 100 IP65



MAIN FEATURES:

- New IP65 dustproof and waterproof accredited.
- Vacuum brazed stainless steel probe assembly.
- Robust carry / presentation storage case.
- Auto safety break wrist or neck carry strap.
- Push button 'auto calibration' feature.
- Low battery indicator and low sensor indicator.
- Enlarged screen and larger digits.
- Tripod mount.
- Protective rubber cover (optional).
- Special leak tight quick connect/disconnect fittings for gas purge tubing.
- Automatic sleep mode when not in use.



Heat Resistant Covers

for Inflatable Tube and Pipe
Purging Systems **PurgElite®**
and other similar models



INTRODUCTION:

Now that the popularity of the **PurgElite®** Systems has been established, we have released Heat Resistant Covers as accessories, to protect the systems for applications where the temperature of the metal near the dams is likely to exceed 80°C (176°F).

Argweld® Heat Resistant Covers are designed to prevent damage to the **PurgElite®** and **PurgExtra™** Inflatable Tube and Pipe Purging Systems, in particular when they are exposed to temperatures of up to 300°C (572°F).

These specially designed Heat Resistant Covers can endure such high temperatures, which protects the inflatable dams, preventing them being damaged or bursting.

These Heat Resistant Covers provide a simple, low cost solution to help to make the cleanest, non-oxidised, zero colour welds.

Like the purging systems, the Heat Resistant Covers are reusable time and time again, without losing their heat protecting properties.

The **HFT® HotPurge®** Systems are very popular for heat-treated pipework, however it is not possible to manufacture this design for diameters below 6", which is one reason for providing Heat Resistant Covers for the **PurgElite®** Systems.

The Heat Resistant Covers are usually provided as pairs, although they can be purchased individually in case of damage or loss.

MAIN FEATURES:

- The Heat Resistant Covers have a temperature resistance up to 300°C (572°F).
- They are available for **PurgElite®** and **PurgExtra™** Systems, sizes ranging from 1 to 24" (25 to 600 mm).
- Ties on each Heat Resistant Cover ensure they are held securely to the Inflatable Tube and Pipe Purging System.
- Holes are designed and manufactured on each Heat Resistant Cover for the **PurgElite®** fittings, such as inlet, exhaust, **Weld Purge Monitor®** connection and crimped end.
- The Heat Resistant Covers are sold as a set of two, however individual ones can be purchased if necessary.
- Heat Resistant Covers can also be manufactured for any other make of Inflatable Tube and Pipe Purging System.
- **PurgElite®** Systems can be manufactured with longer spinal hoses, so that the dams sit further to the outside of the heat treated zone, where the temperature has cooled sufficiently to suit the dams and any heat protecting material used.

Argon Gas Feed Hose and Fittings



Huntingdon Fusion Techniques HFT® now manufactures tailor made Argon Gas Feed Hoses complete with end fittings to attach immediately to the Argweld® Range of Tube and Pipe Weld Purging Systems: PurgElite®, QuickPurge®, HotPurge®.

These high quality hoses can be supplied to all other TIG/ GTAW welders, with their own special fittings as required.

This special, high quality Argon Gas Feed Hose, complete with leak tight end fittings, provides end users with a guaranteed method to feed non contaminated argon gas to a weld zone.

Argon Gas Feed Hose is available off the shelf complete with end fittings in a standard range of lengths, 30 m, 25 m, 15 m, 20 m, 10 m and 5 m.

Quality components are provided for attaching the hose to an argon gas regulator at one end and a selection of fittings for the other end. Specific fittings are available on request.

With our new high speed crimping machinery, we can tailor make your hoses to suit specific requirements, selecting from the range of fittings. If no option is given then we will fit a 12 mm to 12 mm adaptor as standard.

All of these high quality fittings will obviate any connection difficulties you might have on site, saving valuable hours in some cases while trying to source that special item that you need.

When you receive your hose, these connections and our crimping machinery will ensure that you have a leak tight product that puts you into action immediately.

Within the family range of Argweld® Purging Products, Argon Feed Hose Assemblies and Fittings are available from Huntingdon Fusion Techniques HFT®. All of our products are made to a high quality and standard and are the best quality available for argon gas use.

MAIN FEATURES:

- No leaks and no dirty welds because of leaks.
- The Gas Feed Hose is manufactured for use within a temperature range from -30°C up to +80°C and conforms to BS EN 559.
- The safety factor of the Argon Gas Feed Hose is 3 times working pressure, 20 bar (300 psi).
- Each hose has a smooth black natural rubber finish. Natural rubber has mechanical properties making it particularly appreciated in environments subject to heavy wear due to friction.
- Argon Gas Feed Hose fittings also suit all Weld Purge Systems.
- Use only top quality to feed your argon gas.

PurgeGate® for PurgElite®

and other Inflatable Tube and Pipe Weld Purge Systems



The PurgeGate® Valve is designed to fit onto HFT®'s PurgElite® Inflatable Tube and Pipe Weld Purging Systems as well as any other similar devices to prevent the dams bursting due to over inflation.

Inflatable Tube and Pipe Weld Purging Systems are at risk of overinflating during the weld purging process due to unwanted manipulation of gas pressure and flow settings.

PurgeGate® Valves will prevent unwanted and undesirable changes from causing weld failure due to lost purge as a result of dam burst.

These fit all system sizes and can be moved from system to system as the weld size is changed.

The PurgeGate® is fitted as standard onto the range of QuickPurge® and HotPurge® Tube and Pipe Purging Systems.

