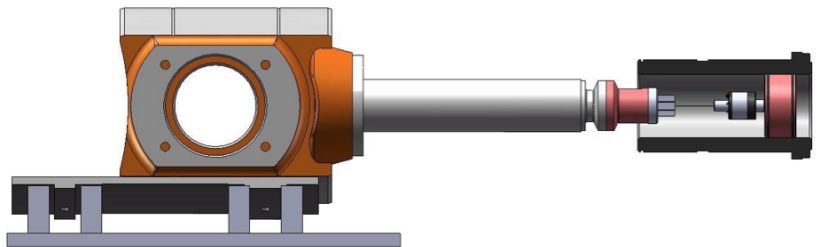




Alignment and Measurement:  
The White Paper Series

Application Note:  
*Mud Pump  
Alignment*



## Application Note:

# *Mud Pump Alignment*

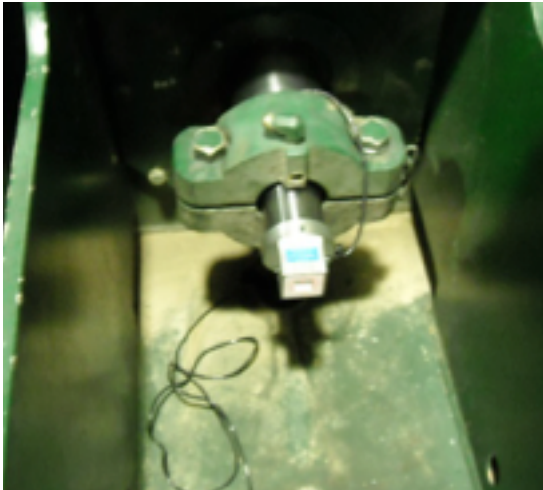
### **Mud Pump Set Up and Maintenance:**

Whether onshore or offshore, well drilling sites rely on a multitude of systems to successfully perform the drilling operation. The mud pump is a key component tasked with circulating drilling fluid under high pressure downhole. The mud pump can be divided into two key sections: the power end or crosshead and the fluid end. Proper alignment of the pump's crosshead to the fluid end liner is necessary to maximizing piston and liner life. Misalignment contributes to accelerated wear on both the piston and the liner, and replacing these components requires downtime of the pump. Traditional methods of inspecting alignment range from using uncalibrated wooden rods, Faro Arms and micrometers to check the vertical and horizontal alignment of the piston rod OD to the piston liner ID. These are time consuming and cumbersome techniques that are ultimately not well suited to troubleshoot and solve alignment issues.

A "Mud Pump Laser Alignment Kit" enables you to measure where the piston will run through the liner at various positions along the pump's stroke. It will also project a laser centerline from the fluid end back towards the rear power end of the pump that can be used to determine how much shimming is required to correct any alignment issues. The kit can include either a 2-Axis receiver or a 4-Axis which accepts the laser beam and documents where it falls on the active surface of the receiver. The 4-Axis receiver can decrease alignment time by as much as 50% as it will measure angularity as well as X and Y while the 2-Axis does not and will need multiple measurement locations to get the same information. In addition, the alignment system is a non-intrusive service requiring the removal of only the piston rod which allows for much quicker service and less down time on the pump. As the mud pumps in question are located globally both on and offshore, having a small, portable system is another great advantage. Our recommendation would be Pinpoint laser System's "Mud Pump Alignment Kit". They are being used by many of the leading repair service companies and have been their main alignment tool for over 15 years. Manufacturers are also utilizing these for new pump set-up.

## Some occurrences that may initiate re-alignment:

- Initial installation (before grouting the baseplate, after grouting the baseplate, after connecting the piping, and after the first run).
- After a pump has been serviced.
- The process operating temperature of the pump has changed.
- Changes have been made to the piping system.
- Periodically, as a preventive maintenance check of the alignment, following the plant operating procedures for scheduled checks or maintenance.

