

CASE STUDY - CUSTOMER EXPERIENCE

ROTATEK rescues sand plant with help from PRÜFTECHNIK

Job role: Field Service Engineer

Company: ROTATEK

Tools: Prüftechnik RotAlign, OptAlign, VibXpert

Key benefits:

- Versatility
- Durability
- Speed
- Accuracy

What started as a mechanical contracting business in 1993 has evolved into ROTATEK, a precision service company specializing in rotating equipment, including laser alignment, 3D metrology, field balancing, and vibration services. ROTATEK, based in Hackensack, N.J., also provides products and rentals, and its field service engineers are available for on-site, worldwide service 24/7.

A growing organization requires advanced tools

As ROTATEK’s laser alignment business has grown, so has its need for precise alignment tools, prompting it to begin using Prüftechnik laser equipment.

“Our first laser alignment tool was the OptAlign Smart,” says Steven Santos, ROTATEK’s founder and one of its field service engineers. “Great tool. We used it for 10 years without a problem.”

Santos researched other brands but wasn’t impressed with the products.

“They just weren’t on the same level as the Prüftechnik equipment,” Santos says. “They may have been cheaper, but if a cheaper unit is going take you a lot longer to do the alignment in the field, that doesn’t translate to saving money.”

Eventually, ROTATEK added RotAlign Ultras and later RotAlign Touch devices to its toolkit. They also began implementing vibration analysis to help troubleshoot rotating equipment in the field, leading to the acquisitions of the Prüftechnik VibXpert vibration analyzers and VibGuard advanced monitoring systems.

ROTATEK woos enterprise companies

In recent years, ROTATEK has provided its services to an increasing number of larger enterprise companies.

“We have a really good mix of different industries that we serve,” Santos continues. “In one week, we may be doing a turbine alignment with a laser tracker, and that same week we might do a 100-horse pump alignment with a RotAlign Touch.”

While his team could use a laser tracker to do a shaft alignment, it would take longer. Instead, they use the RotAlign Touch to do the same job in much less time.

“It’s faster to dimension the equipment. It’s faster to measure, see your results, and see your corrections,” he states. “You can also see your live moves right on the screen.”



ROTATEK solves root cause through expertise

A sand plant in New Jersey experienced a catastrophic blower failure that shut down its plant, costing as much as \$50,000 in daily production losses. Of course, they called ROTATEK for its emergency rotating equipment services. Santos and his team responded quickly to assess the damage and get the plant back up and running.

“It was clear right away that the damage required a lot more than just a routine bearing replacement,” he describes. “The bearings, shaft, coupling, and blower wheel were all damaged beyond repair.”

Fortunately, the client was prepared with a spare rotor. The company decided that ROTATEK would work closely with their millwrights to ensure components were properly installed and the machine was reliable.

The team opted to assemble the rotors in a clean shop, minimizing the bearings’ exposure to sand and other contaminants. Once pre-assembled, the team closely followed the final installation procedures in the field. They carefully arranged the blower wheel’s axial and radial location, properly setting the radial clearance on the bearings, and checked the bearing face runout to ensure the bearings were correctly aligned to the shaft.

ROTATEK used its RotAlign Touch to precision-align the 350-hp motor to the blower. They successfully aligned the shaft to the tolerance with the coupling loose, and then verified in the final coupled state.

Monitoring the shaft with ROTATEK’s VibXpert II revealed some elevated vibration levels, indicating imbalanced mechanical looseness. Based on its experience with new rotor installs and the base and foundation condition, ROTATEK suspected this might happen and had informed the client in advance.

