Volume 1 Number 4

Colmonoy ALLOY NEWS

Hard-facing and Brazing Alloys Wearproof Castings Stainless Steel Processing

WALL COLMONOY CORPORATION • 19345 John R Street • Detroit 3, Michigan • TW 3-3800

Manufacturing Subsidiaries: Wall Colmonoy (Canada) Ltd., 3001 Broadway, Montreal East, Quebec; Wall Colmonoy (Canada) Ltd., Lanarkshire, Scotland

Branches: Buffalo, N. Y.; Linden, N. J.; Chicago, Ill.; Pittsburgh, Pa.; Morrisville, Pa.; Birmingham, Ala.; Houston, Texas; Los Angeles, Calif.

HARD-FACED WEAR PLATES LAST 4 TIMES AS LONG

Arc Welded Protective Coating Effects Big Cost Reduction

Longer service life at reduced cost is the goal in most production installations. Results of recent experiments with pulp and paper industry equipment show that hard-faced wear surfaces are an excellent means of achieving that goal.

Two years' experience with chipper disc wear plate field test installations in Canada shows at least 3 to 4 times the useful service life with arc-welded Colmonoy No. 5 protection. Plates which have been in use as long as 26 months show negligible wear to date.

Colmonoy is well suited to wearproofing other paper mill parts such as pump sleeves, plungers, bed knives, cable buttons and hydro-pulpers.

TYPICAL WEAR PLATE from an 84-inch chipper disc following application of Colmonoy No. 5.

WELDING SHOW MAY 9-10-11

Sure hope we see you at the 4th Annual Welding Show in Buffalo. Drop around and say hello at Booths No. 10 and 11. We'll be displaying our full line of Colmonoy and Nicrobraz products and will have a Sprayweld and welding demonstration in operation.

COLMONOY IMPROVES LIFE OF PUMP PARTS

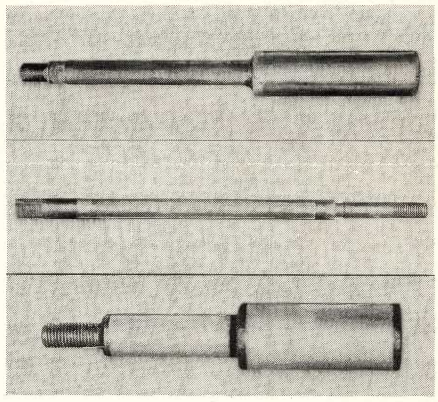
Hard-Face Coatings Withstand Salt Water, Gasoline, Acid

Pump parts hard-faced by Spraywelding with Colmonoy alloys last from 4 to 8 times as long as uncoated parts in oil producing and refining equipment. Increased life results from the wear and corrosion resistance of the nonporous Colmonoy surface.

Long life is achieved despite applications involving contact with such corrosive fluids as salt water, gasoline and hydrofluoric acid (see photos at right). In addition, the alloy surface has a low coefficient of friction that reduces packing wear and cuts maintenance and down time.

Any part exposed in service to corrosive atmospheres or fluids is a *natural* application for Colmonoy. Such parts should be given a protective coating when new. Protected parts can also be renewed by the same Sprayweld process after extended periods of service thus avoiding the costly purchase of new units.

Colmonoy alloys have proved their ability to outwear hardened steel 5 to 25 times in the petroleum and chemical industry and a wide variety of other applications.

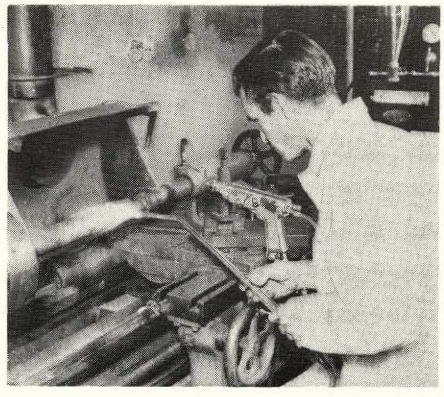


TYPICAL PUMP PARTS protected with Colmonoy hard-facing alloys for long service in oil producing and refining equipment.

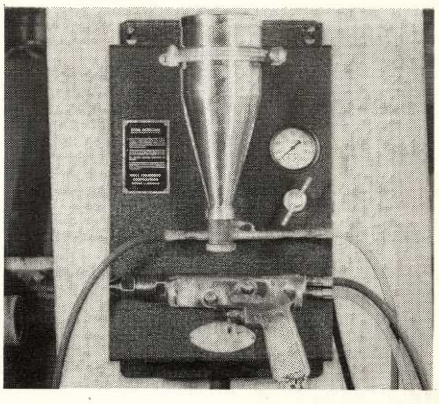
Pump plunger at top is shown following 22 months continuous salt water service in Oklahoma. Packing maintenance was practically eliminated during this period. Previous unprotected plunger normally lasted 3 to 4 months and required almost daily packing gland maintenance.