OVERVIEW:

The PurgeGate® Valve System can be used with the PurgElite® Systems as well as any other manufacturers' versions of Inflatable Tube and Pipe Purging Systems to eliminate the risk of over-pressurising the pipe purging systems.

The valve system can fit all system sizes (1" to 96") and can be moved from system to system.

KEY FEATURES:

- PurgeGate® regulates the gas flow during purging to prevent the Inflatable Tube and Pipe Purging Systems from over inflating.
- Fitted as standard to QuickPurge® and HotPurge® (PurgeGate® II).
- An accessory to be purchased separately for PurgElite® as well as for any other type of Inflatable Tube and Pipe Purging Systems.
- They can be purchased individually.
- Easy push fit connection.
- Simply plug and play.
- They fit all system sizes (1" to 96").
- The PurgeGate® Valve is reusable and can easily be moved from system to system.
- The PurgeGate® Valve is not suitable for Inflatable Stoppers.
- It is important to connect the PurgeGate® in the correct direction with the arrow shown, pointing in the direction of the purge gas flow.

Water Soluble Weld Purge Film®



For the manufacture of water soluble pipe purging dams, Argweld® **Weld Purge Film®** and Argweld® **Super Weld Purge Adhesive®** is an easy and cost effective solution.

The use of water soluble film for manufacture of purging dams is well proven and the Argweld® **Water Soluble Weld Purge Film®** gives superior results over all other water soluble products. It can be used for stainless, duplex and chrome steels as well as titanium.

The Argweld® **Water Soluble Weld Purge Film®** and Argweld® **Super Weld Purge Adhesive®** material makes dams which produce an impenetrable purge barrier but which can easily be washed away when hydrostatically testing the pipe or just by normal wash out.

It dissolves away completely without leaving any fibres to clog up filters or other sensitive parts in a system and it is strong in all directions so that it can maintain a good, leak tight gas barrier throughout the purging process.

Trace element certification can be provided to show that Argweld® **Water Soluble Weld Purge Film®** does not contain any harmful elements and that the quantity of halides is well below the permissible levels. The film and adhesive are completely biodegradable and all packaging materials are recyclable.

APPLICATIONS

- Where Mechanical Purging Devices cannot be retrieved.
- See the weld root clearly by using Argweld® **Water Soluble Weld Purge Film®**.
- Argweld® **Water Soluble Weld Purge Film®** can be used up to 300°C (572°F) without the material burning and losing the weld purge.
- Make tough impenetrable weld purge dams with Argweld® **Water Soluble Weld Purge Film®** and Argweld® **Water Soluble Super Adhesive®**.
- No more dams coming loose and lost purge gas during welding.
- Approved for use in nuclear environments.
- Significantly lower priced than other water soluble materials.
- The Argweld® **Water Soluble Weld Purge Film®** has been designed and developed by Huntingdon Fusion Techniques HFT® as a complete kit.
- Each kit is supplied ready for use containing 20 square meters (215 square feet) of Argweld® **Water Soluble Weld Purge Film®**, two bottles of Argweld® **Super Weld Purge Adhesive®**, a Safety Knife for cutting out the dams and a user instruction manual.

A video presentation giving instructions on 'how to use' is also available.

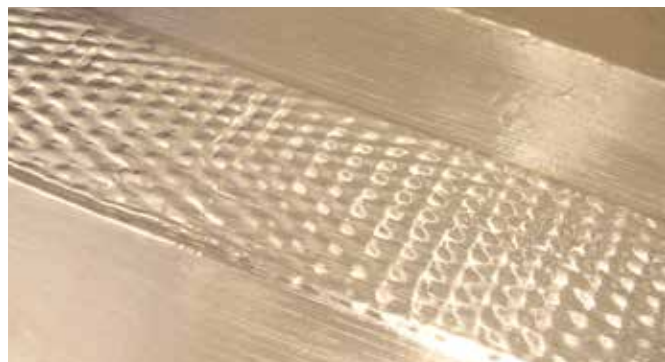
Weld Backing Tape[®] & Weld Purge Tape[®]



© HFT[®]

To reduce welding costs when joining linear or circumferential seams, a backing tape can be applied to the rear of the weld seam allowing the molten metal to be cast onto the glass fibre matting leaving a smooth, coke free weld root.

Huntingdon Fusion Techniques HFT[®], manufactures three grades of backing tape, suitable for different weld current levels.



Picture above: a close up shot of the 25 mm wide glass fibre matting affixed to the 75 mm wide adhesive aluminium tape, applied so that no air pockets are trapped underneath the foil.

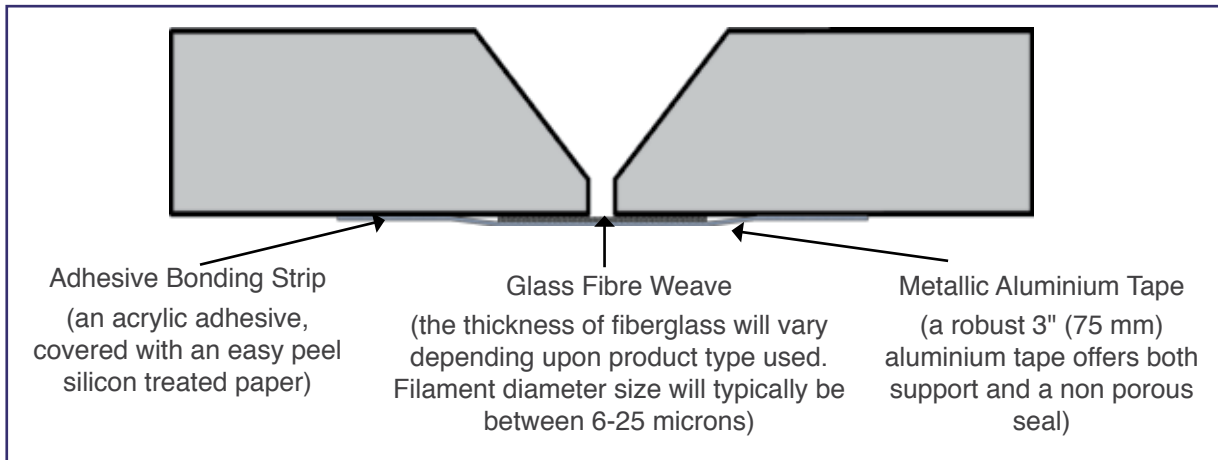
A light duty grade for welding up to 80 Amps, a medium current version for welding up to 160 Amps and a heavy duty grade for welding up to 240 Amps.

