

Flexible Welding Enclosures®



The increasing use of flexible enclosures as alternatives to welding individual parts one at a time, brings with it significant savings in inert gas use. Not a minor consideration when taking into account the high cost of argon and helium.

Flexible Enclosures® can be tailor made readily and quickly to suit the required volume so gas use is minimised. In conjunction with the advanced gas control systems now available from HFT inert gas consumption can be decimated.

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.

Typically used for the welding of any components or structures that may suffer from contact with air during the welding process, where shielding with local devices is not practical or possible.

Applications might range from the welding of titanium, nickel alloy, chrome steel material where exposure to air can cause structural defects to joints, to duplex and stainless items where post weld cleaning is such

a lengthy and expensive process. Flexible Welding Enclosures® can solve these and other problems along with reducing the cost of Argon or Helium.

SPECIAL ENCLOSURES

Apart from the standard models, special enclosures are designed and manufactured to suit all applications. Experience is available of additive manufacturing, nuclear, sports vehicle, aerospace, pipeline, medical 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.

We can design and manufacture any shape and size of flexible enclosure. See some examples in the next pages.

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

RECTANGULAR ENCLOSURES



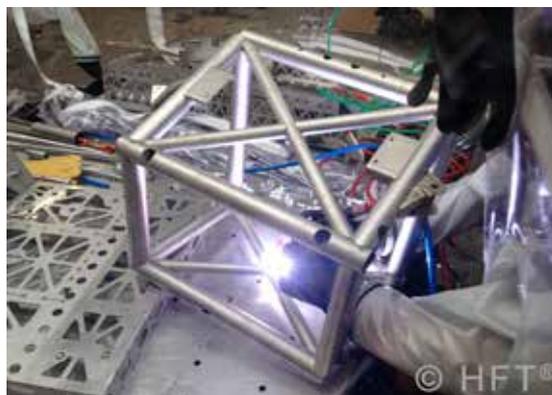
Large Posting Ports (ante chambers)
Lengths of 900, 1200, 1500 and 1800 mm
3 sets of glove ports with sleeves and gloves
These and other specials available on request



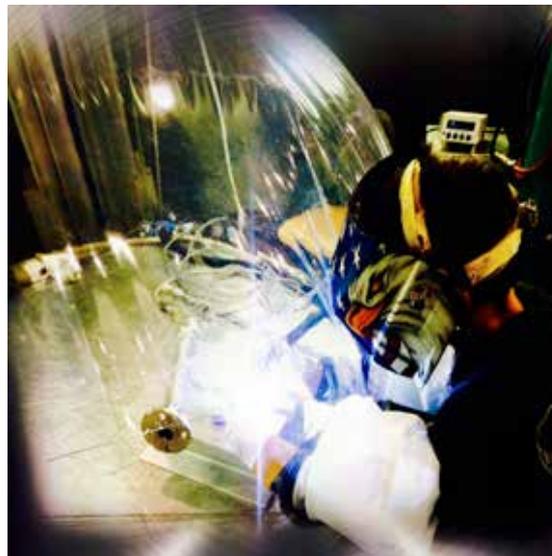
A specially designed welding enclosure for research purposes studying mechanised welding techniques for Titanium.



Titanium structure welded in an enclosure to provide bright shiny welds free of oxide discoloration.



Large volume Flexible Welding Enclosure® for manually welding structural joints.



CUSTOMER AFFADAVIT

“ We use our Argweld® Enclosure along with the PurgEye® Monitor® every day for our titanium welding. They are built to last.”

*Mark Cooper
Fabrication Manager
Shapes Aerospace International*



A production enclosure for manufacturing sports vehicle chassis with many joints welded in the same purging cycle.

SPECIFICATION

The Enclosures are supplied as a totally leak tight unit, with black pvc base welded to the translucent pvc walls and optically clear, transparent top section.

All entry/exit glands are sealed on shipment as are the zip(s), the ante-chamber and the auxiliary posting ports.

