ZEROMAG News

The Beach. Wish you were here?

Mention a trip to Thailand and most people are thinking of warm sun, sandy beaches and swimming in the sea. At Diverse we have a different agenda: training! Sadly not on The Beach. Our staff travel the world to give lectures about magnetism in welding. Our lectures have been given to audiences of professional weld engineers and welders around the globe extended from the UK to Italy, Croatia, Canada even a ship moored off the western coast of Australia, and, during recent weeks Thailand.

The lectures are not some academic exercise, they provide easy to understand background material about magnetism and the problems of arc blow. This material is liberally sprinkled with practical examples, solutions used in the past and deployment techniques for demagnetizing equipment. It explores demagnetizing methods, (we currently know of 9 different schemes!) and how and when these can be used.

In a separate session, usually later the same day, delegates have the opportunity to put their new found knowledge to the test in a practical session using Zeromag. The session allows them to make bad pipes (that is magnetize the pipe so that welding cannot proceed), and then use some of the demagnetizing techniques to remove the magnetism so that welding can be undertaken to the highest quality even with magnetic fields sufficient to blow the arc.

Oil Blowout plugged - now the post mortem

The blow out on the rig in the gulf of Mexico has been successfully plugged and the attention now moves to potential causes of the disaster. Although the exact cause has yet t o be identified, it is known that there was a significant build up in pressure to 100Kg/sq cm (1,400 pounds per square inch) in the hours before the blow out. These high pressures will undoubtedly put additional strain on all the high pressure components, pipes, valves and diverters. Many of these components are welded, and, although not indicated as a weak point in the latest disaster, it shows the importance of high quality welds. Generally welds are fully inspected but even X-ray testing can miss brittle weld metal.

Magnetism during the welding process has long been recognised as the cause of magnetic arc blow, but welders often come across magnetism at lower levels. In these circumstances the temptation is to continue welding and “get the job done” even though the arc is wandering or unstable. This could result in brittle welds if temperature is not maintained at the weld point. Zeromag removes magnetism for welders so that welding can be undertaken to the highest quality even with magnetic fields sufficient to blow the arc.

ZeroB: Trial results

www.diverse-technologies.net

Diverse are best known for supplying solutions to high magnetic fields in pipe and plate welding environments. In recent years we have been extending our product line into smelter environments. Our latest product, ZeroB, has been undergoing trials on active bus bars in a European smelter with good results.

The new product is scheduled for more trials in America in the coming months and we will be taking orders Q2 2011.

Spares kit - ideal for offshore users

Its all very well if things go wrong on shore - just call a courier and equipment can be quickly returned for repair, or spares sent out. But what happens if you are offshore? Diverse have put together a comprehensive selection of spares for Zeromag, and a training course for those who are responsible for engineering repairs. The kit comprises a variety of parts that could potentially be broken as a part of wear and tear on a busy ship or platform.

Lay on coils allows dual demagnetizing for 2 welders

The Diverse Zeromag ZM100A measures and neutralizes magnetic fields which may be present in the weld preparation region of mating steel components.

The Zeromag ZM100A is designed to demagnetize pipes. Zeromag ZM100A, working with up to 100m of demagnetizing cable provides the necessary reverse magnetic field for most pipe and plate welding scenarios. Pipes that have zoned magnetism can be particularly difficult to weld but this is speciality for Zeromag. In the auto mode, Zeromag tracks the field and actively nulls it as the weld progresses.

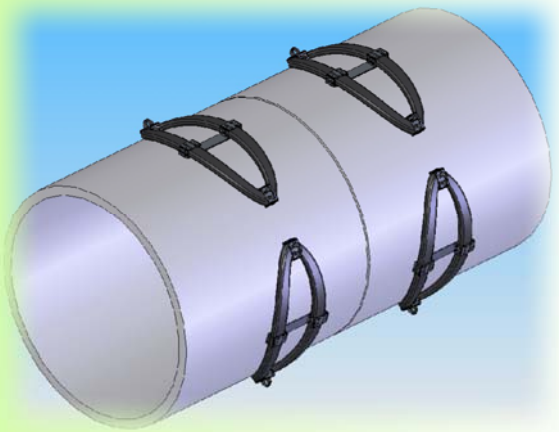
In many pipe applications when working with large diameter pipe it is desirable to have welding at 2 positions around the circumference of the pipe. If zoned magnetism is present then using standard cable or clam coils is not an option as actively nulling with Zeromag will only be possible at one position (i.e. where the probe is positioned). Thus using Zeromag in the normal nulling mode will remove the field at one welding position but may actually increase the field at the other position.

As a result we normally specify that one welder is used for the root pass, after which the magnetic problems will be significantly reduced. This will halve production rates.

For customers that want to use 2 welders for the root pass and we have a new lay on coils product that will allow this. It comprises a set of coils that operate over a fraction (say a quarter) of the pipe diameter; this allows the Zeromag to null just over this range. The lay-on coils are a pair of flexible coils that are clamped onto the pipe surface using the adjustable straps provided. The coils are positioned adjacent to the weld positions with the coils on opposite sides of the pipe. Two Zeromag are then deployed either side for the pipes one for each lay-on coil.

A second system can then be placed on the other side of the pipe allowing simultaneous welding at the 2 positions. To drive the 2 sets of lay-on coils requires 2 Zeromags.

The standard lay on coil, ZMLOC is 0.75m long and is designed to work for pipes greater than 1m diameter. Diverse are pleased to design and supply versions of ZMLOC for specific projects and applications.



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