Dubbs gasoline pump rod (center) is shown after running 24 hours a day for two years. Uncoated rods had a service life of 90 days and required frequent repacking.

Coated plunger following continuous refinery service for more than one year pumping dilute hydrofluoric acid is the lower pump component illustrated. Uncoated plungers have lasted from 2 to 3 months in this severe corrosion application.



FUSING the Colmonoy alloy coating to a pump plunger. Plunger has been previously machined undersize, grit blasted and Spraywelded with .045 in. coat of Colmonoy alloy in powder form. The coating is fused to the base metal using an oxy-acetylene torch flame as shown. The plunger is then finish ground.



SPRAYWELDER UNIT includes pistol, hopper, carburetor, hoses, air regulator and air filter mounted on a panel. Oxygen and acetylene gas and a source capable of delivering 10 cfm of dry air 35 psi are also required. Colmonoy powder is applied through the Spraywelder pistol.*

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COLMONOY PRODUCT OF THE MONTH

WALLEX No. 6 Oxy-Acetylene Rods and A-C, D-C Electrodes

APPLYING WALLEX NO. 6 to internal combustion engine exhaust valve.

Wallex No. 6 is a cobalt chromium tungsten hard-facing alloy. Because of its excellent impact resistance, it is widely used for maintaining cutting edges, especially in high temperature conditions.

Wallex No. 6 is used on valves, pumps, hot dies, mill guides, ingot tong bits, steel mill conveyor rolls, hot shear blades and furnace skid rails. If you have an impact application requiring red hardness, Wallex No. 6 is a perfect answer to your wear problems.

This material has high impact, corrosion and abrasion resistance. It resists oxidation and is virtually unaffected by corrosive chemicals or atmospheric corrosion. Available in 3/16, 1/4, 5/16 and 3/8-in dia rods, as castings or as shot for casting fabrication. Hardness of Wallex No. 6 ranges from 39-44 Rc.

TITANIUM BRAZING PROCESS AVOIDS DISTORTION

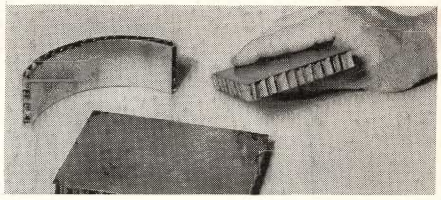
Vacuum Furnace Technique Permits Lower-Than-Normal Temperatures

For years, engineers and production people have been hoping for a solution to the problem of brazing assemblies of titanium parts. A recently announced vacuum furnace brazing process developed by our Stainless Processing Division solves the distortion problem by utilizing below-normal temperatures.

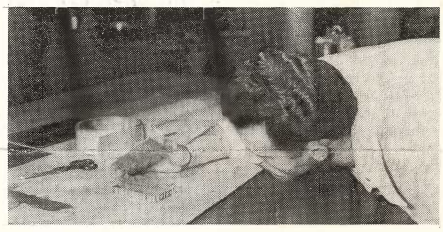
The process can be used with silver or silver manganese brazing alloy to join titanium to titanium, stainless steel or other alloys. It is applicable to assemblies of any size. The new method requires no fluxes and permits simultaneous multiple brazing operations.

The relatively low temperatures used avoid embrittlement and other difficulties generally associated with high temperature brazing of titanium. The wetting and flow characteristics of the process insure complete brazing of all joints regardless of contour or position. This permits the brazing of complicated shapes like turbine blades and honeycomb sections as well as parts in which the titanium components have been assembled prior to the application of the brazing alloy.

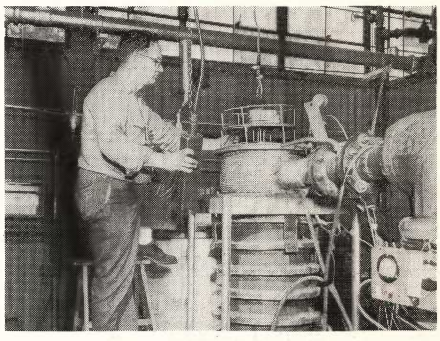
If you have an application in which brazed titanium might be advantageously used, the Colmonoy process makes such an assembly a practical reality. The illustrations at the right show the application of the new process to a typical part.



TYPICAL TITANIUM ASSEMBLIES successfully brazed by new vacuum brazing process. Note that no distortion is evident, in the curved section.



ASSEMBLING section prior to brazing. Shim strips of brazing alloy separate the honeycomb from the face sheets.



SANDWICH ASSEMBLY being lowered into retort prior to brazing. Weights on top face sheet insure positive contact of all components during brazing. Actual brazing is done in a vacuum furnace.

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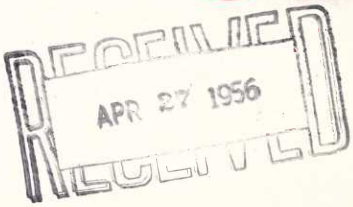

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