

COLMONOY

Wear-Resistant Products and Engineering Services



- Powder • Rod
- Castings • Ingot

**Application
Equipment**



Alloy Development



**Statistical Process
Control**



WALL COLMONOY

Distributed by Astro Alloys Inc., Houston, Texas • 877-437-8338 **World's Leading Manufacturer of Nickel-based Alloys Since 1938**

Sprayweld® Process for efficient hardsurfacing



Hard-surfacing machine components which are subject to abrasive and/or corrosive wear is accepted as a proven maintenance procedure. The question is no longer whether to hard-surface, but which hard-surfacing process to use. To answer this question, the following factors should be considered:

- base metal (ferrous and high alloy);
- type of wear;
- service life;
- maximum wear tolerance; and
- repair costs.

The Sprayweld process offers numerous advantages which favor its use in many applications:

- Faster, uniform application
- Minimal powder consumption
- Close tolerances
- Less finishing time
- Wide range of applicable alloys.

Five-Step Sprayweld process:

1. Preparation

- De-greasing • Undercutting • Grit blasting

2. Preheating

Preheating time varies with the type of base metal:

- Mild steels (maximum .25% carbon)
...max. 300°F (149°C)
- Austenitic stainless steels (300 series)
...600°F (316°C)
- Martensitic steels (4340 and 400 series)
...650-750°F (343-399°C)

3. Spraying

The Sprayweld process utilizes a Colmonoy Spraywelder system (pistol, panel and hoses); oxy-acetylene gases; compressed air; a variable-speed turning device, such as a lathe; and CLEAN, DRY air.

4. Fusing

Oxy-acetylene torch fusing is the most common method of fusing nickel-base alloys. Other fusing methods include controlled-atmosphere furnace, induction, laser and synthetic fuels.

5. Finishing

Colmonoy alloys are easily machined or ground. Request Colmonoy Technical Data Sheet Tech-2 for complete finishing recommendations.

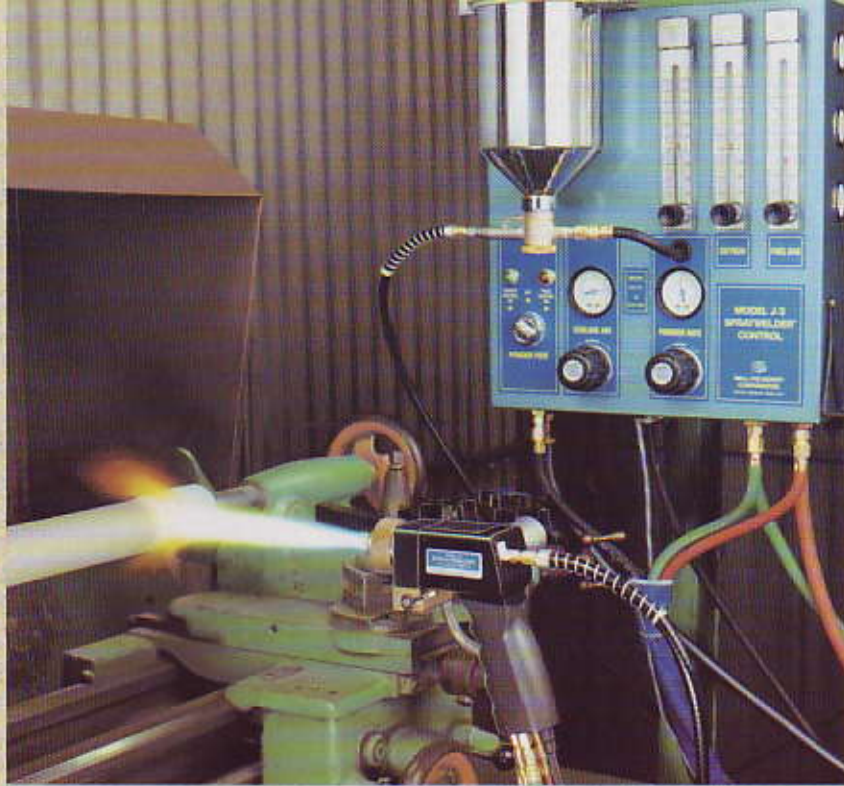
For complete information on the 5-Step Sprayweld Process, request Colmonoy Technical Data Sheet SW-1.

