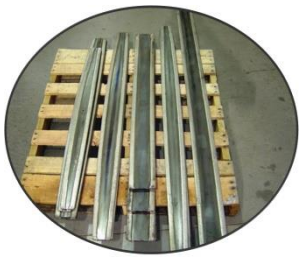
PLASWELD 7000 PTA SYSTEM

Oilfield Stabiliser

Non-Mag Drill Collar

Rollers

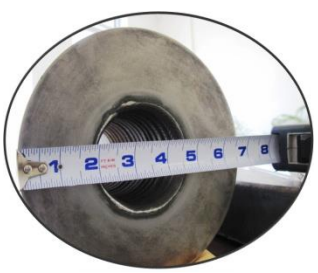


Scrapper Bars

Shovel Tooth

Sleeves

Dredger



Small ID Weld

The PLASWELD 7000 Plasma Transferred Arc (PTA) system is a high quality, modular, robust system with hand-held deposition capability. It is engineered for accuracy and simplicity of operation. The PLASWELD 7000 system uses argon gas to deliver a controlled amount of powdered metal into an argon-7% hydrogen gas shielded plasma transferred plasma column so as to produce metallurgically bonded, wear –resistant coatings to the work piece. Accurate control of the process parameters are possible including powder feed rate, current input, gas flow rates, as well as , upslope and downslope and arc voltage are integrated onto a PLC Controller of simplicity and accuracy. When hook up with suitable work handling equipment – the system will produce precise deposit profiles with minimal base metal dilution.

The resulting coatings are assured to provide:

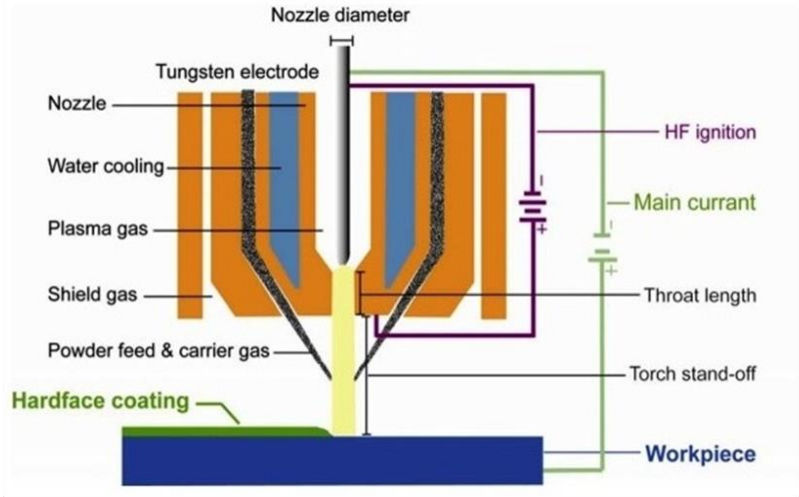
- ✓ Optimal wear resistance
- ✓ Optimal corrosion resistance
- ✓ Minimal base metal distortion and dilution
- ✓ Homogenous and pore-free layers
- ✓ Excellent reproducibility of layers
- ✓ Insignificant subsequent machining
- ✓ Efficient and cost effective use of the powder metal alloy

Highlights of PlasWeld 7000 PTA System:

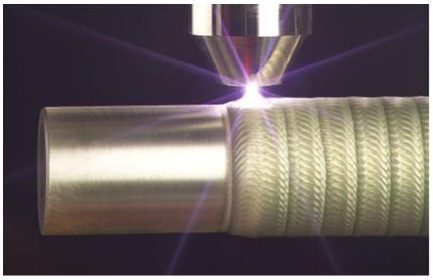
Our cutting edge PTA technology provides unsurpassed industry benefits compared with conventional welding processes and other machines:

- ✓ Ability to store 50 Weld Programs including Welding Voltage; Amperage; and Powder Feed Rate. All of which may be adjusted on the fly.
- ✓ User friendly and can be integrated onto robotics automation or any work handling system easily.
- ✓ Compatible with a wide range of PTA torches.
- ✓ Handheld Pendant to easily make minor adjustments remotely.
- ✓ 350A Power Supply allows for any input voltage hookup (208–575 V) with no manual linking, providing convenience in any job setting. Ideal solution for dirty or unreliable power.
- ✓ High-frequency arc starter for non-contact arc initiation. Provides more consistent arc starts and a soft arc transfer to substrate – thus greater reliability compared to traditional HF arc starters.
- ✓ Unique power source designed protects internal electrical components from airborne contaminates and cooling system operates only when needed, reducing noise, energy use and the amount of contaminates pulled though the machine; thus extending the product life.
- ✓ Extremely stable welding current and minimum heat effected zone though the entire the welding process.
- ✓ Fully automated function allows for single button to turn system On and Off without any sequence being followed.
- ✓ The system automatically begins pre-flow, pilot, transfer, activate the AVC, activate the oscillator, activate the powder feeder and begin following all stored parameters.
- ✓ Error prevention by constant monitoring and measuring of coolant and gas flow prior to and during system start.
- ✓ Shortcut to needed parameters such as the oscillator may be reached with one click or change with the remote pendant.
- ✓ Adjustable AVC sensitivity.
- ✓ The AVC (Arc Voltage Controller) automatically reduce or increase the arc length due to surface irregularities. Thus maintaining a steady and even cladding as well as prevent the torch head from wires or external controller.
- ✓ **ANY** recommended industrial torch may be used with the Plasweld 7000 system.

A Wider surrounding nozzle, ensures that the powder injected into the arc. Powder is fed by a carrier gas, that is normally argon.



Principle parts in a PTA Torch



Example of PTA Welding

Low Dilution

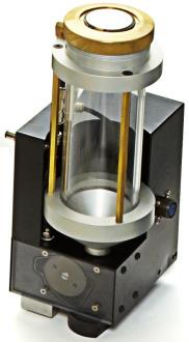
All these benefits are incorporated into a modular and robust system designed to be flexible. The PLASWELD 7000 can be used as part of an automated or semi-automated machine-mount installation or as a standalone hand-held installation. Its unique capabilities had set a new benchmark in PTA welding that enable us to stay in the forefront of competition.

Contact us today for an equipment demonstration to see how affordable it is to own a complete PTA solutions. With the Plasweld 7000 you will be confident in knowing you have made a wise investment in quality that has been rigorously field tested for reliability and performance for continuous production use.

PW 7000 – POWER SOURCE	
TYPE	DC Inverter Power Source
IGNITION TYPE	HF (High Frequency) ignition
CURRENT RANGE	10-350 Amps
WELDING CURRENT	@ 100 % duty cycle 250 Amps
WELDING CURRENT	@ 60 % duty cycle 300 Amps
PILOT ARC CURRENT	@ 10 – 20 amps
Dimension (L X W X H in inches)	13.75 X 22 X 24.75
WEIGHT (lbs)	135
POWER SUPPLY	208 – 575 V with no manual linking
DISPLAY	shows true amperage and voltage during welding

PW 7000 – CONTROL CONSOLE	
CONTROL METHOD	Digital
	Touch screen display
	Colour coded user friendly buttons
	Home screen display sets true amperage, voltage, powder rate and name of current weld program at all time
INTERNAL CONTROL WARNINGS	System locks down and will not pilot without appropriate gases and / or water flow
	System maintains a log of all gases / water flow faults with time and date of occurrence
PROGRAM MODES	Manual / Semi-Automatic / Automatic
GAS FLOW METER CONTROL	Analog (Plasma, Shielding, Carrier gas)
MOTOR CONTROL	Powder feeder (Optional controller for fluidized bed powder feeder)
	Oscillator
	Z - Axis arc voltage controller (AVC)
	Optional controller for positioner or gantry system
STORABLE PROGRAMS	250
PROGRAMMABLE PARAMETERS	17 Parameters
	Weld current
	Voltage
	Powder rate
	Upslope
	Downslope
	Pre - Flow
	Post - Flow
	Arc voltage controller (AVC) On/Off
	Oscillator width
	Oscillator left speed
	Oscillator right speed
	Oscillator left dwell
	Oscillator right dwell
	Oscillator on delay
	Oscillator off delay
	Relay on delay (for positioner)
	Relay off delay (for positioner)
DIMENSIONS (L X B X H in inches)	11.5 X 24 X 25
WEIGHT (lbs)	60

