



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.

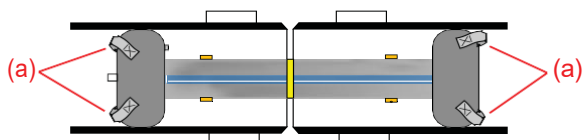
After positioning the system the argon source is opened, the dams inflate to size and the interspace is purged.

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

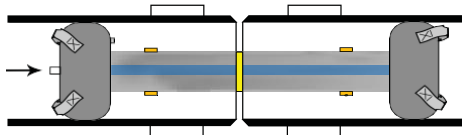
Do not use makeshift or homemade devices like cardboard dams or foam bungs. They contain a lot of water, water vapour and air, putting your weld at risk and end up costing you more money. Use the proper tools for the job!

FIVE SIMPLE STEPS FOR PERFECT RESULTS, EVERY TIME:

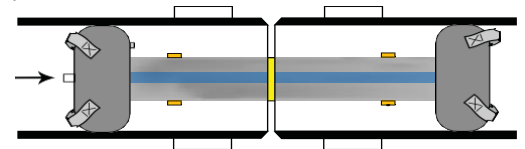
1. The Argweld® **HotPurge®** is positioned using the heat resistant pull tags (a).



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

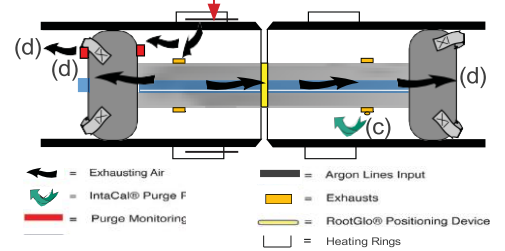


3. Once the Argweld® **HotPurge®** is inflated, the pressure opens the purge valve (c), the air space is purged by the inert gas, displacing the air between the dams to the outside (d). At the required oxygen level, the joint is ready for welding.

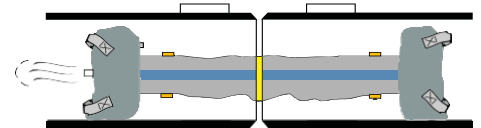


4. During welding an appropriate flow rate of inert gas should be maintained.
5. When the weld is completed and the pwht cycle has finished, the pipe should be allowed to cool below its oxidation temperature at which point the purge gas supply can be closed. Disconnect the hose to deflate the system,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

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



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Another perfect pipe weld!