Each enclosure contains a welded service panel of feed-through ports (glands), including:

- Argon Entry Port.
- Earth/Ground cable.
- 2 water cooling ports.
- TIG/GTAW welding torch cable gland.
- Electric wires for manipulators etc.

This panel is close to the base, for convenience. In addition, the Flexible Welding Enclosures® have an exhaust port at the very top, with a one way valve to vent displaced gas to atmosphere, as the inert gas from below, pushes the unwanted gas to the top.

Two pairs of sleeves and gloves are fitted to each enclosure as standard 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 resistant against ultraviolet hardening and damage.

A standard entry zip is provided .

An additional feed-through is provided for a welding torch on the opposite side of the Enclosure, 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 in and out 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.

An additional exhaust port at the top of the enclosure, is provided for the Weld Purge Monitor® to be connected.

OPTIONS

- Extra pairs of glove ports.
- Special lock for the purging port to maintain argon purge in the enclosure.
- Other sizes and shapes are available as non standard items on special request.
- Different length zips available subject to wish and application.
- Alternative posting ports and antechambers are able to be added.

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

Part N°	Product Description	Diameter	Weight
Round			
AFE0900	fitted with 1430 mm zip	900 mm (36")	8 kg
AFE1200	fitted with 1900 mm zip	1200 mm (48")	8 kg
AFE1500	fitted with 1970 mm zip	1500 mm (60")	10 kg
AFE1800	fitted with 2300 mm zip	1800 mm (70")	10 kg

Rectangular (special made to order)

AFER900	fitted with 1430 mm zip	36"x36"x30"
AFER120	fitted with 1970 mm zip	48"x36"x30"
AFER150	fitted with 1970 mm zip	60"x36"x30"
AFER180	fitted with 1970 mm zip	72"x36"x30"



WELD PURGE MONITORING SYSTEMS



PurgEye® 100 IP65 for oxygen levels from 20.94% to 0.01% (100 ppm).



PurgEye® 200 IP65 Hand Held with PurgeNet™ new battery powered with an Integral sampling pump to drag samples across the sensor at regular, predetermined intervals. Measures down to 10 ppm oxygen. This model is also sealed against the ingress of water and dust, up to IP65 standard.



PurgEye® 300 Nano low cost entry level model for 1000 to 10 ppm oxygen. There are no controls to operate.



PurgEye® 500 Desk with PurgeNet™ similar to the PurgEye® 300 Plus but with an integral pump to take samples of exhaust gas at regular time intervals to be set by the user. Measuring range 1,000 to 10 ppm oxygen.



PurgEye® 600 Touch Screen fully computerised colour model with wireless USB download of recorded data from 1000 ppm down to 10 ppm oxygen. Measuring range from atmosphere (20.94%) to 10 ppm oxygen.



PurgEye® 1000 Remote with PurgeNet™. The 10 ppm oxygen sensing head can monitor up to 1 km away, providing immediate readings via the electronic cable.

PurgEye® 1500 Site IP68 with PurgeNet™. Specially designed to work on rugged construction sites with an indestructible case.

PURGENET™ ACCESSORIES



Visual Alarm Indicator

PurgeNet™ and PurgeLog™ connections

KEEPING IT CLEAN

Argweld® Flexible Weld Purging Enclosures® make it possible to weld stainless steels, titanium and other reactive alloys effectively without oxidation & discolouration

INTRODUCTION

There's not much that's new about Flexible Weld Purging Enclosures®. For more than a generation flexible welding enclosures have been a cost-effective way for welders to maintain an atmosphere that's entirely inert, which is necessary for fabricating products from sensitive materials that are used in many high-tech, high quality or safety-critical applications.

In the past, metal enclosures have been the most common choice for fabricators, even though such equipment has always been very expensive to produce and operate.

Now, as the demand for products fabricated from sensitive or reactive materials increases, the demand is rising for new designs to enclose welding processes.

