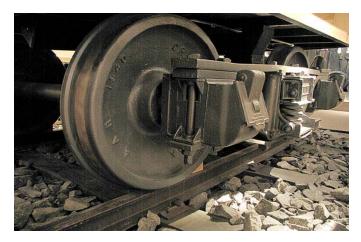
## RAILROAD EQUIPMENT SERVICES

Utilizing the most advanced cutting edge technologies -Truly independent -Technology neutral. O & M Agreements, MRO, LTSAs, Exchange Programs, Complete Overhauls, Engineering consultation, Reverse Engineering.....







- Resurface undersized or worn bearing area journals and wheel seats (Restoration to AAR(American Association of Railroads) Specifications
- Undersized Shaft specs restoration to original OEM
- Rebuild seal ring wear areas
- Recondition worn bearing seals, end bell housings, stator housings on electric motors and electrical machinery
- Application of conductive silver or other enhancements to electrical machinery
- Cracked castings 100% effective cold engineered repairs (e.g. Engine Blocks, Cyl. Heads, Transmission Housings....)
- Polymer Engineering repairs
- Repair Slips rings on electrical machinery
- Extend life of commutators
- Bushing, Bore repairs and restoration
- Scored Hydraulic Rams and Cylinders, and general sealing surfaces
- Restoration of conical or tapered areas
- Spline Shaft repairs
- Crankshaft dimensions restoration (Shot peening to specs if required.
- Material Characterization(s)
- Parts modeling, design, reverse engineering with Solidworks, Inventor, CAD/CAM, Finite Element Analysis, CFD, Virtual Casting simulations.....

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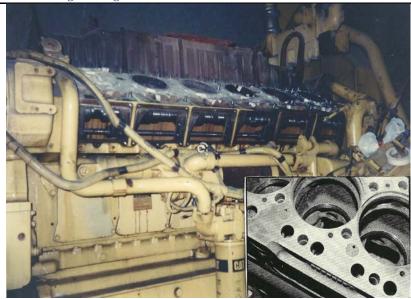
Undersized bearing areas on shafts restored.



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Reverse Engineering.....



Engine Block (1,200 KW) showing cooling port damages, fully restored.



Engine Block damaged by porosity and restored satisfactorily.

- Our Engineering and
   Technology portfolio
   includes, but is not limited to
   (always conscious of the best
   alternative to HazMaterials):
- Powder metallurgy
- Plasma transferred weld
- Polymer Engineered repair technologies
- ESD deposition (dry, wet)
- 100% effective cold casting repair technologies achieving greater than 100% joint efficiency
- $Plating Microfuse_{TM}$
- HVOF
- Other innovative technologies
- 3D Modeling
- CAD/CAM
- Reverse Engineering
- Finite Element Analysis
- Professional Engineers on staff
- Metallurgical experts
- Among others....

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Hydraulic Rams – Before and After.



Crankshaft Crankpin damaged and repaired afterwards.



Turbo Wheels and Housings. Oversized Bearing housings restored to OEM specs. Minority owned and operated.