



**ARGWELD® • TECHWELD™**  
SPECIALTY WELDING PRODUCTS



**COB**  
INDUSTRIES, INC.



THE ARGWELD® PURGE BLADDER SYSTEM IS BASED ON A SIMPLE IDEA. IT COMPRISES TWO PROTECTED BLADDERS CONNECTED BY A SPINAL TUBE. THE TUBE CARRIES THE GAS TO INFLATE THE BLADDERS AND RELEASE VALVE TO PURGE THE SPACE BETWEEN THEM.

## ARGWELD® PURGE BLADDERS

The system is inserted into the bore of the pipe or tube to be welded with one bladder either side of the weld joint. The bladders are inflated to form a seal, after which the pressure in the system opens the purge valve, the inert gas is then fed into the space between the bladders expelling the air. Welding can then be carried out, the inert gas ensuring a clean even penetration bead. Afterward, the bladders are deflated and the device easily removed.

This uniquely designed system means that only one inlet is required for both bladder inflation and introduction of the purge gas. The relief valve can be set to work at any desired flow up to 20 liters/minute. The relief valve can be set to inflate the bladders and purge the interspace simultaneously every time.

### FEATURES

Compared to other method of gas purging for pipe welding the Argweld® purge bladder system has a number of distinct advantages leading to big cost savings.

**Uses less inert gas.** The volume to be purged is localized. For a typical pipe run, the volume of gas used is less than 2 % of that required for a conventional purge.

**Faster.** The system is very quick and easy to install. It can be positioned accurately and the bladder inflates instantly. The purging time is a fraction of that required to purge by conventional methods.

**Easy to Use.** Argweld® purge bladders greatly simplify the process of inert gas purging. Training is minimal, leading to bright shiny welds very quickly.

**Improved quality of welds.** The process involved is highly reliable. It gives regular, controlled high quality results.

**Fast pay back.** The Argweld® purge bladder system pays for itself in just a few welds.

### ARGWELD® PURGE TIME (to 1% oxygen)

By using Argweld® purge bladders, the savings are obtained in reduced purging and waiting time, and in the much lower quantity of inert gas used. Purging occasionally will require a flow rate of at least 24 liters/minutes (50 cubic feet/hour) for longer periods. The chart below shows purge times for various pipe diameters to reduce the air space to less than 1% oxygen. \*\*PURGE TIME FOR ARGWELD PURGE SYSTEM TO 1% OXYGEN.

PIPE LENGTH	PIPE DIAMETER	NORMAL PURGE TIME at 24 L/M	ARGWELD TIME AT 10L/M (CFH)
10m (33')	100mm (4")	26 minutes	1.5 minutes
10m (33')	200mm (8")	83 minutes	4 minutes
10m (33')	300mm (12")	173 minutes	8 minutes

## ARGWELD® PIPE PURGING PLUGS

When purge bladders or purge film cannot be used to make suitable barriers for pipe, tube and fitting purging, the Argweld® purge plugs offer a satisfactory option.

The expanding double seal allows them to be used on oval and out of round tubes as well as elbows, tees and other fittings.

These versatile expandable plugs are used to accommodate a wide variety of industrial applications.

These plugs are also ideal for creating an air-tight seal for pipe purging operations. These plugs can be used to purge short length tube assemblies.

### TECHNICAL INFORMATION

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

After extensive development, the most reliable seal was produced by including an "O" ring groove into which an "O" ring seal is placed. This method forms a positive seal between the surfaces of both components.

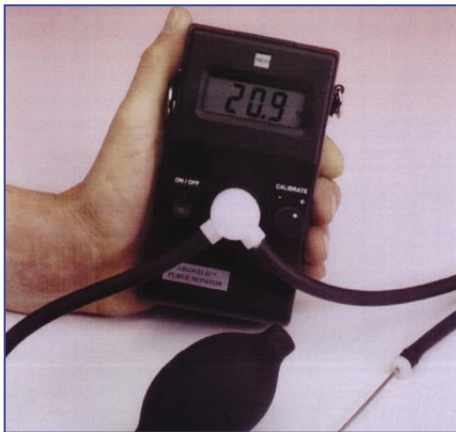
The Argweld® hollow shaft purge plugs range from .5 inch (38.0 mm) to 6 inch (152 mm).

### FEATURES:

- Made from high quality nylon up to 150 mm (6") diameter.
- Available up to 900 mm (36") diameter made from cast aluminum.
- Virtually shatter-proof
- Easily cleaned
- Will not rust or corrode
- A friction-reducing acetyl copolymer thrust washer inserted between the top plate and wing nut provides easy expansion.
- All threads are standard BSP sizes. (adapts to NPT)
- Larger sizes incorporate strengthening ribs to provide rigidity in use
- Double seal available for tight tangent bends.
- Nozzles to accept 3/8" bsp gas hose



ARGWELD® PIPE PURGING PLUGS ARE USED ON SMALLER DIAMETER (1/2" TO 6") AND SHORTER LENGTH TUBE OR PIPE APPLICATIONS. GREAT FOR SEALING OUTLETS WHEN PURGING VESSELS, AS LOW PRESSURE TEST PLUGS FOR PIPE JOINTS, OR TO STOP CONTAMINANTS FROM ENTERING TUBING. MADE FROM HIGH QUALITY NYLON, THESE PLUGS WON'T RUST OR CORRODE, ARE VIRTUALLY SHATTER PROOF, AND RESIST MANY CHEMICALS.