KEY ADVANTAGES

- 1.5 mm (1/16") thick fibre glass band.
- Typical for welding up to 80 amps with TIG/GTAW.
- Can be used with any arc welding process.
- Weld is cast flat onto the fibre band leaving a smooth, coke free surface.
- Welding can be carried out by operatives with lower skill levels.
- The amount of weld root grinding and cleaning is minimised, giving a significant financial saving.
- Allows faster welding thus saving more time and money. Other advantages will be highlighted later in this leaflet
- Tape rolled up and delivered in a multilingual labelled box complete with user instructions

APPLYING THE BACKING TAPE:

The following illustration is a typical profile, showing the correct application of the Argweld® **Weld Backing Tape**®.



Step 1: Simply stick the tape onto the pre-cleaned weld joint area.



Step 3: Remove the tape to see a flat, well formed bead



*Step 2: Weld onto the Argweld® **Purge Tape**®*

ADDITIONAL / SUPPORTING LITERATURE:

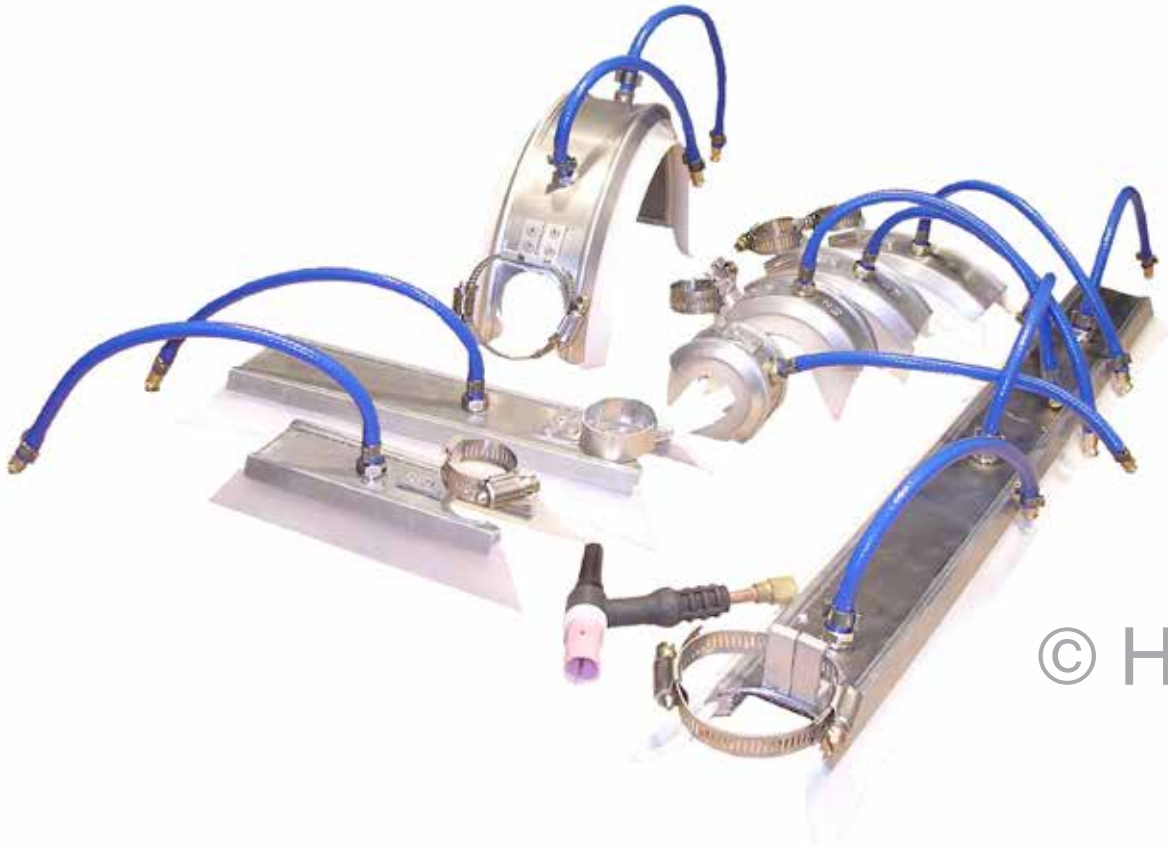
As with all of our other products we also have for the Argweld® **Weld Backing Tape**®:

- A material safety data sheet
- An application guide
- Training poster
- User list
- Technical papers (as published in The Fabricator and Welding & Cutting)

All are available at request. Sample packs are available by contacting HFT® with a description of your application. The sample pack contains a small trial strip of each grade of **Weld Backing Tape**®.

