

AVAILABLE WITH  
**WELDCERT**

**D-ECKWEILER**  
connecting flow to **purity**



# ECOPURGE

## MOBILE WELDING SYSTEM FOR UHP AND STANDARD TUBES

A purging tool for welding of general to Ultra High-Purity EP tubing.  
Available with integrated weld seam documentation tool WeldCert.

# UNIQUE: ECOPURGE\*

## Purge Dam Developed for Welding of General to Ultra High-Purity EP and Sanitary Tubing

The Team of Evans Components Inc. and Dockweiler AG solved what has become a significant cost impact to companies installing higher purity, large diameter tube and pipe regarding high usage of purified Argon gas and wait times for O<sub>2</sub> evacuation.



Purge Dams are not a new concept and have been in use in industrial applications. But none of the previous purge dams have been acceptable for use on tube or pipe for UHP, CFOS and Sanitary systems due to the industry requirement to neither mar the electropolished surface finish nor to deposit contaminants on the inner surface.

A purge dam creates a trapped volume within the piping system that contains the purge gas allowing welding to proceed in a nearly oxygen free environment. The EcoPurge provides the ability to significantly reduce purge times and gas volume required prior to welding.

UHP and CFOS systems are orbitally welded while tightly maintaining the weld bead size and contour with minimal oxidation within the heat effected zone (HAZ). The oxygen concentration at the weld site must be maintained in the single digit PPM range to achieve acceptable results.

The use of the innovative and patented purge dam EcoPurge reduces gas consumption. Schedule reduction is achieved with the EcoPurge since purge time is reduced due to the small trapped volume within the dam. This becomes increasingly beneficial as tube or pipe size increases.

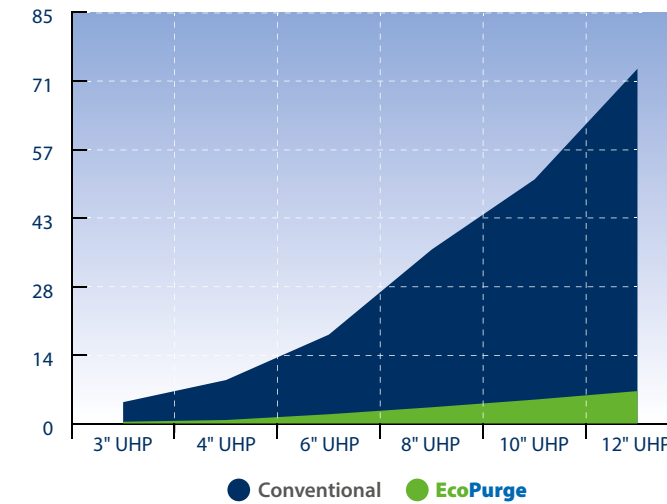
The UHP EcoPurge system is constructed of only materials already either present in UHP piping systems, used to support the installation of this material, or determined to not be detrimental to the UHP gas system.

The goal for this product is use in tube and piping systems having the most stringent requirements for both cleanliness and weld quality. The EcoPurge system has a patent pending.

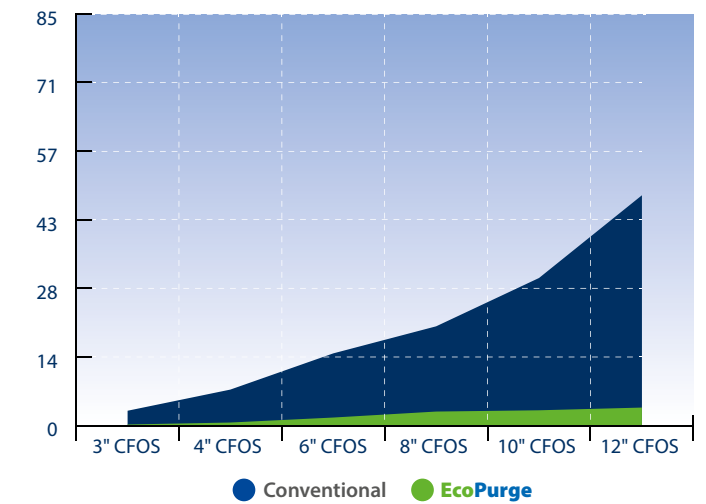
### Advantages of EcoPurge:

- Provides > 90 % reduction in purge gas consumption
- > 65 % reduction in time for purging and welding
- Provides in-situ oxygen and pressure monitoring at the weld seam
- Allows for weld inspection and reduced or elimination of costs for couponing with optional boroscope
- Available in 3", 4", 6" (tube size) and 6", 8", 10", 12" (pipe size). Metric, ISO and JIS dimensions upon request

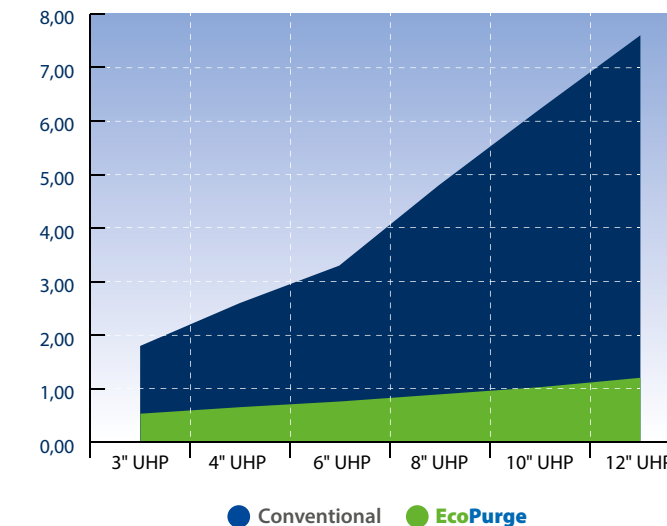
Cubic Meter Argon Gas per Weld – UHP



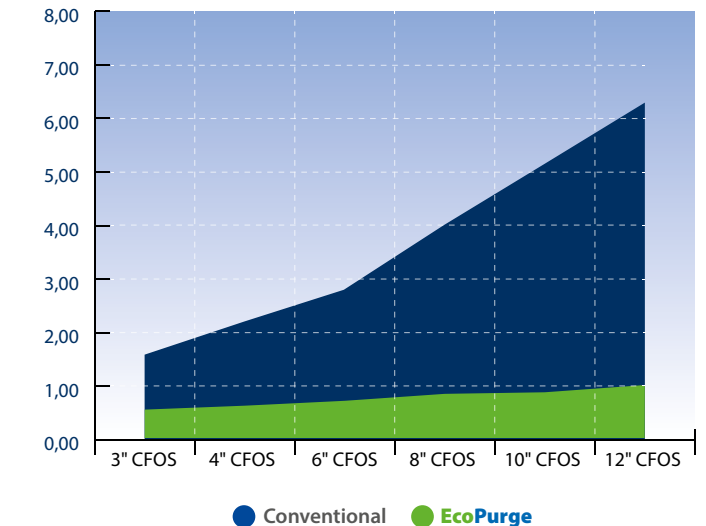
Cubic Meter Argon Gas per Weld – CFOS



Man-hour per Weld – UHP



Man-hour per Weld – CFOS



## Cost Savings – Maximum Reduction in Time and Purge Gas

\*Patented

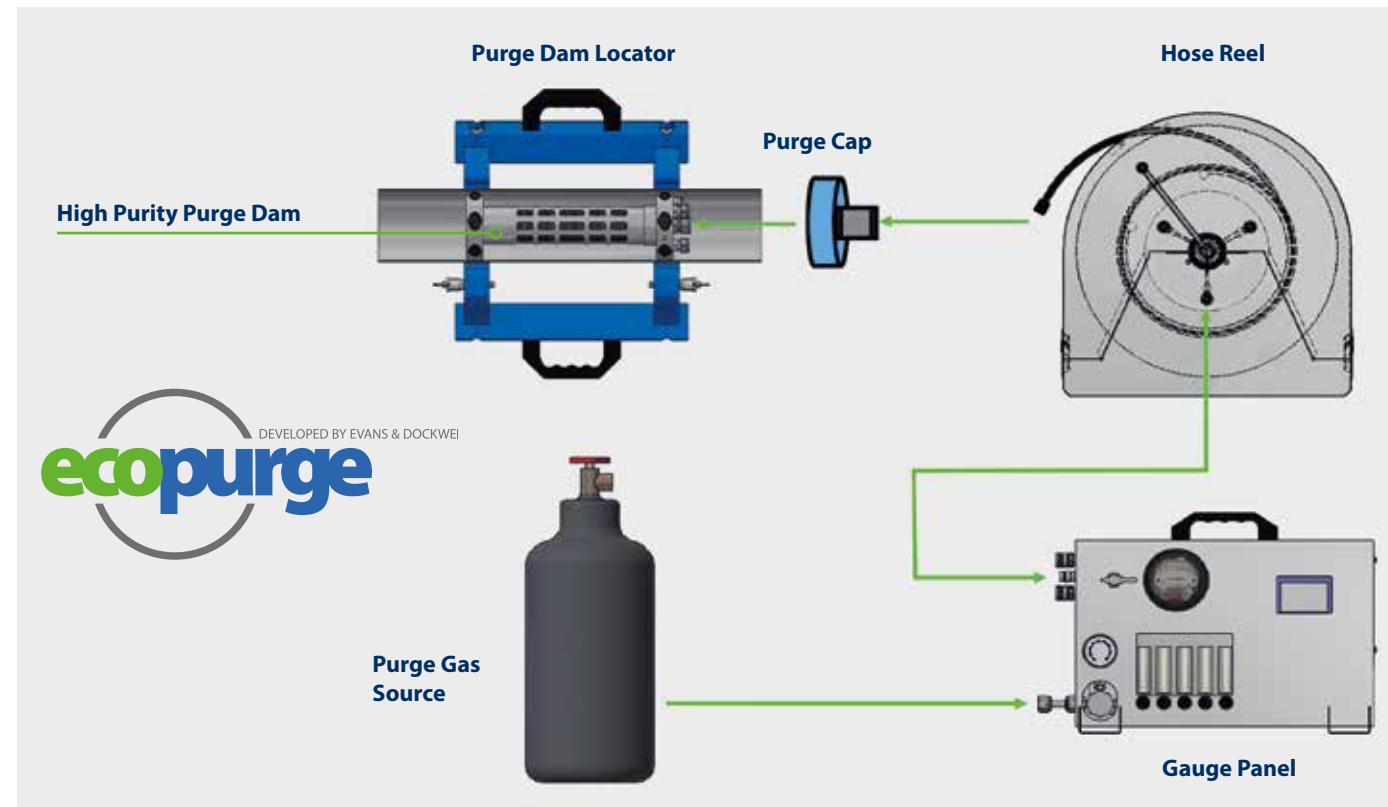
# DIFFERENT: INNOVATIVE DESIGN

## Fulfill Highest Surface Demands of the Semiconductor and Bio-Pharm Industry

The EcoPurge system is inserted into tube or pipe then using the magnetic locator is positioned at the weld seam. EcoPurge has easily replaceable Texwipe™ “booties” surrounding the discs and a Texwipe™ sleeve covering the umbilical to ensure cleanliness and surface protection.

The umbilical is made up of PFA hoses and one optional borescope cable. One end of the umbilical is connected to the EcoPurge and the other through an enclosed hose reel connected to a gauge panel with a purified gas source, add flowmeter pressure monitor, and the O<sub>2</sub> analyzer.

After centering the Purge Dam at the weld site, purge gas flow commences at the user selected flow rate. The O<sub>2</sub> sensor and pressure sensing port provides feedback at the weld site so that welding can commence as soon as the desired O<sub>2</sub> and pressure levels are achieved. The EcoPurge has been shown to achieve extremely high quality welds at a fraction of the time and gas volume, versus conventional purging methods.



High Purity Purge Dam with Adaptor Shells



1. Purge gas inlet connection
2. O<sub>2</sub> sensor and pressure feedback connection
3. Locator shells with Nd-magnets
4. Purge gas diffuser

Purge Dam Locator



1. Purge dam locator
2. Locator handles
3. Nd-magnets
4. Removable hinges

Hose Reel



1. 10 m long supply hose
2. Low dead space quick connections
3. Texwipe™ textile hose
4. Fully enclosed hose reel

Gauge Panel



1. UHP flowmeters
2. Magnahelic® pressure display
3. O<sub>2</sub> monitor
4. Purge gas inlet pressure valve and flowmeter

# WELDCERT\*: THE EASY WAY OF DOCUMENTATION

## The Welding of Electropolished Tubes in an UHP Environment is a Complex Job, Especially when it Comes to Documentation.