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The Sprayweld process offers faster deposition rates, less material consumption and, subsequently, less finishing time. Defect-free overlays are easily and efficiently achieved.

	Hand Welding	Sprayweld Process
Time	40 minutes	3 minutes
Material	Rod, 32 oz. (907 g)	Powder, 11 oz. (312 g)
Quality	Chance of porosity; low spots	No porosity
Accuracy within finished diameter	.150 in. (3.8 mm)	.020 in. (.51 mm)



Powder application made easy with the Spraywelder®

The Spraywelder system has built-in efficiency:

High Spray Rates—Specially designed nozzles achieve optimum performance with all of our various powder groupings. Spray rates up to 19 lbs./hr. (9 kg/hr.) are achieved with our standard model, and up to 35 lbs./hr. (16 kg/hr.) with our high-output system.

Tight Spray Patterns—The nozzles and focused air jets achieve the narrowest spray pattern commercially available. More alloy is delivered to the part faster, with less overspray, minimizing operator time and consumable investment.



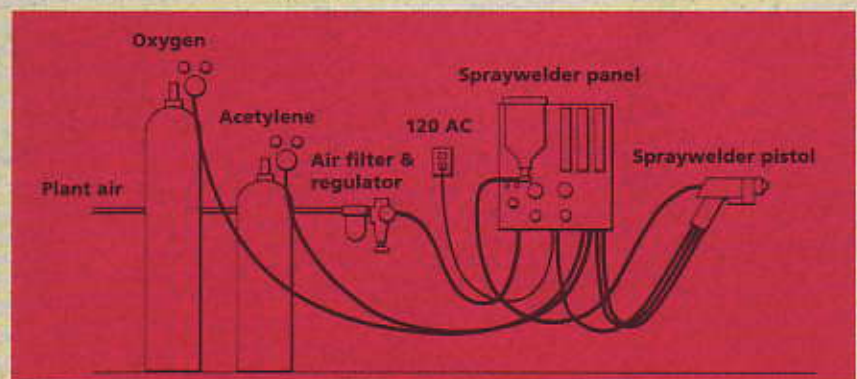
Spray pattern density of Colmonoy No. 6 using a J-3 Spraywelder D nozzle: 98% of the sprayed powder hits the part within a 3/4-inch-diameter target!

Dense Coatings—Flame energy of up to 92,000 BTUs and increased target efficiency means hotter metal spray particles are delivered to the substrate. The final result is a stronger, denser overlay.

Reliability—The Spraywelder pistol is designed and built for years of daily use. O-rings are used throughout the unit and gas passages are drilled into a solid aluminum body. The valve assembly is piston-activated for positive, leak-proof control over all gases and maximum safety. The air-cooled pistol handles the hottest jobs.

Easy Operation—The Spraywelder system includes a complete control panel which can be positioned up to 10 feet away. All gas pressure and flow adjustments are located on the panel. It also secures the 20-lb. (9-kg) production-size hopper, which feeds the gun through a vibrator-less compressed air circuit (no expensive inert gases are necessary). The lightweight pistol is compact and operates in any position.

Versatility—Use the Spraywelder system to apply a wide range of alloys, including spray-and-fuse and metallizing powders.



Complete Spraywelder system includes:

- Pistol and selected tip
- Panel with hopper, carburetor, 2 gauges and 3 flow meters
- Air filter/regulator with gauge and fitting
- Complete hose kit with dual flame arrestors
- Operating manual
- Tool and parts kit