Weld Trailing Shields®

for Titanium and Stainless Steel Welding



© HFT®

It comes as a surprise to many that inert gas is probably the highest cost consumable in welding, second only to the cost of filler wire. More important then, that control is exercised when inert gas is used in weld purging.

The most efficient purge systems minimise the use of inert gas. HFT® Trailing Shield® system design is such that gas used is carefully controlled. There is virtually no loss due to leakage and turbulence.

Argweld® **Trailing Shields®** are designed for high quality gas coverage of titanium and stainless steel during welding to prevent oxidation and weld defects.

They will fit any make of TIG (GTAW) or plasma (PAW) welding torch for manual or automatic welding, on flat sheet or plate and the outsides or insides of tubes or pipes.

For pipes and vessels the radiused versions for welding from the outside are manufactured to suit all diameters from 1 inch and upwards.

For welding pipes and vessels on the inside, the internally radiused shields are manufactured to suit diameters from 4" upwards.

By using an Argweld® Trailing Shield® welds will be left bright and shiny and eliminate discolouration and oxidation.

The gasket is resistant to temperatures up to 230°C.

Argweld® Trailing Shields® will reduce gas consumption, save re-work and eliminate wasted material costs due to oxidation and weld defects.

Argweld® Trailing Shields® can be used for welding stainless steels, duplexes as well as titanium and zirconium and any other weldable metal where discolouration or oxidation needs to be eliminated.

User Quotes:

"Easier to use than you would think".

"The best advantage is that it keeps the weld torch 90° to the weld pool".

The radiused models are provided to suit the exact diameter of pipe or vessel being welded.

ARGWELD® TRAILING SHIELDS® for AUTOMATIC WELDING TORCHES



Huntingdon Fusion Techniques HFT®, manufactures Trailing Shields® for Automatic TIG (GTAW) and plasma (PAW) welding applications, as well as for manual welding torches.

The Trailing Shields® for automatic welding applications are longer and wider than those for manual welding. They have additional gas hoses for extra gas shielding necessary for the faster welding speeds encountered with automatic welding techniques.

Special widths and lengths are available on request.



The picture above shows a typical radiused Trailing Shield® for the internal manual welding of pipes and vessels on the left.

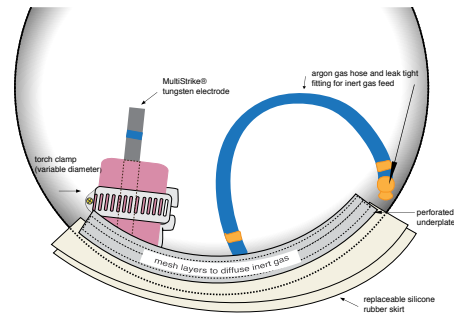
The channels in which the replaceable silicone gasket are located, can be clearly seen.

On the right is a Trailing Shield® for an automatic welding torch to weld outside diameters of pipes and vessels, showing the multiple shield gas hoses.

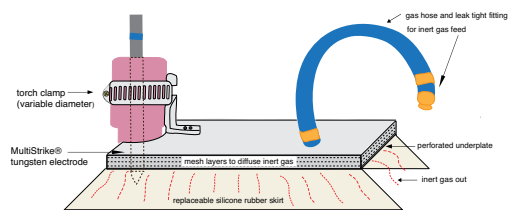
All shield gas hoses are fitted with non return valves so that the gas supply is isolated as soon as the trailing shields are unplugged from the gas supply.

The silicone rubber gaskets, wear, burn and become brittle during use (you will need to replace the gaskets from time to time). They are available either prefabricated to length or as continuous strips, available by the metre length. These are regarded as a consumable.

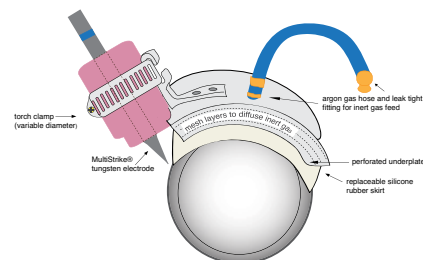
TYPICAL I.D. RADIUS TRAILING SHIELD® APPLICATION (from 4" i.d. upwards)



TYPICAL FLAT TRAILING SHIELD® APPLICATION



TYPICAL O.D. RADIUS TRAILING SHIELD® APPLICATION (from 1" o.d. upwards)



© HFT®

New 1.6 inch (40 mm) long Trailing Shield®.

Flexible Welding Enclosures®



HUNTINGDON FUSION
TECHNIQUES ■ HFT



The Argweld® range of **Flexible Welding Enclosures®** has been designed for applications where a rigid chamber may not be economically viable or where space may be at a premium.

Typical applications include the occasional and production welding of titanium and nickel alloy components for the aerospace, medical and racing car industries and for the welding of stainless steel components to eliminate the expensive cleaning of discolouration.

Apart from the standard models, special enclosures are designed and manufactured to suit all applications. Experience is available of nuclear and chemical industry applications for the handling of a wide range of products and materials, as well as in the pipeline industry with clam shell models to fit on and off pipes.

Enclosures are also designed for “Additive Manufacturing” applications where the melting source might be tig welding or laser.