According to Semi F78 every weld seam has to be documented. In addition to the data about the tube material this results in a high documentation effort the completed tube systems.

The EcoPurge system offers the possibility to collect all relevant data from the welding machine, oxygen measurement device and the material test reports (MTR's) of the tube material and to summarize them automatically in one sheet of welding documentation. This collection of all relevant data is available online and can be easily accessed for QA or documentation purposes. Also records of a visual inspection can be integrated in the welding documentation and are available online, too.

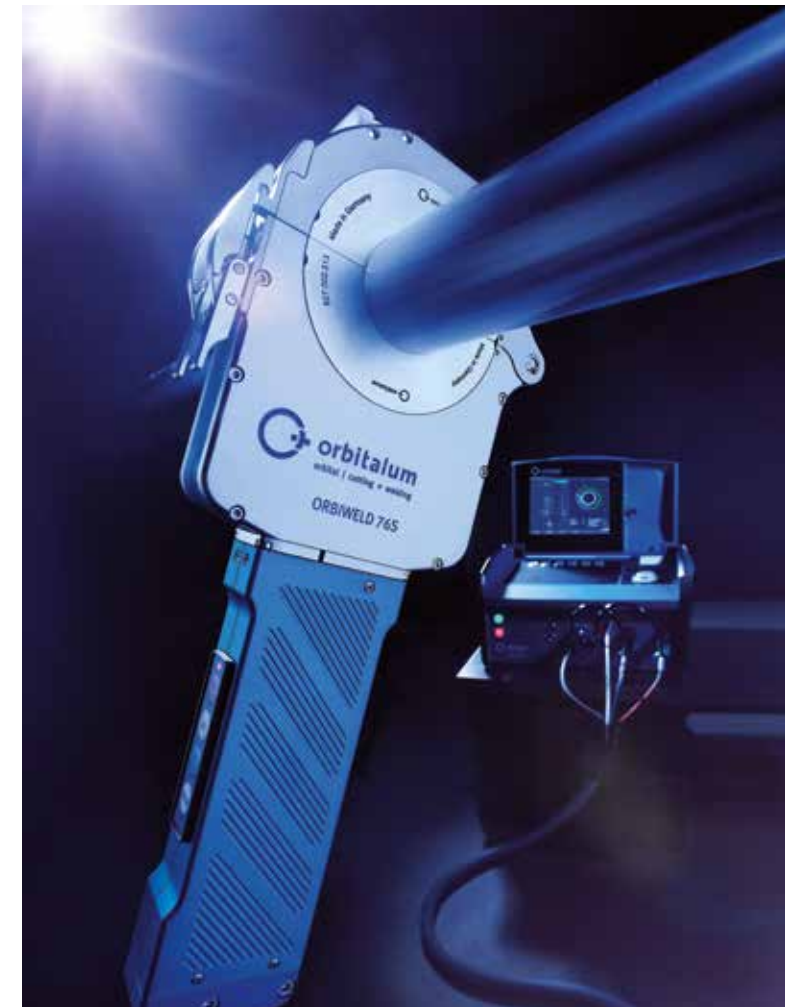
Furthermore, Dockweiler can provide welding recommendations for every Dockweiler heat online, before the welding process is started.

\*Patent pending



## The 8 Major Advantages of WeldCert at a Glance:

1. Dockweiler WeldCert combines the data of the weld log with the corresponding MTR.
2. Automatically created by using data from Dockweiler databases and the data entered by the user.
3. Additionally, pictures & movies of the weld seam can be integrated and are available online.
4. All documentation is available online.
5. By entering the Dockweiler number (batch number) of the tube welding parameter recommendations are provided.
6. Easy and remote quality inspection of the weld seams and approval are possible by checking the parameters and the recorded media files.
7. System offers immediate and full documentation package for used material and every weld seam by entering the project number or similar codes and minimizes therefore the effort of collecting all required documents
8. Simple link from weld seam to documentation by following barcode label at weld seam or entering project number and weld no.



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