SIFCO PROCESS

SIFCO® Selective Plating
Division of SIFCO Industries, Inc.
World Headquarters
5708 Schaaf Road
Cleveland, Ohio 44131, USA
Ph: (216) 524-0099
Fax: (216) 524-6331
FAA Repair Station #SOXR680K

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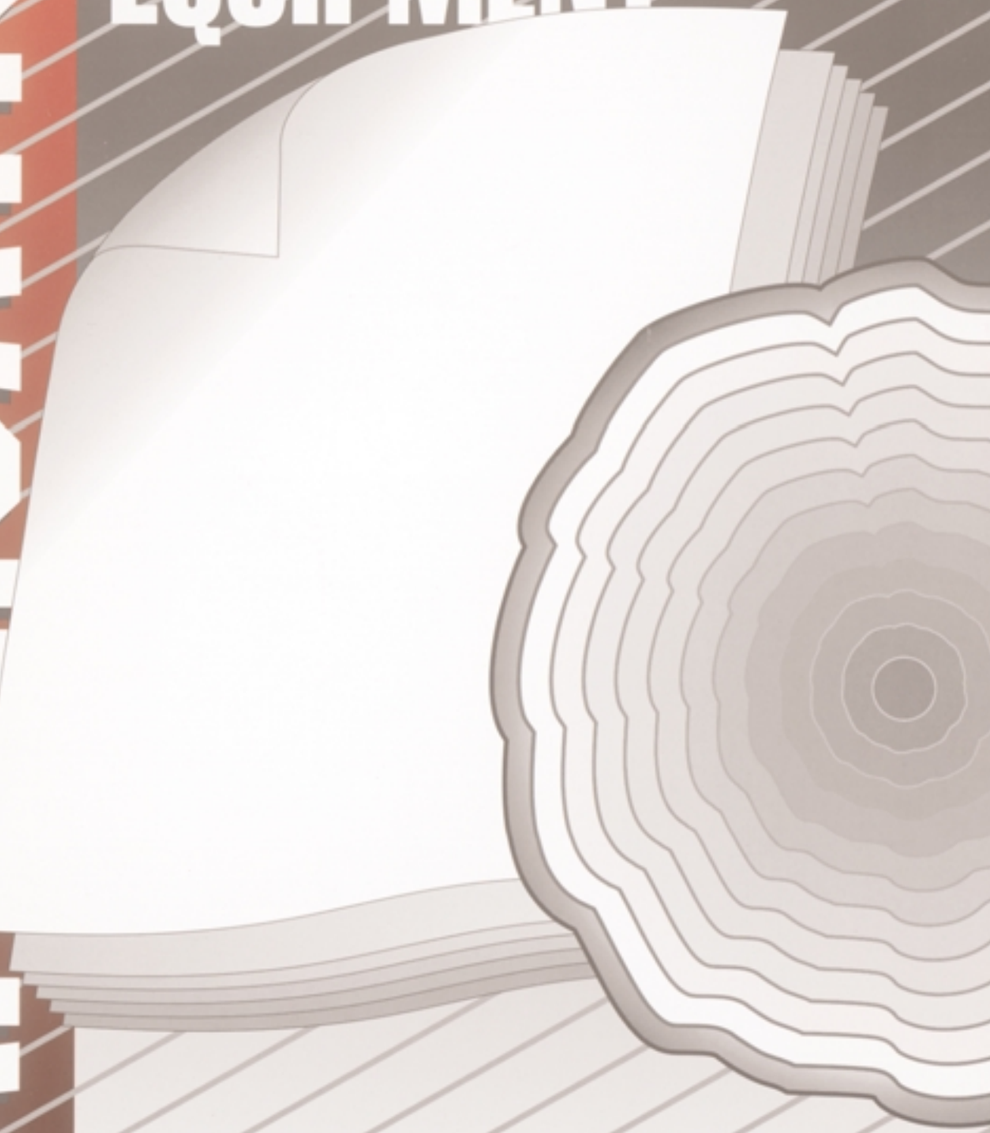
APPLICATIONS

PULP & PAPER PLANT EQUIPMENT



RESIZE • REFINISH • RESURFACE • REBUILD

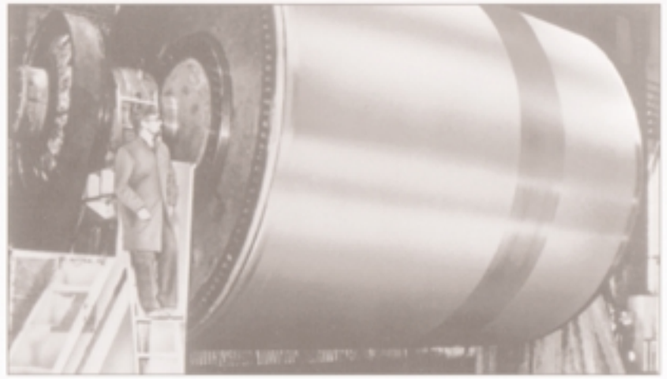
PULP & PAPER PLANT EQUIPMENT

Resize worn or mismachined bearing diameters

Enhance existing surfaces

Apply corrosion resistant coatings

Perform permanent, cost efffective repairs



REAP the benefits of using the SIFCO Process of selective electroplating, a method of plating specific areas without immersing the part. Over 100 plating solutions are available to provide deposits of excellent quality on all commonly used metals and alloys.