STANDARD ENCLOSURES (MM)

Diameter:	920	1200	1530	1830
Side Height:	450	550	550	550
Overall Height:	550	800	800	800
Top Panel:	200	450	450	450



SPECIFICATION:

- Each enclosure contains an argon entry port and an exhaust valve to vent displaced gas to atmosphere.
- Two pairs of sleeves and gloves are fitted to each enclosure and the glove ports are fitted with drawstrings to prevent the gloves and sleeves from blowing out and helping to reduce the risk of damage by passing objects or people.
- The vertical sides of the enclosure are made from translucent plastic, while the top is constructed from an optically clear plastic to provide total visibility.
- The plastic used for Argweld® Flexible Welding Enclosures® is rugged and strong and is resistant against ultraviolet hardening and damage.
- A standard entry zip is provided together with a service panel having feed-throughs for welding torch, earth cable, electrical wires for manipulators, etc. and water cooling pipes should they be needed.
- An additional feed-through is provided for a welding torch on the opposite side of the service panel, so that both left handed and right handed welders can work without having a long weld torch cable doubled up in front of them.
- Each enclosure is provided with a repair kit to allow on site repairs in the event of accidental damage.
- A standard posting port with purge gas hose entry port and vent is fitted to each model to allow small objects to be transferred into the enclosure without disturbing the quality of the purge environment. The standard port comprises a 600 mm long sleeve of 230 mm width when flat.

OPTIONS:

- Extra pairs of glove ports.
- Special lock for the purging port to maintain purge argon in the chamber.
- Other sizes and shapes are available as non standard items on special request.

RECTANGULAR ENCLOSURES

Large Posting Ports (ante chambers) • Lengths of 900, 1200, 1500 and 1800 mm • 3 sets of glove ports with sleeves and gloves • These and other specials available on request



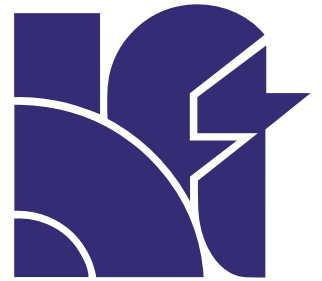
Note: We do not supply the internal metal base plate, the internal purge line or the external stand to support the enclosure.

Flexible Welding Enclosure® for Titanium Additive Manufacturing



Weld Purge Plugs™

FOR ORBITAL WELDING



HUNTINGDON FUSION
TECHNIQUES ■ HFT



PIPE PURGING SYSTEMS

When other purge systems or purge film cannot be used to make a suitable barrier for purging pipes, tubes or fittings, the Argweld® **Weld Purge Plugs™** may offer a satisfactory option.

The Weld Purge Plugs™ can be used for small or odd diameter pipes where purge system or dam systems may not be available or practical.

TYPICAL PURGING APPLICATIONS INCLUDE:

- Short, complicated, variable size assemblies where purging systems or dams would be too long or do not match the diameters being worked on.
- The expanding rubber seal allows the plugs to be used for weld purging oval and out of round tubes as well as in elbows, tees and other fittings.
- These plugs are also ideal for creating an air-tight seal for leak testing operations.

FEATURES:

- Made from engineering quality nylon up to 150 mm (6") diameter.
- Virtually shatter-proof.
- Easily cleaned.
- Will not rust or corrode.
- A friction-reducing acetal copolymer thrust washer inserted between the top plate and wing nut provides easy expansion and release.
- Larger sizes incorporate strengthening ribs to provide rigidity in use.
- Standard seals made from natural rubber with silicone and nitrile rubber alternatives.
- All plugs conform to British Standards BS 8005 for low pressure testing and sealing of pipes.

TECHNICAL INFORMATION:

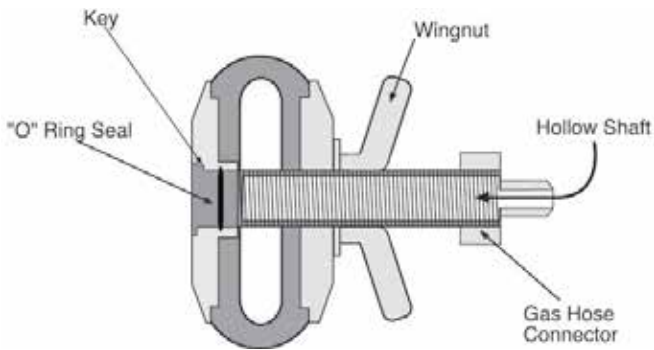
Increasing use of internal inert gas purging for process and hygienic stainless steel pipework has called for additional dams which help operators achieve an air tight seal.

The Argweld® **Weld Purge Plugs™** offer a useful alternative for small bore pipework. They can also be used for leak testing.

0.5", 0.75", 1", 1.25" and 1.5" plugs can be delivered with a solid stem or a hollow shaft.

The 0.5", 0.75", 1", 1.25" and 1.5" hollow shaft plugs have a 10 mm thread on the outside of the shaft.

The 1.5", 2", 2.5", 3", 3.5", 4", 4.5", 5" and 6" all have 0.5" BSP shaft.



ORBITAL WELDING KIT:

The purge plug kit for Orbital welding is specifically designed for the weld purging of stainless steel pipework.

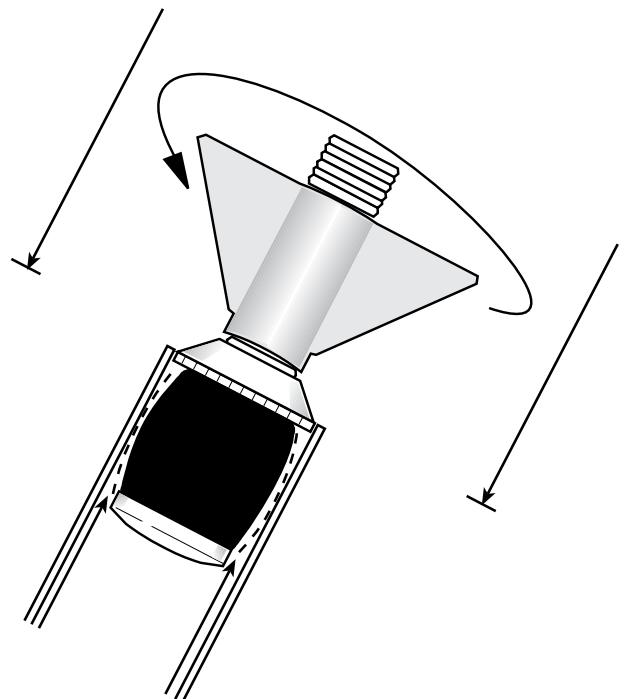
The kit contains two of each plug and ranges from ½" through to 4". Also included are four ½" BSP nipple caps and four ½" BSP swivel nut and hose tail.



