

*Restore and Protect Worn Parts  
with Plasma Arc Welding  
Powder-Feed Solutions*



**PROCESS WELDING SYSTEMS, INC.**

# RESTORE CRACKED AND WORN METAL PARTS TO THEIR ORIGINAL DIMENSIONS FOR MAXIMUM PROTECTION

NOW YOU DON'T HAVE TO TRASH YOUR OLD METAL PARTS. WITH PLASMA POWDER FEED WELDING PRODUCTS, YOU CAN MAKE PRECISE REPAIRS ON WORN PARTS AND PROTECT THEM FROM FUTURE WEAR. SAVE MONEY ON DOWNTIME AND PART REPLACEMENT WITH PWS SOLUTIONS.

## THE PLASMA POWDER FEED WELDING PROCESS

The base metal of a component is melted using a plasma power supply and a plasma powder feed torch. During welding a controlled amount of alloy is carried by Argon into an Argon/Hydrogen shielded and transferred arc plasma column to apply a metallurgically bonded, wear resistant coating to the work piece. Accurate control of powder feed rate, current input (amperage) and gas flow rates allow the operator to attain precise deposits of powder material with minimal base metal.

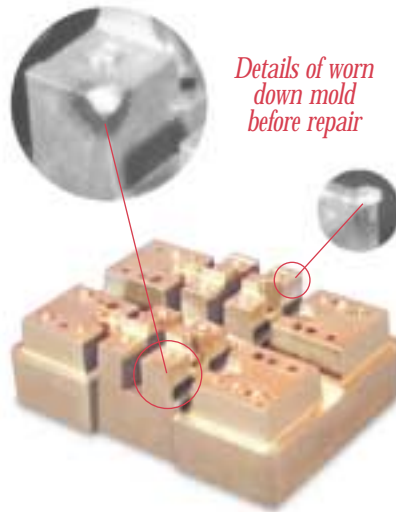
## APPLICATIONS

Application requirements such as resistance to abrasion, galling, impact and chemical or heat corrosion are candidates for plasma powder feed welding. Most ferrous and non-ferrous metals can be welded with plasma powder feed welding.

Plasma powder feed welding is perfect for parts such as turbine blades, dies, pumps, valves, screws, shafts, rotors, hammers, sleeves, cams, gears, bushings or any part requiring restoration of worn metal surfaces back to dimension.

ASK US ABOUT OUR WELD LAB, SAMPLE WELDING OR EQUIPMENT DEMONSTRATIONS.

