WELDING BASICS SERIES

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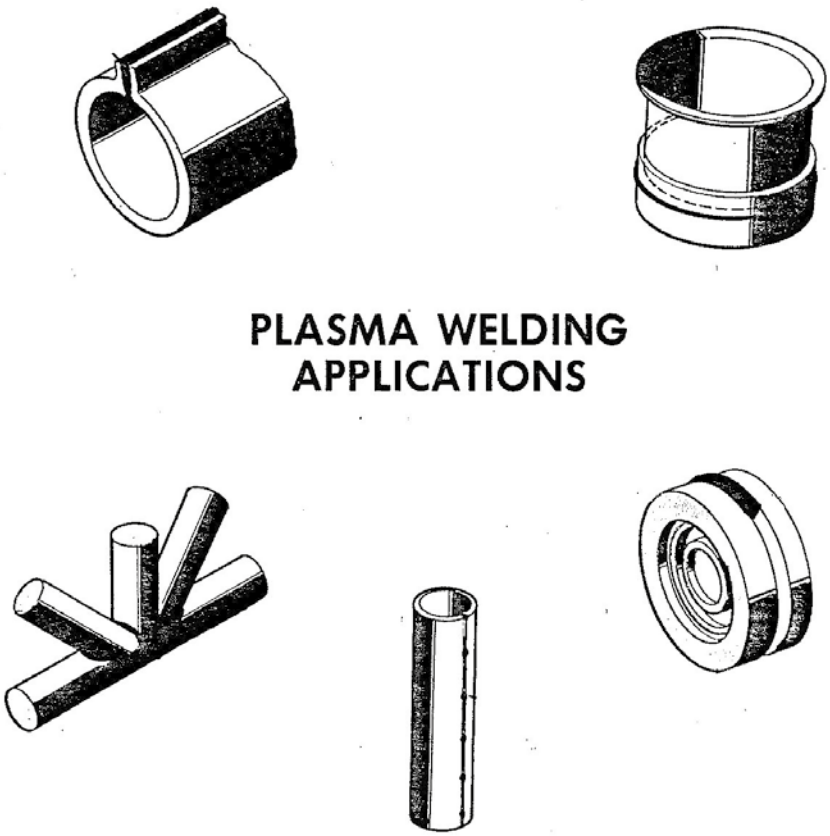
PLASMA WELDING APPLICATIONS

Plasma Welding Applications



PWP Industrial, Jaguar House, Shuttleworth Road, Bedford MK41 0EP, United Kingdom
Contact us on: Tel: 01234 345111 Email: info@pwpind.com

Plasma Welding Applications

APPLICATIONS OF PLASMA ARC WELDING

Plasma arc welding is adaptable to both manual and automatic operation, and can be used to produce either continuous or intermittent welds with or without the addition of filler wire. Plasma arc welding is most often an alternative to gas tungsten arc (TIG) welding. It is sometimes competitive with oxy-acetylene welding and electron beam welding and occasionally with resistance seam welding.

Metal Welded

Plasma arc welding may be applied to carbon and alloy steels, stainless steels, heat-resisting alloys, refractory metals, copper alloys, nickel alloys, titanium alloys and zirconium alloys. Aluminum has been successfully joined by plasma arc welding, but is not recommended since other processes offer advantages over plasma arc welding.

Welding Positions

Plasma arc welding is generally considered to be an all-position process, depending somewhat on whether or not filler wire is added. When welding is done on pipe in the (5G) horizontal position, the recommended technique is to weld from 12 o'clock to 6 o'clock with overlap.

Metal Thickness

Foils as thin as 0.001 have been joined satisfactorily with the plasma needle arc. The recognized maximum thickness for single pass keyhole welding, without filler wire addition is 0.250". Thicker sections may be joined if the edges are prepared according to recommendations and filler wire is added to eliminate undercut.

Joint Design

Joint designs for plasma arc welding are generally the same as TIG welding up to 0.060". Root opening and misalignment are less critical in plasma arc welding, because of the stiffness of the arc, and its insensitivity to voltage changes.

Typical operating conditions for plasma arc welding of various metals show the joint design recommended for various thicknesses. Edge-flanged, butt joints, square-groove but joints and machined-grooved joints are most often used.

The following applications are typical and representative of those which take advantage of the special properties of the plasma arc welding process. Whether or not plasma arc welding will be more expensive than another process will be determined only by careful evaluation of the application and the welding processes.

