

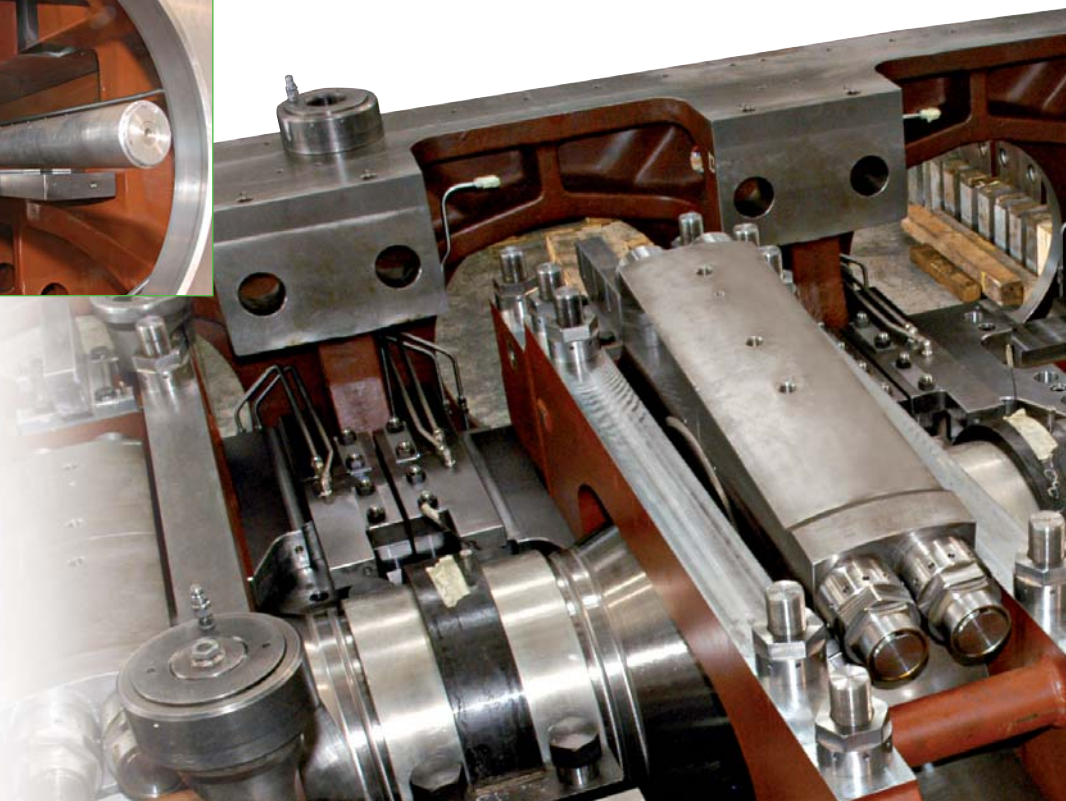
On-Site Laser-Based Hypercompressor Plunger Alignment Service

Benefits

- Increased production
- Higher efficiency**
- Compliance with environmental regulations
- Availability and Reliability**
- Life extension

Using this advanced laser alignment service, the following customer benefits can be achieved:

- Longer component life
- Increased mean-time-between-failure
- Simplification of alignment procedure with improved safety
- Significant reduction in manpower and down time



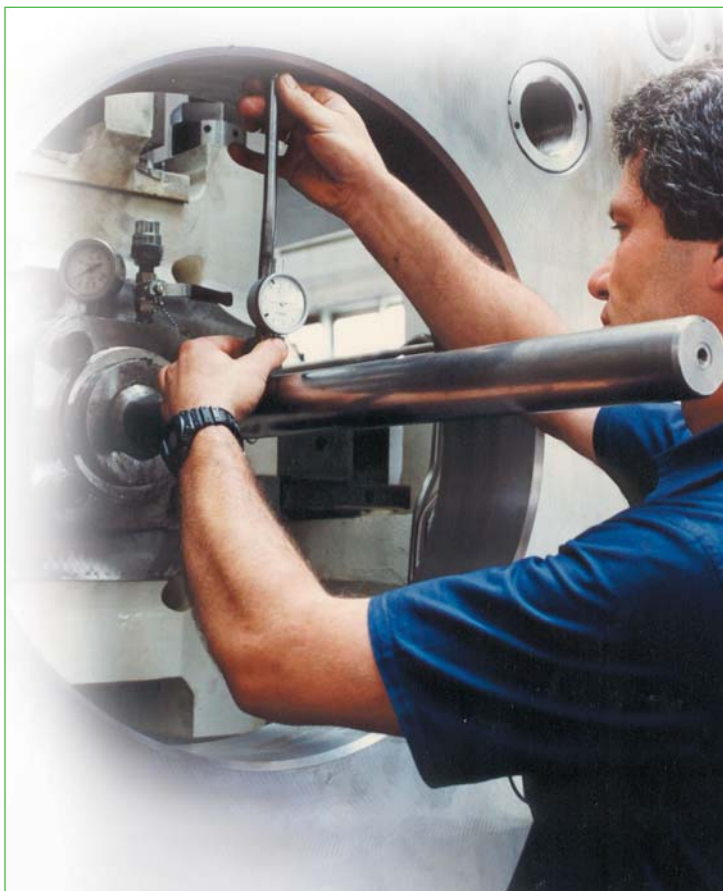
What it is

Plunger run-out is the critical factor for correct hypercompressor operation. Optimized run-out substantially increases the cylinder life and reduces maintenance.