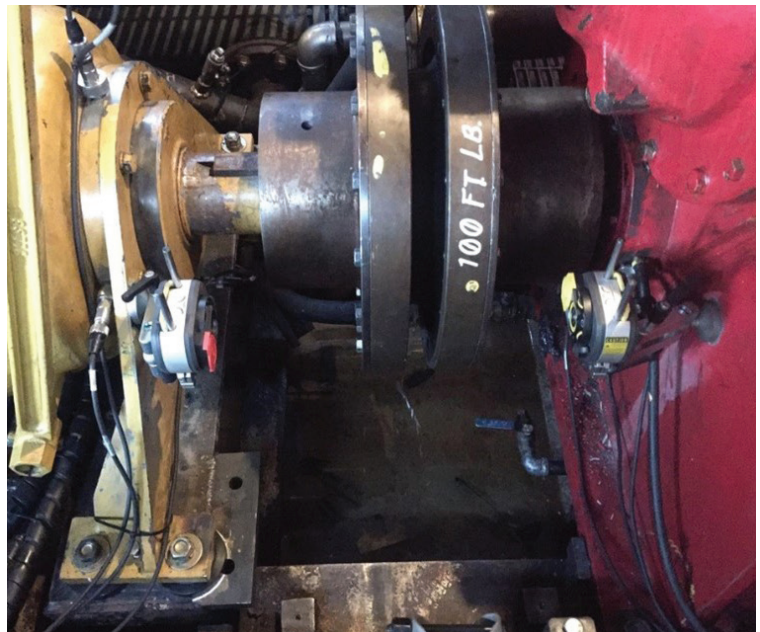
To meet production demands while operating at a safe vibration level, the company decided to reduce the blower speed during the midnight shift when no regular working millwrights were scheduled. The customer and ROTATEK developed a plan to correct the base issues and prepare the location for ROTATEK to balance the blower in the coming days.

ROTATEK got the dirt on a clogged dredge pump

The same sand plant had an emergency involving a dredge pumping plant, a marine vessel used to pump sand out of lakes and other bodies of water so it can be sold to municipalities to rebuild or enhance their shorelines.

“The dredge suffered frequent coupling failures, with each replacement coupling costing \$7,000; not including the labor costs or \$30,000 of production losses per day,” Santos explains. “And they had quite a few coupling failures in a short amount of time, so they reached out to us to diagnose and fix the problem.”

Santos and his team took a boat out to the barge with a variety of Prüftechnik equipment, including two VibXpert systems and a RotAlign Touch tool. The barge had a diesel engine, flexibly coupled to a large integral gear pump.



The Live Trend setup

“We acquired an uncoupled measurement with our RotAlign and found excessive misalignment,” he says.

In addition to the misalignment, the Power Take Off (a foot-mounted component) was discovered to have severe angular soft foot. It didn’t have a strong mechanical fit, and the angular soft foot was so severe that it would take an inordinately long time to correct it using alignment shims.

“We recommended a product called RotaChocks, adjustable spherical chocks that could conform to an angled foot,” Santos continues.

For Santos, working on a ship with limited amounts of working space was a unique and challenging difficulty.

“It was a lot of out-of-position work. We were lying on our sides and working upside down,” he illustrates. “But in the end, we had a successful alignment that we verified with the RotAlign Touch.”

Santos and his team mounted the SensAlign heads and used Live Trend to monitor positional movement between the PTO and the gear pump.

The team went above deck and recorded vibration data through different speeds and processes. Santos and his team confirmed that there was no excessive positional travel.

“I think the movement that we may have recorded was less than two-thousandths of an inch. And they were working the barge hard—it’s not a delicate process when they’re mining for sand,” Santos says. “But we have Live Trend data to show that they didn’t have excess positional movement.”

Saving money with Prüftechnik tools

ROTATEK’s speedy response saved its customer a considerable amount of money on both jobs.

“The coupling was replaced three times prior to our service, and we installed the fourth one,” Santos explains. “Prüftechnik enabled us to give our customer the best of both worlds—accurate alignments and a product in RotAlign that helped us do more in much less time than a laser tracker.”



The equipment had cupped washers because the through-hole was so large that when it was bolted together, it mushroomed the washers.



ROTATEK’s field service engineers are available for on-site worldwide service 24/7.

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