

Western Instruments Inc.

Established 1965

W-PB-12 Powder Bulb



The W-PB-12 was originally a liquid glue applicator, with its Brass Tube Spigot and Rubber Cap, as shown in the picture below. At least 40 years ago, some oilfield inspector saw that it's original parts could be modified to become a Powder Bulb. The spigot is removed and its hole blocked with a special fastener.

To adapt the Glue Applicator for use as a high volume Power Bulb, holes are machined into the threaded 'pot metal' cap, to allow large amounts of powder to be dispensed onto the workpiece. These large amounts of powder are used for several reasons, however 2 specific inspections come to mind. First with a specially prepared Yoke to find longitudinal splinting in the ends of Tubing and Casing. The Yoke Contact Feet are worn to an appropriate angle to be dragged from the end inward. A full end inspection can be performed in 3 or 4 passes with the Yoke, as the tube is rotated.

The second application, is to be used with a Capacitive Discharge Power Supply (CD Unit), where 4/0 Cables are connected to a segmented central conductor. The central conductor is assembled to be exposed at each end of a tube (pipe), and the cables connected to the positive and negative poles of the CD Unit. The stored energy in the Capacitors is released and induce a Full Wave

DC field into the pipe, so a large area can be dusted with Dry Method Power, to find longitudinal defects.

The W-PB-12 is not intended for general Magnetic Particle Inspection for two reasons; the large amount of Powder dispensed, and the skill required to applying such high volumes of particle without masking defects. Like use with any other Power Bulb, it is best to apply power at right angles to suspected defects. If defect orientations are unknown, then powder is applied at right angles to the plane formed by the contact feet of the Yoke (the field direction).

Some inspectors may think that the machined holes could be made smaller, however they can't be drilled small enough to mimic the holes of a screen, and enough holes can't be drilled. There are no reference specifications for Dry Power Bulbs, so use of different styles are up to individual inspectors. The W-PB-12 is a somewhat specialty item to Distributors may not have one in stock. All of Western Instruments Magnetic Particle Inspection Accessories can be purchased from one of our many distributors.

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Original Glue Applicator