

# Zeromag Training

Understanding and fighting arc blow

**DIVERSE**

www.diverse-technologies.net



## Overview

The Diverse ZEROMAG measures and neutralizes magnetic fields and is really simple to use, just deploy and press start!. But in order to get the best from anything it helps to have training. The staff at Diverse and acknowledged experts solving in magnetic arc blow and we provide training and consultancy to help users train their staff to solve magnetism

problems. Our wealth of experience amassed over 15 years has helped our customers in a wide variety of weld scenarios.

Our Zeromag training course gives you the chance to take advantage of this knowledge so that you can spot the magnetism in advance understand the impact of zoned, circumferential and longitudinal magnetism. Magnetic arc blow is full of folk lore - an old dodge is to use a welding set and a few turns of cable. In most cases this will actually make matters worse, and makes the engineering solution more difficult. Conversely, through an understanding of the causes and nature of the problem you will be able to deploy the demagnetizing equipment with speed and certainty.



## Activities

The training takes a full day, 50% spent in class and 50% with practical hands on in your workshop or on-site.

The classroom lecture is an informal presentation that seeks to provide the background knowledge about whether the problem is magnetism, where it comes from, how to overcome the problem and how to get the best from the equipment. The list of topics are:

1. Getting Started - is it really magnetism ... or something else?
2. What causes the magnetism - and how this impacts on how it can be overcome?
3. Magnetic issues - practical understanding of the theory of magnetism - and how Zeromag works
4. Job preparation - how to prepare Zeromag, and the team using it!
5. Running the job - practical tips how to get the best from Zeromag keeping production levels high
6. What not to do with Zeromag.
7. FAQs - learn from what others ask.
8. Question and answer session.

The practical part of the course requires a set up in your workshop to include a pipe butt weld already fitted up ready for welding, and a Zeromag. Delegates will each be given the chance to use the equipment under supervision. Each will have a chance to make it impossible to weld - and then defeat the magnetism and show that the pipes can be welded. The exact format will depend upon available test pieces, space etc.



## Deployment points

The training addresses many of the issues you will face in combating magnetic arc blow, some you may have thought of, others are not so obvious. The training will guide you through each aspect of demagnetizer deployment

Zeromag is applicable for all steel plate and pipe butt welds. Deployment starts by understanding your specific problem. In order to understand what you need and how to deploy it you will need to know some or all of the following:

- Plate or pipe wall thickness
- Material(s)
- Weld setup geometry
- Welding technique (SAW, MIG, TIG stick etc.)
- Magnetism source (NDT, storage, handling)
- For pipes, the diameter and the number of weld positions around the pipe
- Number of weld stations and distance between them
- Number of passes
- Weld prep shape
- Cladding and type
- Single/double headed welding
- Preheat temperature
- Speed of welding,
- Earth points

Armed with this information successful trainees will be able to specify the demagnetizing equipment, determine likely impact on production speeds and proceed with confidence to a guaranteed solution. All candidates receive a certificate and a Zeromag hi-viz vest.

## Consultancy

In most cases the DKPW with the standard Zeromag ZM100A will address most arc blow problems immediately and completely. However, every project is different with different materials and geometries making application and deployment job specific.

We undertake consultancy on magnetic problems in welding and have a wide view of many projects round the world. We often integrate consultancy with the training visit to reduce costs.



## Costs

The training can be carried out at your weld site almost anywhere in the world (there are a few exceptions such as off-shore or in regions of conflict). You will need to have available a Zeromag and a typical weld setup.

The basic cost of the course is 200 GBP per delegate, minimum 5 delegates. There are additional logistical costs getting to your site. These include BC air travel travel, transfers and subsistence. We charge 500 GBP for every day (excluding the training day) away from our Cambridge base.

Note that our customers often combine the training schedule with on-site consultancy. A quotation will be provided for specific jobs.

## Web based

We can offer an alternative training model which comprises 2 x 2-hour sessions conducted over Skype. For this you will need to have a good broadband connection (both in your lecture room and the workshop) and a computer with a web cam. The first 2 hour session is an abridged version of the lecture. The second session is again in the workshop, but here the level of student supervision is more limited. The cost for web based training is 150 GBP per delegate, minimum 5 delegates.