TEG
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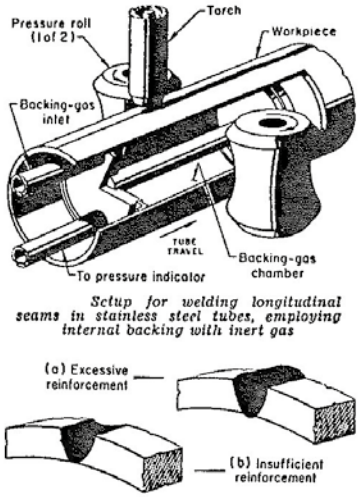
Plasma Welding Applications

PT-8 TORCH & PWM-8 UNIT



Setup for welding longitudinal seams in stainless steel tubes, employing internal backing with inert gas

PWM-9 (1,2,3,4)

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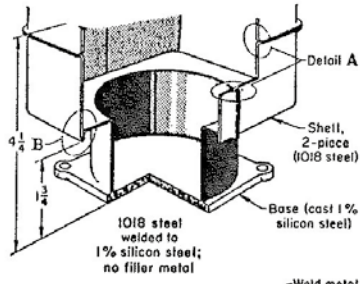

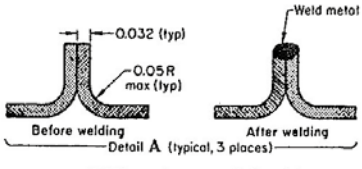

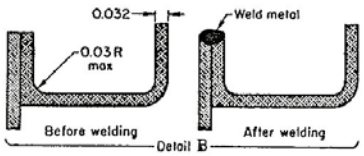

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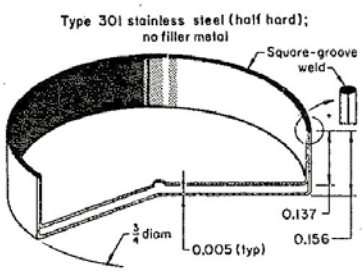

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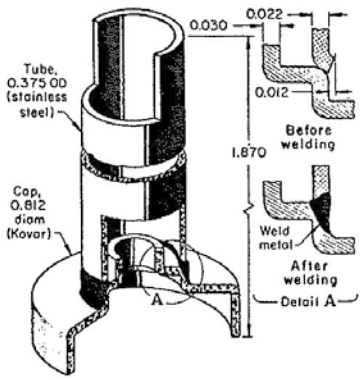

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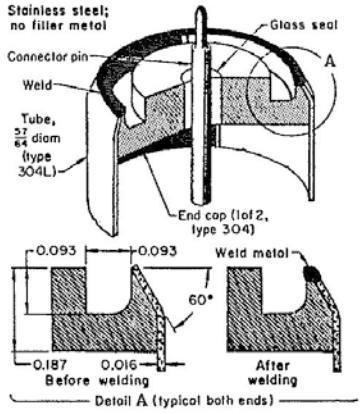

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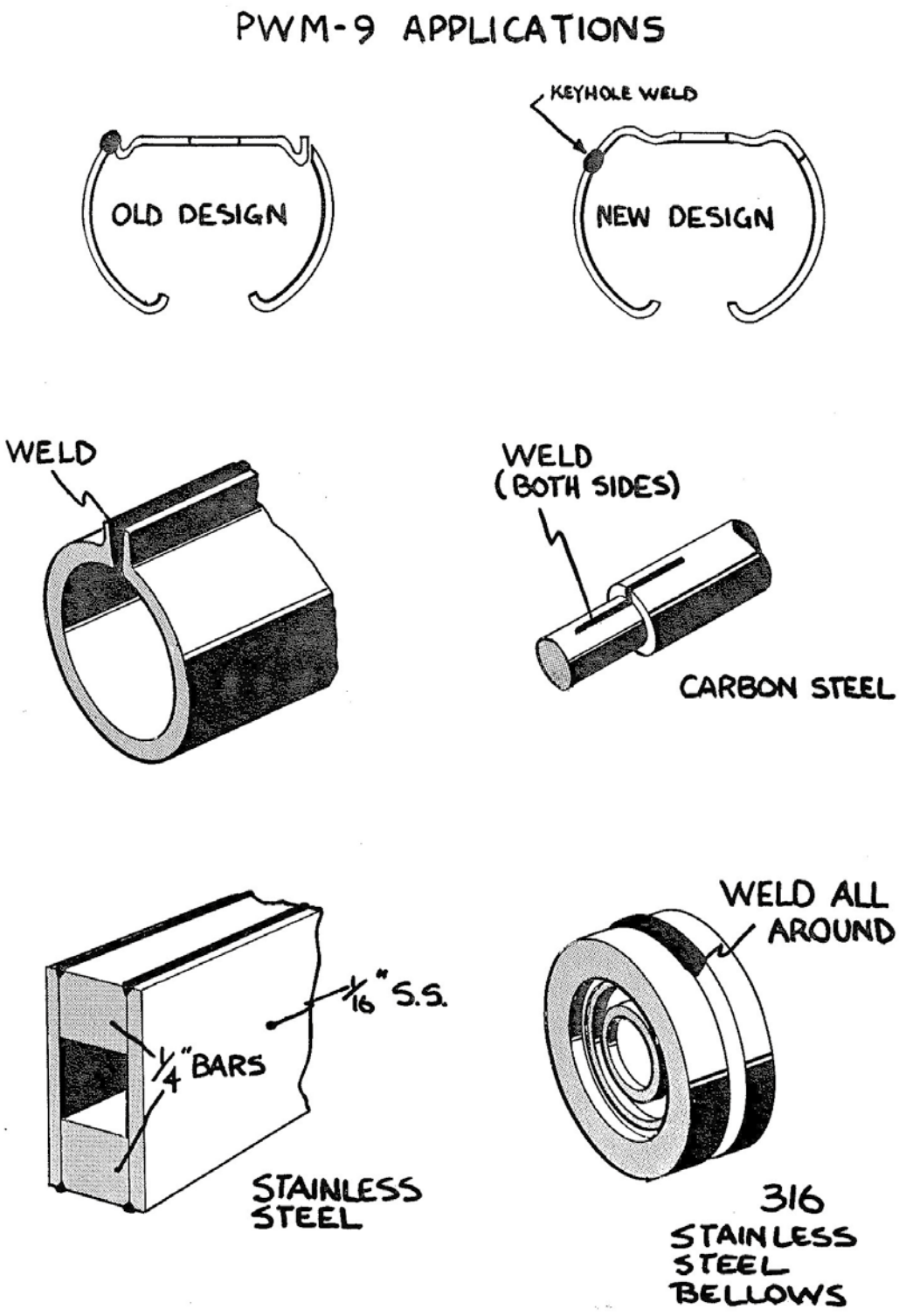

