# Repair & Engineering Services for Industrial Equipment





 ISO 9001:2008
 psi-repair.com

 CAGE 5N884
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#### We offer:

Repair Savings Reliability Improvement Efficiency Uptime

#### **Resources:**

Sustainment & Obsolescence Management Engineering Services Technical Support Test Equipment RCA Corrective Engineering

#### Time:

Exchange Program Repair & Hold Solutions Overflow Support Emergency Service

#### Components we repair/service:

AC/DC Servo Motor & Drives Ball Screws CNCs Encoders Gearboxes Hydraulic Pumps, Motors & Valves **IGBT Banks** Inverters & Chargers **PLCs** Power/HUB Converters Power Supplies Printed Circuit Boards Resolvers **RF** Remanufacture & Testing Robotics Rotary & Linear Actuators Servo Motor & Valves Spindles Tachmometers Traction Motors Transmitters & Transducers Vacuum Pumps ...and more

#### Industries we serve:

Automotive Aerospace & Defense Bus & Trolley Food & Beverage Light & Heavy Rail Oil & Gas Petrochemical Plastics Pulp & Paper Semiconductor Steel Wind

## A trusted single-source provider of industrial component repairs, product enhancements, remanufacturing and replacement services.

PSI Repair Services is a trusted Independent Service Provider for manufacturers that operate industrial equipment. For over 50 years, we have provided the best repair and engineering services in the market for industrial electronic, electro-mechanical, and precision mechanical assembly components. Our repairs save customers up to 70% versus the cost of buying new components from the OEM. All repairs come with a free evaluation, quick response, and performance test. Our one-of-a-kind engineering services, which sets us apart from the competition, includes robust offerings like Reverse Engineering, Root Cause Analysis, Obsolescence Sustainment and Corrective Engineering, all of which improve meantime between failures (MTBFs) and component reliability.

PSI's state-of-the-art diagnostic equipment handles components from a wide range of manufacturers. Our expertise in performing failure analysis allows our customers to make more informed maintenance decisions on their business-critical equipment. For unsalvageable and obsolete components, PSI offers comprehensive remanufacturing services. In addition, PSI offers surplus parts and emergency services for customers that need to get their critical systems back up and running again as quickly as possible.

#### PSI's Engineering Services Can Significantly Improve Component Reliability, Extend Service Life, and Save You Money

Have you ever been told that your critical component is unsalvageable? It might not be. PSI Repair Services repairs and remanufacturers what others cannot. The PSI Engineering Services Team completes a thorough root cause analysis and determines the corrective action necessary. In many cases, PSI can engineer a custom solution to repair or replace the failure and prevent future ones. Check out a few of success stories below:

### PSI Repair Services brings obsolete vacuum pumps back to like-new condition

A customer wanted to extend the life of five obsolete vacuum pumps, already operating for over 30 years, and needing major reconditioning to run for the next 30 years. As expected, there was significant wear & tear in each unit. Some required complete overhaul and some were even missing components. PSI was able to offer a custom solution for each unit and manufacture parts where needed. Some parts were upgraded to make the units more robust and efficient, and to improve upon the original design. As expected, there was significant wear & tear in each unit. Some required complete overhaul and some were even missing components. PSI was able to offer a custom solution for each unit and manufacture parts where needed. Some parts were upgraded to make the units more robust and efficient, and to improve upon the original design. The result? A 74% cost savings.







PSI Repair Services, Inc. has 56,500 square feet of repair space.

## PSI Engineering Services resolves servo valve failures in seismic vibrator trucks (a.k.a. thumper trucks)

Seismic thumper trucks are intricate machines, powered by complex hydraulic and mechanical systems. To generate the massive force necessary for a controlled and effective sound blast (for perspective, dynamite used to be the preferred method for this), all equipment must be highly precise and high performing. High-intensity vibration exposed the hydraulic servo valves to a variety of problems that led to the corruption of other parts, resulting in equipment failure and downtime. PSI tested the servo valves on run-in test stands to check performance and determine repair requirements. After disassembling the valves, PSI cleaned all parts ultrasonically in a heated vapor degreaser system, replaced all broken, worn and missing parts, reassembled the valves using new Viton seals, and tested the valves on a dedicated test stand capable of low and high flow testing. The result? The remanufactured, like-new condition servo valves met and exceeded the same industry specifications for performance as new servo valves, and saved the customer approximately 40% versus the cost of buying new.





#### PSI Repair Services detects stressed CCA components that were overlooked by a major prime contractor's in-house test system

A major prime contractor sent PSI a circuit card assembly (CCA) for repair that had already passed its own in-house test inspection. To the customer's surprise, PSI discovered eight stressed microchips and one hard-failure microchip. If they were not replaced, MTBF would decrease and maintenance costs would increase, ultimately jeopardizing critical missions. PSI's state-of-the-art equipment proved that the prime contractor's in-house system test did not detect components that were degraded by stress/usage. PSI made the repairs, which saved the contractor crucial time and money in future repairs.





#### Major Tier 1 Auto OEM Has Life of Vacuum Pumps Extended Leading to Big Savings

PSI determined the premature failures were due to overheating, improper lubrication and vacuum leaks, so they provided the manufacturer with digital photos of the assembly, illustrating and describing the correct installation procedures for coolant and lubrication. To resolve this issue, PSI recommended a cooling system that would extend service life from just 2 months to 3 years. The result? A 90% failure reduction and a cost-savings of approximately \$840K per year.



#### PSI Engineering Services resolves vibration issue that caused excessive servo motor failures for electric motor manufacturer

An electric motor manufacturer was experiencing a high incidence of servo motor failures on their presses. PSI closely examined the situation and determined that there was excessive vibration that was breaking down the servo motors, causing failure in the wiring and bearings. To counteract this situation, the PSI Engineering Services team developed a plenum that absorbed the vibration and improved upon the original design. The result? Failure mode was reduced by a factor of 12 to 1, resulting in an annual savings that exceeded \$150K.







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