ARGWELD® NYLON PURGE PLUG RANGE:

Size		Weight gms	Outside measurement			
Inch	mm		Unexpanded		Max. expansion	
			Inch	mm	Inch	mm
0.5	12.7	10	0.47	12	0.62	16
0.75	19.0	15	0.70	18	0.94	24
1.0	25.4	20	0.90	23	1.25	32
1.25	31.8	35	1.22	31	1.65	42
1.5	38.1	45	1.45	37	1.69	54
2.0	50.8	80	1.88	48	2.55	65
2.5	63.5	130	2.36	60	3.03	77
3.0	76.2	140	2.75	70	3.42	87
3.5	88.9	148	3.26	83	3.81	97
4.0	101.6	160	3.74	95	4.33	110
4.5	114.3	216	4.48	114	5.11	130
5.0	127.0	280	4.76	121	5.59	142
6.0	152.4	390	5.82	148	6.37	162

Note: Plugs are also available up to 36" (900 mm) diameter made from cast aluminium and available with 0.5", 1" and 2", (13 mm, 25 mm and 50 mm), BSP outlet. In addition plugs made of steel and inflatable plugs are available for up to 80" (2 meter) diameter.



Techweld® MultiStrike® TUNGSTEN ELECTRODES



Techweld® MultiStrike® Tungsten Electrodes have been developed with the health and safety of the end user in mind.

MultiStrike® Tungsten Electrodes generate up to 10 times the performance of 2% thoriated electrodes under identical conditions.

MultiStrike® Tungsten Electrodes lower the working temperature giving cooler welds.

The number of arc strikes is increased before regrinding is needed. MultiStrike® Tungsten Electrodes represent the highest quality, totally traceable, longest lasting and are the most reliable tungsten electrodes available.

They can be used for welding of steels and alloys with DC as well as aluminium with AC techniques giving narrower, lower heat input welds.

The carefully balanced mix of non-radiotoxic dopants used in MultiStrike® Tungsten Electrodes produces a 10 times greater performance than conventional thoriated tungsten electrodes and provide a stable performance over the current range from 0 - 300 Amps.

SUMMARY OF MAIN FEATURES

For improved TIG welding of steels, aluminium and their alloys:

- Increased number of arc strikes before resharping is necessary.
- Contains no radioactive material, non-radiotoxic.
- Non thoriated, eliminates carcinogenic thoria.
- Non carcinogenic.
- Improved dopant distribution.
- Lowers the working temperature giving cooler welds.
- Special packaging gives guarantee of quality and traceability.
- Traceability with every tungsten.
- AC & DC welding.

MultiStrike® Tungsten Electrodes are totally traceable, each being identified by a batch number shown on the special packaging.

Immediate delivery is available for MultiStrike® Tungsten Electrodes.

TWICE THE STRIKING POWER

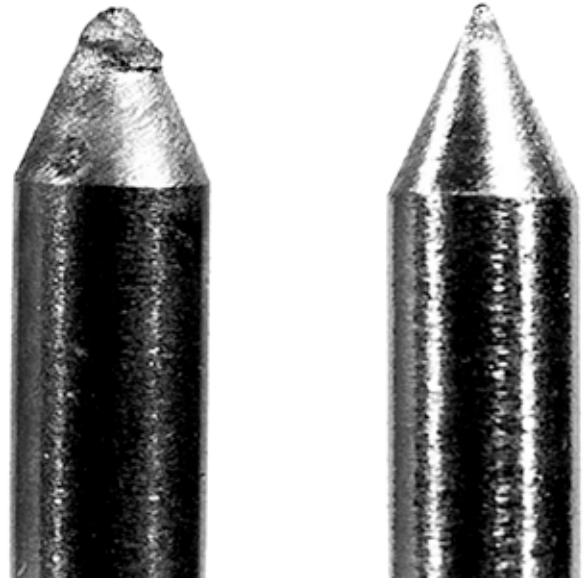
Because of growing concerns of potential hazards of ingestion of radioactive dust, MultiStrike® Tungsten Electrodes contain a rare earth dopant to replace thoria and eliminate the radioactive content.

The unique dopant content of MultiStrike® Tungsten Electrodes has only half the density of thoria. With the 2% of our dopant that is included, there is twice as much dopant and twice as much striking power than in thoriated tungstens.

The larger volume of dopant in MultiStrike® Tungsten Electrodes gives much improved distribution of the dopant itself.

Furthermore, these special electrodes give good welding results from low to high current levels.

MultiStrike® Tungsten Electrodes can be used on aluminium and its alloys as well as steels.



2% Thoriated Tungsten
after 20 automatic welds

MultiStrike® Tungsten
after 200+ welds

SPECIAL PACKAGING GUARANTEES QUALITY WITH EACH BATCH CONTROL

MultiStrike® Tungsten Electrodes always originate from the identical source, giving the user a guarantee of product quality, reliability, repeatability, consistency and traceability.

