

PIONEER SOLUTIONS, LLC

COMPANY OVERVIEW



HISTORY & BACKGROUND

Pioneer Solutions, LLC was formed in 2004 and is primarily comprised of the former Euclid-Hitachi heavy equipment engineering department. The company retained a large group of experienced personnel in a broad range of technical disciplines when Hitachi Construction Machinery acquired the Euclid business and discontinued its North American operations. **Pioneer Solutions has over 300 combined years of OEM based experience in the off-highway and heavy equipment industries.** The company supports customers through three main business divisions – Engineering Services, Testing Services, and Manufactured Products.

The Engineering Services Division provides design, engineering, product management, and project management services to equipment manufacturers and end users. Pioneer has engineering and design expertise in all of the technical disciplines (structural, hydraulic, power train, electrical, and software) related to developing off-highway and heavy equipment. This business is organized to support customers throughout the entire product life cycle – from new product development to field problem resolutions, to machine upgrades.

The Testing Services Division provides test program planning, procedure development, execution, oversight, and reporting services to equipment manufacturers and end users. Pioneer has test management and test engineering experience in validation programs for new prototype machines, structural, hydraulic, power train, field failure resolution, performance improvement, and global industry standard certifications. This business is organized to support customers with testing in the laboratory, factory, and field.

The Manufactured Products Division supplies specialized products to equipment manufacturers in the areas of braking systems and power train components. Pioneer focuses on highly engineered components, such as oil cooled disc brakes, differential gearing, and final drive planetary assemblies. These components require advanced manufacturing processes and a high level of quality to perform in the extreme applications of the off highway equipment industry. This business supports customers through new product development, prototype, production, and field service.

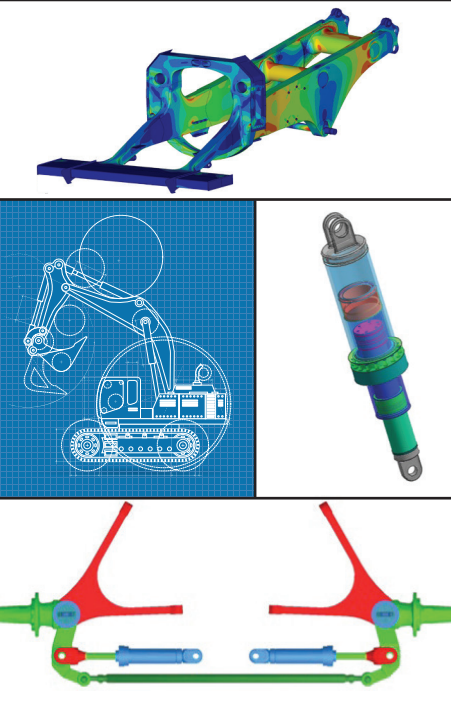
“*... Pioneer Solutions, LLC can provide engineering services based on years of experience in the design and testing of mining and construction equipment. ... I highly recommend Pioneer Solutions to meet your needs.*”

Walter Fox – Former CEO
Hitachi Construction Manufacturing LTD.

PIONEER SOLUTIONS, LLC 

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ENGINEERING SERVICES



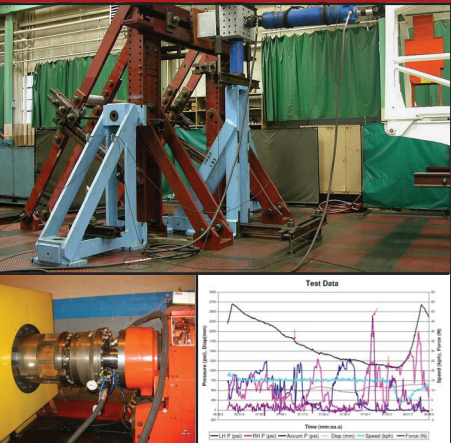
CAPABILITES & EXPERTISE

- » Metallurgy
- » Structural Components
- » Axles, Steering Mechanisms, Suspensions
- » Advanced FEA & Simulation
- » Hydraulic Systems
- » Power Train Systems
- » Brakes
- » Differential & Planetary Gear Assemblies
- » Electrical Systems & Software
- » Machine & Systems Integration
- » Manufacturing Engineering
- » Product Management
- » Project Management

TECHNICAL SOLUTIONS

- » Market Analysis / Voice of Customer
- » Product Definition / Planning
- » Technical Specifications
- » Machine Concept Development
- » System & Component Design
- » Design Review & Verification
- » Reliability / Performance Improvements
- » Cost & Weight Optimization
- » Product Upgrades
- » Design for Global Markets
- » Failure Analysis & Resolution
- » Supplier Development
- » Manufacturing & Quality Planning

TESTING SERVICES



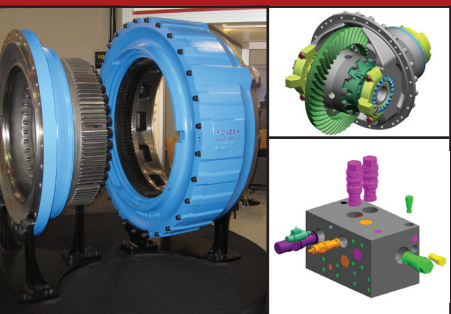
CAPABILITES & EXPERTISE

- » Definition of Test Goals
- » Development of Test Plans
- » Definition of Test Procedures
- » Execution of Tests
- » Analysis of Data
- » Formulation of Conclusions & Reporting

TECHNICAL SOLUTIONS

- » Laboratory Testing
- » Factory Testing
- » Field Testing
- » Component Testing
- » System Testing
- » Machine Testing
- » International Standards Certifications

MANUFACTURED PRODUCTS



CAPABILITES & EXPERTISE

- » Design Engineering
- » Engineering Support for OEM Integration
- » Manufacturing Quality
- » Product Support

TECHNICAL SOLUTIONS

- » Oil Cooled Disc Brakes
- » Hydraulic System Components
- » Differential & Planetary Gearing