The key issues related to alignment are:

- Manual tools are heavy
- Operation is manpower intensive
- Time required for disassembly and assembly is lengthy
- Accuracy and precision are highly influenced by operator experience

The introduction of this new technology overcomes these issues. We have developed this innovative tool to reduce time and cost, and to improve the quality of this maintenance activity. The approach employs laser technology for plunger alignment, hardware enables the data acquisition on site for computing the proper settings and alignment parameters of the cross head.



How it works

Laser emitters and receivers are positioned in the housing of the plungers at the extremity of the cross head. Precise measurements will determine the cross head misalignment with respect to the center position of the frame and the design threshold tolerance. The cross head, with the emitters proper inserted in the housings, must be positioned at the head stroke end to capture the first laser reading. Next the cross head is moved to the back stroke for the second data reading. From these two readings, our technical advisor is able to determine any misalignment from the theoretical cross head alignment line (see *Figure 1*). From the vertical displacement of the cross head, it is possible to calculate the necessary adjustment of the cross head bands to eliminate the misalignment and conform to the

design specifications. The next step is to mount the laser tools and perform a verification measurement. Once the lasers have been aligned, the operator can make

the horizontal and vertical cross head corrections directly. By the laser display our technical advisor will check if any plunger housing adjustment is needed.

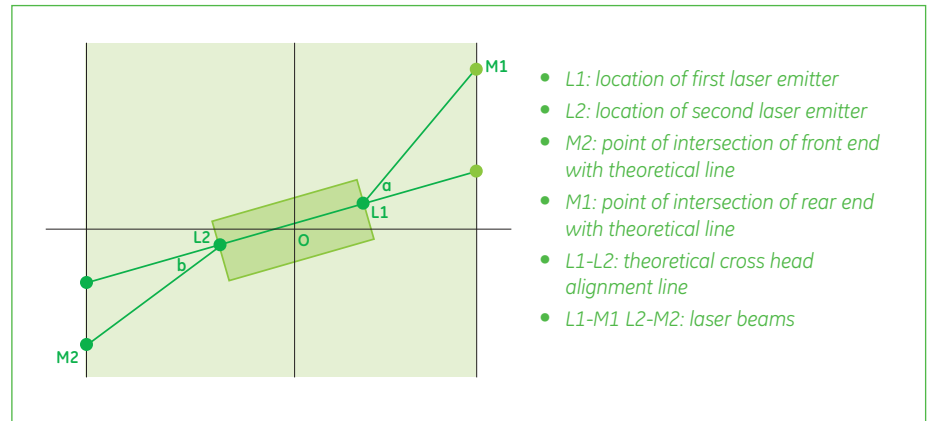
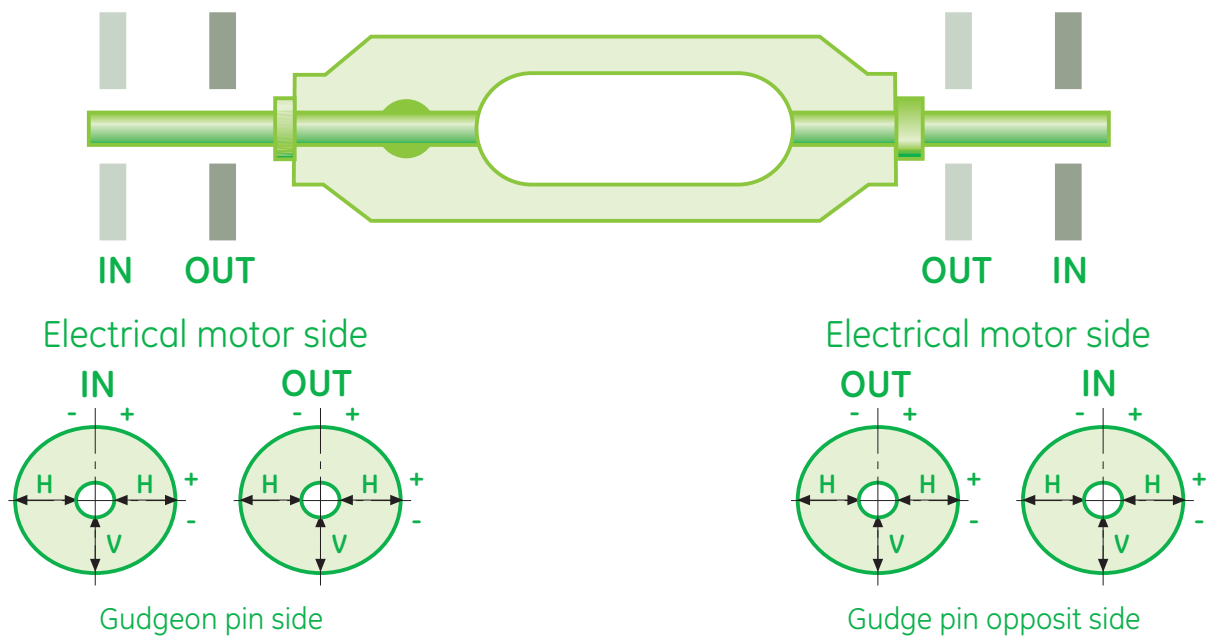


Figure 1 - Cross head alignment diagram



Layout of measurement points



GE imagination at work

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