

A close-up photograph of a hand holding a red BAC pin brazing torch. The torch's nozzle is directed downwards, where a bright, intense blue flame is visible, illuminating the surrounding area. The background is dark, making the torch and flame stand out. The BAC logo is in the top right corner, and the text 'CORROSION CONTROL' is below it. At the bottom, a blue banner contains the text 'PIN BRAZING' in white.

BAC[®]

CORROSION CONTROL

PIN BRAZING

Pin Brazing

Various Field Applications

Pin brazing is used to ensure a safe electrical connection to different types of steel structures. The pin brazing method is well suited for bonding between pipe joints, connection of test station leads, connection of anode leads, attachment of grounding cables, and many other applications.



Fast and Easy Connection

Pin brazing of cables gives a safe and durable connection to pipelines in both the vertical and horizontal orientation. Its thermal duration is much lower than thermite welding and is not affected by wind or damp surfaces. This automated brazing system only takes 1.5 – 2 seconds. Pin brazing is easy to use in the field as well as in the workshop.

Pin Brazing for Cathodic Protection

When a cathodic protection system is applied to a pipeline with bell and spigot joints, these joints must be electrically bonded. Pin brazing can be used to attach threaded pins to the bell and spigot ends of the pipe and a bonding cable can then be attached between them.

For pipelines of ductile or cast-iron, threaded brazing pins are used. A prefabricated cable is then attached using the supplied locking nuts. For steel pipelines, either threaded brazing pins with nuts are used or the cable is brazed directly onto the pipe by means of a lug for permanent attachment.

In cathodic protection systems, there are a great number of connections required for anode cables, test stations, interference bonds, etc. The BAC Pin Brazing unit contains all the equipment and tools required to make safe cable

connections in cathodic protection applications for pipeline and utility systems. Pin brazing utilizing threaded studs can also be used for many types of equipment attachments such as conduit straps, small test stations to steel posts and steel structures, security equipment and electrical grounding requirements.



The BAC pin brazing system can also use a welding machine as a power source in situations where a great number of connections are required in one place such as bracelet anode bond wire attachments in a pipe coating yard, or on a lay barge during pipe installation. It is especially effective in J-lay situations where the pipeline is being installed in a vertical or off-vertical orientation. Pin brazing is the

only efficient process for anode bond wire attachment to pipelines being installed vertically or at high vertical angles.

Benefits

★ Speed of Installation

Around one minute per connection.

★ Low Temperature

The low melting point of the solder and the short duration of the heat cycle keep the thermal effects on the steel to a minimum. Testing has shown that surface temperatures directly under a pin brazed connection on 6" and 8" schedule 40 steel pipe do not exceed 125°F. Thermite welding consistently exceeded 215°F; above the breakdown temperature of some internal pipe coatings.

★ All Weather

Wind, rain, and cold do not prevent the operator from working safely and effectively with pin brazing equipment. Damp pipes pose no problem. Thermite welding, on the other hand, is greatly affected by wind and moisture.

★ Safety

No special equipment or precautions are needed for the pin brazing operators other than the typical personal protective equipment recommended for hand tool use (gloves and safety glasses).

★ Easy to Use

The automated nature of the process means operators can be trained in less than one hour.

★ Versatile

The portable nature of the equipment means that connections can be made in almost any location and on all horizontal, vertical, off-vertical and even inverted positions on a pipeline.



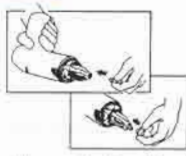
Equipment

The BAC EASYBOND Pin Brazing system is suitable for all types of cable to pipeline bonding installation and maintenance work. It is designed for the occasional as well as high usage operator. It is a rugged and low cost system with more flexibility than thermite welding or any other cable to pipe bonding system. The unit is portable and easily transported. With multiple battery boxes, continuous welding can be made at any site. Larger capacity units are available for users requiring higher numbers of brazes per battery charge. *(The grinder shown is an accessory)*

Pin brazing in 4 easy steps



Clean the pipe



Load the gun with a Pin and Ferrule



The cable and lug are brazed to the pipe



Test the connection



CORROSION CONTROL

Accessories



Grinder

A specially designed 42 volt D.C. grinder is available that runs off the pin brazing battery pack. This tool makes coating removal of the thickest pipeline coating an easy task prior to the pin brazing of the stud and the attachment of the pin brazing grounding magnet.

DC Charger

A 12 volt D.C. powered charger that allows for the charging of the pin brazing battery pack off of a vehicle's charging circuit. You can now charge the system while driving to the next job location.



Easybond Reach System (EBRS)

Specially designed to be compatible with the BAC Easybond pin brazing unit, the Easybond Reach System (EBRS) comprises a special pin brazing gun with a purpose designed brazing tool that attaches to an adjustable extension tube (5' to 8') constructed of aluminum. To reach the buried pipe all that is required is to core-drill or vacuum excavate a hole, as small as 8" diameter, down to the pipe where the connection pin needs to be brazed. The system also includes a device for local pipe coating removal and cleaning in the area to be bonded to ensure a good braze. Triggering of the device is controlled via a special manually controlled switch mounted onto the battery unit.



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