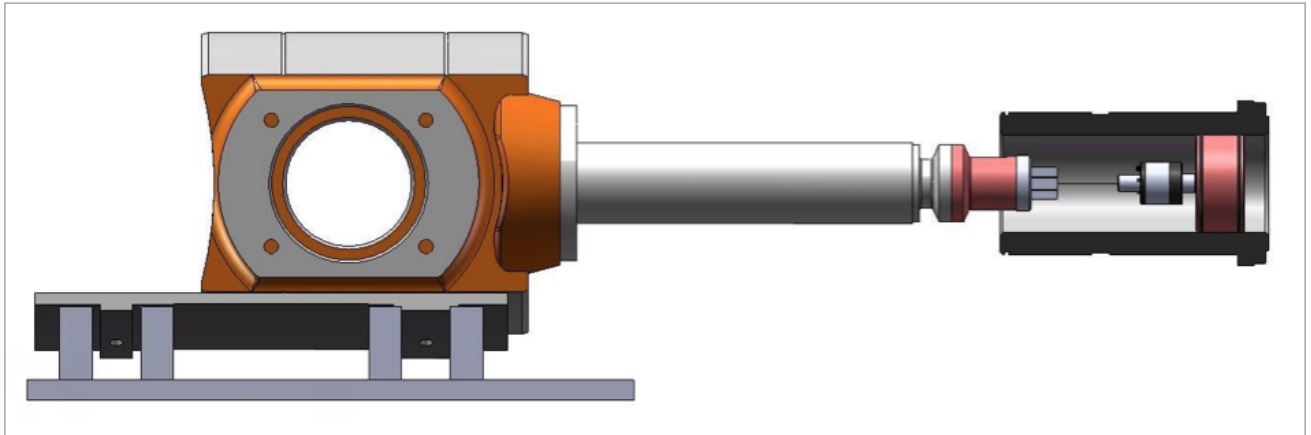


## Advantages of Pinpoint Laser “Mud Pump Alignment Kit”:

- It is fast & easy to mount
- Enables you to measure where the piston will run through the liner at various positions
- Projects a laser centerline from the fluid end back towards the rear power end of the pump
- Allows you to determine how much shimming is required to correct alignment issues
- Requires removing only the piston rod allowing for quicker service and less downtime
- Improves operating life and reliability
- Reduces costs of consumed spare parts
- Reduces maintenance labor costs
- Reduces production loss
- Lower energy losses due to friction and vibration
- Increased productivity through time savings and reducing repair

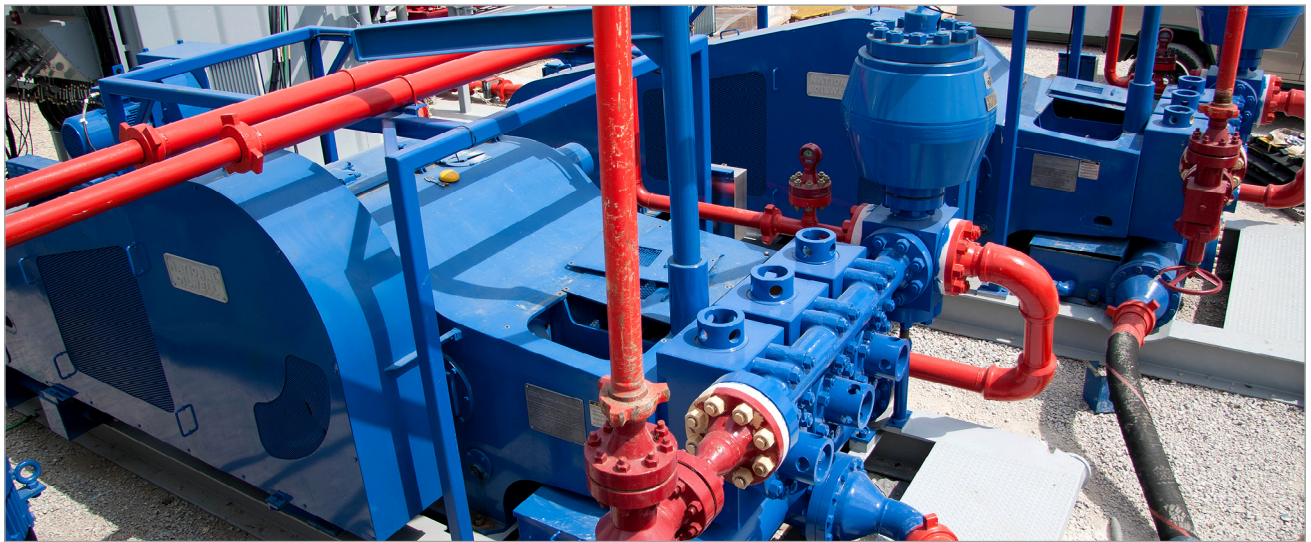
### One of our customers described the following:

"We routinely utilize Pinpoint Laser Systems' "Mud Pump Alignment Kit". We have one service technician dedicated to pump alignments and have seen continued success correcting issues on pumps after numerous rebuild attempts by others proved unsuccessful."



### Another had this to say:

"I'm a firm believer in Pinpoint's Mud Pump Alignment Kit, having used it as well as the old manual methods and even Faro arms in troubleshooting pumps on offshore rigs. In the hands of someone who understands pump alignment it is a powerful yet portable tool."





Alignment and Measuring:  
The Whitepaper Series

Application Note:

## *Mud Pump Alignment*

### **Pinpoint Laser Systems**

*Alignment Specialists  
are standing by to  
answer your questions.*

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