Valve Gear Monitoring

At Komatsu Mining, we understand the challenges mines experience in tough times. Facing little or no capital, you still need to operate on a day-to-day basis, maintain reliability, and improve productivity, all the time pushing the life of your core assets. This understanding has allowed us to develop an aftermarket service with cost-effective solutions tailored to your individual needs and budget.

Hydraulics are one of the most critical functions on a longwall system. Overall system operation relies on the dependability and performance of hundreds of parts, each with the ability to reduce productivity and even trigger downtime in the event such part fails.

To provide customers with a high degree of confidence in the ongoing reliability and performance of your "in-service" units, the we have developed a program for the examination and prediction of performance of key hydraulic components such as spool and solenoid valves, leg and ram cylinders.

As the OEM, Komatsu Mining has access to the original manufacturing drawings, material specifications and design intent. Combined with years of design expertise and experience in determining investigative test procedures and practices that can aid in the diagnosis and prognosis of potential faults, our team is uniquely qualified to perform this service. Pre-emptive testing reduces the chances of experiencing system wide failures and any necessary remedial actions, like overhaul or replacements, can be planned in advance to reduce costs and lead times and limit losses in productivity.

The service is designed to provide our customer with an up-to-date status health check on your significant investment, by the people who designed and manufactured the equipment. This service can be tailored to suit customer requirements, operational circumstances, and budgets. The cost of the service includes replacement parts to generate the samples and labor to change out the parts.

An example of critical control valves included as part of the service are:

- Compak – spools and solenoids
- Gas yield valve
- Guaranteed set valve
- Stabilizing Ram Pilot Operated Check Valve (POCV)
- Creep advance valve
- Mechanical yield valve
- Leg Pilot Operated Check Valve (POCV)

A detailed report will be provided covering all findings on the health status of the key components along with recommendations.

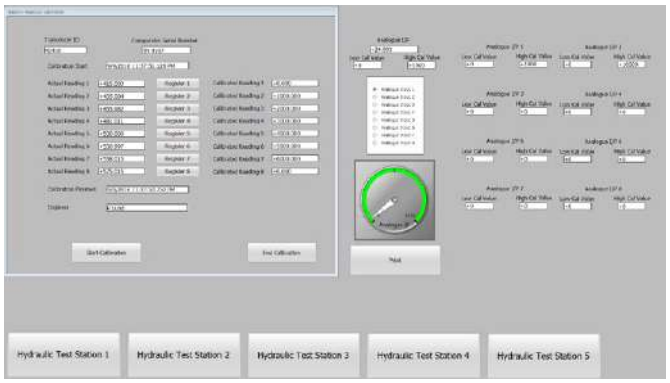
Your final report will include:

- Visual inspection and photographic records of the "as supplied" condition of the valves
- Detailed strip and examination report: current condition of components, including wear and tear, and machined valve bodies and moving parts
- Functional testing information: tested in accordance with the OEM test procedure
- Endurance testing information: critical to establishing the additional life expectancy of the valves based on their current condition
- Seal condition: many factors influence the longevity of soft seal elements - assessment is critical for early identification of potential loss of hydraulic integrity

Specialized testing equipment

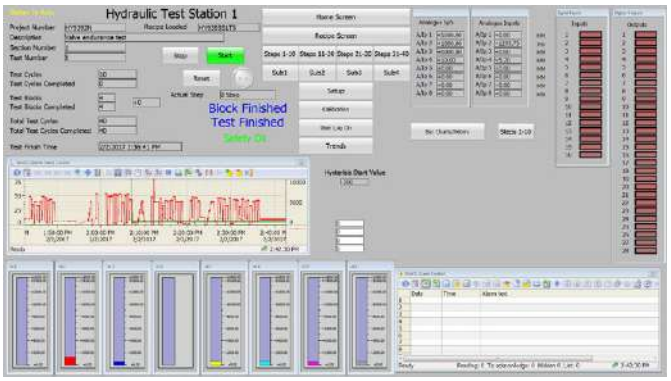
- Custom hydraulic test consoles:
  - Driven from programmable data log controllers to facilitate the cycle endurance tests
  - Various tests can be configured to cover the full suite of analysis needed to meet each customer's requirements
- Live test data through custom software:
  - Used to interrogate valve performance during testing
  - Used to support customer feedback and reports

Compak valve testing rig



Test rig monitoring screen

Leg yield valve testing rig



Test engineer user interface

Komatsu Mining Corp.

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