Selective Plating is a versatile method that can be used for many different, demanding OEM and repair applications on pulp and paper plant machinery and equipment. This portable process can be used both on site and in the shop. You can buy the equipment and do your own selective plating, or our certified technicians can do the work at your facility or in one of our job shops located worldwide. We are prepared to meet unexpected problems, and respond to your needs with fast and expert service.

Perform On-Site, Cost Effective, Permanent Repairs

- **Repair components in place**
- **Reduce equipment downtime**
- **Eliminate expensive disassembly and shipping costs**
- **Expand in-house maintenance and repair capabilities**
- **Provide a permanent cost effective repair**

RESIZE

REFINISH

RESURFACE

REBUILD

A P P L I C A T I O N S

A Case History

Problem

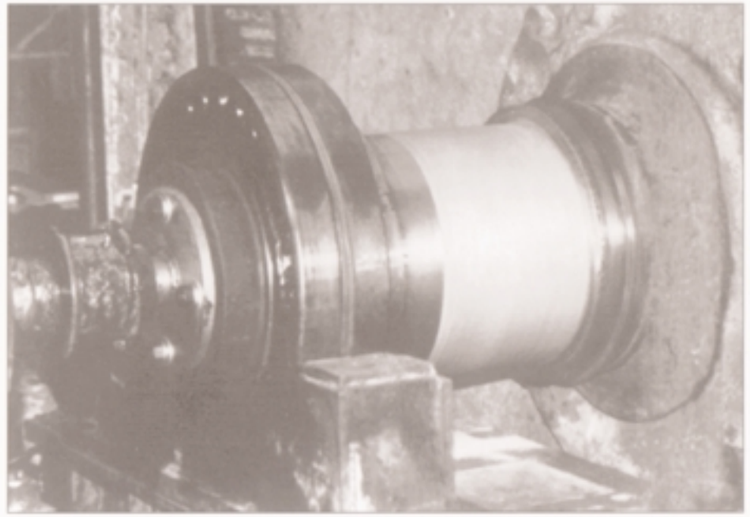
Steam heat was applied too rapidly while starting up a 4.5 m (15 ft) long, 4.5 m (15 ft) diameter Yankee Drier. The result was that the inner race on a roller bearing cracked, which damaged the journal. Approximately 95% of the journal area required build-up material. The amount of material required on 65% of the area was 2.5 microns (0.001 in.) to 508 microns (0.020 in.) per side. Approximately 30% of the area required 508 microns (0.020 in.) to 2290 microns (0.090 in.) on a side where broken up fragments pressed into the journal. The tapered journal had a diameter of 330 to 356 mm (13 to 14 in.) and a length of 203 mm (8 in.).

Solution

Selective plating was selected as the repair method. The plating of the journal began with mechanical preparation of the surface using flap and polishing wheels to remove sharp projections, oxides, baked on films, etc. Afterwards, the area was solvent cleaned and masked off. The area was then cleaned, etched, desmutted, nickel flashed, and copper-plated 625 microns (0.025 in.) thick over the entire surface. There was some surface roughness at this point, so flap and polishing wheels were again used to improve the surface. The journal was measured using a micrometer, and areas where there was sufficient stock were masked off so that additional plating could be applied only where it was required.

The remaining area was cleaned, etched and copper plated with an additional 625 mm (0.025 in.) thickness. A total of 4 layers of copper was applied in this manner. This provided sufficient stock over the entire journal. The time elapsed, from originally viewing the part to this point, was 40 hours.

The journal was then machined with a single point tool approximately 50 microns (0.002 in.) undersize. Nickel 25 microns (0.001 in.) thick was finally applied to give a harder, anti-galling surface.



Result

After the job was done, the unit was placed back in service. After ten years, there has been no problem with the repair. The bearing was taken off once and, because no damage was noted, the same bearing was replaced.

APPLICATIONS

- **Suction Rolls:** bearing diameters
- **Dryer Rolls:** bearing diameters, heads
- **Pumps:** bearing housings, impeller bores, shaft bearing journals and seal areas
- **Electric Motors:** bearing housings, rotor journals, commutators, bus bars
- **Power Generating Equipment:** steam turbine bearing journals, flange faces, diesel engine cylinder liners, connecting rod bores, crankshaft journals

REFERENCE

TSB 86002 Technical Considerations On The Performance Of SIFCO Process Deposits On Bearing Seats And Shrink And Press Fit Surfaces

TSB 81001 Scratch Filling Characteristics of SIFCO Process Deposits

SIFCO PROCESS®

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