PLASMA POWDER FEED TECHNOLOGY ENSURES HIGH QUALITY REPAIRS FOR A VARIETY OF PARTS AND DIFFERING BASE METALS

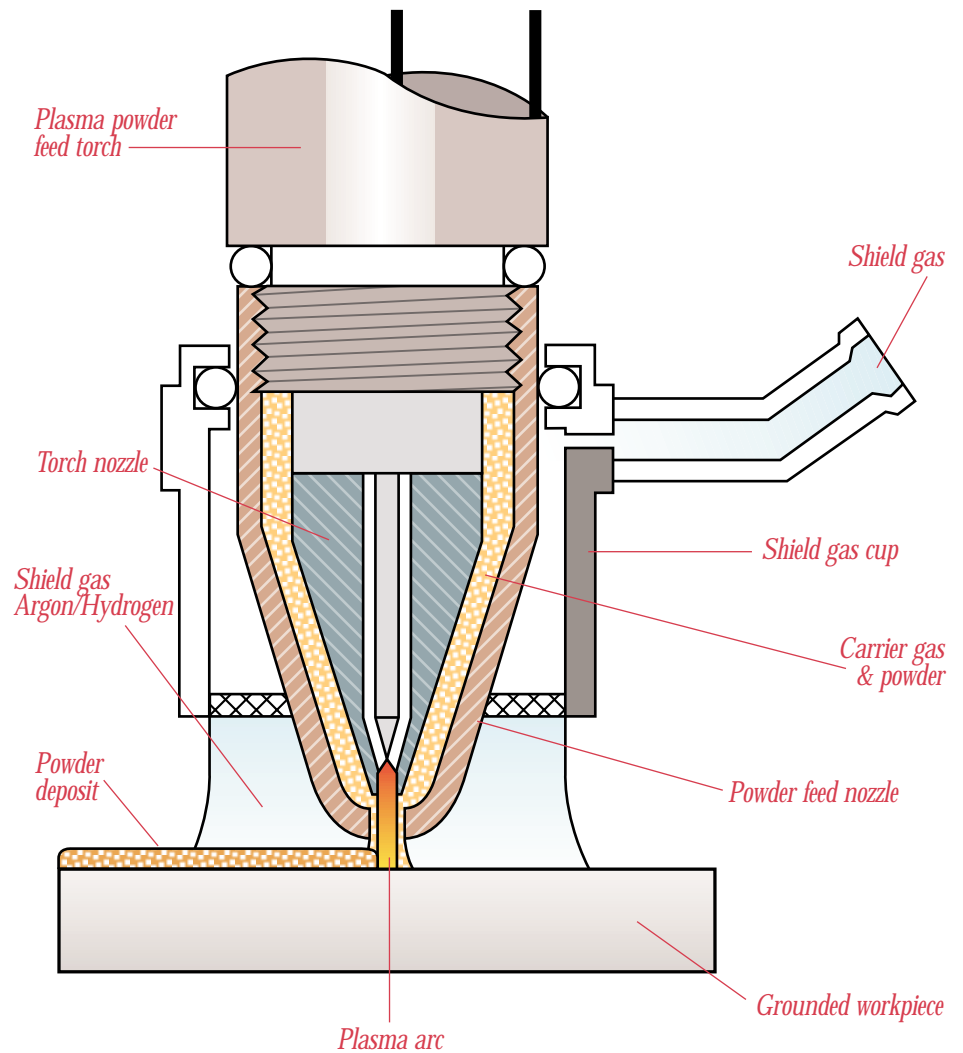


*Details of worn down mold before repair*

*Tool die & mold repair to original specifications*



*Hardfacing of wear surfaces*



PLASMA ARC WELDING WITH POWDER FEED DIAGRAM

# ADVANTAGES OF PLASMA ARC POWDER FEED WELDING

- Maintenance and repairs are done quickly reducing labor and downtime costs
- Restores worn parts and surfaces to their original dimensions
- Welding amperages as low as 0.5 amps and as high as 200 amps.
- Stable concentrated cylindrical arc and consistent arc starting
- Slight variations in torch stand off distance have little effect on bead or heat concentration with a minimal heat affected zone
- Metallurgical bonded overlays with minimal dilution of the base metal
- Wide range of alloy powder filler materials (wire materials are limited)
- Powder is easier to apply than wire welding
- Equipment can be used for manual or automated welding



*Sample restored parts,  
each made of differing base metals*



*Parts rebuilt to original dimensions*

## PRECISION COMPONENTS NEEDED FOR A COMPLETE POWDER FEED SYSTEM

### 5300 LF POWDER FEEDER

The **5300 LF Powder Feeder** is a gas operated, precision metering device developed to reliably feed selected powders for plasma welding. A remote powder feed on/off pendant is provided but the unit may also be integrated into a system for automated welding. Feed rates under 2 gm/min., gas flows under 2 SCFH and up to 9 lbs/hr. **Additional material on the 5300 LF is available by request.**

### PLASMA POWDER FEED TORCHES

Torches are available for low amperage welding, high amperage welding, manual welding and automated welding and can be customized to fit the user's application. Torches are water cooled and include cables and fittings for use with the power supply. **Torch accessory kits are sold separately. Ask for a bulletin on our complete line of plasma torches.**





## P+T POWER SUPPLY

The P+T can weld from 0.1 amp to 50 amps. It has a built-in programmer that can store up to 100 programs. One can use the P+T as a standard plasma welder, for TIG hand welding or with plasma powder feed in the manual or automated mode. The P+T is excellent for welding thin material in the low amp ranges.

Ask us for a P+T bulletin.



## ULTIMA 150 POWER SUPPLY

Ultima 150 is a self contained unit which is capable of welding up to 100 amps at 100% duty cycle. Amperage ranges are 0.5 to 15.0 amps and 5 to 150 amps. The unit can be used for standard plasma welding in the manual or automatic mode.

Ask us for an Ultima 150 bulletin.



## DT-100 PROCESS AUTOMATION

The DT-100 is a programmable welding control that interfaces to plasma power supplies to allow very accurate and repeatable welding programs to be developed and recalled for semi automatic and automatic powder feed welding applications.

Process variables such as preflow, postflow peak current, background current, up slope, down slope, pulsing, initial current, final current, weld time, travel time, travel speed, powder or wire feed and inputs and outputs at selected intervals can be programmed. Ask for more information on the DT-100 & complete turnkey welding systems.



CONSULT PWS, INC. ABOUT OTHER POWER SUPPLIES OR ABOUT SAMPLE WELDING AND PROCESS ASSURANCE PROGRAMS

**PROCESS WELDING SYSTEMS, INC.**

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