7000 RP - REMOTE PENDANT WITH BUILT-IN OSCILLATOR	
NUMBER OF FUNCTIONS CONTROLS	14 Functions
	Emergency stop
	Torch (On/Off)
	Gas (On/Off)
	Powder (On/Off)
	Weld current (Up/Down)
	Arc voltage CONTROL [AVC] (Up/Down)
	Powder rate (Up/Down)
	Oscillator set up (On/Off)
	Oscillator center potentiometer
	Oscillator width (Increase/Decrease)
	Oscillator left speed (Up/Down)
	Oscillator right speed (Up/Down)
	Oscillator left dwell (Increase/Decrease)
	Oscillator right dwell (Increase/Decrease)



7000 SD - POWDER FEEDER	
TYPE	Stepper driven metering wheel with pressure equilibrium system
FEEDING RATE	3 – 120 gram/minute
CAPACITY	25 lbs (11.34 kg) Custom sizes available
TYPICAL PARTICLE SIZES IN US MESH # / MICROMETERS WEIGHT %	
80 / 180 Micrometers	0
100 / 150 Micrometers	5 max
-100 +270 / 150 - 53 Micrometers	Balance
-270 +328 / 53 - 45 Micrometers	5 Max
-325 / 45 Micrometers	1 Max

7000 CC – CHILLER CIRCULATOR	
CAPACITY	1.5 KW Max
BTU/HR	9000
INLET/OUTLET PIPING	0.5” NPT
SOUND PRESSURE LEVEL	67 dB(A)
VOLTAGE	230 VAC single phase
COMPRESSOR POWER	1 HP
DIMENSIONS (L X B X H in inches)	23 X 23 X 36
WATER PRESSURE	3.6 BAR
DIMENSION	(W)710mm x (L)545mm x (H)450mm
TANK CAPACITY	20 L

* Rated at ambient temperature <42°C
* Water Level Indicator
* Microcomputer temperature controller
* Stainless steel cover
* Submersed copper coil evaporator
* Metal Mesh Air Filter
* Common Alarm Indication
* Safety features to protect compressor from over heating and current surge

7000 OSC – OSCILLATOR	
MOTOR TYPE	Stepper motor with encoder feedback
METHOD	Precision ball screw
TRAVEL	5 inches max

7000 AVC – ARC VOLTAGE CONTROLLER	
MOTOR TYPE	Stepper motor
METHOD	Acme screw
TRAVEL	6 inches
TRAVEL SPEED (max)	300 mm/sec
TASK	Vertical torch positioner when system is idle
	AVC actuator when system is running

MM-300 Torch

HH-300 Torch

TORCHES TO MEET APPLICATION NEEDS

MM-300 Torch – High deposition unit for production applications mainly for iron based, nickel alloy and cobalt base alloy.

HH-300 Torch – Robust hand held unit for manual operation.

P-220 Torch – Small diameter unit for fine, precise applications.