Each pack of 10 is supplied in special packaging which is your guarantee of **quality and traceability** every time.

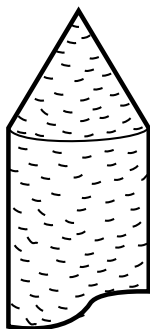


© HFT®

Radiation Monitor - low background radiation level



2% Thoriated Tungsten
showing risk of uneven thoria
distribution



MultiStrike® Tungsten
showing double the dopant
with even distribution



© HFT®



© HFT®

NO RADIO-ACTIVE ELEMENTS

Unlike tungsten-thoria, MultiStrike® Tungsten Electrodes contain no radioactive element. Where health and safety authorities or others are concerned about the radioactive or carcinogenic effects of thoria, MultiStrike® Tungsten Electrodes are a high quality alternative.



Radiation Monitor - Relatively high radiation level compared to MultiStrikes®

MULTISTRIKE®, A GREEN TUNGSTEN ELECTRODE, SAFE FOR USE, NON-TOXIC and NON-CARCINOGENIC

- **They are safer.** They do not contain radioactive thoria, known as a carcinogen.
- **They last longer.** Under most conditions, MultiStrike® Tungstens Electrodes should provide more than twice the number of starts than thoriated tungstens.
- **They do not generate as much heat.** Having a lower electron voltage potential than thoriated tungstens, MultiStrike® Tungsten Electrodes are especially useful for applications requiring low heat input, like orbital welding, micro-TIG and micro-plasma welding.
- **They require lower voltages.** MultiStrike® Tungstens Electrodes contain a special dopant which reduces the starting voltage needed to establish the arc.
- **They can reduce stocking costs.** The same electrodes can be used in some AC welding techniques as well as in DC welding.

If you are a New User.

- You may need to vary your welding current slightly to compensate for the MultiStrike® Tungsten Electrodes lower operating voltage and temperature.
- Check out the reliability, repeatability and reproducibility of the MultiStrike® Tungsten Electrodes.

5 REASONS TO USE MULTISTRIKE® TUNGSTENS



Radiation Monitor - shows comparison of radiation levels

1. Contain NO carcinogenic material.
2. For AC and DC welding.
3. Can be used on aluminium welding.
4. Increases the number of arc strikes before re-sharpening is necessary.
5. Lowers the working temperature giving cooler welds.



WORK FUNCTION - some specific background and science

The work function of a metal or alloy is the energy needed to remove an electron from Fermi level in the material to a point at an infinite distance outside the surface.

This is relevant to TIG welding since the lower the work function of an electrode, the lower the voltage necessary to strike an arc.

The work function of tungsten is 4.35 ev. Therefore, the addition of a stable metal oxide with a work function lower than pure tungsten, lowers the work function of the tungsten.

Thorium's work function is 3.4 ev.

The special blend of dopants in MultiStrike® Tungsten Electrodes has a work function of 2.9 ev.

Huntingdon Fusion Techniques HFT® special blend of dopants, along with its stringent in-house production specification ensure that the dopant is distributed evenly through the Techweld® MultiStrike® Tungsten Electrodes, maintaining an even performance from start to finish.

SEE WHAT OUR CUSTOMERS HAVE TO SAY....

Huntingdon Fusion Techniques HFT® have received numerous letters of praise from users, many of them major international manufacturers.

Here are some comments which have been received in writing to give you an idea of the benefits others have experienced using Techweld® MultiStrike®.

"We manufacture small pharmaceutical fittings using manual TIG welding and produce tube-tube joints using mechanised orbital welding. In both applications we have observed a four to five time improvement between re-grinding when replacing thoriated tungsten with your MultiStrike®." New York, USA.

"The number of arc strikes between re-sharpening is considerably greater with MultiStrike® than with thoriated electrodes. We also find the lower heat input is a benefit since we often weld in very close proximity to glass." Senior Production Engineer.

"The introduction of MultiStrike® has been welcomed by all our welding staff. The new electrodes are giving excellent results and demonstrating much improved strike characteristics. Although more expensive than the previous electrodes, their life is significantly longer which is expected to lead to long-term cost savings. We are also aware of the health and safety benefits of using non-thoriated electrodes." European Manufacturing Facility.

"We have tested your MultiStrike® under production conditions where we need to make short lengths welds using the TIG process. On a batch of 50 components only 2 light re-grinds were required compared to 7 heavy regrinds when using thoriated electrodes. Even when the welder occasionally touched the work with the electrode there was no material change in performance whereas we would normally expect to have to re-grind. Better weld quality and finish was observed. We were particularly impressed with the health and safety aspects and have taken the decision to remove all thoriated electrodes from site." Production Service Manager.

"We manufacture thin-walled hollow shaft products in type 316 stainless steel. Whereas with thoriated electrodes we regularly encounter problems with weld pitting which necessitates re-welding and often re-machining, this has been virtually eliminated when using MultiStrike®. Significant savings in the cost of post weld operations have been observed." Texas, USA.

"We have now had an opportunity to evaluate your MultiStrike® Electrodes and can report extended working life between re-grinds and improvement in initial strike rates. The most significant improvement however is in automatic machine use." Technical Manager.

"We use computer controlled equipment for hot wire cladding with stellite. With thoriated electrodes, we observed rapid contamination leading to regrinding after only 15/30 minutes. Using MultiStrike® has been a revelation since we can achieve 8 hours of work between regrinds. Savings in downtime have thus been significant." Welding Engineer, Brighouse, UK.



You will prefer using Techweld® MultiStrike® Tungsten Electrodes from Huntingdon Fusion Techniques HFT®.