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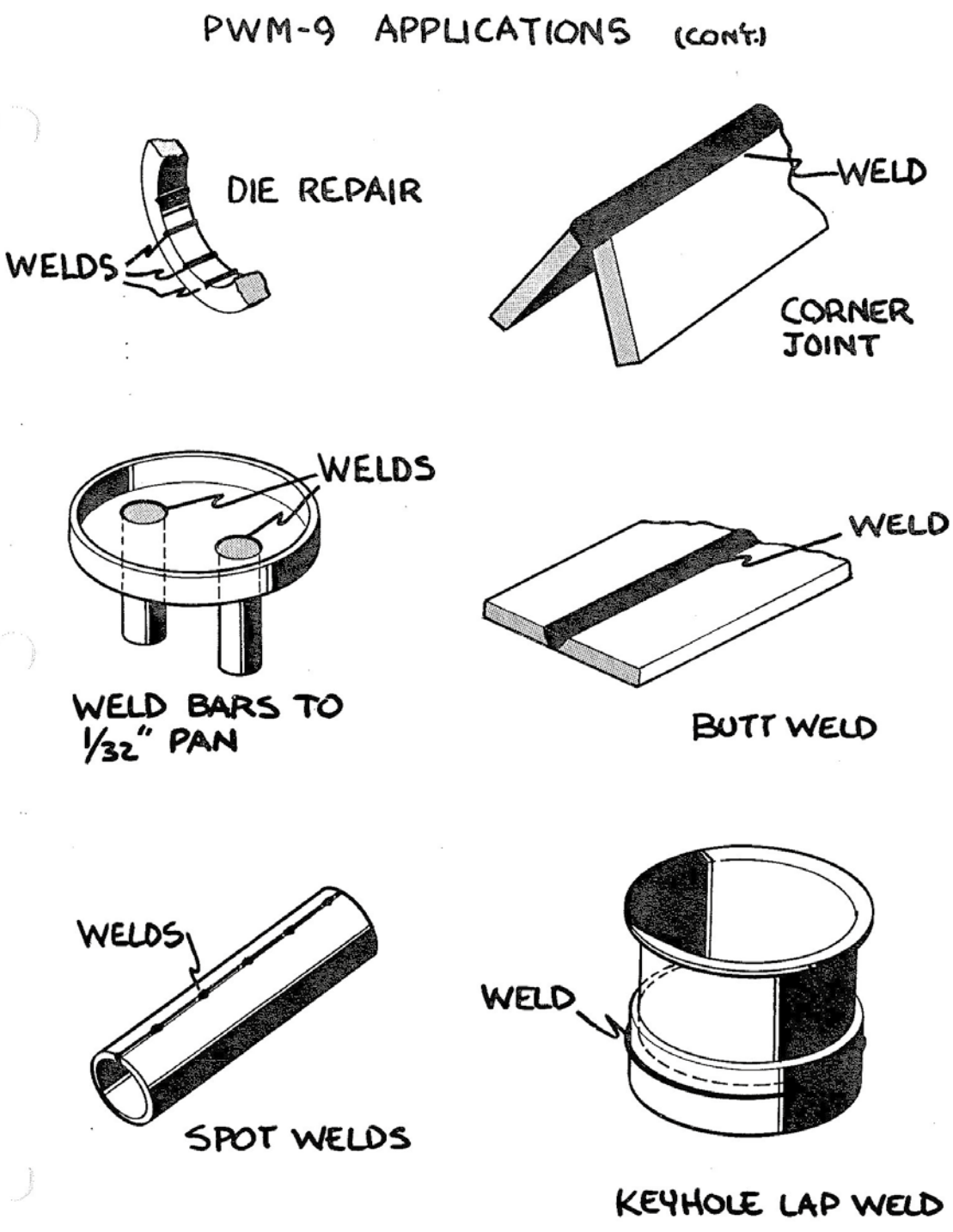