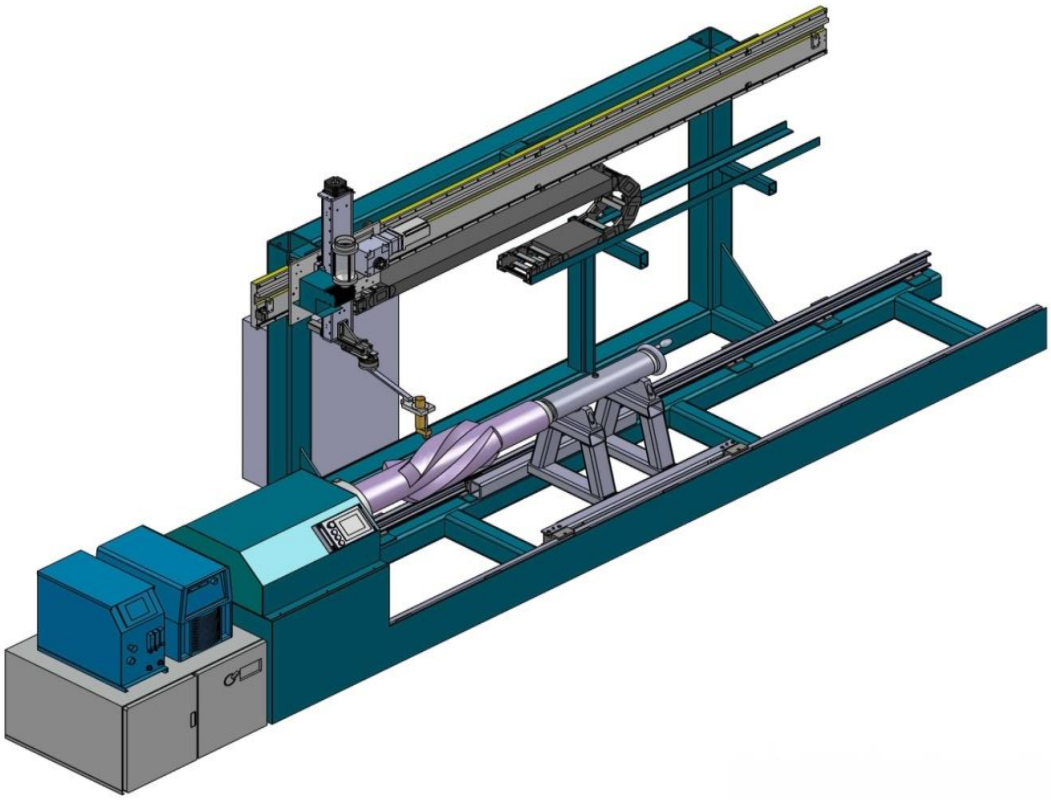
P-250 ID Torch – For internal diameter coating (3 inch minimum) and also can be use for outside diameter coating due to its robust design.

P-150 ID torch – Designed for high quality deposits for a variety of different wear resisting overlays alloy. Alloys can be applied to surfaces of inside diameters as small as 1.5 inches! 200 Amp rating with 2 - 5.5 lbs/hr deposition rate.

GENERAL	
WARRANTY	2 year warranty on power source & control console
SHIPPING	Ex stock / 4 - 6 weeks for basic system
BACK UP UNIT AVAILABILITY	Yes
TRAINING	Yes
TECHNICAL SUPPORT	Yes
APPLICATION DEVELOPMENT	Free consultation

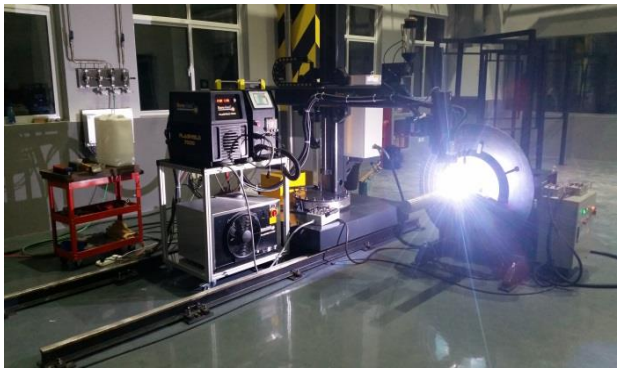
Semi-automated & fully-automated work handling system custom design built for different applications

Dura-Metal range of machinery and equipment are well known in the market for their reliability and quality. We have designed and manufactured a wide range of semi-automated and fully automated production machinery and equipment & fixtures for welding and cladding applications. Our experienced mechatronics design engineers / technicians are trained to assist customers in their productivity and quality enhancement through innovative machinery design and implementation.



Following are some examples of our successful PTA work cell deployment and customer's Facility :

- ✓ Oilfield Stabilizers
- ✓ Marine valve spindle and seats
- ✓ Glass mould
- ✓ Mining components
- ✓ Wear plate manufacturing
- ✓ User friendly work handling system for jobshops



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