ARGWELD® PURGE MONITORS DETECT THE LEVELS OF OXYGEN IN PURGING GAS TO INDICATE WHEN IT IS AT A SAFE LEVEL TO WELD.

### ARGWELD® PURGE MONITORS

Small, portable and very simple to use. The purge monitor is supplied in a robust housing. It comes complete with a stainless steel probe, a 2 meter length rubber hose, a rubber vacuum bulb and a carrying strap.

It can be used in a continuous monitoring mode connecting the rubber tube to the exhaust port of the purging device or enclosure and allowing the exhausted gas to flow free over the sensor.

Alternatively, the monitor can be used in the sampling mode. The stainless steel probe is inserted either into the volume being purged or the exhaust port. The rubber bulb is then used to draw a sample of the gas across the sensor.

The LCD scale displays the oxygen level in 15 mm high figures which can easily be read from a distance of several feet. Once the desired oxygen level is achieved, welding can begin. **NOTHING COULD BE SIMPLER!**



THE ARGWELD® TITANIUM PURGE MONITOR HAS BEEN SPECIFICALLY DESIGNED FOR INDICATING OXYGEN LEVELS IN ARGON GAS FOR WELD PURGING.

### ARGWELD® PARTS PER MILLION MONITOR

The PPM Monitor is designed specifically for oxygen monitoring during the welding of titanium and ultrapure stainless fabrications. Any level of oxygen above 100 parts per million can discolor and adversely effect a titanium weld.

The PPM monitor will accurately read down to 10 parts per million on an alpha numeric display. Audible alarms can be set to let the user know when a proper purge has been achieved or when oxygen content has risen above desired levels.

It measures and clearly indicates actual oxygen levels in parts per million down to 10 parts per million on an alpha-numeric display.

The unit is menu driven by four buttons on the front panel and has an internal alarm with high and low oxygen levels which can be set on the front panel.

A unique new sensor is used which has very little maintenance requirement and tests have shown that it should last up to five years.

An optional software package is available to allow a computer to be used to store and print results and graphs etc for quality control purposes.

### **ARGWELD® BACKING TAPE**

Typically for the welding of thin wall stainless steel sheet and vessels from one side only, the backing tape can be attached to the backside of the weld, to support the weld pool, keep the argon from the weld torch surrounding the weld pool and eliminate the need to back purge, while giving a consistent high quality under bead profile.

For purging large vessels the tremendous savings of purge gas and waiting time, pays for the use of the backing tape many times over.

The high temperature heat resistant adhesive aluminum backing foil is 75 mm (3 inch) wide and in the center is a heat resistant band of woven glass fiber cloth 25 mm (1 inch) wide. The glass fiber cloth has a weight of 1000 grams per square meter. The tape comes in reels of 25 meters (80 feet) length.

The Thickness of the cloth will support single pas TIG welding at weld currents up to 160 AMPS, without change to the chemistry or metallurgy of the weld.

### **ARGWELD® WATER SOLUBLE PURGE FILM**

Argweld® Water Soluble Purge Dam Film can be used for stainless, duplex and chrome-moly steels as well as titanium.

The Argweld® purge 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 fibers to clog up filters or other sensitive parts in a system and it can resist pressure in all directions so that it can maintain a good gas barrier throughout the purging process.

Trace element certification can be provided to show that Argweld® 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.



EXTENDING THE RANGE OF ARGWELD® PURGING PRODUCTS AND PROVIDING AN ECONOMICAL NON METALLIC WELD BACKING SYSTEM FOR THE BACKING OF WELDS, WHERE PURGING IS REQUIRED BUT NOT EASILY ACHIEVED.



THE USE OF WATER SOLUBLE FILM FOR MANUFACTURE OF PURGING DAMS IS WELL PROVEN AND THE ARGWELD® FILM GIVES SUPERIOR RESULTS OVER ALL OTHER WATER SOLUBLE PRODUCTS.



## ARGWELD® FLEXIBLE WELDING ENCLOSURES

Argweld® Flexible Welding Enclosures are used when space is a concern or a rigid enclosure is not economically viable. Typically used for multiple weld jobs on a single piece of metal within a completely purged environment. They are available in a wide variety of sizes out of stock and can be made to custom specifications.

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.

### STANDARD ENCLOSURES (INCHES)

DIAMETER:	36"	48"	60"	72"
SIDE HEIGHT:	17 3/4"	21 1/2"	21 1/2"	21 1/2"
OVERALL HEIGHT:	21 1/2"	31 1/2"	31 1/2"	31 1/2"
TOP PANEL:	7 3/4"	17 3/4"	17 3/4"	17 3/4"

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 discoloration. Rectangular units now available.