REPEATABLE STRIKES EVERYTIME.....!

Techweld® MultiStrike® TEG-1000 Tungsten Electrode Grinder



© HFT®



FEATURES

Repeatable points every time

The use of the TEG-1000 Grinder will give repeatable Tungsten Electrode points every time, enabling consistent repeatable arc performance and welding results.

Axial grinding

By grinding the points longitudinally, the TEG-1000 eliminates arc flicker or wander.

Any diameters

Sizes from 1.0 to 3.2 mm can be ground using the multi hole tappet that is part of the grinder. Other diameters and short lengths can be ground by using the appropriate accessory tappets, collets and pin vice.

Return on Investment

The Grinder has been purpose designed and manufactured for the job. The cost saved in grinding wheels alone can provide rapid payback on the small outlay required to purchase this Grinder.

Prolonged Tungsten Electrode life

Savings can be achieved because of the increased life of properly ground Tungsten Electrodes. With the special collet accessory, shorter tungstens can be held, significantly increasing the life time of each Tungsten Electrode before it is discarded.

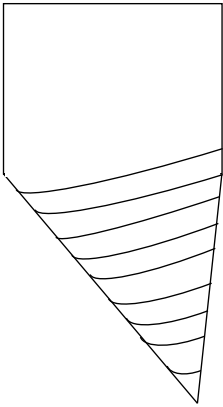
TIG welding requires Tungsten Electrodes with perfectly ground and polished tips. Huntingdon Fusion Techniques' TEG-1000 provides these, time-after-time, to exactly the same size and shape at low cost.

The diamond wheel grinds the Tungsten Electrodes longitudinally. This prevents arc flicker or wander caused by circumferential lines or ridges found on Tungsten Electrodes, which have been ground incorrectly.

With Tungsten Electrodes ground and polished, mechanised welding can produce identical, repeatable results every time. With manual welding the shape of the Tungsten Electrode is just as important. With a correctly-shaped tip, the arc can be precisely positioned with none of the preferential arcing experienced when using poorly shaped manually ground tips.

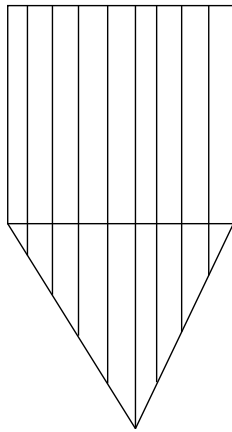
The TEG-1000 is a high performance tool that is an essential for every welding workshop where GTAW/TIG, Plasma/PAW or resistance welding processes are used.

Incorrect direction of grinding



Typical Tungsten Electrode tip by hand grinding

Correct direction of grinding



Tungsten Electrode tip from the TEG-1000 Grinder



4 Size collet holder for short tungstens (1.0mm, 1.6mm, 2.4mm and 3.2mm)



4 hole tappet and angle guide

MULTISTRIKE® TUNGSTEN ELECTRODES

MultiStrike® Tungsten Electrodes are the only fully traceable tungstens available. Many of our customers report that they perform better than other type of electrodes for the majority of TIG and plasma applications.

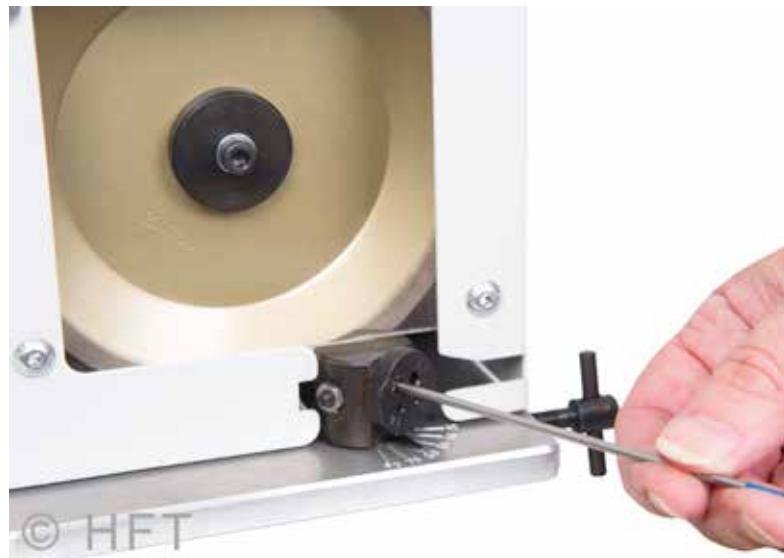
MultiStrike® are thoria free and environmentally friendly. When used in automatic and manual welding processes, operators experience less down time and can achieve full weld penetration with less heat input and up to ten times greater arc striking before re-grinding is necessary.

New MultiStrike® Tungstens work just as well on DC welding of steels as well as AC Welding of Aluminium. They perform much better than Zirconiated tungstens and last longer. One MultiStrike® Tungsten can be used for all GTAW/Tig, PAW/Plasma and resistance welding.



Various tappets and collets available for TEG-1000

- British manufactured.
- Quiet in operation.
- Separate on and off switches.
- CE Mark.
- 110 Volt and 220 Volt versions 50/60 Hz.
- Easy wheel replacement.
- Can be retrofitted to the new vacuum unit.
- Bench mounted system.
- Vacuum unit accessory gives safe and clean disposal of dry powder, no wet radioactive sludge to worry about.
- Easy to use collet and angle guide system.
- Integral handle making unit portable and easy to move to different locations.
- A published technical paper is available about tungsten electrode grinding, a copy of which is available upon request.



Worldwide Care and

Customer Support



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