An increasing number of companies that fabricate products in such metals are recognizing the benefits of the Flexible Weld Purging Enclosures®.



Welding titanium and other sensitive materials successfully requires an entirely clean and draught free work area

TITANIUM

To begin, welding titanium demands more care than usual. It's not impossible, but it's a particular skill.

Titanium is highly reactive. It will form compounds with undesirable elements. If the metal is heated in air, the surface of the part will gain carbides, nitrides, and oxides that may reduce the weld's fatigue resistance and notch toughness, as well as that of the heated zone.

According to titanium manufacturer Timet Corp., the techniques and equipment used to weld titanium are similar to those required for other high-performance materials (e.g., stainless steels or Ni-base alloys).



By contrast, titanium demands greater attention to cleanliness and to the use of auxiliary inert gas shielding than those materials.

“Molten titanium weld metal must be totally protected from contamination by air,” according to Timet, and ‘hot heat-affected zones and root sides of titanium welds must be shielded until temperatures drop below 800° F (427° C).”

Timet recommends welding of titanium be done in a separate, specifically designated area.

This area should be kept clean and isolated from dirt producing operations like grinding, torch cutting, and painting that may produce dust or other particulates. It should also be draught-free and humidity should be controlled.

Leading British weld purging ancillaries manufacturer Huntingdon Fusion Techniques (HFT®) reports significant sales of its flexible enclosures to global aerospace manufacturers involved in helicopter, bellows, spacecraft and fluid handling systems production, as well as top sports car and surgical product manufacturers and to Airlines for repair and maintenance applications.

CEO, Georgia Gascoyne notes, ‘We have been taken by surprise at the sudden surge in demand from these highly demanding fabricators although we have promoted our enclosures for these very applications for many years.

The HFT® enclosures are manufactured from UV resistant PVC and have proved to be extremely successful for welding with oxygen levels down to 10 parts per million. Aerospace companies are now placing orders for batches of six at a time so that they can meet production demands’.



The Flexible Weld Purging Enclosures® are manufactured as standard with two sets of glove ports but extra sets can be specified. The upper half of the enclosure is optically clear and provides excellent welding vision. An entry lock is fitted for small parts to be taken in and out without loss of purge quality. An exhaust valve allows continuous purging so that impurities can be expelled during welding.

STAINLESS STEELS

Although welding stainless steel components inside Flexible Welding Enclosures® is not a pre-requisite, the cost and time savings might be considered a justifiable reason to begin welding in totally inert atmospheres rather than pouring away expensive Argon gas by welding in ambient conditions and trying to shield from the front and purging the backside simultaneously.

Having examined the staggering cost differences of Argon from enclosure welding to ambient welding, by adding the savings of time in cleaning and/or pickling, there is another significant sum of money to be saved.

The purchase and disposal costs of pickling fluids needs to be taken into consideration as well as the costs of abrasives and polishing materials. A Return on Investment chart is available showing the extent of these enormous savings.



Robot welding system inside special Flexible Enclosure®.

For Additive Manufacturing and other automatic welding applications.



HUNTINGDON FUSION TECHNIQUES ■ HFT

Other HFT® Weld Purging Products

Argweld® Inflatable Tube Pipe & Pipeline Weld Purging Systems
Argweld® PurgEye® Weld Purge Monitors®
Argweld® Weld Purge Film® & Weld Purge Super Adhesive®
Argweld® Weld Backing Tape™ & Weld Purge Tape™
Argweld® Weld Trailing Shields®
Argweld® Flexible Welding Enclosures®
Argweld® Weld Purge Plugs™ & Orbital Welding Plugs
Techweld® MultiStrike® Tungsten Electrodes

Our HFT Pipestoppers® Division

Nylon, Aluminium, Steel and Rubber Pipe Plugs and Inflatable Stoppers

AFE LFT 8P AK01 06-10-2020 ME

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