ARGWELD® TITANIUM TRAILING SHIELDS GIVE SECONDARY SHIELDING GAS COVERAGE WHICH PREVENTS THE MATERIAL FROM OXIDIZING FOLLOWING WELDING ON PIPE AND SHEET.

## ARGWELD® TRAILING SHIELDS

The Argweld® leading and trailing shields are designed for high quality gas coverage of titanium while welding.

They can be supplied to fit any make of TIG or plasma welding torch for manual and automatic welding on pipes, vessels or flat plate.

By using an Argweld® trailing shield, titanium welds will be left bright and shiny and eliminate discoloration.

Argweld® purge shields will reduce gas consumption, save re-work and eliminate wasted materials cost due to oxidation.

Argweld® purging shields can also be used for welding stainless steel, duplexes as well as titanium and any other weld able metal where discoloration or oxidation need to be eliminated.

The shields are manufactured to weld flat plate or any diameter tube, pipe or vessel.

They are manufactured with variable radii to suit each diameter, contoured for either outside or inside welding.

### TEG III GRINDER

TIG and plasma welding requires tungsten electrodes with perfectly ground and polished tips. The TEG-3 Tungsten Electrode Grinder provides these, time-after-time, to exactly the same size and shape at a low cost.

The diamond wheel grinds the tungstens longitudinally. This prevents arc flicker or wander caused by circumferential lines or ridges found on electrodes which have been ground circumferentially.

When tungsten electrodes are ground and polished, mechanized welding can produce identical, repeatable results every time. With manual welding the shape of the tungsten 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.

### TECHWELD™ RESISTANCE ELECTRODE FORCE GAUGE

To improve quality control, ease inspection and for regular calibration of resistance welding machines, COB Industries, Inc. offers a force meter for measuring resistance welder electrode force.

This self contained instrument uses a cell with a force sensor to provide an accurate digital read out for auditing weld electrode forces.

Force can vary because of changing factory air pressure, water in air causing air cylinders to deteriorate, and loss of air pressure due to worn seals.

The Resistance Welder Electrode Force Gauge allows electrode force to be measured as often as necessary to ensure that this variable stays within tolerance, thereby eliminating variations in resistance weld repeatability.

The weld force is read off a digital display in the handle of the instrument. Special electronics ensure that the true clamp load is displayed rather than any other readings caused by initial head closure shock loads. (Shock loads can be monitored by connecting the instrument to a storage oscilloscope.

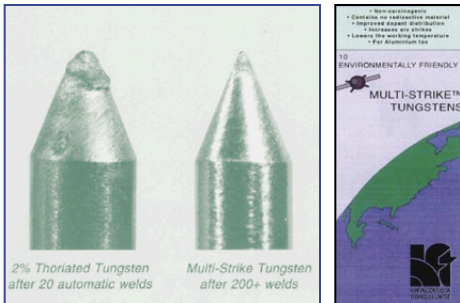


THE TEG-3 IS A HIGH PERFORMANCE TOOL THAT IS AN ESSENTIAL FOR EVERY WELDING SHOP WHERE TIG OR PLASMA PROCESSES ARE USED.



THE RESISTANCE WELDER ELECTRODE FORCE GAUGE ALLOWS ELECTRODE FORCE TO BE MEASURED AS OFTEN AS NECESSARY TO ENSURE THAT THIS VARIABLE STAYS WITHIN TOLERANCES.

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TECHWELD™ MULTI-STRIKE TUNGSTEN ELECTRODES ARE THE WORLDS LEADING NON-THORIATED TUNGSTEN ELECTRODE. THEY CAN GIVE TEN TIMES THE LIFE OF STANDARD TUNGSTENS, CAN BE USED FOR ALL APPLICATIONS INCLUDING ALUMINUM AND STEEL AND ARE FULLY BATCH TRACEABLE.

## TECHWELD™ MULTI-STRIKE ELECTRODES

COB and Huntingdon Fusion Techniques Limited is proud to introduce a new TIG welding electrode material.

A tungsten electrode has been developed with a collection of non-thoriated, non-radioactive, noncarcinogenic dopants to make it weld at high, low and medium current ranges on both DC TIG (GTAW) welding of Steels and alloys as well as AC TIG (GTAW) welding of Aluminum and its alloys.

The mix of Dopants:

- greatly enhances electrode life
- multiplies the number of strikes per tungsten
- does not contain any radioactive material.

### **MULTI-STRIKE TUNGSTENS for improved TIG Welding:**

- Increase the number of arc strikes before resharpening is necessary.
- Contains no radioactive material.
- Lowers the working temperature giving cooler welds.
- Special packaging gives guarantee of quality and tractability.
- Eliminates carcinogenic thoria.

COB INDUSTRIES, INC.

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