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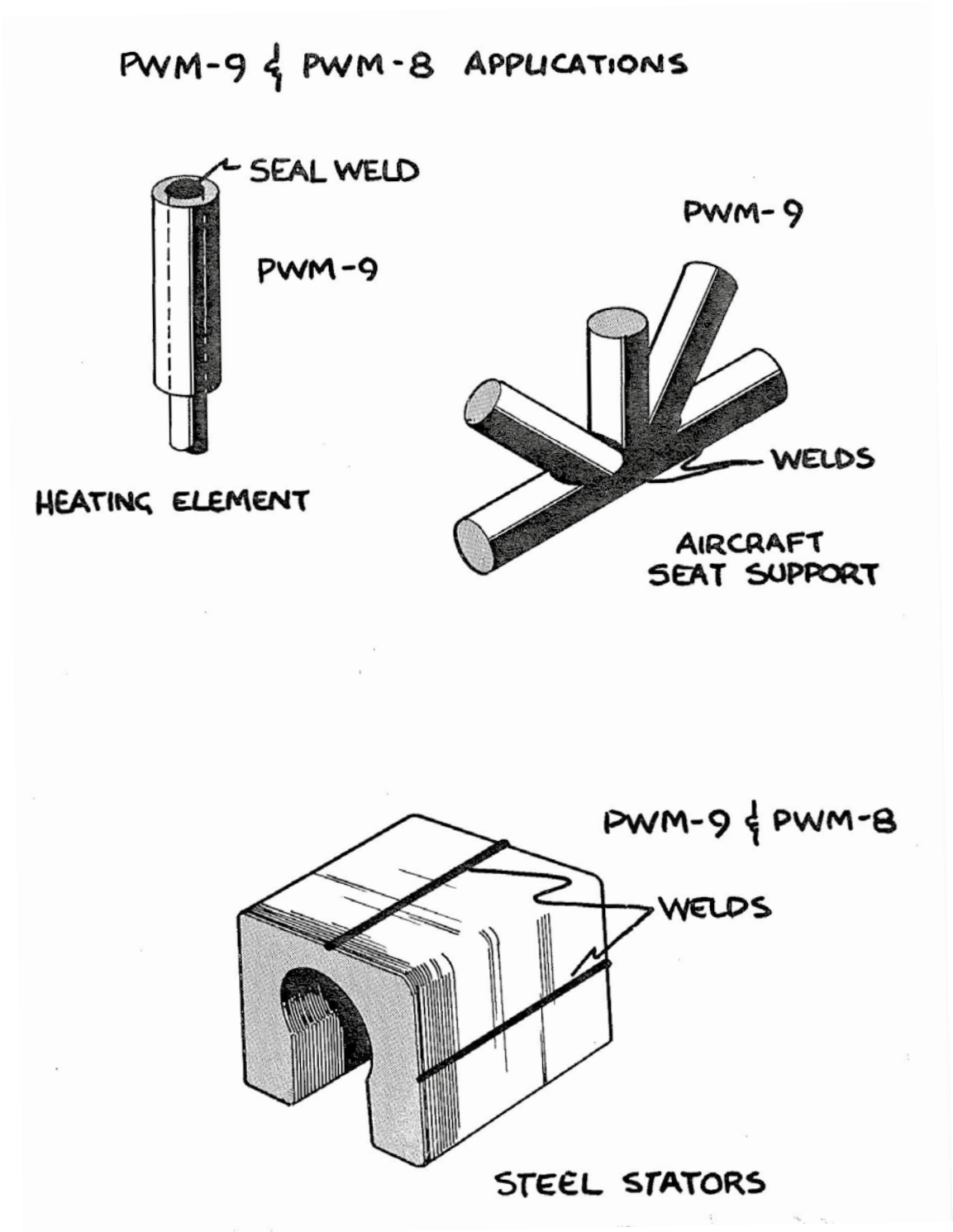

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ANY QUESTIONS? CONTACT US!

Tel: 01234 345111
Email: info@pwpind.com